



ANCSA 17(d)(1) Withdrawals

Final Environmental Impact Statement

July 2024

Prepared by:

U.S. Department of the Interior
Bureau of Land Management

In Cooperation with:

State of Alaska
U.S. Environmental Protection Agency

Estimated Total Costs to Develop and Produce this EIS: \$3,453,050

Mission

The Bureau of Land Management's mission is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

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Final Environmental Impact Statement

Lead Agency

U.S. Department of the Interior (DOI), Bureau of Land Management (BLM)

Cooperating Agencies

State of Alaska (State) and U.S. Environmental Protection Agency

Decision to be Made

Revoke in full, revoke in part, or retain all or some of the Alaska Native Claims Settlement Act (ANCSA) 17(d)(1) withdrawals on lands described in Public Land Orders (PLOs) 7899 through 7903.

Abstract

The DOI is considering opening lands subject to the ANCSA 17(d)(1) withdrawals within the lands described in PLOs 7899 through 7903. PLOs 7900, 7901, 7902, and 7903, which would revoke withdrawals on lands in the Ring of Fire, Bay, Bering Sea-Western Interior, and East Alaska planning areas, respectively, were signed on January 15 and 16, 2021; however, they were never published in the *Federal Register* (FR). PLO 7899, which would revoke withdrawals on lands in the Kobuk-Seward Peninsula planning area, was signed on January 11, 2021, and published in the *Federal Register* on January 19, 2021 (86 FR 5236). Subsequently, the DOI identified certain procedural and legal defects in the decision-making process for these PLOs, as described in the April 16, 2021, *Federal Register* notice (86 FR 20193), including an insufficient analysis under the National Environmental Policy Act. The DOI extended the opening order for PLO 7899 until August 31, 2024, to provide an opportunity to review the decisions and to ensure the orderly management of the public lands (88 FR 21207). The BLM has prepared this final environmental impact statement (EIS) to analyze the following four alternatives:

- Alternative A (No Action Alternative), in which the DOI would retain the ANCSA 17(d)(1) withdrawals within the decision area, preserving the status quo as it was before PLOs 7899 through 7903 were signed in 2021.
- Alternative B (Partial Revocation), in which the DOI would revoke the 17(d)(1) withdrawals in part to allow the State top filed Priority 1 and 2 lands to convert to effective selections where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing areas of critical environmental concern would be minimized. All other lands would remain withdrawn.
- Alternative C (Partial Revocation), in which the DOI would revoke the 17(d)(1) withdrawals in full where the withdrawn lands have high mineral potential, including State top filed Priority 1 and 2 lands. Under Alternative C the DOI would also revoke in part the withdrawals on any remaining Priority 1 and 2 top filings outside of the high mineral potential areas for the limited purpose of opening those lands to selection under the Alaska Statehood Act. All other lands would remain withdrawn.
- Alternative D (2021 Proposed Action), in which the DOI would revoke ANCSA 17(d)(1) withdrawals consistent with the action described in PLOs 7899, 7900, 7901, 7902, and 7903, which would affect a total of approximately 28 million acres across the five planning areas.

Further Information

Contact Racheal Jones, BLM Project Manager at (907) 290-0307 or visit the ANCSA 17(d)(1) Withdrawals EIS website at: <https://eplanning.blm.gov/eplanning-ui/project/2018002/510>



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

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July 2024

Dear Reader:

I am pleased to present the *ANCSA 17(d)(1) Withdrawals Final Environmental Impact Statement* (EIS) for your review. This EIS was prepared by the Bureau of Land Management (BLM) and considers the impacts of opening lands currently subject to Alaska Native Claims Settlement Act (ANCSA) 17(d)(1) withdrawals, including lands within the Bay, Bering Sea-Western Interior, East Alaska, Kobuk-Seward Peninsula, and Ring of Fire planning areas, Alaska. The withdrawals under evaluation in this EIS cover the lands described in Public Land Orders (PLOs) 7899, 7900, 7901, 7902, and 7903, signed January 2021. These orders would lift existing withdrawals across approximately 28 million acres of public lands, resulting in the loss of Federal subsistence priority on some of those lands along with closures to mining and leasing.

PLO 7899, addressing lands in the Kobuk-Seward Peninsula planning area, was signed on January 11, 2021, and published in the *Federal Register* on January 19, 2021. PLOs 7900, 7901, 7902, and 7903, addressing lands in the Ring of Fire, Bay, Bering Sea-Western Interior, and East Alaska planning areas, respectively, were signed on January 15 and 16, 2021, but were never published in the *Federal Register* and do not have an opening date. After review, certain procedural and legal defects were identified in the decision-making process for these PLOs, including insufficient analysis under the National Environmental Policy Act, failure to follow Section 106 of the National Historic Preservation Act, and possible failure to adequately evaluate impacts under Section 7 of the Endangered Species Act. Because of these deficiencies, on April 16, 2021, the U.S. Department of the Interior—relying on inherent authority to revisit decisions based on identified legal errors—delayed the opening of lands under PLO 7899 and the publication of PLOs 7900, 7901, 7902, and 7903 until an EIS could be completed and procedural deficiencies could be addressed.

This EIS considers a range of alternatives, including a no action alternative. Action alternatives comprise full or partial revocation of the ANCSA 17(d)(1) withdrawals. Revocation of these withdrawals has the potential to allow establishment of mining claims (location) or applications for title (entry) under public land laws, including the mining laws, and may result in changes to the land use. Changes in land use have the potential to affect resources. Alternative A, the No Action Alternative, is the Preferred Alternative in this EIS.

This EIS process is intended to inform whether the Secretary of the Interior decides to revoke in full, revoke in part, or retain the ANCSA 17(d)(1) withdrawals on lands described in PLOs 7899, 7900, 7901, 7902, and 7903.

The BLM evaluated all comments received during the 60-day public comment period on the draft EIS. Substantive comments are addressed in this final EIS (Appendix H). The record of decision for the EIS will be published no sooner than 30 days after publication of the final EIS.

The final EIS, associated documents, and an interactive web map presenting the decision area may be accessed on the internet at the ANCSA 17(d)(1) withdrawals EIS website at <https://eplanning.blm.gov/eplanning-ui/project/2018002/510>.

Sincerely,

Steven M. Cohn

1 EXECUTIVE SUMMARY

This executive summary for this Alaska Native Claims Settlement Act (ANCSA) 17(d)(1) withdrawals environmental impact statement (EIS) provides an overview of the project, issues raised in agency and public scoping, a synopsis of the major conclusions from the analysis, and information on how potential effects of the project differ by action alternative, as per 40 Code of Federal Regulations [CFR] 1502.12.

2 INTRODUCTION AND BACKGROUND

The U.S. Department of the Interior (DOI), Bureau of Land Management (BLM) Alaska State Office, prepared this EIS to evaluate the effects of any Secretarial decision to open lands subject to the ANCSA 17(d)(1) withdrawals within the lands described in Public Land Orders (PLOs) 7899 through 7903 (the potential revocation of these 17(d)(1) withdrawals is hereafter referred to as the *project*). PLOs 7900, 7901, 7902, and 7903, which would revoke withdrawals on lands in the Ring of Fire, Bay, Bering Sea-Western Interior, and East Alaska planning areas, respectively, were signed on January 15 and 16, 2021; however, they were never published in the *Federal Register* (FR). PLO 7899, which would revoke withdrawals on lands in the Kobuk-Seward Peninsula planning area, was signed on January 11, 2021, and published in the *Federal Register* on January 19, 2021 (86 FR 5236). Subsequently, the DOI identified certain procedural and legal defects in the decision-making process for these PLOs, as described in the April 16, 2021, *Federal Register* notice (86 FR 20193), including an insufficient analysis under the National Environmental Policy Act (NEPA). The DOI extended the opening order for PLO 7899 until August 31, 2024, to provide an opportunity to review the decisions and to ensure the orderly management of the public lands (88 FR 21207). The BLM is using this time to address identified deficiencies and complete the NEPA analysis.

In 1971, ANCSA 17(d)(1) was enacted to settle aboriginal land title claims with Alaska Natives and directed the Secretary of the Interior (Secretary) to “review the public lands in Alaska and determine whether any portion of these lands should be withdrawn . . . to insure [sic] that the public interest in these lands is properly protected.” Pursuant to this Congressional direction, the Secretary issued a series of PLOs from 1972 to 1973 that withdrew more than 158 million acres of land in Alaska from appropriation under the public land laws, including the lands addressed in this EIS. The BLM generally refers to these lands as the *ANCSA 17(d)(1) withdrawals*. As used in this document, *ANCSA 17(d)(1) withdrawals*, or just *17(d)(1) withdrawals*, specifically refer to the withdrawals themselves (i.e., the legal action) or the land withdrawn under this authority within the decision area. The decision area comprises the lands under consideration in this EIS; these are lands that were included in PLOs 7899 through 7903, except for land within polar bear (*Ursus maritimus*) critical habitat. EIS Appendix B (Glossary) provides definitions of terms used in the EIS.

A withdrawal can 1) set land aside for a specific public purpose, 2) close land to specific uses under the public land laws (usually sale, settlement, location, and entry), or 3) limit land use to maintain public values and reserve an area for a particular public use or for transferring jurisdiction of an area to another Federal agency. Withdrawals are usually established through a PLO or enacted by legislation. For example, the Secretary may withdraw land within a BLM campground from the mining and mineral leasing laws to ensure that the specific purpose of camping can occur without the campers being put in potential danger from mining activities. Under Section 204 of the Federal Land Policy and Management Act of 1976, as amended (FLPMA), the Secretary has the authority to make, modify, extend, or revoke administrative withdrawals. Withdrawals on land prevent the operation of laws that would allow the land to leave Federal ownership. When a withdrawal is revoked, the land becomes available under whatever laws apply to those acres. Withdrawals can be targeted to close the land only to some public land laws; similarly, the Secretary can later revoke a withdrawal in part to allow for the operation of only a specific

public land law that was not previously operative on that land. For example, a withdrawal may be revoked in part to allow only for land selection under the Alaska Statehood Act, but not to allow for applicability of any other public land laws (such as the Mining Law of 1872).

The ANCSA 17(d)(1) withdrawals in the decision area originally occurred through 15 PLOs that withdrew the lands under multiple land use planning areas, subject to valid existing rights, from disposal or appropriation under the public land laws, including mining and mineral leasing laws, while the BLM completed inventories and assessed resources for developing land management objectives. Some of these PLOs also withdrew the land pursuant to ANCSA 11(a)(3) to protect the land status until Alaska Native Corporations (ANCs) could make their land selections. The BLM has already conveyed over 96 percent of the ANC entitlements.

The 15 PLOs that withdrew the land within the decision area are as follows:

- PLOs 5169, 5170, 5171, 5172, 5173, 5174, 5175, 5176, and 5178 withdrew lands for selection by village and regional Native corporations under ANCSA 11(a)(3) and for classification under ANCSA 17(d)(1).
- PLO 5179 withdrew lands in aid of legislation concerning national park, national forest, wildlife refuge, and wild and scenic systems under ANCSA 17(d)(2) and to allow for classification of the lands under ANCSA 17(d)(1).
- PLO 5180 withdrew lands to allow for classification and for protection of the public interest in these lands under ANCSA 17(d)(1).
- PLO 5184 withdrew lands legislatively withdrawn by ANCSA 11 to allow for classification or reclassification of some areas under ANCSA 17(d)(1).
- PLO 5186 withdrew lands not selected by the State of Alaska to allow for classification and protection of the public interest in lands under ANCSA 17(d)(1).
- PLO 5188 withdrew lands in former reservations for the use and benefit of Alaska Natives classification and protection of the public interest pursuant to ANCSA (17)(d)(1).
- PLO 5353 withdrew lands under the authority of ANCSA 17(d)(1) pending determination of eligibility of certain Native communities under ANCSA 11(b)(3) and for classification of lands not conveyed pursuant to ANCSA 14.

The purposes of the withdrawals above, other than those under ANCSA 17(d)(1), have been met. The statutory selection application deadlines for ANCSA selections have passed, and most ANCSA selections are in place. Likewise, the eligibility of Native communities under ANCSA 11(b)(3) has been determined. Additionally, the Alaska National Interest Lands Conservation Act (ANILCA) created conservation system units from the lands withdrawn under PLO 5179 fulfilling the purpose of the withdrawals under ANCSA 17(d)(2).

The Secretary has modified, revoked in part, and revoked in full 17(d)(1) withdrawals over the years since they were issued to allow for various activities. For instance, subsequent PLO modifications have been issued that opened some of the 17(d)(1) withdrawals to mineral entry and mineral leasing. The entire decision area is currently open to mineral sales. Details regarding acres that are currently open based on the most recent PLO modifications are in EIS Sections 1.2 and 3.8.

The original PLOs withdrew the land from selection under the Alaska Statehood Act (Public Law 85-508, 72 Statute 339, enacted July 7, 1958). The Alaska Statehood Act authorized the transfer of approximately 105 million acres of Federal land to the State of the Alaska, and although the BLM has already conveyed most of the entitlement, the State has approximately 5.2 million acres of entitlement remaining. Many of

the lands addressed in the PLOs were opened to State selection, and therefore there are 6.4 million acres of effective selection in the decision area. Under ANILCA 906(e), the State of Alaska was authorized to “top file” on lands not available for selection. Within the decision area, there are approximately 1.1 million acres that are top filed over a variety of encumbrances, including the portions of these PLOs not revoked in part to allow for state selections; ANCSA selections; withdrawals reserving lands for other Federal agencies; and active mining claims. If those lands become available in the future, the State’s top filing would become an effective selection barring any competing encumbrances.

The NEPA analysis associated with the BLM resource management plans (RMPs)/EISs (see BLM 2006a, 2006b, 2007b, 2007c, and 2020) that were prepared for each of the five planning areas (Bay, Bering Sea-Western Interior, East Alaska, Kobuk-Seward Peninsula, and Ring of Fire) evaluates impacts of revocation of these PLOs (Figure ES-1).

In 2020 and 2021, the DOI prepared PLOs 7899, 7900, 7901, 7902, and 7903 (2021 Action) that would have revoked ANCSA 17(d)(1) withdrawals on approximately 28 million acres of BLM-managed land within the five planning areas (see EIS Figures 1.2-2 through 1.2-6; all EIS figures are in EIS Appendix A). Revocation of the withdrawals in full would allow for the public lands laws to be implemented in full. This would include the selection of lands pursuant to the Alaska Statehood Act, which would allow the State of Alaska's top filed selections to become effective selections if the land is not otherwise encumbered, and would open lands to mineral leasing, mining claim location and entry, and all other forms of appropriation from which the lands are currently withdrawn.

As discussed in EIS Section 1.1, Introduction, following issuance of these revocation PLOs, the DOI identified certain procedural and legal defects in the decision-making process for these PLOs, including insufficient analysis under NEPA and reliance on potentially outdated data from the RMP/EISs.

The DOI first addressed the availability of land for selection of Native allotments by Alaska Native veterans under the Dingell Act. The BLM analyzed a revocation in part of the 17(d)(1) withdrawals to allow selection under the Dingell Act in the *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program* (BLM 2022). The Secretary then issued PLOs 7912 and 7929 revoking in part the 17(d)(1) withdrawals to allow for selections under the Dingell Act on approximately 27.8 million acres within the decision area.

The BLM is now addressing the remaining defects in the revocation PLOs and updating the NEPA analysis.

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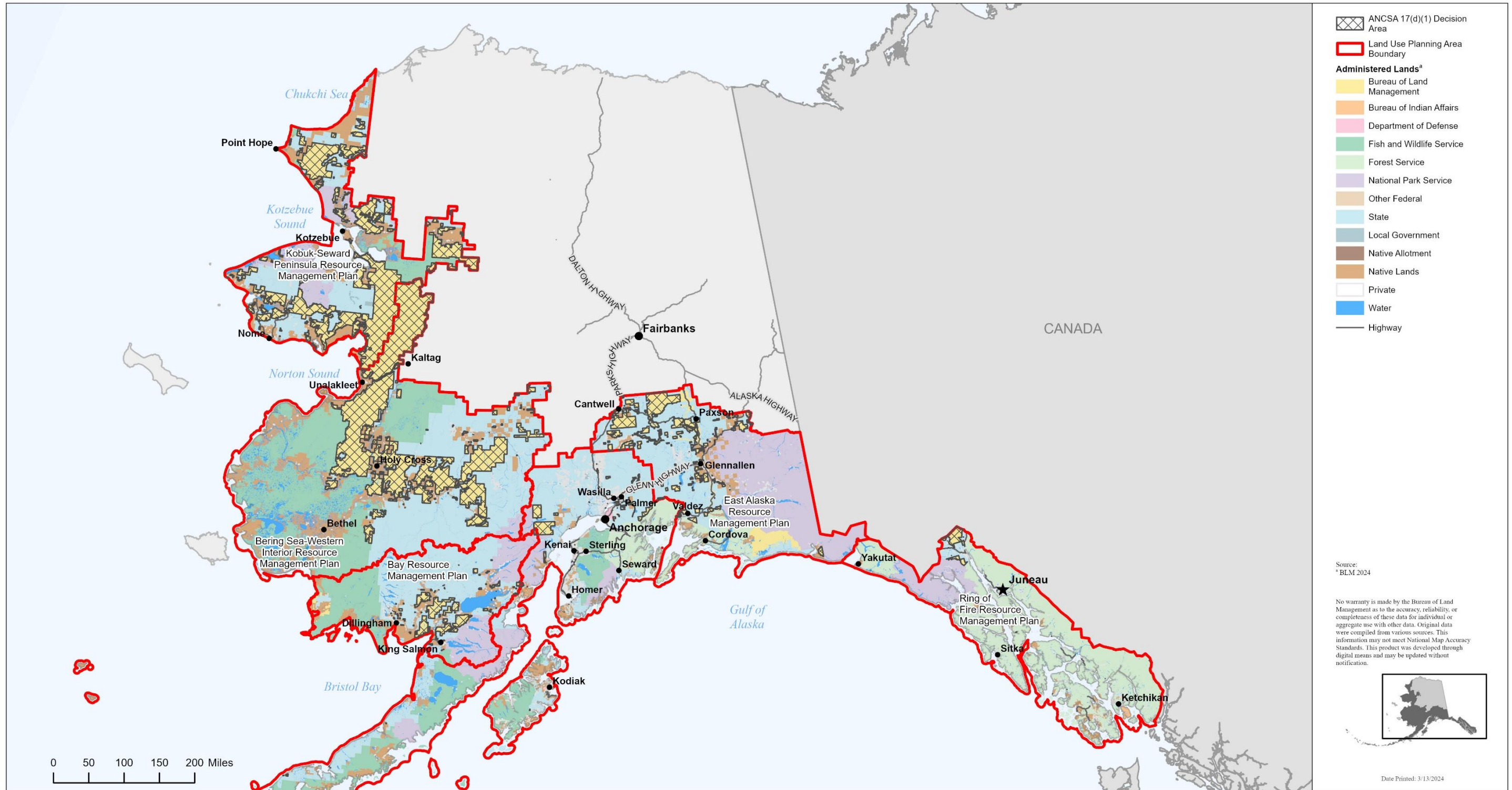


Figure ES-1. ANCSA 17(d)(1) withdrawals for all planning areas in the decision area.

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3 PURPOSE AND NEED FOR ACTION

The 2021 Action under review is revocation of the ANCSA 17(d)(1) withdrawals as described in PLOs 7899, 7900, 7901, 7902, and 7903. This EIS evaluates the resource conditions on these lands and incorporates and describes additional coordination with other Federal agencies, State and local governments, Federally recognized Tribes, ANCs, and other stakeholders to ensure that the environmental analysis previously conducted will be updated and expanded upon as appropriate. This additional analysis is necessary to ensure an accurate assessment of the impacts of revocation of the ANCSA 17(d)(1) withdrawals; to correct errors in the previous decision-making process regarding these withdrawals; and to ensure that opening these lands is consistent with the purposes of ANCSA 17(d)(1), which requires that “the public interest in these lands is properly protected,” including factors such as subsistence hunting and fishing, habitat connectivity, protection of cultural resources, and protection of threatened and endangered species. This evaluation is needed to make an informed public interest determination to support revocation in full, revocation in part, or full retention of the ANCSA 17(d)(1) withdrawals.

4 DECISION TO BE MADE

Based on the analysis contained in this EIS, the Secretary will decide whether to open certain lands currently withdrawn from appropriation under ANCSA 17(d)(1). The decision will not include land management actions, and it will not change or add to existing RMPs, or their terms and conditions. The decision will also not affect current effective selections by the State or ANCs because they could be conveyed regardless of the Secretarial decision. The DOI will consider analysis in this EIS when evaluating the following options:

- Revoke or partially revoke all or some of the ANCSA 17(d)(1) withdrawals on lands described in PLOs 7899 through 7903.
- Retain the ANCSA 17(d)(1) withdrawals on lands described in PLOs 7899 through 7903, maintaining the status quo.

There are other withdrawals in the decision area reserving land for several Federal agencies; pursuant to Section 204(i) of FLPMA, the Secretary cannot revoke a withdrawal of land under the administration of any Federal agency other than the DOI unless that agency consents. For example, PLO 3830 withdrew and reserved 140 acres of public land for use by the Federal Aviation Agency for an air navigation facility at Kotzebue (30 FR 12253, September 24, 1965), PLO 1672 withdrew and reserved 880.4 acres of public land for use by the Department of the Air Force for military purposes at Wales (23 FR 5088, July 3, 1958), and PLO 3629 withdrew and reserved 27.36 acres of public land for use by the National Oceanic and Atmospheric Administration National Marine Fisheries Service as an administrative site for shellfish research (30 FR 5481, April 16, 1965). Though the acreages in these examples are small, there are several such examples. For instance, there are several more sites across the decision area withdrawn and reserved for administration by the Federal Aviation Agency, in particular. EIS Appendix J, Withdrawals or Reservations of Land for Other Federal Agencies, includes a non-exhaustive list of other lands withdrawn and reserved for other Federal agencies that lie within the decision area.

5 COMMUNITY ENGAGEMENT

5.1 Scoping and Issues

Scoping is the process of soliciting input on the issues, alternatives, and impacts that will be analyzed in an EIS. The BLM conducted both external scoping with interested parties and internal scoping with BLM subject matter experts. The BLM published a notice of intent to prepare an EIS in the *Federal Register* on August 18, 2022, announcing a 60-day public scoping period to solicit public comments and to identify issues for this EIS (87 FR 50875). Public scoping comments were accepted through October 19, 2022. The BLM held three virtual public scoping meetings during the scoping period.

The BLM received 80 unique comment submissions during the public scoping period. Overall, the BLM identified 276 substantive comments from those submissions. In February and March 2023, the BLM conducted focused outreach to Tribes and ANCs to ensure awareness of the preparation of this EIS and implications of the decision to be made and solicited additional input on issues and alternatives (see EIS Section 1.8.1, Consultation with Tribes and Alaska Native Corporations). The public scoping report is available on the BLM's ePlanning website: <https://eplanning.blm.gov/eplanning-ui/project/2018002/510>.

Between scoping and the publication of the draft EIS, the BLM received letters from Tribes, Tribal organizations, ANCs, and non-governmental organizations expressing support for retaining the withdrawals to avoid impacts to subsistence resources and impacts to indigenous ancestral homelands. The BLM also received a letter from a regional ANC expressing support for revoking the withdrawals.

5.2 Public Meetings and ANILCA 810 Hearings for the Draft Environmental Impact Statement

The BLM held 19 public meetings and ANILCA 810 hearings for the draft EIS in January and February 2024. In-person meetings were held in 14 hub communities, and five meetings were hosted virtually. EIS Appendix H (Community Engagement Summary and Comments Received on the Draft Environmental Impact Statement) summarizes the community engagement effort for the draft EIS. The BLM received a total of 14,835 submittals during the public comment period from 14,444 individuals; 1,081 of the submittals were unique, and the remainder were form letters or duplicate submittals. Public comments on the draft EIS and BLM responses are also summarized in EIS Appendix H.

5.2.1 *Disputed Issues and Issues to be Resolved*

Public and agency comments on the draft EIS and BLM responses are in EIS Appendix H. Key comment themes are detailed in Section 3 (Comment Themes) of that appendix and are summarized below.

- Commenters expressed the desire to complete ANC selections and conveyances and Alaska Native Vietnam-era veteran allotment selections prior to the Secretary revoking any 17(d)(1) withdrawals.
- Commenters questioned the change in policy from the BLM's 2006 Report to Congress required by Section 207 of the Alaska Land Transfer Acceleration Act.
- Commenters expressed the desire for land under various 17(d)(1) withdrawals to be retained in BLM management for social, environmental, economic, and subsistence reasons.
- Commenters requested the incorporation of Indigenous Knowledge into this EIS.

- Commenters questioned the assumptions and adequacy of the analysis methods used in the draft EIS and reasonably foreseeable development (RFD) scenario to determine impacts to various resources.
- Commenters requested additional analysis of cumulative impacts on the evaluated resources, including local impacts like habitat fragmentation and spills from potential mining and development as well as global impacts to climate change.
- Commenters requested an expanded economic analysis to evaluate effects to tourism, fisheries, recreation, and guiding services.
- Commenters believed subsistence impacts are overstated in the EIS and alleged that State regulations allow hunting and fishing to occur regardless of Federal subsistence priority.

Issues to be resolved are as follows:

- The Secretary will select an action from within the range of alternatives analyzed in this EIS.
- Prior to any decision to revoke in full or revoke in part the ANCSA 17(d)(1) withdrawals described in this EIS, the DOI will complete consultation under the National Historic Preservation Act, including executing a programmatic agreement (PA) (see EIS Section 1.8.2, National Historic Preservation Act Consultation).
- Prior to any decision to revoke in full or revoke in part the ANCSA 17(d)(1) withdrawals described in this EIS, the DOI will obtain consent from agencies with administrative jurisdiction over lands withdrawn and reserved for their use in the planning areas. Pursuant to Section 204(i) of FLPMA, the Secretary cannot revoke a withdrawal of land under the administration of any Federal agency other than the DOI unless that agency consents.
- ANCSA entitlements that are not fulfilled will not be resolved in this EIS.

6 ALTERNATIVES

Each of the alternatives identifies 17(d)(1) withdrawals in the five planning areas as retained or revoked. The alternatives range from retaining the withdrawals on all lands (Alternative A) to revoking the withdrawals on all lands (Alternative D). Alternative B includes partial revocations where conflicts with natural resources, cultural resources, subsistence, recreational resources, or proposed or existing areas of critical environmental concern (ACECs) would be minimized, and Alternative C includes partial revocations based on mineral potential. See EIS Appendix B (Glossary) for definitions of terms used in the alternative descriptions. A summary of impacts under each alternative is provided in Table ES-1 at the end of this document.

6.1 Alternative A (No Action Alternative, Preferred Alternative)

Alternative A would retain the ANCSA 17(d)(1) withdrawals within the decision area, preserving the status quo as it was before PLOs 7899 through 7903 were signed in 2021. EIS Figures 2.2-1 through 2.2-6 detail 17(d)(1) withdrawals within each planning area that are retained under Alternative A. Should Alternative A be selected, the State's remaining 5.2 million acres of entitlements would be fulfilled through existing effective selections.

6.2 Alternative B (Partial Revocation)

Alternative B would revoke in part withdrawals to allow State top filed Priority 1 and 2 lands to convert to effective selections only where conflicts with natural resources, cultural resources, subsistence, recreational resources, or proposed or existing ACECs would be minimized. These lands would remain withdrawn as specified under the applicable PLO. Specific known subsistence access areas were also removed from consideration for withdrawal revocation; however, due to the extent of subsistence access throughout the state, they were not entirely avoided. All other lands would remain withdrawn (EIS Figure 2.3-1).

Under Alternative B, 17(d)(1) withdrawals affecting approximately 433,000 acres would be revoked in part to allow State top filed Priority 1 and 2 lands to convert to effective selections. However, 402,000 of these acres have underlying selections or are otherwise encumbered, so they would likely continue to be unavailable for Alaska Statehood Act selection. The remaining 41,000 acres of Priority 1 and 2 top filings—7 percent of the State top filed Priority 1 and 2 lands within the decision area—are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal. These 41,000 acres could be conveyed to the State at its request if the 17(d)(1) withdrawals are partially revoked to open the lands to selection under the Alaska Statehood Act. Alternative B would not revoke any 17(d)(1) withdrawals with Priority 3 and 4 top filings.

EIS Figures 2.3-2 through 2.3-6 detail 17(d)(1) withdrawals within each planning area as well as where the 17(d)(1) withdrawals would be retained or revoked under Alternative B.

6.3 Alternative C (Partial Revocation)

Under Alternative C, the Secretary would revoke the 17(d)(1) withdrawals in full for those acres that have high mineral potential, including State top filed Priority 1, 2, 3, and 4 lands. Also under Alternative C, the Secretary would revoke the withdrawals in part on any remaining Priority 1 and 2 top filings outside of the high mineral potential areas for the limited purpose of opening those lands to selection under the Alaska Statehood Act. All other lands, including areas of high mineral potential that are already opened to mineral entry or leasing due to an existing PLO would remain withdrawn as specified in that PLO (EIS Figure 2.4-1). Because Alternative B also revokes in part withdrawals that include State top filed Priority 1 and 2 land, all withdrawals revoked in part under Alternative B are included in Alternative C.

Under Alternative C, the 17(d)(1) withdrawals affecting approximately 5,345,000 acres with high mineral potential, including some State top filed Priority 1 and 2 lands, would be revoked in full, opening these lands to public land laws. The 17(d)(1) withdrawals affecting an additional 457,000 acres of State top filed Priority 1 and 2 lands in the decision area that do not have high mineral potential would be revoked in part to allow for State selection only. Therefore, the 17(d)(1) withdrawals affecting 1,048,000 acres of State top filed Priority 1 and 2 lands would be revoked in full or revoked in part, which accounts for all State top filed Priority 1 and 2 lands in the decision area. However, because approximately 505,000 of these acres have underlying selections or are otherwise encumbered, they would continue to be unavailable for Alaska Statehood Act selection. The remaining Priority 1 and 2 top filings are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal. These 567,000 acres are the lands that the BLM expects could be conveyed, should the Secretary select Alternative C. This would be all of the State top filed Priority 1 and 2 lands within the decision area.

EIS Figures 2.4-2 through 2.4-6 detail 17(d)(1) withdrawals that would be retained, revoked in part, or revoked in full under Alternative C.

Alternative C would also revoke 17(d)(1) withdrawals affecting 145,000 acres with Priority 3 and 4 top filings that would immediately convert to effective selections upon that revocation only if otherwise unencumbered. However, because these are lower priority, the BLM assumes the State would relinquish or the BLM would reject the newly effective selections within 10 years of the decision due to overselection.

6.4 Alternative D (2021 Proposed Action)

Under Alternative D (2021 Proposed Action), the Secretary would revoke in full ANCSA 17(d)(1) withdrawals consistent with the action described in the January 2021 PLOs 7899, 7900, 7901, 7902, and 7903, which would affect a total of approximately 28 million acres across the five planning areas (see EIS Figure 2.5-1). All withdrawals revoked in full or revoked in part under Alternatives B and C are inherently included in the revocations for Alternative D.

Under Alternative D, approximately 1,048,000 acres of State top filed Priority 1 and 2 lands could convert to effective selections. However, because approximately 505,000 of these acres have underlying selections or are otherwise encumbered, they would continue to be unavailable for Alaska Statehood Act selection. The remaining Priority 1 and 2 top filings are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal. These 567,000 acres are the lands that the BLM expects could be conveyed, should the Secretary select Alternative D. This would be all of the State top filed Priority 1 and 2 lands within the decision area.

EIS Figures 2.5-2 through 2.5-6 detail 17(d)(1) withdrawals within each planning area that would be revoked under Alternative D.

Alternative D would also revoke in full the 17(d)(1) withdrawals on 400,000 acres with Priority 3 and 4 top filings that would immediately convert to effective selections upon that revocation if otherwise unencumbered. However, because these are lower priority, the BLM assumes the State would relinquish or the BLM would reject the newly effective selections within 10 years of the decision due to overselection.

6.5 Changes Since the Draft EIS

The following key changes were completed since the draft EIS:

- The land within the 17(d)(1) withdrawals that intersect the Alaska Long Trail proposed national scenic trail (NST) (which equals approximately 4 miles of the proposed trail route) is now retained under Alternative B.
- The land within the 17(d)(1) withdrawals that intersect the Iditarod National Historic Trail (NHT) corridor (which equals approximately 4 miles of trail) is now retained under Alternative B.
- 17(d)(1) withdrawals on lands that have high mineral potential that are already open to mineral entry or leasing under the mining laws due to PLO amendments were changed to retained under Alternative C. This changed 2,260,000 acres from revoke to retain under this alternative.
- All ANCSA 17(d)(1) withdrawals are now correctly analyzed as open to mineral sales under the Materials Act. Discussion of the general impacts on salable mineral (sand, stone, gravel, pumice, clay, rock, and petrified wood) availability due to revocation of the withdrawals was removed from the analysis since revocation of the withdrawals does not change what is open to mineral sales. Discussion of the general impacts on resources from development of salable minerals

(gravel mining) is included in this EIS to reflect the increased need for this activity for the purpose of supporting infrastructure for various types of development.

However, acres more likely to be developed for salable minerals are still included in the EIS calculations for areas more likely to be developed due to the logistical difficulties of removing those acres in the limited time to make the change. The change to the impact analysis would be *de minimis*: it results in an overestimate of approximately 7,000 acres of lands more likely to be developed as a result of any revocation of the 17(d)(1) withdrawals. These 7,000 acres are already open to mineral sales and can be developed at any time regardless of the Secretarial decision on this project. The overestimate occurs in the following locations:

- Bay planning area: < 1,000 acres near Aleknagik
 - East Alaska planning area: 3,000 acres spread in small parcels near Nelchina, Chistochina, Chitina, Mentasta Lake, Paxson, and Cantwell
 - Kobuk-Seward Peninsula planning area: 2,000 acres near Teller
 - Ring of Fire planning area: 2,000 acres near Palmer along the Knik River
- Land status data regarding acres of land conveyed, selected, and top filed were updated and now reflect data as of January 24, 2024. These data also reflect any changes to the priority of State selections and top files. In summary, the final EIS reflects approximately 283,000 fewer acres of State selections (of any priority) and 278,000 more acres of State top filings of any priority.
 - The subsistence analysis was updated to remove State top filed lands that are top filed over State effective selections from the lands where there would be effects on subsistence. The draft EIS erroneously calculated encumbrances on State top filed lands without considering whether the State top filed lands were also effectively selected by the State. Because a revocation of a withdrawal to allow for State selection would not actually change the status of any lands that are effectively selected, this led to a decrease in the number of acres where a loss of Federal subsistence priority would occur as a result of a Secretarial decision.
 - The impacts due to Alternative B were refined to remove the effects of development on lands that are not likely to be conveyed to the State. Alternative B would revoke in part the withdrawals only to allow for State selection. Given this, it would not change the management of the lands except to the extent that top filed lands that are not otherwise encumbered would become effective selections and could be conveyed to the State. The draft EIS included in the analysis all lands that are more likely to be developed within areas where the withdrawals would be revoked in part despite the fact that revocation is not reasonably likely to lead to the development of lands that would not likely be conveyed to the State.
 - The acres newly open to mineral entry immediately following revocations of 17(d)(1) withdrawals disclosed in EIS Table 3.8-5 and 3.8-10 increased substantially in the final EIS. In the draft EIS, criteria were applied to acres open or closed to mineral entry or leasing to determine how many acres would be newly opened following revocations of 17(d)(1) withdrawals. Since publication of the draft EIS, it has been clarified which criteria were appropriate for calculation. Therefore, numbers in final EIS Tables 3.8-5 and 3.8-10 differ from the tables published in the draft EIS.

7 CONSULTATION AND COORDINATION

7.1 Consultation with Tribes and Alaska Native Corporations

The BLM notified Tribes and ANCs that the agency would be preparing an EIS on the project by mailing letters on August 22, 2022, inviting them to engage in consultation and to participate as a consulting party under NEPA and Section 106 of the NHPA, per 36 CFR 800.3, Departmental Manual 512 Chapters 4 and 6, and BLM Manual 1780. The BLM sent letters to all 227 Federally recognized Tribes in Alaska and to 236 ANCs. On November 16, 2022, the BLM sent a second letter to Tribes informing them they may qualify for cooperating agency status and inviting them to engage in consultation. In February and March 2023, the BLM made personal telephone calls to all 227 Tribes and reached out to ANCs by email to ensure awareness of the project and to invite those interested to consult with the BLM. Tribes and ANCs contacted during this time were also invited to an informal consultation meeting on March 29. During the March 29 meeting about the project, the BLM presented on the 17(d)(1) withdrawals, the purpose of revocation, potential impacts of revocation, and the EIS process, and held a question-and-answer session.

The BLM is conducting government-to-government and ANCSA consultations on an ongoing basis through the development of this EIS and until a ROD is published. Consultations are held at the request of Tribes and ANCs.

7.2 National Historic Preservation Act Consultation

Section 106 of the NHPA requires Federal agencies to consider the effects of their actions on historic properties (those listed on or eligible for the National Register of Historic Places) and to invite interested parties to express their views on resolving adverse effects that may result from those actions. The BLM initiated consultation under Section 106 of the NHPA on August 22, 2022, by sending letters to Tribes, ANCs, and municipalities, inviting them to participate as a consulting party. The BLM sent a second invitation letter on November 16, 2022. On January 11, 2023, the BLM notified the Alaska State Historic Preservation Office and the Advisory Council on Historic Preservation of the project and invited them to review and identify issues that should be addressed in this EIS.

The BLM has determined that revocation of the ANCSA 17(d)(1) withdrawals has the potential to adversely affect historic properties since the transfer of land (that may contain historic properties) out of Federal ownership without legally enforceable mechanisms to preserve historic properties is an adverse effect pursuant to 36 CFR 800.5(a)(2)(vii). In consultation with the Alaska State Historic Preservation Office, the BLM has determined that a PA, as described at 36 CFR 800.14(b)(1), is the most appropriate manner to meet its Section 106 NHPA compliance responsibilities. The PA is in development and will include measures to minimize and mitigate adverse effects to historic properties that may result from implementation of the proposed action.

Since August 2022, several Tribes and ANCs have expressed interest in participating in the Section 106 compliance process. The BLM sent invitations to the first consulting party meeting in January 2024 and held a virtual consulting party meeting on February 15, 2024. The BLM will continue consulting with the Alaska State Historic Preservation Office and consulting parties until the PA is completed. The PA will be completed prior to the issuance of any decision to revoke in full or revoke in part the ANCSA 17(d)(1) withdrawals as described in this EIS.

7.3 Compliance with Section 810 of the Alaska National Interest Lands Conservation Act

Section 810 of ANILCA requires the BLM to evaluate the effects of the alternatives and the cumulative impacts of current and future activities on subsistence uses and needs. An ANILCA 810 evaluation is published with this EIS and is included as Appendix C. This evaluation was prepared in parallel with and is consistent with the analysis contained in this EIS. The ANILCA 810 evaluation and the draft EIS were available for public review together, and 19 public hearings were held to collect testimony from affected communities during the draft EIS public comment period. The dates and locations of the public hearings are listed in EIS Appendix H. Transcripts of the public meetings and ANILCA 810 hearings are available on the BLM's ePlanning website (<https://eplanning.blm.gov/eplanning-ui/project/2018002/510>). The BLM used the information shared by commenters at the public hearings and submitted in writing during the comment period to inform the determinations made in the final ANILCA 810 evaluation found in EIS Appendix C.

7.4 Endangered Species Act Consultation

Informal consultation under Section 7 of the Endangered Species Act (ESA) between the BLM and the U.S. Fish and Wildlife Service (USFWS) for species listed under the ESA was completed on March 11, 2024. USFWS concurred with the BLM's determination that the project is not likely to adversely affect the ESA-protected polar bear, spectacled eider (*Somateria fischeri*), or the Alaska-breeding population of Steller's eider (*Polysticta stelleri*).

7.5 Magnuson-Stevens Fishery Conservation and Management Act Compliance

Compliance with the Magnuson-Stevens Fishery Conservation and Management Act regarding essential fish habitat occurred between the BLM and National Marine Fisheries Service, and the BLM received concurrence from the National Marine Fisheries Service on April 12, 2024, that the project would have no direct adverse effect on freshwater essential fish habitat for Pacific salmon.

8 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table ES-1 summarizes the potential environmental impacts of each alternative. EIS Chapter 3, Affected Environment and Environmental Consequences, details the affected environment for social, physical, and biological resources and the potential environmental impacts associated with each of the alternatives. Potential impacts for each resource are described in terms of type, context, duration, and intensity. For more information on all potential impacts, please refer to Chapter 3 of this EIS.

8.1 Reasonably Foreseeable Development Scenario

The act of revoking 17(d)(1) withdrawals would not cause any direct, specific measurable impacts to resources under Alternative B, C, or D. No development plans have been submitted and no stipulations are attached to the selected lands that would prevent any specific development from taking place. (The terms and conditions contained in the existing land use plans would apply, as applicable, to any proposed development on lands where the Secretary revokes the 17(d)(1) withdrawals and the land stays in BLM management.) Therefore, impacts to resources are analyzed through assumptions regarding types and

levels of development, as described in the RFD scenario (see EIS Appendix D) and in EIS Section 3.1, Introduction and Methodology.

The RFD scenario identifies and quantifies potential development activity in the decision area, including the extraction of leasable, locatable, and salable minerals, as well as the establishment of associated ROWs, assuming the land is not withdrawn from availability for such activities. The RFD scenario is a projection of reasonably foreseeable activity for a defined area and period that is used for analysis purposes; an RFD scenario is not a plan of development nor a guarantee of development. It is a projection of potential activity based on the best available data at the time of writing to allow the analysis of possible impacts in compliance with NEPA.

For all categories of development described in the RFD scenario, the analysis assumes that the likelihood of both exploration and development becomes lower with distance from the existing road system, railbelt, freshwater barge routes, and ports due to the cost to construct and maintain access to a potential development site. For example, a site with high mineral potential and connectivity to the road system, ports, or the railway system would have a higher likelihood of development than a site with high mineral potential that lacked reasonable access.

Mining claims and existing mining activities were also used as an indicator of mineral development potential and future mineral activity. Therefore, the RFD scenario summarizes the known and presumed activity in each planning area. The BLM used this information, combined with access considerations, to identify areas more likely to be developed for leasable, locatable, and salable minerals on land currently subject to ANCSA 17(d)(1) withdrawals.

Because the RFD scenario is a projection of reasonably foreseeable activity for the decision area, it was used to identify areas more likely to be developed in areas that are not already open to mineral entry. Chapter 3 of this EIS also focuses on areas *more likely to be developed* that are not already open to mineral entry, and that do not have State Priority 1 or 2 effective selections, i.e., areas that have the greatest potential to change should the Secretary revoke the 17(d)(1) withdrawals in whole or part as described in the various action alternatives. Areas that are currently open to mineral entry are considered in the cumulative impacts analysis.

This EIS also identifies the areas that are more likely to be conveyed due to revocation of 17(d)(1) withdrawals, termed *priority conveyances*. *Priority conveyances* are Priority 1 and 2 State top filings on lands that would become available should the Secretary revoke the 17(d)(1) withdrawals. Current effective selections are not affected by Secretarial decision-making for this project because they could be conveyed regardless of the Secretarial decision, and thus are not lands more likely to be conveyed due to a revocation. Priority conveyances are highlighted because once the State receives these lands, Federal land management and BLM regulatory protections would not apply.

Should the Secretary revoke the 17(d)(1) withdrawals, the greatest impacts to the quality of the human environment from future development can be expected to occur where an area is both more likely to be conveyed out of Federal ownership and more likely to be developed (for leasable or locatable mineral materials). For most resources, this EIS highlights 1) the number of acres where this development is more likely to occur, and 2) the number of acres that are more likely to be conveyed, should the Secretary revoke the withdrawals.

Therefore, areas more likely to be developed within the priority conveyances form the *focused analysis area* for most resources analyzed in Chapter 3. The *focused analysis area* comprises 475,000 acres, or 2 percent of the decision area. This EIS uses focused analysis areas to highlight where effects are most likely to occur within the 28 million acres analyzed.

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Table ES-1. Summary of Impacts

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
Birds and Special Status Bird Species				
Available migratory bird habitat	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to available migratory bird habitat in the analysis area.	Acres of high-value bird habitat: 17,000 acres on 17(d)(1) revocations on priority conveyances. < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of high-value bird habitat: 131,000 acres on 17(d)(1) revocations on priority conveyances. 39,000 acres on 17(d)(1) revocations on lands more likely to be developed. 4,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of high-value bird habitat: 131,000 on 17(d)(1) revocations on priority conveyances. 53,000 acres on 17(d)(1) revocations on lands more likely to be developed. 4,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
BLM special status bird species and ESA bird species	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to BLM special status bird species and ESA bird species in the analysis area.	Acres of raptor habitat: 11,000 acres on 17(d)(1) revocations on priority conveyances. < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of seabird habitat: 6,000 acres on 17(d)(1) revocations on priority conveyances. < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of shorebird habitat: 10,000 acres on 17(d)(1) revocations on priority conveyances. < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of waterbird habitat: 5,000 acres on 17(d)(1) revocations on priority conveyances. < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of landbird habitat: 27,000 acres on 17(d)(1) revocations on priority conveyances. 2,000 acres on 17(d)(1) revocations on lands more likely to be developed. 2,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of raptor habitat: 289,000 acres on 17(d)(1) revocations on priority conveyances. 61,000 acres on 17(d)(1) revocations on lands more likely to be developed. 5,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of seabird habitat: 201,000 acres on 17(d)(1) revocations on priority conveyances. 23,000 acres on 17(d)(1) revocations on lands more likely to be developed. 3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of shorebird habitat: 169,000 acres on 17(d)(1) revocations on priority conveyances. 29,000 acres on 17(d)(1) revocations on lands more likely to be developed. 3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of waterbird habitat: 37,000 acres on 17(d)(1) revocations on priority conveyances. 10,000 acres on 17(d)(1) revocations on lands more likely to be developed. 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of landbird habitat: 122,000 acres on 17(d)(1) revocations on priority conveyances. 80,000 acres on 17(d)(1) revocations on lands more likely to be developed. 19,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of raptor habitat: 289,000 acres on 17(d)(1) revocations on priority conveyances. 64,000 acres on 17(d)(1) revocations on lands more likely to be developed. 5,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of seabird habitat: 201,000 acres on 17(d)(1) revocations on priority conveyances. 35,000 acres on 17(d)(1) revocations on lands more likely to be developed. 3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of shorebird habitat: 169,000 acres on 17(d)(1) revocations on priority conveyances. 49,000 acres on 17(d)(1) revocations on lands more likely to be developed. 3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of waterbird habitat: 37,000 acres on 17(d)(1) revocations on priority conveyances. 23,000 acres on 17(d)(1) revocations on lands more likely to be developed. < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. Acres of landbird habitat: 122,000 acres on 17(d)(1) revocations on priority conveyances. 88,000 acres on 17(d)(1) revocations on lands more likely to be developed. 19,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Climate				
Climate change and greenhouse gas emissions	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes in the development of leasable minerals in the analysis area.	Acres more likely to be developed for leasable minerals: 2,000 acres on 17(d)(1) revocations on priority conveyances.	Acres more likely to be developed for leasable minerals: 16,000 acres on 17(d)(1) revocations on priority conveyances.	Acres more likely to be developed for leasable minerals: 16,000 acres on 17(d)(1) revocations on priority conveyances.

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
Cultural Resources				
Management and integrity of cultural resources	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to known cultural and ethnographic resources in the analysis area.	Known cultural and ethnographic resources affected: 1,374 resources on 17(d)(1) revocations on priority conveyances. 610 resources on 17(d)(1) revocations on lands more likely to be developed. 610 resources on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Known cultural and ethnographic resources affected: 2,151 resources on 17(d)(1) revocations on priority conveyances. 1,510 resources on 17(d)(1) revocations on lands more likely to be developed. 746 resources on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Known cultural and ethnographic resources affected: 2,151 resources on 17(d)(1) revocations on priority conveyances. 1,643 resources on 17(d)(1) revocations on lands more likely to be developed. 746 resources on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
ANCSA 14(h)(1) lands	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to the 14(h)(1) lands in the analysis area.	Under Alternative B, conflicts with natural resources, cultural resources, subsistence resources, recreation resources, or proposed or existing ACECs would be minimized, therefore, there would be no project-related changes to the 14(h)(1) lands in the analysis area.	Number of 14(h)(1) sites affected: 71 sites on 17(d)(1) revocations on priority conveyances. 16 sites on 17(d)(1) revocations on lands more likely to be developed. 1 site on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Number of 14(h)(1) sites affected: 71 sites on 17(d)(1) revocations on priority conveyances. 18 sites on 17(d)(1) revocations on lands more likely to be developed. 1 site on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Economics				
Economic conditions	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to economic conditions in the analysis area.	41,000 acres of 17(d)(1) revocations on priority conveyances. 2,000 acres of 17(d)(1) revocations on lands more likely to be developed. 2,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	564,000 acres of 17(d)(1) revocations on priority conveyances. 125,000 acres of 17(d)(1) revocations on lands more likely to be developed. 23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	564,000 acres of 17(d)(1) revocations on priority conveyances. 155,000 acres of 17(d)(1) revocations on lands more likely to be developed. 23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Environmental Justice				
Environmental justice populations	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to the management of, or access to, the analysis area.	Environmental justice impacts: 47 environmental justice populations impacted as calculated by the community impact ranking.	Environmental justice impacts: 108 environmental justice populations impacted as calculated by the community impact ranking.	Environmental justice impacts: 115 environmental justice populations impacted as calculated by the community impact ranking.
Fish and Aquatic Species				
Freshwater aquatic habitat	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to freshwater aquatic habitat in the analysis area.	Miles of anadromous streams and rivers affected: 86 miles on 17(d)(1) revocations on priority conveyances. 9 miles on 17(d)(1) revocations on lands more likely to be developed. 9 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Miles of anadromous streams and rivers affected: 1,623 miles on 17(d)(1) revocations on priority conveyances. 1,177 miles on 17(d)(1) revocations on lands more likely to be developed. 283 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Miles of anadromous streams and rivers affected: 1,623 miles on 17(d)(1) revocations on priority conveyances. 1,406 miles on 17(d)(1) revocations on lands more likely to be developed. 283 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Fish and aquatic invertebrate populations	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to fish and aquatic invertebrate populations in the analysis area.	Alternative B would largely avoid impacts to fish or aquatic invertebrate populations. Alternative B could impact one BLM sensitive fish species (Gulkana River steelhead trout) because multiple priority conveyances are immediately adjacent to the Gulkana River. Alternative B is not anticipated to have impacts on the other BLM sensitive fish species (Kigluaik Mountains Arctic char) because this species does not occur on or immediately downstream from the revocations.	For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the impacts on fish and aquatic invertebrate populations would be the same as Alternative B but to a greater magnitude and extent. Alternative C could impact up to three BLM sensitive fish species (Alaskan brook lamprey, Kigluaik Mountains Arctic char, and Gulkana River steelhead trout) because multiple priority conveyances include suitable habitat or are immediately adjacent to the Gulkana River.	Alternative D would have similar types of impacts to fish and aquatic invertebrate populations as Alternative C but to a larger extent and magnitude because more miles of stream and acres of lakes and ponds occur on 17(d)(1) withdrawals that would be revoked. Alternative D could impact up to three BLM sensitive fish species (Alaskan brook lamprey, Kigluaik Mountains Arctic char, and Gulkana River steelhead trout) because multiple priority conveyances include suitable habitat or are immediately adjacent to the Gulkana River.
Minerals				
Locatable mineral availability*	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to the availability of locatable minerals in the analysis area.	Changes to locatable mineral availability: < 1,000 acres on 17(d)(1) revocations on lands more likely to be developed for locatable minerals.	Changes to locatable mineral availability: 56,000 acres on 17(d)(1) revocations on lands more likely to be developed for locatable minerals.	Changes to locatable mineral availability: 56,000 acres on 17(d)(1) revocations on lands more likely to be developed for locatable minerals.

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
		< 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for locatable minerals.	3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for locatable minerals.	3,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for locatable minerals.
Leasable mineral availability*	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to the availability of leasable minerals in the analysis area.	Changes to leasable mineral availability: 2,000 acres on 17(d)(1) revocations on lands more likely to be developed for leasable minerals. 2,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for leasable minerals.	Changes to leasable mineral availability: 40,000 acres on 17(d)(1) revocations on lands more likely to be developed for leasable minerals. 16,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for leasable minerals.	Changes to leasable mineral availability: 40,000 acres on 17(d)(1) revocations on lands more likely to be developed for leasable minerals. 16,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed for leasable minerals.
Paleontological Resources				
Scientifically important paleontological resources having Potential Fossil Yield Classifications (PFYC) Class 4 or Class 5	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to paleontological resources in the analysis area.	33,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on priority conveyances. 2,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on lands more likely to be developed. 2,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	231,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on priority conveyances. 97,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on lands more likely to be developed. 21,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	231,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on priority conveyances. 113,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations on lands more likely to be developed. 21,000 acres of PFYC Class 4, 5, or U on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Realty and Lands				
Land use authorizations	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to land use authorizations in the analysis area.	1,000 acres of 17(d)(1) revocations on priority conveyances. 2,000 acres of 17(d)(1) revocations on lands more likely to be developed. 2,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. 0 acres of 17(d)(1) revocations on top filings Priority 3 and 4	565,000 acres of 17(d)(1) revocations on priority conveyances. 126,000 acres of 17(d)(1) revocations on lands more likely to be developed. 23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. 145,000 acres of 17(d)(1) revocations on top filings Priority 3 and 4	565,000 acres of 17(d)(1) revocations on priority conveyances. 156,000 acres of 17(d)(1) revocations on lands more likely to be developed. 23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed. 400,000 acres of 17(d)(1) revocations on top filings Priority 3 and 4
Special designations	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to BLM special designations in the analysis area.	Acres of Delta Range SRMA affected: 0 acre on 17(d)(1) revocations on priority conveyances. Acres of Denali Highway SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Haines extensive recreation management area (ERMA) affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Knik River SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Squirrel River SRMA affected: 5,000 acres on 17(d)(1) revocations on priority conveyances. Rest of RMAs: 0 acres on 17(d)(1) revocations on priority conveyances. Miles of Iditarod NHT: 0 miles on 17(d)(1) revocations on priority conveyances. Miles of Alaska Long Trail (proposed NST): 0 miles on 17(d)(1) revocations on priority conveyances. Acres of Mount Osborne ACEC affected: 0 acre on 17(d)(1) revocations on priority conveyances.	Acres of Delta Range SRMA affected: 0 acre on 17(d)(1) revocations on priority conveyances. Acres of Denali Highway SRMA affected: 8,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Gulkana River SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Haines Block SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Haines ERMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Knik River SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Salmon Lake-Kigluaik SRMA affected: 26,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Squirrel River SRMA affected: 5,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Tiekol SRMA affected: 4,000 acres on 17(d)(1) revocations on priority conveyances.	Acres of Delta Range SRMA affected: 0 acre on 17(d)(1) revocations on priority conveyances. Acres of Denali Highway SRMA affected: 8,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Gulkana River SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Haines Block SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Haines ERMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Knik River SRMA affected: < 1,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Salmon Lake-Kigluaik SRMA affected: 26,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Squirrel River SRMA affected: 5,000 acres on 17(d)(1) revocations on priority conveyances. Acres of Tiekol SRMA affected: 4,000 acres on 17(d)(1) revocations on priority conveyances.

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
			Miles of Iditarod NHT: 3 miles on 17(d)(1) revocations on priority conveyances. Miles of Alaska Long Trail (proposed NST): 5 miles on 17(d)(1) revocations on priority conveyances. Acres of Mount Osborne ACEC affected: 22,000 acres on 17(d)(1) revocations on priority conveyances.	Miles of Iditarod NHT: 3 miles on 17(d)(1) revocations on priority conveyances. Miles of Alaska Long Trail (proposed NST): 5 miles on 17(d)(1) revocations on priority conveyances. Acres of Mount Osborne ACEC affected: 22,000 acres on 17(d)(1) revocations on priority conveyances.
Recreation and Travel Management				
Recreation management and public access	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to recreation and public access in the analysis area.	See special designations.	See special designations.	See special designations.
Transportation systems and traffic	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to transportation and traffic in the analysis area.	Acres within transportation systems analysis area where transportation could be impacted: 36,000 acres on 17(d)(1) revocations on priority conveyances. 2,000 acres on 17(d)(1) revocations on lands more likely to be developed. 2,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres within transportation systems analysis area where transportation could be impacted: 523,000 acres on 17(d)(1) revocations on priority conveyances. 126,000 acres on 17(d)(1) revocations on lands more likely to be developed. 23,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres within transportation systems analysis area where transportation could be impacted: 523,000 acres on 17(d)(1) revocations on priority conveyances. 151,000 acres on 17(d)(1) revocations on lands more likely to be developed. 26,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Social Systems				
Social systems	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to social dynamics in the analysis area.	The number of communities impacted for subsistence: see subsistence (harvester access). Because fewer acres of 17(d)(1) withdrawals would be revoked, there would be fewer changes to social systems.	The number of communities impacted for subsistence: see subsistence (harvester access). Where 17(d)(1) withdrawals are revoked under Alternative C, the impacts to social systems would be the same as Alternative B, but to a potentially greater magnitude and extent. Alternative B was designed to avoid opening areas with the highest potential for conflict with subsistence, so the additional lands opened under Alternative C are not just more in quantity but also lands with a higher likelihood to cause changes in Federal subsistence priority.	The number of communities impacted for subsistence: see subsistence (harvester access). Alternative D would have similar types of impacts to social systems as Alternative C but to a potentially larger extent and magnitude because more withdrawals would be revoked. Under Alternative D, more areas could be developed or experience changes in Federal subsistence priority.
Soils and Permafrost				
Soils and permafrost	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to soil and permafrost in the analysis area.	Acres of permafrost: 39,000 acres on 17(d)(1) revocations on priority conveyances. 2,000 acres on 17(d)(1) revocations on lands more likely to be developed. 2,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of permafrost: 563,000 acres on 17(d)(1) revocations on priority conveyances. 123,000 acres on 17(d)(1) revocations on lands more likely to be developed. 23,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Acres of permafrost: 563,000 acres on 17(d)(1) revocations on priority conveyances. 152,000 acres on 17(d)(1) revocations on lands more likely to be developed. 23,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Subsistence				
Harvester access	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to subsistence user access in the analysis area.	44 communities with a loss of Federal subsistence priority. 3 communities within 5 miles of a community use area with a loss in Federal subsistence priority. 27 communities with subsistence use areas that overlap lands more likely to be developed. 1 community with adjacent lands more likely to be developed.	100 communities with a loss of Federal subsistence priority. 8 communities within 5 miles of a community use area with a loss in Federal subsistence priority. 100 communities with subsistence use areas that overlap lands more likely to be developed. 13 communities with adjacent lands more likely to be developed.	117 communities with a loss of Federal subsistence priority. 10 communities within 5 miles of a community use area with a loss in Federal subsistence priority. 104 communities with subsistence use areas that overlap lands more likely to be developed. 15 communities with adjacent lands more likely to be developed.
Resource abundance	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to subsistence resource availability in the analysis area.	See harvester access.	See harvester access.	See harvester access.

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
Resource availability	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to subsistence resource abundance in the analysis area.	See harvester access.	See harvester access.	See harvester access.
Terrestrial Mammals				
Caribou abundance and distribution as a subsistence resource	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to caribou populations in the analysis area.	<p>Acres of herd range:</p> <p>5,000 acres of Western Arctic herd range on 17(d)(1) revocations on priority conveyances.</p> <p>4,000 acres of Denali herd range on 17(d)(1) revocations on priority conveyances.</p> <p>3,000 acres of Nelchina herd range on 17(d)(1) revocations on priority conveyances.</p> <p>2,000 acres of Nelchina herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>The rest of herds ranges have 0 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>2,000 acres of Nelchina herd range on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p> <p>The rest of herds ranges have 0 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>Acres of herd range:</p> <p>268,000 acres of Nelchina herd range on 17(d)(1) revocations on priority conveyances.</p> <p>220,000 acres of Western Arctic herd range on 17(d)(1) revocations on priority conveyances.</p> <p>43,000 acres of Mentasta herd range on 17(d)(1) revocations on priority conveyances.</p> <p>83,000 acres of Nelchina herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>12,000 acres of Western Arctic herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>8,000 acres of Mentasta herd range on 17(d)(1) revocations on lands more likely to be developed.</p> <p>19,000 acres of Nelchina herd range on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p> <p>The rest of herds ranges have 0 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>Acres of herd range:</p> <p>268,000 acres of Nelchina herd range on 17(d)(1) revocations on priority conveyances.</p> <p>220,000 acres of Western Arctic herd range on 17(d)(1) revocations on priority conveyances.</p> <p>43,000 acres of Mentasta herd range on 17(d)(1) revocations on priority conveyances.</p> <p>83,000 acres of Nelchina herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>31,000 acres of Western Arctic herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>8,000 acres of Mentasta herd range acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>19,000 acres of Nelchina herd range on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p> <p>The rest of herds ranges have < 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>
Moose abundance and distribution as a subsistence resource	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to moose populations in the analysis area.	<p>Acres of game management unit (GMU):</p> <p>41,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>2,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>2,000 acres on 17(d)(1) revocations on lands more likely to be developed not on priority conveyances.</p>	<p>Acres of GMU:</p> <p>565,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>122,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>22,000 acres on 17(d)(1) revocations on lands more likely to be developed not on priority conveyances.</p>	<p>Acres of GMU:</p> <p>565,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>152,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>22,000 acres on 17(d)(1) revocations on lands more likely to be developed not on priority conveyances.</p>
Wood bison abundance and distribution	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to wood bison populations in the analysis area.	No acres of wood bison range would be impacted for any alternative.	No acres of wood bison range would be impacted for any alternative.	Acres of wood bison range: 102,000 acres on 17(d)(1) revocations
Other terrestrial mammal abundance and distribution as a subsistence resource	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to other terrestrial mammals in the analysis area.	<p>41,000 acres of 17(d)(1) revocations on priority conveyances.</p> <p>2,000 acres of 17(d)(1) revocations on lands more likely to be developed.</p> <p>2,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>565,000 acres of 17(d)(1) revocations on priority conveyances.</p> <p>126,000 acres of 17(d)(1) revocations on lands more likely to be developed.</p> <p>23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>565,000 acres of 17(d)(1) revocations on priority conveyances.</p> <p>156,000 acres of 17(d)(1) revocations on lands more likely to be developed.</p> <p>23,000 acres of 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>
Vegetation, Wetlands, and Special Status Plants				
Vegetation loss or change	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related loss or changes to vegetation in the analysis area.	<p>Acres of high-value vegetation communities:</p> <p>17,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>< 1,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>< 1,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>Acres of high-value vegetation communities:</p> <p>131,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>39,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>4,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>	<p>Acres of high-value vegetation communities:</p> <p>131,000 acres on 17(d)(1) revocations on priority conveyances.</p> <p>53,000 acres on 17(d)(1) revocations on lands more likely to be developed.</p> <p>4,000 acres on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.</p>

Resource/Issue	Alternative A (No Action Alternative, Preferred Alternative)	Alternative B (Partial Revocation)	Alternative C (Partial Revocation)	Alternative D (2021 Proposed Action)
Rare and sensitive plant species populations	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to rare and special status plant species in the analysis area.	Number of special status plants: 0 species identified on 17(d)(1) revocations on priority conveyances. 0 species identified on 17(d)(1) revocations on lands more likely to be developed. 0 species identified on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Number of special status plants: 3 species identified on 17(d)(1) revocations on priority conveyances. 1 species identified on 17(d)(1) revocations on lands more likely to be developed. 0 species identified on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Number of special status plants: 3 species identified on 17(d)(1) revocations on priority conveyances. 2 species identified on 17(d)(1) revocations on lands more likely to be developed. 0 species identified on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Water Resources				
Water quality	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to water quality in the analysis area.	Miles of streams and rivers affected: 86 miles on 17(d)(1) revocations on priority conveyances. 22 miles on 17(d)(1) revocations on lands more likely to be developed. 22 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Miles of streams and rivers affected: 1,623 miles on 17(d)(1) revocations on priority conveyances. 1,176 miles on 17(d)(1) revocations on lands more likely to be developed. 283 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.	Miles of streams and rivers affected: 1,623 miles on 17(d)(1) revocations on priority conveyances. 1,405 miles on 17(d)(1) revocations on lands more likely to be developed. 283 miles on 17(d)(1) revocations where priority conveyances are on lands more likely to be developed.
Water availability	All ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no project-related changes to available water in the analysis area.	See water quality.	See water quality.	See water quality.

Note: *More likely to be developed* is defined and explained in EIS Section 3.1.1.2 (Reasonably Foreseeable Development Scenario).

* See EIS Tables 3.8-5, 3.8-10, and 3.8-15 for a summary of acres open to mineral entry under each alternative.

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ABBREVIATIONS

°C	degrees Celsius
ACCS	Alaska Center for Conservation Science
ACEC	area of critical environmental concern
ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ADLWD	Alaska Department of Labor and Workforce Development
ADOTPF	Alaska Department of Transportation and Public Facilities
AHPA	Alaska Historic Preservation Act
AHRS	Alaska Heritage Resources Survey
ANC	Alaska Native Corporation
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
ASG	Alaska Shorebird Group
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CBNG	coal bed natural gas
C&T	customary and traditional
CFR	Code of Federal Regulations
CH ₄	methane
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
CWA	Clean Water Act
Dingell Act	John D. Dingell Jr. Conservation, Management, and Recreation Act of 2019
DOI	U.S. Department of the Interior
DTMS	Delong Mountain Transportation System
EFH	essential fish habitat
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
ERMA	extensive recreation management area
ESA	Endangered Species Act
FR	<i>Federal Register</i>
GDP	gross domestic product
GHG	greenhouse gas
GMU	Game Management Unit
GSPE	Geospatial Population Estimator

HUC	hydrologic unit code
LNG	liquified natural gas
Mt	million metric ton
MTRS	meridian, township, range, and sections
N/A	not available
N ₂ O	nitrous oxide
NADP	National Atmospheric Deposition Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	national historic trail
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places
NST	national scenic trail
NTMC	national trail management corridor
NTN	National Trends Network
OHV	off-highway vehicle
PA	programmatic agreement
PFYC	Potential Fossil Yield Classifications
PLO	Public Land Order
RFD	reasonably foreseeable development
RFA	reasonably foreseeable actions
RMA	recreation management area
RMP	resource management plan
ROW	right-of-way
Secretary	Secretary of the Interior
SGCN	species of greatest conservation need
SRB&A	Stephen R. Braund & Associates
SRMA	special recreation management areas
State	State of Alaska (governing body)
TCA	trend count area
TCP	traditional cultural places
TLUI	Traditional Land Use Inventory
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

CHAPTER 1. INTRODUCTION AND PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The U.S. Department of the Interior (DOI), Bureau of Land Management (BLM) Alaska State Office, prepared this environmental impact statement (EIS) to evaluate the effects of any Secretarial decision to open lands subject to the Alaska Native Claims Settlement Act (ANCSA) 17(d)(1) withdrawals within the lands described in Public Land Orders (PLOs) 7899 through 7903. The potential revocation of these 17(d)(1) withdrawals is hereafter referred to as the *project*. PLOs 7900, 7901, 7902, and 7903, which would revoke withdrawals on lands in the Ring of Fire, Bay, Bering Sea-Western Interior, and East Alaska planning areas (Figures 1.2-1 through 1.2-6), respectively, were signed on January 15 and 16, 2021; however, they were never published in the *Federal Register* (FR). PLO 7899, which would revoke withdrawals on lands in the Kobuk-Seward Peninsula planning area, was signed on January 11, 2021, and published in the *Federal Register* on January 19, 2021 (86 FR 5236). Subsequently, the DOI identified certain procedural and legal defects in the decision-making process for these PLOs, as described in the April 16, 2021, *Federal Register* notice (86 FR 20193), including an insufficient analysis under the National Environmental Policy Act (NEPA). The DOI extended the opening order for PLO 7899 until August 31, 2024, to provide an opportunity to review the decisions and to ensure the orderly management of the public lands (88 FR 21207). The BLM is using this time to address identified deficiencies and complete the NEPA analysis.

Figures supporting this EIS are provided in Appendix A (Maps), and technical terms are defined in Appendix B (Glossary).

1.2 BACKGROUND

In 1971, ANCSA 17(d)(1) was enacted to settle aboriginal land title claims with Alaska Natives and directed the Secretary of the Interior (Secretary) to “review the public lands in Alaska and determine whether any portion of these lands should be withdrawn . . . to insure [sic] that the public interest in these lands is properly protected.” Pursuant to this Congressional direction, the Secretary issued a series of PLOs from 1972 to 1973 that withdrew over 158 million acres of land in Alaska from appropriation under the public land laws, including the lands addressed in this EIS. The BLM generally refer to these lands as the *ANCSA 17(d)(1) withdrawals*. As used in this document, *ANCSA 17(d)(1) withdrawals* or just *17(d)(1) withdrawals* specifically refer to the withdrawals themselves (i.e., the legal action) or the land withdrawn under this authority within the decision area. The *decision area* comprises the lands under consideration in this EIS; these are lands that were included in PLOs 7899 through 7903 except for land within polar bear (*Ursus maritimus*) critical habitat.

A withdrawal can 1) set land aside for a specific public purpose, 2) close land to specific uses under the public land laws (usually sale, settlement, location, and entry), or 3) limit land use to maintain public values and reserve an area for a particular public use or for transferring jurisdiction of an area to another Federal agency. Withdrawals are usually established through a PLO or enacted by legislation. For example, the Secretary may withdraw land within a BLM campground from the mining and mineral leasing laws to ensure that the specific purpose of camping can occur without the campers being put in potential danger from mining activities. Under Section 204 of the Federal Land Policy and Management Act of 1976, as amended (FLPMA), the Secretary has the authority to make, modify, extend, or revoke administrative withdrawals. Withdrawals on land prevent the operation of laws that would allow the land to leave Federal ownership. When a withdrawal is revoked, the land becomes available under whatever

laws apply to those acres. Withdrawals can be targeted to close the land only to some public land laws; similarly, the Secretary can later revoke a withdrawal in part to allow for the operation of only a specific public land law that was not previously operative on that land. For example, a withdrawal may be revoked in part to allow only for land selection under the Alaska Statehood Act, but not to allow for applicability of any other public land laws (such as the Mining Law of 1872).

The ANCSA 17(d)(1) withdrawals in the decision area originally occurred through 15 PLOs that withdrew the lands under multiple land use planning areas, subject to valid existing rights, from disposal or appropriation under the public land laws, including mining and mineral leasing laws, while the BLM completed inventories and assessed resources for developing land management objectives. Some of these PLOs also withdrew the land pursuant to ANCSA 11(a)(3) to protect the land status until Alaska Native Corporations (ANCs) could make their land selections. The BLM has already conveyed over 96 percent of the ANC entitlements.

The 15 PLOs that withdrew the land within the decision area are as follows:

- PLOs 5169, 5170, 5171, 5172, 5173, 5174, 5175, 5176, and 5178 withdrew lands for selection by village and regional Native corporations under ANCSA 11(a)(3) and for classification under ANCSA 17(d)(1).
- PLO 5179 withdrew lands in aid of legislation concerning national park, national forest, wildlife refuge, and wild and scenic systems under ANCSA 17(d)(2) and to allow for classification of the lands under ANCSA 17(d)(1).
- PLO 5180 withdrew lands to allow for classification and for protection of the public interest in these lands under ANCSA 17(d)(1).
- PLO 5184 withdrew lands legislatively withdrawn by ANCSA 11 to allow for classification or reclassification of some areas under ANCSA 17(d)(1).
- PLO 5186 withdrew lands not selected by the State of Alaska to allow for classification and protection of the public interest in lands under ANCSA 17(d)(1).
- PLO 5188 withdrew lands in former reservations for the use and benefit of Alaska Natives classification and protection of the public interest pursuant to ANCSA (17)(d)(1).
- PLO 5353 withdrew lands under the authority of ANCSA 17(d)(1) pending determination of eligibility of certain Native communities under ANCSA 11(b)(3) and for classification of lands not conveyed pursuant to ANCSA 14.

The purposes of the withdrawals above, other than those under ANCSA 17(d)(1), have been met. The statutory selection application deadlines for ANCSA selections have passed, and most ANCSA selections are in place. Likewise, the eligibility of Native communities under ANCSA 11(b)(3) has been determined. Additionally, the Alaska National Interest Lands Conservation Act (ANILCA) created conservation system units from the lands withdrawn under PLO 5179, fulfilling the purpose of the withdrawals under ANCSA 17(d)(2).

The Secretary has modified, revoked in part, and revoked in full 17(d)(1) withdrawals over the years since they were issued to allow for various activities. For instance, subsequent PLO modifications have been issued that opened some of the 17(d)(1) withdrawals to mineral entry and mineral leasing. The entire decision area is currently open to mineral sales. Table 1.2-1 and Figures 1.2-7 through 1.2-18 summarize the acres that are currently open based on the most recent PLO modifications.

Table 1.2-1. Acres Currently Open to Mineral Entry, Leasing, or Sales in the Decision Area

Column A	Column B	Column C	Column D
Planning Area	17(d)1 Withdrawals under Evaluation in this EIS	17(d)1 Withdrawals Currently Open to Locatable Mineral Entry*	17(d)1 Withdrawals Currently Open to Mineral Leasing
Bay	1,243,000	180,000	< 1,000
Bering Sea-Western Interior	13,322,000	8,935,000	1,701,000
East Alaska	2,567,000	1,616,000	947,000
Kobuk-Seward Peninsula	9,653,000	5,622,000	4,595,000
Ring of Fire	950,000	371,000	0
Total	27,735,000	16,724,000	7,243,000

* Includes lands open to location only of metalliferous minerals.

The original PLOs withdrew the land from selection under the Alaska Statehood Act (Public Law 85-508, 72 Statute 339, enacted July 7, 1958). The Alaska Statehood Act authorized the transfer of approximately 105 million acres of Federal land to the State of the Alaska and, although the BLM has already conveyed most of the entitlement, the State has approximately 5.2 million acres of entitlement remaining. Many of the lands addressed by the PLOs were opened to State selection and therefore there are 6.4 million acres of effective selection in the decision area. Under ANILCA 906(e), the State of Alaska was authorized to “top file” on lands still not available for selection. Within the decision area, there are approximately 1.1 million acres that are top filed over a variety of encumbrances, including the portions of these PLOs not revoked in part to allow for state selections; ANCSA selections; withdrawals reserving lands for other Federal agencies; and active mining claims. If those lands become available in the future, the State’s top filing would become an effective selection barring any competing encumbrances.

The NEPA analysis associated with the BLM resource management plans (RMPs)/EISs (see BLM 2006a, 2006b, 2007b, 2007c, and 2020) that were prepared for each of the five planning areas (Bay, Bering Sea-Western Interior, East Alaska, Kobuk-Seward Peninsula, and Ring of Fire) evaluates impacts of revocation of these PLOs (see Figure 1.2-1; all EIS figures are in Appendix A).

In 2020 and 2021, the DOI prepared PLOs 7899, 7900, 7901, 7902, and 7903 (2021 Action) that would have revoked ANCSA 17(d)(1) withdrawals on approximately 28 million acres of BLM-managed land within the five planning areas (see Figures 1.2-2 through 1.2-6). Revocation of the withdrawals in full would allow for the public lands laws to be implemented in full. This would include the selection of lands pursuant to the Alaska Statehood Act, which would allow the State of Alaska’s top filed selections to become effective selections, and would open lands to mineral leasing, mining claim location and entry, and all other forms of appropriation from which the lands are currently withdrawn.

As discussed in Section 1.1, Introduction, following issuance of these revocation PLOs, the DOI identified certain procedural and legal defects in the decision-making process for these PLOs, including insufficient analysis under NEPA and reliance on potentially outdated data from the RMPs/EISs.

The DOI first addressed the availability of land for selection of Native allotments by Alaska Native veterans under the John D. Dingell Jr. Conservation, Management, and Recreation Act of 2019 (Dingell Act). The BLM analyzed a revocation in part of the 17(d)(1) withdrawals to allow selection under the Dingell Act in the *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program* (BLM 2022). The Secretary then issued PLOs 7912 and 7929 revoking in part the 17(d)(1) withdrawals to allow for selections under the Dingell Act on approximately 27.8 million acres within the decision area.

The BLM is now addressing the remaining defects in the revocation PLOs and updating the NEPA analysis.

Table 1.2-2 summarizes the acres under 17(d)(1) withdrawals, acres selected (by selection type), acres top filed, and acres that would remain in BLM management after revocation. Because some of the selections and top filings may overlap, the acres of ANCSA and State of Alaska selections, top filings, and unselected lands detailed below are greater than the total acres under 17(d)(1) withdrawals in each planning area. Section 1.2.1, Planning Area Descriptions, describes each planning area.

Table 1.2-2. Acres of 17(d)(1) Withdrawals in the Decision Area by Selection Status

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H
Planning Area	Planning Area (all lands, acres)	17(d)1 Lands under Evaluation in this EIS (acres)	State-Selected Lands (acres) [†]	State Top Filings (acres) [‡]	State Top Filings Encumbered by ANCSA-Selected Lands (acres) [†]	Other Encumbered Lands (acres) ^{††}	Unselected (acres) [†]
Bay	23,000,000	1,243,000	180,000	72,000	98,000	36,000	1,006,000
Bering Sea-Western Interior	64,900,000	13,322,000	2,278,000	441,000	127,000	31,000	10,595,000
East Alaska	31,500,000	2,567,000	1,395,000	638,000	485,000	201,000	634,000
Kobuk-Seward Peninsula	33,000,000	9,653,000	2,052,000	271,000	301,000	43,000	7,254,000
Ring of Fire	61,000,000	950,000	484,000	82,000	87,000	6,000	419,000
Total	213,400,000	27,735,000	6,389,000	1,504,000	1,098,000	317,000	19,908,000

Note: Though additional withdrawals occur in the 5 planning areas, they are not in the decision area of this EIS.

* The encumbrances described in Columns F and G reduce the total acres that could be converted to effective selections.

† Acreages of ANCSA-selected lands (Column F) contain overlapping acreages with State top filings (Column E). This is because a parcel may be selected under multiple selection categories. Therefore, acreages of unselected lands (Column H) are not the result of subtracting selected acreages (Columns E, F, and G) from all 17(d)(1) acreage (Column C).

†† Other encumbrances include withdrawals reserving land for other Federal agencies, Alaska Native veteran allotment selections under the Dingell Act, or active mining claims

‡ State top filings acreages contain overlapping acreages. This is because a parcel may be top filed on ANCSA-selected lands or unselected lands.

1.2.1 Planning Area Descriptions

1.2.1.1 Bay Planning Area

The Bay planning area includes the Bristol Bay and Goodnews Bay areas of Southwest Alaska and covers an area 250 miles east-west and 150 miles north-south for a total of approximately 23 million acres (see Figure 1.2-2). Most access to the area is by air or boat; there is no road access to areas managed by the BLM (BLM 2008a). The Bay planning area is managed pursuant to the Bay RMP issued in 2008 (BLM 2008a). Within the Bay planning area, approximately 1,243,000 acres are under evaluation in this EIS (see Table 1.2-1).

1.2.1.2 Bering Sea-Western Interior Planning Area

The Bering Sea-Western Interior planning area covers the area south from the Northwest Alaska and Lower Yukon watersheds to the northern portion of the Southwest Alaska watershed (see Figure 1.2-3). The planning area includes all lands west of Denali National Park and Preserve to the Bering Sea and covers approximately 65 million acres. The Bering Sea-Western Interior planning area is managed pursuant to the Bering Sea-Western Interior RMP, issued in 2021 (BLM 2021). Within the Bering Sea-Western Interior planning area, approximately 13,322,000 acres are under evaluation in this EIS (see Table 1.2-1).

1.2.1.3 East Alaska Planning Area

The East Alaska planning area covers approximately 32 million acres and extends from the southern slopes of the Alaska Range to the Chugach Mountains and from the Talkeetna Mountains to the Wrangell Mountains (see Figure 1.2-4). Several major highways run through the planning area, as does a north-south segment of the Trans-Alaska Pipeline System. The Trans-Alaska Pipeline System corridor is excluded from the decision area. The planning area includes the coastline of Prince William Sound and the Copper River Basin, the communities of Cordova and Valdez, and other smaller villages. The East Alaska planning area is managed pursuant to the East Alaska RMP issued in 2007 (BLM 2007a). Within the East Alaska planning area, approximately 2,567,000 acres are under evaluation in this EIS (see Table 1.2-1).

1.2.1.4 Kobuk-Seward Peninsula Planning Area

The Kobuk-Seward Peninsula planning area covers approximately 33 million acres and has no road access to Interior Alaska (see Figure 1.2-5). The area includes part of the Northwest Arctic Borough, most of the Bering Straits region, and the western edge of the North Slope Borough. The Chukchi and Bering Seas bound the area on the west and south, and the National Petroleum Reserve in Alaska, Noatak National Preserve, Kobuk Valley National Park, and the Yukon River watershed bound the planning area on the east. The Kobuk-Seward Peninsula planning area is managed pursuant to the Kobuk-Seward Peninsula RMP issued in 2008 (BLM 2008b). Within the Kobuk-Seward Peninsula planning area, approximately 9,653,000 acres are under evaluation in this EIS (see Table 1.2-1).

1.2.1.5 Ring of Fire Planning Area

The Ring of Fire planning area encompasses approximately 61 million acres; of that total, approximately 1.3 million acres (2 percent) are managed by the BLM Anchorage and Glennallen Field Offices (see Figure 1.2-6). The planning area is divided into four regions: the Alaska Peninsula/Aleutian Chain region, Kodiak region, Southcentral region, and Southeast region. The Southcentral region includes Anchorage

and other populated areas (BLM 2006a). The Ring of Fire planning area is managed pursuant to the Ring of Fire RMP issued in 2008 (BLM 2008c). Within the Ring of Fire planning area, approximately 950,000 acres are under evaluation in this EIS (see Table 1.2-1).

1.3 PURPOSE AND NEED FOR ACTION

The 2021 Action under review is revocation of the ANCSA 17(d)(1) withdrawals as described in PLOs 7899, 7900, 7901, 7902, and 7903. This EIS evaluates the resource conditions on these lands and incorporates and describes additional coordination with other Federal agencies, State and local governments, Federally recognized Tribes, ANCs, and other stakeholders to ensure that the environmental analysis previously conducted will be updated and expanded upon as appropriate. This additional analysis is necessary to ensure an accurate assessment of the impacts of revocation of the ANCSA 17(d)(1) withdrawals; to correct errors in the previous decision-making process regarding these withdrawals; and to ensure that opening these lands is consistent with the purposes of ANCSA 17(d)(1), which requires that “the public interest in these lands is properly protected,” including factors such as subsistence hunting and fishing, habitat connectivity, protection of cultural resources, and protection of threatened and endangered species. This evaluation is needed to make an informed public interest determination to support revocation in full, revocation in part, or full retention of the ANCSA 17(d)(1) withdrawals.

1.4 DECISION TO BE MADE

Based on the analysis contained in this EIS, the Secretary will decide whether to open certain lands currently withdrawn from appropriation under ANCSA 17(d)(1). The decision will not include land management actions, and it will not change or add to existing RMPs, or their terms and conditions. The decision will also not affect current effective selections by the State or ANCs because they could be conveyed regardless of the Secretarial decision. The DOI will consider the analysis in this EIS when evaluating the following options:

- Revoke in full or revoke in part all or some of the ANCSA 17(d)(1) withdrawals on lands described in PLOs 7899 through 7903.
- Retain the ANCSA 17(d)(1) withdrawals on lands described in PLOs 7899 through 7903, maintaining the status quo.

There are other withdrawals in the decision area reserving land for several Federal agencies; pursuant to Section 204(i) of FLPMA, the Secretary cannot revoke a withdrawal of land under the administration of any Federal agency other than the DOI unless that agency consents. For example, PLO 3830 withdrew and reserved 140 acres of public land for use by the Federal Aviation Agency for an air navigation facility at Kotzebue (30 FR 12253, September 24, 1965), PLO 1672 withdrew and reserved 880.4 acres of public land for use by the Department of the Air Force for military purposes at Wales (23 FR 5088, July 3, 1958), and PLO 3629 withdrew and reserved 27.36 acres of public land for use by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service as an administrative site for shellfish research (30 FR 5481, April 16, 1965). Though the acreages in these examples are small, there are several such examples. For instance, there are several more sites across the decision area withdrawn and reserved for administration by the Federal Aviation Agency, in particular. EIS Appendix J, Withdrawals or Reservations of Land for Other Federal Agencies, includes a non-exhaustive list of other lands withdrawn and reserved for other Federal agencies that lie within the decision area.

1.5 RELATIONSHIP TO STATUTES, REGULATIONS, OTHER NEPA DOCUMENTS

The alternatives analyzed in this EIS comply with Federal environmental statutes and regulations, executive orders, and DOI and BLM policies. Key statutes, regulations, and policies that apply to the project are listed below:

- NEPA (1969)
- ANCSA (1971)
- FLPMA (1976)
- Section 1119 of the Dingell Act (2019)
- ANILCA (1980)
- Alaska Statehood Act (1958)
- Endangered Species Act (ESA) (1973)
- Section 106 of the National Historic Preservation Act (NHPA) (1966, as amended)
- Paleontological Resources Protection Act (2009)
- Secretary's Order 3373 (Evaluating Public Access in Bureau of Land Management (BLM) Public Land Disposals and Exchanges)
- *BLM National Environmental Policy Act Handbook H-1790-1*
- Executive Orders 13007 and 13175
- BLM Manual 1780, Tribal Relations

This EIS tiers to the following NEPA documents, which analyze impacts of revocation of the withdrawals:

- Bay proposed RMP/final EIS (2007b) and approved record of decision (ROD) (2008a)
- East Alaska proposed RMP/final EIS (2006a) and approved ROD (2007a)
- Kobuk-Seward Peninsula proposed RMP/final EIS (2007c) and approved ROD (2008b)
- Ring of Fire proposed RMP/final EIS (2006b) and approved ROD (2008c)
- Bering Sea-Western Interior proposed RMP/final EIS (2020) and approved ROD (2021)

1.6 COMMUNITY ENGAGEMENT

1.6.1 Scoping and Issue Development

Scoping is the process of soliciting input on the issues, alternatives, and impacts that will be analyzed in an EIS. The BLM conducted both external scoping with interested parties and internal scoping with BLM subject matter experts. The BLM published a notice of intent to prepare an EIS in the *Federal Register* on August 18, 2022, announcing a 60-day public scoping period to solicit public comments and to identify issues for the EIS (87 FR 50875). Public scoping comments were accepted through October 19, 2022. The BLM held three virtual public scoping meetings during the scoping period.

The BLM received 80 unique comment submissions during the public scoping period. Overall, the BLM identified 276 substantive comments from those submissions. In February and March 2023, the BLM conducted focused outreach to Tribes and ANCs to ensure awareness of the preparation of this EIS and implications of the decision to be made and solicited additional input on issues and alternatives (see Section 1.8.1, Consultation with Tribes and Alaska Native Corporations). The public scoping report is available on the BLM’s ePlanning website: <https://eplanning.blm.gov/eplanning-ui/project/2018002/510>.

Between scoping and the publication of the draft EIS, the BLM received letters from Tribes, Tribal organizations, ANCs, and non-governmental organizations expressing support for retaining the withdrawals to avoid impacts to subsistence resources and impacts to indigenous ancestral homelands. The BLM also received a letter from a regional ANC expressing support for revoking the withdrawals.

1.6.1.1 **Issues Identified for Detailed Analysis**

Based on internal and external scoping, 29 issues were identified for detailed analysis (Table 1.6-1).

Table 1.6-1. Issues Identified for Detailed Analysis

Resource or Topic	Issue
Birds and special status bird species	How would revocation of 17(d)(1) withdrawals change available migratory bird habitat?
Birds and special status bird species	How would revocation of 17(d)(1) withdrawals affect BLM special status bird species and Endangered Species Act bird species?
Climate	How would revocation of 17(d)(1) withdrawals affect climate change and greenhouse gas emissions?
Cultural resources	How would revocation of 17(d)(1) withdrawals affect management and integrity of cultural resources?
Cultural resources	How would revocation of 17(d)(1) withdrawals affect cultural resources on lands applied for pursuant to ANCSA 14(h)(1)?
Economics	How would revocation of 17(d)(1) withdrawals affect the economic conditions?
Environmental justice	How would revocation of 17(d)(1) withdrawals affect environmental justice populations?
Fish and aquatic species	How would revocation of 17(d)(1) withdrawals change freshwater aquatic habitat?
Fish and aquatic species	How would revocation of 17(d)(1) withdrawals affect fish and aquatic invertebrate populations?
Minerals	How would revocation of 17(d)(1) withdrawals affect the availability of locatable minerals?
Minerals	How would revocation of 17(d)(1) withdrawals affect the availability of leasable minerals?
Paleontology	How would revocation of 17(d)(1) withdrawals affect scientifically important paleontological resources having Potential Fossil Yield Classifications Class 4, Class 5, or Class U?
Realty and lands	How would revocation of 17(d)(1) withdrawals affect land use authorizations?
Realty and lands	How would revocation of 17(d)(1) withdrawals affect lands with BLM special designations?
Recreation and travel management	How would revocation of 17(d)(1) withdrawals affect recreation management and public access?
Recreation and travel management	How would revocation of 17(d)(1) withdrawals change transportation systems and traffic?
Social Systems	How would revocation of 17(d)(1) withdrawals affect social systems?
Soils and permafrost	How would revocation of 17(d)(1) withdrawals affect soils and permafrost?
Subsistence	How would revocation of 17(d)(1) withdrawals affect subsistence user access?
Subsistence	How would revocation of 17(d)(1) withdrawals affect resource abundance?

Resource or Topic	Issue
Subsistence	How would revocation of 17(d)(1) withdrawals affect resource availability?
Terrestrial mammals	How would revocation of 17(d)(1) withdrawals affect caribou (<i>Rangifer tarandus granti</i>) abundance and distribution?
Terrestrial mammals	How would revocation of 17(d)(1) withdrawals affect moose (<i>Alces alces</i>) abundance and distribution?
Terrestrial mammals	How would revocation of 17(d)(1) withdrawals affect wood bison (<i>Bison bison athabasca</i>) abundance and distribution?
Terrestrial mammals	How would revocation of 17(d)(1) withdrawals affect other terrestrial mammal abundance and distribution?
Vegetation, wetlands, and special status plants	How would revocation of 17(d)(1) withdrawals affect vegetation loss or change?
Vegetation, wetlands, and special status plants	How would revocation of 17(d)(1) withdrawals affect special status plant species populations?
Water resources	How would revocation of 17(d)(1) withdrawals affect water quality?
Water resources	How would revocation of 17(d)(1) withdrawals affect water availability?

1.6.1.2 Issues Identified but Eliminated from Detailed Analysis

Issues that were identified but did not warrant detailed analysis include

- issues where the resource in question is not present in the analysis area;
- issues where laws, regulations, or other protective measures would reduce impacts below significance;
- issues where the impact context is so low that a detailed analysis was not needed to determine significance; and
- issues analyzed in other NEPA documents tiered to by this EIS and not requiring additional analysis.

Issues eliminated from detailed analysis and the rationale for this elimination are summarized in Table 1.6-2. Some issues eliminated from detailed analysis may involve resources that may be affected by the project, but effects would be relatively minor in comparison with the issues analyzed in detail. In compliance with 40 Code of Federal Regulations (CFR) 1502.2(b), this EIS has “only brief discussion of other than significant issues.”

Table 1.6-2. Issues Identified but Eliminated from Detailed Analysis

Issue or Topic	Rationale
Air quality	Any development of lands would have to follow Alaska Department of Environmental Conservation (ADEC) regulations located at 18 Alaska Administrative Code 50 for Air Quality Control, which would limit pollutants and require that applicants meet U.S. National Ambient Air Quality Standards and Alaska Ambient Air Quality Standards. Any developer would have to do site-specific modeling and analysis to prove their undertaking would meet U.S. National Ambient Air Quality Standards and Alaska Ambient Air Quality Standards.
Existing effective selections	The Secretary's decision regarding the project will not affect current effective selections by the State or ANCs because they could be conveyed regardless of the Secretarial decision for the project evaluated in this EIS.
Geology, cave, and karst	Potential development activities would not change or alter the surficial geology on a regional scale. Localized impact due to potential development activities are discussed in the Soils and Permafrost section.

Issue or Topic	Rationale
Hazardous waste use, storage, transportation, and disposal	<p>For individual potential developments, analysis in detail of use, storage, transportation, and disposal of hazardous materials associated with specific projects would be required prior to authorization.</p> <p>Use, storage, transportation, and disposal of hazardous materials are highly regulated under Alaska's Water Pollution Control and Waste Disposal statute, Alaska Radiation and Hazardous Waste Protection statute, and Alaska's Underground Storage Tank Compliance Act.</p> <p>Any existing hazardous materials sites would have to be avoided or remedied prior to any development (18 Alaska Administrative Code 75.325).</p>
Marine mammals	<p>The polar bear (<i>Ursus maritimus</i>) is protected under the ESA, and some BLM-managed lands in the Kobuk-Seward Peninsula and Bering Sea-Western Interior planning areas fall within critical habitat for the polar bear. However, the decision area does not overlap polar bear critical habitat.</p> <p>Most of the 17(d)(1) withdrawals are located inland from the coast. Changes in the potential for development would likely have no direct effect on mammal species that occur in marine waters.</p>
Noise	<p>Any attempt at evaluation would be speculative and is not essential for a reasoned choice among alternatives.</p>
Salable minerals	<p>The Secretary's decision regarding the project will not affect salable mineral availability because all 17(d)(1) withdrawals are currently open to salable minerals.</p>
Threatened or endangered plant populations	<p>The Aleutian shield fern (<i>Polystichum aleuticum</i>) is the only endangered plant species in Alaska. The range is limited to Mount Reed on Adak Island within the Alaska Maritime National Wildlife Refuge. Although the range of the shield fern overlaps with the Ring of Fire planning area, it does not overlap with any 17(d)(1) withdrawals, and thus analysis in detail is not necessary.</p>
Wildland fire	<p>Per the 2020 Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement (Alaska Interagency Coordination Center 2020), the BLM Alaska Fire Service is responsible for protection on BLM, Alaska Department of Natural Resources (State), and ANCSA lands. Changes in landownership and any updates to the desired fire management options (critical, full, modified, limited) can be coordinated with the Alaska Fire Service prior to the next fire season through a change approval form available in the annual Alaska Interagency Wildland Fire Management Plan (Alaska Interagency Coordination Center 2023). None of the alternatives would result in significant impacts to, or even change, operational fire management activities as none would affect these long-standing interagency agreements.</p> <p>Although not specifically fire related, the State of Alaska governs how timber harvesting, reforestation, and timber access occur on State, private, and municipal lands. Should land leave Federal ownership, future landowners may need to coordinate with the State on the Alaska Forest Resources and Practices Act (Alaska Statute 41.17) and Alaska Forest Resources and Practices Regulations (11 Alaska Administrative Code 95).</p>
Non-BLM-managed wild and scenic rivers	<p>Because ANILCA 606 amended the Wild and Scenic Rivers Act to withdraw wild and scenic river corridors (the area within 0.5 mile of the river bank) from mineral entry, and because none of the withdrawals adjacent to non-BLM-managed wild and scenic rivers are top filed, any Secretarial decision to revoke 17(d)(1) withdrawals would not affect non-BLM-managed wild and scenic rivers, and they are not discussed further in the EIS.</p>
Lands with wilderness characteristics	<p>No lands with wilderness characteristics overlap the 17(d)(1) withdrawals within the decision area. Changes in the potential for development would have no direct effects on lands with wilderness characteristics.</p>
Co-stewardship between Tribal governments and the BLM	<p>The Secretary's decision is limited to revoking, revoking in part, or maintaining the withdrawals and would not make decisions on co-stewardship or any management decisions on a particular resource. Evaluating co-stewardship is outside the scope of the EIS. Withdrawal revocations would not preclude co-stewardship agreements between the BLM and Tribes in the future.</p>
National Park Service (NPS) visitor experience	<p>The decision area does not overlap NPS lands.</p>
Chilkoot National Historic Trail	<p>Although one 17(d)(1) withdrawal in the decision area overlaps with the Chilkoot National Historic Trail (NHT) by 0.31 mile, the trail corridor is not a BLM special designation, and the Secretary's decision from the project would not affect the parcel since it is an effective State selection. Because it is a Priority 4 selection, it is currently segregated and is likely to stay in Federal management (see EIS Section 3.1.1, Introduction and Methodology, for land selection facts and assumptions). The parcel is also not in an area more likely to be developed. Additionally, large portions of the trail are already on State lands that are managed for recreation. All NHTs are established by Congress (Directors Order 45). Most Federal NHTs have ongoing cooperative agreements with states for the provision of route signs, law enforcement services, land protection, and other areas of common interest (NPS 2023). Therefore, the project would not affect the NHT or recreation associated with it.</p> <p>Effects to cultural resources associated with the NHT are described in EIS Section 3.4.1.2.4, Alternative C, and EIS Section 3.4.1.2.5, Alternative D.</p>

1.6.2 Public Meetings and ANILCA 810 Hearings for the Draft Environmental Impact Statement

The BLM held 19 public meetings and ANILCA 810 hearings for the draft EIS in January and February 2024. In-person meetings were held in 14 hub communities, and five meetings were hosted virtually. EIS Appendix H, Community Engagement Summary and Comments Received on the Draft Environmental Impact Statement, summarizes the community engagement effort for the draft EIS. The BLM received a total of 14,835 submittals during the public comment period from 14,444 individuals; 1,081 of the submittals were unique, and the remainder were form letters or duplicate submittals. Public comments on the draft EIS and BLM responses are also summarized in EIS Appendix H.

1.7 COOPERATING AGENCIES

In accordance with 40 CFR 1501.8, any Tribal, Federal, State, or local agency that has jurisdiction by law or special expertise with respect to an environmental issue addressed in this EIS is eligible to be a cooperating agency. On November 16, 2022, the BLM mailed letters to potential cooperating agencies that notified them they may qualify as a cooperating agency. Potential cooperating agencies were asked to provide a written acceptance that included the reason they qualified for cooperating agency status. In total, 327 invitations were mailed to all Tribes and a combination of Federal, State, and local governments. Table 1.7-1 identifies the cooperating agencies for the project and summarizes the elements of their eligibility.

Table 1.7-1. Cooperating Agencies

Agency	Authority/Expertise
State of Alaska	Responsible for managing State lands and fish and wildlife resources. Authority for air, water use, and wastewater permits. Expertise in socioeconomics, biological resources, subsistence, and State-selected and top filed lands
U.S. Environmental Protection Agency	Responsibilities under Section 309 of the Clean Air Act to review the EISs of other Federal agencies and to comment on the adequacy and the acceptability of the environmental impacts of the project. Expertise in water quality.

1.8 CONSULTATION AND COORDINATION

1.8.1 Consultation with Tribes and Alaska Native Corporations

The BLM notified Tribes and ANCs that the agency would be preparing an EIS on the project by mailing letters on August 22, 2022, inviting them to engage in consultation and to participate as a consulting party under NEPA and Section 106 of the NHPA, per 36 CFR 800.3, Departmental Manual 512 Chapters 4 and 6, and BLM Manual 1780. The BLM sent letters to all 227 Federally recognized Tribes in Alaska and to 236 ANCs. On November 16, 2022, the BLM sent a second letter to Tribes informing them they may qualify for cooperating agency status and inviting them to engage in consultation. In February and March 2023, the BLM made personal telephone calls to all 227 Tribes and reached out to ANCs by email to ensure awareness of the project and to invite those interested to consult with the BLM. Tribes and ANCs contacted during this time were also invited to an informal consultation meeting on March 29, 2023. During the March 29 meeting about the project, the BLM presented on the 17(d)(1) withdrawals, the purpose of revocation, potential impacts of revocation, and the EIS process, and held a question-and-answer session.

The BLM is conducting government-to-government and ANCSA consultations on an ongoing basis through the development of the EIS and until a ROD is published. Consultations are held at the request of Tribes and ANCs.

Table 1.8-1 lists the Tribes and ANCs that engaged in consultation on this EIS before release of the draft EIS.

Table 1.8-1. Tribes and Alaska Native Corporations Engaged in Consultation

Tribe	Alaska Native Claims Settlement Act Corporation
Knik Tribe	Ahtna, Inc.
Native Village of Unalakleet	Cook Inlet Region, Inc.*
Chickaloon Native Village	Arctic Slope Regional Corporation*
Native Village of Tazlina	Calista Corporation
Native Village of Gakona*	Doyon, Limited
Village of Koliganek*	NANA
Native Village of Kluti-Kaah*	
Kenaitze Indian Tribe*	
Gwichyaa Zhee Gwich'in*	
Native Village of Tetlin*	
Nulato Village*	
Orutsarmiut Native Council*	
Native Village of Paimiut*	
Native Village of Shishmaref*	
Native Village of Saint Michael*	
Tangirnaq Native Village (Kodiak)	
Igiugig Village	

Note: Some parties called into the March 29, 2023, meeting by telephone or did not provide identifying information and may not be represented in this list.

* Participated in the March 29, 2023, informal virtual Tribal consultation meeting.

1.8.2 National Historic Preservation Act Consultation

Section 106 of the NHPA requires Federal agencies to consider the effects of their actions on historic properties (those listed on or eligible for the National Register of Historic Places [NRHP]) and to invite interested parties to express their views on resolving adverse effects that may result from those actions. The BLM initiated consultation under Section 106 of the NHPA on August 22, 2022, by sending letters to Tribes, ANCs, and municipalities, inviting them to participate as a consulting party. The BLM sent a second invitation letter on November 16, 2022. On January 11, 2023, the BLM notified the Alaska State Historic Preservation Office and the Advisory Council on Historic Preservation of the project and invited them to review and identify issues that should be addressed in the EIS.

The BLM has determined that revocation of the ANCSA 17(d)(1) withdrawals has the potential to adversely affect historic properties, since the transfer of land (that may contain historic properties) out of Federal ownership without legally enforceable mechanisms to preserve historic properties is an adverse effect pursuant to 36 CFR 800.5(a)(2)(vii). In consultation with the Alaska State Historic Preservation Office, the BLM has determined that a programmatic agreement (PA), as described at 36 CFR 800.14(b)(1), is the most appropriate manner to meet its Section 106 NHPA compliance responsibilities. The PA is in development and will include measures to minimize and mitigate adverse effects to historic properties that may result from implementation of the proposed action.

Since August 2022, several Tribes and ANCs have expressed interest in participating in the Section 106 compliance process. The BLM sent invitations to the first consulting party meeting in January 2024 and held a virtual consulting party meeting on February 15, 2024. The BLM will continue consulting with the Alaska State Historic Preservation Office and consulting parties until the PA is completed. The PA will be completed prior to the issuance of any decision to revoke in full or revoke in part the ANCSA 17(d)(1) withdrawals as described in this EIS.

1.8.3 Compliance with Section 810 of the Alaska National Interest Lands Conservation Act

Section 810 of ANILCA requires the BLM to evaluate the effects of the alternatives and the cumulative impacts of current and future activities on subsistence uses and needs. An ANILCA 810 evaluation is published with this EIS and is included as Appendix C. This evaluation was prepared in parallel with and is consistent with the analysis contained in this EIS. The ANILCA 810 evaluation and the draft EIS were available for public review together, and 19 public hearings were held to collect testimony from affected communities during the draft EIS public comment period. The dates and locations of the public hearings are listed in EIS Appendix H. Transcripts of the public meetings and ANILCA 810 hearings are available on the BLM's ePlanning website (<https://eplanning.blm.gov/eplanning-ui/project/2018002/510>). The BLM used the information shared by commenters at the public hearings and submitted in writing during the comment period to inform the determinations made in the final ANILCA 810 evaluation found in EIS Appendix C.

1.8.4 Endangered Species Act Consultation

Informal consultation under Section 7 of the ESA between the BLM and the U.S. Fish and Wildlife Service (USFWS) for species listed under the ESA was completed on March 11, 2024. USFWS concurred with the BLM's determination that the project is not likely to adversely affect the ESA-protected polar bear, spectacled eider (*Somateria fischeri*), or the Alaska-breeding population of Steller's eider (*Polysticta stelleri*).

1.8.5 Magnuson-Stevens Fishery Conservation and Management Act Compliance

Compliance with the Magnuson-Stevens Fishery Conservation and Management Act regarding essential fish habitat (EFH) occurred between the BLM and National Marine Fisheries Service, and the BLM received concurrence from the National Marine Fisheries Service on April 12, 2024, that the project would have no direct adverse effect on freshwater EFH for Pacific salmon.

CHAPTER 2. ALTERNATIVES

2.1 ALTERNATIVE DEVELOPMENT PROCESS

The BLM developed a reasonable range of alternatives that would respond to the purpose and need for revocation (see Section 1.3, Purpose and Need for Action). The alternatives development process began with scoping and continued through detailed workshops with the BLM interdisciplinary team (composed of resource and area experts) and cooperating agencies. The BLM also incorporated input from Tribes and ANCs during alternatives development (see Section 1.6.1, Scoping and Issue Development, and Section 1.8.1, Consultation with Tribes and Alaska Native Corporations).

The BLM considered alternatives that would provide different proportions and configurations of 17(d)(1) withdrawals that would be retained or revoked in the five planning areas. Each of the alternatives identifies 17(d)(1) withdrawals in the five planning areas as retained or revoked. The alternatives range from retaining the withdrawals on all lands (Alternative A) to revoking the withdrawals on all lands (Alternative D). Alternative B includes partial revocations where conflicts with natural resources, cultural resources, subsistence, recreational resources, or proposed or existing areas of critical environmental concern (ACECs) would be minimized, and Alternative C includes partial revocations based on mineral potential. See EIS Appendix B (Glossary) for definitions of terms used in the alternative descriptions. The Secretary of the Interior may choose any combination of revocation or retention of 17(d)(1) withdrawals evaluated within the range of alternatives. The Preferred Alternative in this EIS is Alternative A. The identification of a preferred alternative does not constitute a commitment or decision; if warranted, the Secretary may select a different alternative than the Preferred Alternative in the ROD.

Throughout the decision area, the State of Alaska has top filings on lands not available for selection. The State has categorized top filings into four priority levels— Priority 1, 2, 3, and 4—with Priority 1 being the highest priority for conveyance.¹ The major kinds of encumbrances that are preventing top filings from becoming effective selections include ANCSA 17(d)(1) withdrawals not revoked in part to allow for selection; ANCSA selections; withdrawals reserving lands for other Federal agencies; Alaska Native veteran allotment selections under the Dingell Act; or active mining claims. During the scoping period, the State of Alaska indicated a preference for the DOI to proceed with revocation of the applicable ANCSA 17(d)(1) withdrawals to allow its top filed lands to become effective selections, and this was considered in the development of alternatives.

2.2 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Alternative A would retain the ANCSA 17(d)(1) withdrawals within the decision area, preserving the status quo as it was before PLOs 7899 through 7903 were signed in 2021 (see maps in EIS Appendix A). Tables 2.2-1 and 2.2-2 provide a summary of acres associated with Alternative A by planning area. Figures 2.2-1 through 2.2-6 detail 17(d)(1) withdrawals within each planning area that are retained under Alternative A. Should Alternative A be selected, the State's remaining 5.2 million acres of entitlements would be fulfilled through existing effective selections. Alternative A is the Preferred Alternative in this EIS.

¹ Pursuant to Section 906(f) of ANILCA, the State provides the BLM a prioritized list of selections. The State has categorized its selections into four priorities—Priority 1, 2, 3, or 4—with Priority 1 being the highest priority for conveyance to the State.

Table 2.2-1. Summary of 17(d)(1) Withdrawals Retained under Alternative A

Column A	Column B	Column C
Planning Area	Total Acres of 17(d)(1) Withdrawals Retained*	Total Acres of 17(d)(1) Withdrawals Revoked
Bay	1,243,000	0
Bering Sea-Western Interior	13,322,000	0
East Alaska	2,567,000	0
Kobuk-Seward Peninsula	9,653,000	0
Ring of Fire	950,000	0
Total	27,735,000	0

* Columns B, C, and D in Table 2.2-2 sum to Column B in Table 2.2-1.

Table 2.2-2. Summary of Effects on State Priority Top Filings Under Alternative A

Column A	Column B	Column C	Column D	Column E
Planning Area	Acres of 17(d)(1) Withdrawals Retained on State Top Filed Priority 1 and 2 Lands	Acres of 17(d)(1) Withdrawals Retained on State Top Filed Priority 3 and 4 Lands	Remaining Acres of 17(d)(1) Withdrawals Retained	Acres of State Priority 1 and 2 Top Filings That Would Immediately Become Effective Selections
Bay	22,000	50,000	1,171,000	0
Bering Sea-Western Interior	292,000	144,000	12,886,000	0
East Alaska	500,000	91,000	1,976,000	0
Kobuk-Seward Peninsula	182,000	86,000	9,385,000	0
Ring of Fire	52,000	29,000	869,000	0
Total	1,048,000	400,000	26,287,000	0

2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Alternative B would revoke in part withdrawals to allow State top filed Priority 1 and 2 lands to convert to effective selections only where conflicts with natural resources, cultural resources, subsistence, recreational resources, or proposed or existing ACECs would be minimized. These lands would otherwise remain withdrawn, as specified under the applicable PLO. Specific known subsistence access areas were also removed from consideration for withdrawal revocation; however, due to the extent of subsistence access throughout the state, they were not entirely avoided. All other lands would remain withdrawn (Figure 2.3-1).

Tables 2.3-1 and 2.3-2 provide a summary of acres associated with Alternative B by planning area. Under Alternative B, 17(d)(1) withdrawals affecting approximately 433,000 acres would be revoked in part to allow State top filed Priority 1 and 2 lands to convert to effective selections (Column C of Table 2.3-2). However, 402,000 of these acres have underlying selections or are otherwise encumbered (Columns D and E in Table 2.4-2), so they would likely continue to be unavailable for Alaska Statehood Act selection. The remaining 41,000 acres of Priority 1 and 2 top filings—7 percent of the State top filed Priority 1 and 2 lands within the decision area—are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal (Column F). These 41,000 acres could be conveyed to the State at its request if the 17(d)(1) withdrawals are partially revoked to open the lands to selection under the Alaska Statehood Act. Alternative B would not revoke any 17(d)(1) withdrawals with Priority 3 and 4 top filings.

Figures 2.3-2 through 2.3-6 detail 17(d)(1) withdrawals within each planning area as well as where the 17(d)(1) withdrawals would be retained or revoked under Alternative B.

Table 2.3-1. Summary of 17(d)(1) Withdrawals Retained or Partially Revoked under Alternative B

Column A	Column B	Column C
Planning Area	Total Acres of 17(d)(1) Withdrawals Retained	Total Acres of 17(d)(1) Withdrawals Partially Revoked
Bay	1,226,000	17,000
Bering Sea-Western Interior	13,253,000	69,000
East Alaska	2,390,000	177,000
Kobuk-Seward Peninsula	9,510,000	143,000
Ring of Fire	923,000	27,000
Total	27,302,000	433,000

Table 2.3-2. Summary of Effects on State Priority Top Filings Under Alternative B

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of 17(d)(1) Withdrawals Retained on State Top Filed Priority 1 and 2 Lands*	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands on ANCSA-Selected Lands	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands with other Encumbrances	State Priority 1 and 2 Top Filings That Would Immediately Become Effective Selections After Revocation†‡
Bay	6,000	17,000	16,000	< 1,000	< 1,000
Bering Sea-Western Interior	223,000	69,000	42,000	< 1,000	26,000
East Alaska	333,000	177,000	161,000	26,000	3,000
Kobuk-Seward Peninsula	40,000	143,000	137,000	< 1,000	5,000
Ring of Fire	26,000	27,000	20,000	< 1,000	7,000
Total	628,000	433,000	376,000	26,000	41,000

* State top filed Priority 1 and 2 lands that were identified by resource specialists as having resource conflict concerns.

† Lands that are not otherwise encumbered.

‡ Because 17(d)(1) withdrawals that are ANCSA selected may overlap with 17(d)(1) withdrawals with other encumbrances, Columns D, E, and F sum to slightly more than the total acres in Column C.

2.4 ALTERNATIVE C (PARTIAL REVOCATION)

Under Alternative C, the Secretary would revoke the 17(d)(1) withdrawals in full for those acres that have high mineral potential, including State top filed Priority 1, 2, 3, and 4 lands. Also under Alternative C, the Secretary would revoke the withdrawals in part on any remaining Priority 1 and 2 top filings outside of the high mineral potential areas for the limited purpose of opening those lands to selection under the Alaska Statehood Act. All other lands, including areas of high mineral potential that are already opened to mineral entry or leasing due to an existing PLO, would remain withdrawn as specified in that PLO (Figure 2.4-1). Because Alternative B also revokes in part withdrawals that include State top filed Priority 1 and 2 land, all withdrawals revoked in part under Alternative B are included in Alternative C.

Tables 2.4-1 and 2.4-2 provide a summary of acres associated with this alternative by planning area. Under Alternative C, the 17(d)(1) withdrawals affecting approximately 5,345,000 acres with high mineral potential, including some State top filed Priority 1 and 2 lands, would be revoked in full, opening these lands to public land laws (Column D and Column F in Table 2.4-1). The 17(d)(1) withdrawals affecting an additional 457,000 acres of State top filed Priority 1 and 2 lands in the decision area that do not have high mineral potential would be revoked in part to allow for State selection only (Column E of Table 2.4-1). Therefore, the 17(d)(1) withdrawals affecting 1,048,000 acres of State top filed Priority 1 and 2 lands would be revoked in full or revoked in part, which accounts for all State top filed Priority 1 and 2 lands in the decision area (Column B of Table 2.4-2). However, because approximately half of these acres have underlying selections or are otherwise encumbered (Columns D and E in Table 2.4-2), they would continue to be unavailable for Alaska Statehood Act selection. The remaining Priority 1 and 2 top filings are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal (Column F of Table 2.4-2). These 567,000 acres are the lands that the BLM expects could be conveyed, should the Secretary select Alternative C. This would be all of the State top filed Priority 1 and 2 lands within the decision area (see Column F of Table 2.4-2 and Table 2.5-2).

Figures 2.4-2 through 2.4-6 detail 17(d)(1) withdrawals that would be retained, revoked in part, or revoked in full under Alternative C.

Alternative C would also revoke 17(d)(1) withdrawals affecting 145,000 acres with Priority 3 and 4 top filings (Column C in Table 2.4-2) that would immediately convert to effective selections upon that revocation if otherwise unencumbered. However, because these are lower priority, the BLM assumes the State would relinquish or the BLM would reject the newly effective selections within 10 years of the decision due to overselection.

Table 2.4-1. Summary of 17(d)(1) Withdrawals Retained or Revoked under Alternative C

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Total Acres of 17(d)(1) Withdrawals Retained	Acres of High Mineral Potential*	Acres of 17(d)(1) Withdrawals Fully Revoked on High Mineral Potential Lands Only†	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands Only‡	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands and High Mineral Potential Lands‡
Bay	1,168,000	36,000	53,000	22,000	0
Bering Sea-Western Interior	11,081,000	2,175,000	1,949,000	197,000	95,000
East Alaska	974,000	2,002,000	1,093,000	107,000	393,000
Kobuk-Seward Peninsula	8,050,000	2,321,000	1,421,000	114,000	68,000
Ring of Fire	660,000	219,000	238,000	17,000	35,000
Total	21,933,000	6,753,000	4,754,000	457,000	591,000

* The total acres of high mineral potential may be lower than the total acres of 17(d)(1) withdrawals fully revoked because an entire section was considered revoked if any part of the section overlapped with high mineral potential.

† Does not include State top filed Priority 1 or 2 lands that have high mineral potential.

‡ Acres where the withdrawals are revoked in full are areas that have high mineral potential and are State top filed Priority 1 and 2 lands.

§ Revoked in part to allow for selection under the Statehood Act for State top filed Priority 1 or 2 lands only; acres are outside of high mineral potential areas.

Table 2.4-2. Summary of Effects on State Priority Top Filings Under Alternative C

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of 17(d)(1) Withdrawals Revoked on State Top Filed Priority 1 and 2 Lands (full and partial revocations)	Acres of 17(d)(1) Withdrawals Revoked on State Top Filed Priority 3 and 4 Lands*	Acres of 17(d)(1) Withdrawals Revoked on State Top Filed Priority 1 and 2 Lands on ANCSA-Selected Lands	Acres of 17(d)(1) Withdrawals Revoked on State Top Filed Priority 1 and 2 Lands with other Encumbrances	Acres of State Priority 1 and 2 Top Filings That Would Immediately Become Effective Selections After Revocation† ‡
Bay	22,000	6,000	18,000	< 1,000	4,000
Bering Sea-Western Interior	292,000	31,000	43,000	< 1,000	248,000
East Alaska	500,000	78,000	212,000	38,000	273,000
Kobuk-Seward Peninsula	182,000	28,000	137,000	13,000	33,000
Ring of Fire	52,000	2,000	43,000	1,000	9,000
Total	1,048,000	145,000	453,000	52,000	567,000

* Lands that are likely to be relinquished or rejected.

† Lands that are not otherwise encumbered.

‡ Because 17(d)(1) withdrawals that are ANCSA selected may overlap with 17(d)(1) withdrawals with other encumbrances, Columns D, E, and F sum to slightly more than the total acres in Column B.

2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D (2021 Proposed Action), the Secretary would revoke in full ANCSA 17(d)(1) withdrawals consistent with the action described in the January 2021 PLOs 7899, 7900, 7901, 7902, and 7903, which would affect a total of approximately 28 million acres across the five planning areas (Figure 2.5-1). All withdrawals revoked in full or revoked in part under Alternatives B and C are inherently included in the revocations for Alternative D.

Tables 2.5-1 and 2.5-2 provide a summary of acres associated with Alternative D by planning area. Under Alternative D, approximately 1,048,000 acres of State top filed Priority 1 and 2 lands could convert to effective selections (Column B in Table 2.5-2). However, because approximately half of these acres have underlying selections or are otherwise encumbered (Columns D and E in Table 2.5-2), they would continue to be unavailable for Alaska Statehood Act selection. The remaining Priority 1 and 2 top filings are not encumbered and would immediately become effective selections upon revocation of the 17(d)(1) withdrawal (Column F). These 567,000 acres are the lands that the BLM expects could be conveyed, should the Secretary select Alternative D. This would be all of the State top filed Priority 1 and 2 lands within the decision area (see Column F of Table 2.5-2).

Figures 2.5-2 through 2.5-6 detail 17(d)(1) withdrawals within each planning area that would be revoked under Alternative D.

Alternative D would also revoke in full the 17(d)(1) withdrawals on 400,000 acres with Priority 3 and 4 top filings (Column C in Table 2.4-2) that would immediately convert to effective selections upon that revocation if otherwise unencumbered. However, because these are lower priority, the BLM assumes the State would relinquish or the BLM would reject the newly effective selections within 10 years of the decision due to overselection.

Table 2.5-1. Summary of 17(d)(1) Withdrawals Revoked under Alternative D

Column A	Column B	Column C
Planning Area	Total Acres of 17(d)(1) Withdrawals Retained	Total Acres of 17(d)(1) Withdrawals Fully Revoked
Bay	0	1,243,000
Bering Sea-Western Interior	0	13,322,000
East Alaska	0	2,567,000
Kobuk-Seward Peninsula	0	9,653,000
Ring of Fire	0	950,000
Total	0	27,735,000

Table 2.5-2. Summary of Effects on State Priority Top Filings Under Alternative D

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 3 and 4 Lands*	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands on ANCSA-Selected Lands	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands with other Encumbrances	Acres of State Priority 1 and 2 Top Filings That Would Immediately Become Effective Selections ^{† ‡}
Bay	22,000	50,000	18,000	< 1,000	4,000
Bering Sea-Western Interior	292,000	144,000	43,000	< 1,000	248,000
East Alaska	500,000	91,000	212,000	38,000	273,000
Kobuk-Seward Peninsula	182,000	86,000	137,000	13,000	33,000
Ring of Fire	52,000	29,000	43,000	1,000	9,000
Total	1,048,000	400,000	453,000	52,000	567,000

* Lands that are likely to be relinquished or rejected

† Lands that are not otherwise encumbered.

‡ Because 17(d)(1) withdrawals that are ANCSA selected may overlap with 17(d)(1) withdrawals with other encumbrances, Columns D, E, and F sum to slightly more than the total acres in Column B.

2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

During the scoping process discussed in Section 1.6.1, Scoping and Issue Development, the BLM received comments suggesting alternatives or components of alternatives to be considered. These suggestions and the reasons they were eliminated from detailed analysis are provided below.

- *A Tribal alternative that integrates Indigenous Knowledge, demographics, socioeconomics, health impacts, and historic and contemporary use areas, among all affected Alaska Native communities.* This EIS considers issues (e.g., climate change, subsistence use, proposed and existing ACECs) presented to the BLM by Tribes during scoping and during government-to-government consultations and incorporates Indigenous Knowledge in the analysis. Under Alternative B, the ANCSA 17(d)(1) withdrawals would be retained in areas of concern made known to the BLM by Tribes. This alternative was dismissed from detailed analysis because it is substantially similar to Alternative B.
- *An alternative that would establish co-management agreements between the BLM and Tribal governments.* The purpose and need for action evaluated in this EIS is limited: at issue is whether the Secretary should revoke in full or in part, or retain, the ANCSA 17(d)(1) withdrawals in the decision area, and the alternatives analyzed include variations of revocation or retention of these withdrawals. Developing and evaluating management, including co-management, for BLM-managed lands are outside the scope of the EIS. This alternative was dismissed from detailed analysis because it would not respond to the purpose and need for action.
- *An alternative that retains the majority of land in protected status outside of conveyances of personal Native allotments.* This EIS evaluates two action alternatives that retain the withdrawals, essentially a protected status, on the majority of the decision area: Alternative B and Alternative C. Under Alternative B, the Secretary would revoke the withdrawals in part to allow for State selection to approximately 2 percent of the decision area and otherwise the withdrawals would be retained, and under Alternative C, the Secretary would revoke the withdrawals on approximately 29 percent of the decision area. As of September 8, 2023, all 17(d)(1) withdrawals within the decision area evaluated in this EIS are open to Native allotment selection under the Dingell Act, except lands within 500 feet of the Iditarod National Historic Trail (NHT), or within 0.25 mile of cultural resource sites, including lands applied for by regional Native corporations pursuant to ANCSA 14(h)(1) and certain known cultural resources sites. This alternative was dismissed from detailed analysis because it is substantially similar to Alternative B and Alternative C.
- *An alternative that would consider retaining all the 17(d)(1) withdrawals.* This EIS evaluates the No Action Alternative (Alternative A), which would retain all the 17(d)(1) withdrawals in the decision area. This alternative was dismissed from detailed analysis because it is the same as the No Action Alternative.
- *An alternative that improves access to public lands for individuals, businesses, and community development by offering land disposals or land exchanges with ANCs that have blocked development along roads.* The purpose and need for action evaluated in this EIS is limited: at issue is whether the Secretary should revoke in full or part, or retain, the ANCSA 17(d)(1) withdrawals in the decision area, and the alternatives analyzed include variations of revocation and retention of these withdrawals. Evaluating specific land disposals or directed land exchanges is outside the scope of the EIS. This alternative was dismissed from detailed analysis because it would not respond to the purpose and need for action.
- *An alternative that focuses on supporting climate resilience, adaptation, and mitigation, as well as the impacts of any likely future development on these goals.* The purpose and need for action

evaluated in this EIS is limited: at issue is whether the Secretary should revoke in full or part, or retain, the ANCSA 17(d)(1) withdrawals in the decision area, and the alternatives analyzed include variations of revocation and retention of these withdrawals. Developing and evaluating management direction for BLM-managed lands are outside the scope of the EIS. This alternative was dismissed from detailed analysis because it would not respond to the purpose and need for action.

- *An alternative that retains specified areas for their ecological, cultural, or recreational values.* This EIS evaluates the No Action Alternative (Alternative A), which would retain all 17(d)(1) withdrawals in the decision area. Additionally, Alternative B retains most of the 17(d)(1) withdrawals in the decision area to protect ecological, cultural, and recreational values. Alternative C also retains withdrawals because they do not meet the criteria described in EIS Section 2.4, Alternative C. Therefore, this alternative was dismissed from detailed analysis because retaining the suggested withdrawals is analyzed in Alternatives A, B, and C, depending on the suggested area (Table 2.6-1).

Table 2.6-1. Alternative Components Proposed in Public Comments

Suggested Lands to Retain in the Withdrawal	Purpose	Alternative that Retains These Lands
All lands in Calista Corporation region	Availability to fulfill ANCSA statutory land entitlements	Alternative A, Alternative B, some withdrawals in Alternative C
Areas that support salmon	Fish habitat and subsistence	Alternative A, some withdrawals in Alternative B and C
Bristol Bay	Fish habitat	Alternative A, Alternative B, most withdrawals in Alternative C
Bristol Bay Fisheries Reserve	Fish habitat	Alternative A, Alternative B, most withdrawals in Alternative C
Chilkat-Klehini Watershed	Fish and wildlife habitat	Alternative A, Alternative B, some withdrawals in Alternative C
Chitina and Kenny Lake	Fish habitat	Alternative A, some withdrawals in Alternative B
Copper River Basin	Fish habitat	Alternative A most withdrawals in Alternative B and some withdrawals in Alternative C
Holitna Basin	Fish habitat	Alternative A, Alternative B, and some of Alternative C
Susitna Watershed	Subsistence and commercial use	Alternative A, some withdrawals in Alternatives B and C
Upper Talkeetna River and upper Clear Creek	Recreation, fish and wildlife habitat, water quality, subsistence	Alternative A most withdrawals in Alternative B and some withdrawals in Alternative C
Kvichak and Nushagak drainages	Subsistence	Alternative A, most withdrawals in Alternatives B and C
Kigluaik Mountains Kateel River Meridian, Township 5 South, Range 33 West, ALL; Township 6 South, Range 33 West, ALL El Dorado River Kateel River Meridian, Township 10 South, Range 31 West, Section 32; Township 9 South, Range 31 West, Sections 6, 7, 17, 18, 19, 20, 21	Subsistence	Alternative A, most withdrawals in Alternative B and some withdrawals in Alternative C
Nulato Hills, central Seward Peninsula, and north of Kivalina	Bird habitat	Alternative A, Alternative B, some withdrawals in Alternative C

Suggested Lands to Retain in the Withdrawal	Purpose	Alternative that Retains These Lands
Pah River Flats	Recreation, fish and wildlife habitat	Alternative A, Alternative B, some withdrawals in Alternative C
Parcel between Icy Bay and Chugach	Bird habitat	Alternative A, Alternative B
Parcels near Haines	Wildlife habitat	Alternative A, Alternative B, and some withdrawals in Alternative C
Tagagawik River	Water quality and fish habitat	Alternative A, Alternative B, most withdrawals in Alternative C
Thompson Pass	Recreation, fish habitat	Alternative A, Alternative B, some withdrawals in Alternative C
Section 30 of Township 11 North, Range 8 East	Subsistence and fish habitat	Alternative A, some withdrawals in Alternative B
Areas that support caribou calving and wintering grounds	Wildlife habitat	Alternative A
Devils Canyon and Susitna River	Prevent development of projects	Alternative A, some withdrawals in Alternative B
Lands near the proposed Pebble Mine and Ambler Road	Prevent development of projects	Alternative A, most withdrawals in Alternative B and C

2.7 CHANGES SINCE THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

The following key changes were completed since the draft EIS:

- The land within the 17(d)(1) withdrawals that intersect the Alaska Long Trail proposed national scenic trail (NST) (which equals approximately 4 miles of the proposed trail route) is now retained under Alternative B.
- The land within the 17(d)(1) withdrawals that intersect the Iditarod NHT corridor (which equals approximately 4 miles of trail) is now retained under Alternative B.
- 17(d)(1) withdrawals on lands that have high mineral potential that are already open to mineral entry or leasing under the mining laws due to PLO amendments were changed to retained under Alternative C. This changed 2,260,000 acres from revoke to retain under this alternative.
- All ANCSA 17(d)(1) withdrawals are now correctly analyzed as open to mineral sales under the Materials Act. Discussion of the general impacts on salable mineral (sand, stone, gravel, pumice, clay, rock, and petrified wood) availability due to revocation of the withdrawals was removed from the analysis since revocation of the withdrawals does not change what is open to mineral sales. Discussion of the general impacts on resources from development of salable minerals (gravel mining) is included in the EIS to reflect the increased need for this activity for the purpose of supporting infrastructure for various types of development.

However, acres more likely to be developed for salable minerals are still included in the EIS calculations for areas more likely to be developed due to the logistical difficulties of removing those acres in the limited time to make the change. The change to the impact analysis would be *de minimis*, i.e., it would result in an overestimate of approximately 7,000 acres of lands more likely to be developed as a result of any revocation of the 17(d)(1) withdrawals. These 7,000 acres are already open to mineral sales and can be developed at any time regardless of the Secretarial decision on this project. The overestimate occurs in the following locations:

- Bay planning area: < 1,000 acres near Aleknagik

- East Alaska planning area: 3,000 acres spread in small parcels near Nelchina, Chistochina, Chitina, Mentasta Lake, Paxson, and Cantwell
- Kobuk-Seward Peninsula planning area: 2,000 acres near Teller
- Ring of Fire planning area: 2,000 acres near Palmer along the Knik River
- Land status data regarding acres of land conveyed, selected, and top filed were updated and now reflect data as of January 24, 2024. These data also reflect any changes to the priority of State selections and top files. In summary, the final EIS reflects approximately 283,000 fewer acres of State selections (of any priority) and 278,000 more acres of State top filings of any priority.
- The subsistence analysis was updated to remove State top filed lands that are top filed over State effective selections from the lands where there would be effects on subsistence. The draft EIS erroneously calculated encumbrances on State top filed lands without considering whether the State top filed lands were also effectively selected by the State. Because a revocation of a withdrawal to allow for State selection would not actually change the status of any lands that are effectively selected, this led to a decrease in the number of acres where a loss of Federal subsistence priority would occur as a result of a Secretarial decision.
- The impacts due to Alternative B were refined to remove the effects of development on lands that are not likely to be conveyed to the State. Alternative B would revoke in part the withdrawals only to allow for State selection. Given this, it would not change the management of the lands except to the extent that top filed lands that are not otherwise encumbered would become effective selections and could be conveyed to the State. The draft EIS included in the analysis all lands that are more likely to be developed within areas where the withdrawals would be revoked in part despite the fact that revocation is not reasonably likely to lead to the development of lands that would not likely be conveyed to the State.
- The acres newly open to mineral entry immediately following revocations of 17(d)(1) withdrawals disclosed in EIS Table 3.8-5 and 3.8-10 increased substantially in the final EIS. In the draft EIS, criteria were applied to acres open or closed to mineral entry or leasing to determine how many acres would be newly opened following revocations of 17(d)(1) withdrawals. Since publication of the draft EIS, it has been clarified which criteria were appropriate for calculation. Therefore, numbers in Tables 3.8-5 and 3.8-10 differ from the tables published in the draft EIS.

2.8 COMPARISON OF ALTERNATIVES

Table 2.8-1 through Table 2.8-3 provides a comparison of the action alternatives.

The alternatives would result in the impacts detailed in Chapter 3 of the EIS and summarized in the Executive Summary (Table ES-1). Under Alternative A (No Action Alternative), all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the decision area should the Secretary select the No Action Alternative. The reasonably foreseeable trends and planned actions described in Section 3.1.3 would continue, and any effective selections could be conveyed at any time regardless of the Secretary's decision regarding the 17(d)(1) withdrawals.

Table 2.8-1. Comparison of Future of 17(d)(1) Withdrawals per Alternative

Column A	Column B	Column C	Column D
Alternative	Total Acres of 17(d)(1) Withdrawals Retained	Total Acres of 17(d)(1) Withdrawals Fully Revoked	Total Acres of 17(d)(1) Withdrawals Partially Revoked*
Alternative A	27,735,000	0	0
Alternative B	27,302,000	0	433,000
Alternative C	21,933,000	5,345,000	457,000
Alternative D	0	27,735,000	0

* These lands would otherwise remain withdrawn pursuant to ANCSA 17(d)(1).

Table 2.8-2. Comparison of State Priority Top Filings on 17(d)(1) Withdrawals per Alternative

Column A	Column B	Column C	Column D	Column E	Column F	Column G
Alternative	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands on ANCSA-Selected Lands	Acres of 17(d)(1) Withdrawals Fully Revoked on State Top Filed Priority 1 and 2 Lands with other Encumbrances	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands on ANCSA-Selected Lands	Acres of 17(d)(1) Withdrawals Partially Revoked on State Top Filed Priority 1 and 2 Lands with other Encumbrances
Alternative A	0	0	0	0	0	0
Alternative B	0	433,000	0	0	376,000	26,000
Alternative C	591,000	457,000	229,000	40,000	225,000	11,000
Alternative D	1,048,000	0	453,000	52,000	0	0

Table 2.8-3. Comparison of High Mineral Occurrence on 17(d)(1) Withdrawals per Alternative

Column A	Column B	Column C
Alternative	Acres of 17(d)(1) Withdrawals Fully Revoked on High Mineral Occurrence Potential Lands*	Acres of 17(d)(1) Withdrawals Partially Revoked on High Mineral Occurrence Potential Lands
Alternative A	0	0
Alternative B	0	182,000
Alternative C	5,345,000	0
Alternative D	5,345,000	0

* See Tables 3.8-5, 3.8-10, and 3.8-15 for a summary of acres open to mineral entry under each alternative.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION AND METHODOLOGY

This chapter describes the affected environment and impacts of the project relative to the issues analyzed in detail. Issues analyzed in brief are described in Section 1.6.1.2, Issues Identified but Eliminated from Detailed Analysis. The affected environment for each resource describes the reasonably foreseeable environmental trends and planned actions in the area that contribute to the environmental baseline. Impacts are those changes to the quality of the human environment that may reasonably be expected to occur following selection of one of the alternatives for the project. Impacts include those changes that occur at the same time and place as the project, as well as those changes that may occur later in time or are further removed in distance from the project but are still reasonably foreseeable (40 CFR 1508.1(g)).

3.1.1 Analysis Methods and Assumptions

Because the decision area for the project is large (over 27 million acres) and because there remain implications that are unknowable on an individual parcel-by-parcel level should the Secretary revoke the 17(d)(1) withdrawals, the analysis uses assumptions to describe the impacts that might occur should the Secretary revoke the withdrawals and the lands be conveyed or developed. Uncertain variables include whether the withdrawals have been revoked in part to allow certain actions like mineral leasing at a township level. Unknowable variables include if or to whom lands would be conveyed if the 17(d)(1) withdrawals are revoked. The necessarily imperfect character of these assumptions means that the analysis will be both over- and under-inclusive as to acreages and locations evaluated, as described in this section.

In addition, separate from the issue of selection and possible conveyance, should the Secretary revoke the 17(d)(1) withdrawals to the extent of opening lands to location and entry under the U.S. mining laws where such lands are not already open, some of these 28 million acres may experience the intensive development and impacts associated with mining or extraction activity. Although it is impossible to predict exactly where and how much mining activity may occur, this analysis assumes that such mining activity would occur on lands with high mineral potential and proximity to existing access or infrastructure (termed areas *more likely to be developed*, as described in the reasonably foreseeable development [RFD] scenario in EIS Appendix D). The kinds of impacts that result from mining activity are well-understood and include surface disturbance; habitat alteration; increase in water withdrawals or usage; increase in dust and noise; and deterioration in air quality resulting both from activities at the mine and transportation of people, supplies, and product. What cannot be predicted with any exactitude is the location and intensity of such impacts as the latter depends on the kind of mineral resource mined, the type of mining methods, and other factors described in the mining-specific discussion of impacts in Section 3.1.1.5. For these reasons, the description of impacts of mineral development in this EIS are necessarily general.

In some instances, the acres selected by the State of Alaska for conveyance coincide with areas more likely to be developed. In such instances, mineral development is most likely to occur following conveyance of the land to the State and would therefore take place under the relevant laws and regulations of the State of Alaska rather than its Federal counterparts. The analysis assumes that lands that would remain under Federal management would have more stringent requirements and restrictions and would therefore experience fewer impacts from development than those from development on lands that are conveyed to the State. Lands that would be conveyed would be available for development without BLM management protections; other Federal protections such as the Clean Water Act (CWA) would still apply.

This document does not endeavor to provide a full breakdown of any difference in the Federal and State of Alaska permitting regimes and the differences in impacts from development under each that may result.

Pursuant to 40 CFR 1502.21, the BLM must disclose incomplete or unavailable data and determine whether unavailable information is essential to a reasoned choice among alternatives and, if so, whether the cost of obtaining the missing information is exorbitant or unknown. All data identified as incomplete or unavailable are disclosed in the relevant section of the EIS and in EIS Appendix I (Incomplete or Unavailable Data) with the rationale for why they are incomplete or unavailable along with an explanation as to why they are not essential to a reasoned choice among alternatives.

The approach to the analysis and the analysis assumptions are described in this section.

3.1.1.1 Land Selection Facts and Assumptions for Analysis

The context of land selection is important to consider for analysis. In Alaska, public land is or has been subject to various laws that allow or allowed the State of Alaska, ANCs, Alaska Native veterans, or others to select acres for future conveyance. In some cases, the 17(d)(1) withdrawals explicitly allowed these selections. For instance, PLO 5353 specifically allowed for selections under ANCSA 12. In other cases, the 17(d)(1) withdrawal orders were revoked in part to allow for selections; for instance, PLO 5174 revoked the withdrawals in part to allow for State of Alaska selections and PLO 7912 revoked the withdrawals in part to allow for selections under the Dingell Act. When a withdrawal is revoked in full, the lands become available to the operation of all the currently applicable public land laws.

The selections under the Alaska Statehood Act are complete, but top filings can become recognized as additional effective selections once the land is available to the operation of the law under which the selection is made. Section 906(e) of ANILCA allowed the State of Alaska to file future selections on lands that were not currently available because the land was withdrawn or selected by another entity. These are referred to as *top filings*; they are in effect “waiting in line” until the withdrawal is revoked or the first entity either receives its lands or relinquishes its claim or place in line. In addition, sometimes the land has been withdrawn by Congress, the President, or the Secretary and reserved for specific use by a Federal agency (e.g., the U.S. Department of the Army or NOAA) in addition to the 17(d)(1) withdrawal that made the land unavailable. Revocation of the ANCSA 17(d)(1) withdrawals in full (Alternative D) would make the land available for selection under the Alaska Statehood Act, if otherwise available. Once the land is available, the State's top filings become effective selections under the Alaska Statehood Act.

Given the complexity of these various kinds of land status, the difficulty of providing granular analysis of the environmental impacts of revocation of the 17(d)(1) withdrawals, and the focus on the implications for these different kinds of selections, should the Secretary revoke the 17(d)(1) withdrawals in relevant part, the analysis in this EIS is based on the following facts and reasonable assumptions:

1. Land selection in this EIS refers to lands selected by either ANCs pursuant to ANCSA or the State of Alaska pursuant to the Alaska Statehood Act. State top filings refer to where the State has an application to select the land that would not become effective until the land becomes available.
2. Once the State's top filings become effective selections under the Alaska Statehood Act, that selection's prioritization would correspond to the priority the State of Alaska applied to the top filing. For instance, Priority 1 top filings would become Priority 1 selections.
3. Priority 1 is the highest priority in State of Alaska selection, with subsequent rankings descending in priority to Priority 2, 3, or 4. The State of Alaska can change its prioritization of selected lands at any time; however, for the purposes of this analysis, it is assumed that the prioritization of

record as of January 2024 will remain the same for the 10 years following a Secretarial decision on the project.

4. The EIS assumes that the BLM will not convey some top filed lands even if the Secretary revokes the 17(d)(1) withdrawal in relevant part, where top filings are in place due to an encumbrance other than the 17(d)(1) withdrawal. For instance, if the land is selected by an ANC, the State's top filing would not attach to that parcel, even if the Secretary revokes the 17(d)(1) withdrawal in relevant part, unless the ANC relinquishes its selection or the selection is rejected by the BLM when the ANC has received its full entitlement. Other encumbrances can include withdrawals reserving land for other agencies or Native allotment selections under the Dingell Act. It is unknown when or if the other encumbrances would be removed; therefore, the only top filed lands reasonably likely to become effective State selections are parcels where the land would become immediately available to the State upon the Secretary's revocation of the 17(d)(1) withdrawal in relevant part.
5. In the event the top filing becomes an effective selection, even though the Secretary has revoked the 17(d)(1) withdrawal in relevant part, these lands would be unavailable for any other form of appropriation. This is because the effective State selections segregate (set aside) the lands from entry; that is, the State selection blocks the selection or location of the land under most other public land laws. This also means that even in those cases where existing withdrawals allow for location and entry under the U.S. mining laws, the revocation of the 17(d)(1) withdrawals that allow State top filings to become effective selections would result in closing those lands to mineral entry because the State's selection would segregate the land. Therefore, all selected land (whether the 17(d)(1) withdrawal is revoked or not) would not be available for location and entry under the U.S. mining laws. Also, since State-selected land is not included in the definition of public lands for purposes of ANILCA, the additional State selections that become effective upon revocation of the 17(d)(1) withdrawals would also not be available for Federal subsistence priority (ANILCA 102.3 and 804).
6. Though the BLM still manages the land on effective selections, the BLM cannot approve grants of right-of-way (ROW) on State-selected lands without State concurrence. Similarly, on ANCSA-selected lands, ROWs require coordination with ANCs (but not concurrence) prior to approval (43 CFR 2650.1). The management prescriptions of the existing RMPs would apply to these ROWs.
7. The BLM can convey effective selections to the State at any time. Conversely, the State can relinquish a selection at any time. There is no established timeline for the BLM to convey or the State to relinquish selections; however, for the purposes of this analysis, it is assumed that the State of Alaska would pursue the Priority 1 and 2 selections in the decision area for conveyance within 10 years of the Secretary's decision for the project.
8. If a 17(d)(1) withdrawal is revoked and 1) the lands have not been top filed and 2) the lands are not otherwise withdrawn and reserved for some other purpose or Federal agency or segregated by a selection or other public land law entry, they would be open to appropriation under the public land laws, including location and entry under the Federal mining laws and leasing under the Mineral Leasing Act. The BLM would manage these lands consistent with the applicable RMP for the area.
9. Land management prescriptions established in the applicable RMPs would continue to apply for both unselected and selected lands should the Secretary revoke the 17(d)(1) withdrawals affecting such lands.
10. The State of Alaska has overselected lands. That is, they have selected more lands than its entitlement. The State is entitled to receive approximately 104,525,000 acres from the Federal

government, of which 95 percent has been conveyed to them (as of April 2023). The remaining State entitlement is approximately 5.2 million acres, which would be conveyed from existing selections and top filings across the State, assuming no withdrawal prevents the selection from becoming effective and no other entity is ahead of them in line. If all Priority 1 and 2 top filings become effective selections, 9.4 million acres would be Priority 1 or 2 selections. Of the Priority 1 and 2 top filed lands, 3.8 million acres are withdrawn under 17(d)(1). The Secretarial decision-making evaluated in this EIS is about a subset of those withdrawals.

11. This EIS assumes that the State would take title to all the lands it designated as its Priority 1 and 2 selections. Specifically, the BLM assumes that within 10 years of a Secretarial decision on the project, it would convey all Priority 1 and 2 top filings that become effective selections. Independent of such decision, though considered in the cumulative impacts analysis, the BLM also anticipates that it would convey all currently effective Priority 1 and 2 State-selected lands within 10 years of such a decision. For any land conveyed to the State, the State of Alaska management would apply upon its receipt.
12. Further, the BLM assumes that the conveyance of the Priority 1 and 2 selections would fulfill the State's entitlement, and therefore all the selections the State designated as Priority 3 and 4 would either be relinquished by the State or rejected by the BLM, and those lands would no longer be segregated.
13. Most ANCs in the decision area also have more land selected than their remaining entitlement. However, due to the prioritization method used by the ANCs and the multiple ANCs with selections, the BLM cannot assume at the project level which selections the ANCs may relinquish or the BLM reject, resulting in the lifting of the segregation due to such selections.
14. Some ANCs are underselected. If State top filings fall into place, that land would be segregated and would not be available for selection by ANCs that are underselected.
15. Conveyances are subject to valid existing rights; therefore, leases, ROWs, etc., would remain effective following conveyance of any Federal land to the State of Alaska.

Tables 3.1-1 through 3.1-3 summarize how the status of a given acre of land would change as 17(d)(1) withdrawals are revoked under the various alternatives, selections are relinquished or rejected, and conveyances are completed. Similarly, the tables indicate if the parcels are open to location and entry under the U.S. mining laws or are available for Federal subsistence priority. The EIS effects analysis uses these assumptions when considering the potential result of revocation or retention of ANCSA 17(d)(1) withdrawals.

Table 3.1-1. Selection Sequencing: Lands without Alaska Native Corporation or State of Alaska Selections

Initial Land Status	Potential Action	Assumptions for Analysis	Resulting Minerals Entry Status	Effect on Availability of the Land for Federal Subsistence Priority under ANILCA
BLM-managed lands, currently open to mineral entry	The Secretary does not revoke the ANCSA 17(d)(1) withdrawal.	Land remains open to mineral entry; terms of existing PLO apply; management prescriptions of existing RMP apply.	Remains open.	Remains available for Federal subsistence priority.
BLM-managed lands, currently open to mineral entry	The Secretary revokes the ANCSA 17(d)(1) withdrawal.	Land remains open to mineral entry; management prescriptions of existing RMP apply.	Remains open.	Remains available for Federal subsistence priority.
BLM-managed lands, currently withdrawn from mineral entry	The Secretary does not revoke the ANCSA 17(d)(1) withdrawal.	Land remains closed to mineral entry; terms of existing PLO apply; management prescriptions of existing RMP apply.	Remains closed.	Remains available for Federal subsistence priority.
BLM-managed lands, currently withdrawn from mineral entry	The Secretary revokes the ANCSA 17(d)(1) withdrawal.	Withdrawal is revoked, lands are no longer reserved by the ANCSA 17(d)(1) withdrawals and are open to mineral entry; management prescriptions of existing RMP apply.	Becomes open.	Remains available for Federal subsistence priority.

Table 3.1-2. Selection Sequencing: Lands with Alaska Native Corporation or State of Alaska Selections

Initial Land Status	Potential Action	Assumptions for Analysis	Resulting Minerals Entry Status	Effect on Availability of the Land for Federal Subsistence Priority under ANILCA
State of Alaska– or ANCSA-selected lands (not top filed)	The Secretary does not revoke the ANCSA 17(d)(1) withdrawal.	Withdrawal remains in place. State or ANC selection remains in place. Terms of existing PLO apply.	Remains closed to mineral entry.	Remains unavailable for Federal subsistence priority unless the land is not conveyed and the State of Alaska or ANC selection is rejected or relinquished.
State of Alaska– or ANCSA-selected lands (not top filed)	The Secretary revokes the ANCSA 17(d)(1) withdrawal.	Encumbered until conveyance, relinquishment, or rejection. For purpose of analysis, it is assumed conveyance to the State of Alaska would occur for Priority 1 and 2 selections but not Priority 3 and 4. Conveyance to the State would occur within 10 years of a Secretarial revocation decision. It is also assumed that conveyance to ANCs would occur within 10 years after the ROD. ROWs and other non-mining authorizations could be authorized with concurrence from the State of Alaska on State-selected lands, and with consultation (not concurrence) with the ANC on ANCSA-selected lands. Management prescriptions of existing RMP would apply to these ROWs.	On Priority 1 and 2 selections, land remains segregated from entry, including mineral entry, until conveyed, relinquished, or rejected. If conveyed, then management would be determined by the receiving party. Priority 3 and 4 selections would be relinquished or rejected within 10 years of a Secretarial revocation decision, and those lands would no longer be segregated from entry.	Remains unavailable for Federal subsistence priority unless the land is not conveyed and the State of Alaska or ANC selection is rejected or relinquished.

Table 3.1-3. Selection Sequencing: Top Filed Lands

Initial Land Status	Potential Action	Assumptions for Analysis	Resulting Minerals Entry Status	Effect on Availability of the Land for Federal Subsistence Priority under ANILCA
State top filed Priority 1, 2, 3, and 4	The Secretary does not revoke the ANCSA 17(d)(1) withdrawal.	Withdrawal remains in place. Top filing remains in place.	Remains closed unless otherwise stated in PLO.	Remains available for Federal subsistence priority (unless State of Alaska top filing is due to another ANCSA selection).
State top filed Priority 1 and 2	The Secretary revokes the ANCSA 17(d)(1) withdrawal in full or in part.	<p>Top filing attaches as a selection, and the land is segregated from entry. Conveyance, assumed to occur within 10 years a Secretarial revocation decision. Once conveyed, then land managed by the State of Alaska.</p> <p>ROWs and other non-mining authorizations could be authorized with concurrence from the State of Alaska on State-selected lands. Management prescriptions of existing RMPs would apply to these ROWs.</p> <p>If State of Alaska top filed lands are ANCSA selected, then the land would either be conveyed to the ANC and managed by them, or, if the ANC relinquishes the land, it would be conveyed to and managed by the State.</p> <p>Partial revocations (Alternatives B or C) would result in lands not otherwise being available for entry. Full revocation (Alternative D) would result in lands being available for entry.</p>	Land becomes segregated until conveyed, then managed by the State of Alaska.	Land becomes unavailable for Federal subsistence priority.
State top filed Priority 3 and 4	The Secretary revokes the ANCSA 17(d)(1) withdrawal.	<p>For purpose of analysis, it is assumed conveyance to the State would not occur on Priority 3 and 4 lands due to overselection. The State of Alaska is unlikely to have adequate remaining entitlement to request these acres once the Priority 1 and 2 selections are conveyed. Therefore, the analysis assumes Priority 3 and 4 top files on lands that are not otherwise encumbered that become effective selections would be relinquished or rejected.</p> <p>If lands are also ANCSA selected, then the ANC could relinquish, reject, or retain its selection. If an ANC retains its selection and they are not overselected, it is assumed conveyance to the ANC could occur within 10 years after the ROD.</p> <p>However, if the ANC selection is relinquished or rejected, top filing attaches as a selection when the land becomes available, and the land is segregated from entry.</p>	Land becomes segregated until selection is rejected or relinquished, then the land becomes open to mineral entry if the withdrawal is revoked in full or remains closed if revoked in part.	<p>Top filed Priority 3 and 4 lands, not otherwise encumbered, would become effective selections and the land would be removed from Federal subsistence priority until the Priority 3 and 4 top files are relinquished or rejected, at which time lands would become available for Federal subsistence priority.</p> <p>If lands are encumbered by an ANC selection, it remains unavailable for Federal subsistence priority due to the ANC selection. If ANC selection is rejected or relinquished and lands are not otherwise encumbered, State top file becomes effective selection and lands remain segregated and unavailable for Federal subsistence priority until the Priority 3 and 4 top files are relinquished or rejected, at which time lands would become available for Federal subsistence priority.</p>

3.1.1.2 Reasonably Foreseeable Development Scenario

The act of revoking 17(d)(1) withdrawals would not cause any direct, specific measurable impacts to resources under Alternative B, C, or D. No development plans have been submitted, and no stipulations are attached to selected lands that would prevent any specific development from taking place. (The terms and conditions contained in the existing land use plans would apply, as applicable, to any proposed development on lands where the Secretary revokes the 17(d)(1) withdrawals and the land stays in BLM management.) Therefore, impacts to resources are analyzed through assumptions regarding types and levels of development, as described in the RFD scenario (see EIS Appendix D) and summarized below.

The RFD scenario identifies and quantifies potential development activity in the decision area, including the extraction of leasable, locatable, and salable minerals, as well as the establishment of associated ROWs, assuming the land is not withdrawn from availability for such activities. The RFD scenario is a projection of reasonably foreseeable activity for a defined area and period that is used for analysis purposes; an RFD scenario is not a plan of development nor a guarantee of development. It is a projection of potential activity based on best available data at the time of writing to allow the analysis of possible impacts, in compliance with NEPA.

For all categories of development described in the RFD scenario, the analysis assumes that the likelihood of both exploration and development becomes lower with distance from the existing road system, railbelt, freshwater barge routes, and ports due to the cost to construct and maintain access to a potential development site. For example, a site with high mineral potential and connectivity to the road system, ports, or the railway system would have a higher likelihood of development than a site with high mineral potential that lacked reasonable access.

Mining claims and existing mining activities were also used as an indicator of mineral development potential and future mineral activity. Therefore, the RFD scenario summarizes the known and presumed activity in each planning area. The BLM used this information, combined with access considerations, to identify areas more likely to be developed for leasable, locatable, and salable minerals on lands currently subject to ANCSA 17(d)(1) withdrawals.

Because the RFD scenario is a projection of reasonably foreseeable activity for the decision area, it was used to identify areas more likely to be developed in areas *that are not already open to mineral entry*. Chapter 3 of the EIS also focuses on areas more likely to be developed that are not already open to mineral entry and that do not have State Priority 1 or 2 effective selections, i.e., areas that have the greatest potential for a change in status should the Secretary revoke the 17(d)(1) withdrawals in whole or part as described in the various action alternatives. Areas that are currently open to mineral entry are considered in the cumulative impacts analysis.

3.1.1.3 Analysis Areas

The EIS uses analysis areas to describe effects to resources or topics analyzed in detail in Chapter 3. An *analysis area* is specific to the resource being analyzed and is generally the area in which effects from 17(d)(1) revocations could occur and is sufficiently broad to provide some context for the description of the affected environment and the uniqueness of the resource on the landscape.

The RFD describes areas with high mineral potential and identifies which of these areas are more likely to be developed based on proximity to existing access or infrastructure. The EIS highlights these lands as the ones more likely to be impacted by development, should the Secretary revoke the 17(d)(1) withdrawals in relevant part.

The EIS also identifies the areas that are more likely to be conveyed due to revocation of 17(d)(1) withdrawals, termed *priority conveyances*. *Priority conveyances* are Priority 1 and 2 State top filings on lands that would become available should the Secretary revoke the 17(d)(1) withdrawals. Current effective selections are not affected by Secretarial decision-making for this project because they could be conveyed regardless of the Secretarial decision, and thus are not included as lands likely to be conveyed due to a revocation. Priority conveyances are highlighted because once the State receives these lands, Federal land management and BLM regulatory protections would not apply.

Should the Secretary revoke the 17(d)(1) withdrawals, the greatest impacts to the quality of the human environment from future development can be expected to occur where an area is both more likely to be conveyed out of Federal ownership and more likely to be developed (for leasable or locatable mineral materials). For most resources, the EIS highlights 1) the number of acres where this development is more likely to occur, and 2) the number of acres that are more likely to be conveyed, should the Secretary revoke the withdrawals.

Therefore, areas more likely to be developed within the priority conveyances form the *focused analysis area* for most resources analyzed in Chapter 3. The focused analysis area comprises 475,000 acres, or 2 percent of the decision area. The EIS uses focused analysis areas to highlight where effects are most likely to occur within the 28 million acres analyzed if the 17(d)(1) withdrawals are revoked as described in Alternative B, C, or D.

3.1.1.4 Calculations

As described in Section 2.1, Alternative Development Process, in some areas, State top filings fall on top of lands already encumbered. Should the Secretary revoke the 17(d)(1) withdrawals to the extent set forth under Alternative B, C, or D, and the lands already are encumbered, the top filing would not fall into place, and the land could not be conveyed to the State. However, if the encumbrance is an ANCSA selection, the ANC may choose to relinquish its selection (most ANCs are also overselected), thereby allowing the State top filing to fall into place and the land to be conveyed. Because the BLM cannot predict where this would occur, the EIS analysis does not address the potential for an encumbrance to be relinquished or rejected, allowing a top filing to fall into place in the future. Accordingly, the EIS discloses the maximum total acreage that could be conveyed if the Secretary should revoke the 17(d)(1) withdrawals as described under Alternative B, C, or D, which is likely an overestimate of the actual conveyance. Some of the withdrawals in the decision area have other encumbrances (such as ANCSA selections, withdrawals reserving land for other Federal agencies, Alaska Native veterans allotment selections under the Dingell Act, or active mining claims) that would prevent top filings from becoming effective selections and thus reduce the acres that could be conveyed to the State. The total acreages of encumbrances on 17(d)(1) withdrawals in each planning area are summarized in Table 1.2-2.

Throughout the EIS, calculations are rounded to the nearest thousand acres where appropriate. Throughout Chapter 3, tables are used to summarize the impacts. Table 3.1-4 explains the intent of each column in these tables.

Table 3.1-4. Explanation of Example Resource Analysis Table

Analysis Area (acres)	Acres of (resource) in Analysis Area	Acres of (resource) where 17(d)(1) Withdrawal Would be Revoked	Acres of (resource) where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of (resource) where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of (resource) where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Analysis areas differ by resource and are described at the beginning of each resource section.	Acres of the resource present within the analysis area.	Represents acres of the resource on 17(d)(1) withdrawals that are revoked.	Represents acres of the resource on areas more likely to be conveyed should the Secretary revoke the 17(d)(1) withdrawals.	Represents acres of the resource on areas more likely to be developed should the Secretary revoke the 17(d)(1) withdrawals.	Represents those areas where the highest impacts are likely to occur because they are both likely to be conveyed and more likely to be developed should the Secretary revoke the 17(d)(1) withdrawals.

3.1.1.5 Types of Development that Could Occur on Lands Where Withdrawals are Revoked

The impact analysis assumes that in areas more likely to be developed (as defined in the RFD scenario), various types of development could occur after lands are conveyed (e.g., mining, minerals extraction, ROWs, and recreation). Any type of development could include construction or expansion of infrastructure that may include roads, trails, pipelines, buildings or structures, increased traffic, off-highway vehicle (OHV) use, increased human noise and activity, the potential for air and dust emissions, and water withdrawals or wastewater discharge. For the impact analysis, the term *development* refers to changes to the land due to the installation of infrastructure or associated activities listed above. The impact analysis also assumes that impacts from development on Federal land may be less than those on State or ANC land because Federal land management stipulations are typically more stringent than State guidelines.

The analysis recognizes impacts can occur even when there is a low likelihood of development if a very large amount of land is opened. Therefore, the analysis assumes some development would occur within the Federally managed lands if the Secretary revokes the 17(d)(1) withdrawals for the full 27,735,000 million acres.

Impacts from mineral extraction include development or upgrading of roads, pipelines, buildings and structures, increased traffic, human noise and activity, habitat degradation, and the potential for air and dust emissions. These impacts vary by resource and are therefore discussed under each issue statement.

3.1.1.6 Native Allotments Selected Under the Dingell Act

As described in BLM's *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment* (2022a), the BLM assumed that the level of development expected to occur on lands conveyed as Alaska Native allotments pursuant to the Dingell Act would be very low, and that allotments would be used predominantly for personal use and subsistence harvesting. Generally, activities on lands used for personal use and subsistence harvesting would be limited to clearing land, building a cabin, or developing a camping area. Allotments located adjacent to a road system or near an area with existing development would have a higher likelihood of increased development. Allotments located within cities or villages are more likely to be subdivided, with multiple houses built on each allotment. Some allotments located near a city or village may be developed for sand or gravel materials. Sand and gravel development is unlikely in remote locations due to the lack of access or proximity to demand. All other mineral rights, except sand and gravel, would remain reserved to the United States and therefore could not be developed without additional environmental review. A review of 163 randomly selected allotments in BLM records found that only 25 allotments (15.3 percent) conveyed under past Alaska Native allotment laws contained any evidence of human use. This review showed that, despite the evidence of human use on some allotments, 99.9 percent of the total acreage was unaltered. There could be up to approximately 817,000 acres opened to selection by Alaska Native Vietnam-era veterans under the Dingell Act via this EIS; these are areas that have previously been closed to selection due to their cultural importance (e.g., Alaska Heritage Resources Survey [AHRS] sites, approved 14(h)1 sites, and rejected 14(h)1 sites).

3.1.1.7 Temporal Scale of Impacts

Unless otherwise noted, all impacts are assumed to be long term (more than 20 years). The process for developing and implementing mineral extraction can take several years, and exploration of some areas may not begin immediately after the BLM conveys land where a withdrawal was revoked. Furthermore, conveyance of lands where a withdrawal was revoked could take up to 10 years. Therefore, impacts are considered on a long-term scale for each resource and issue described in this EIS.

3.1.1.8 Tiering to NEPA Analysis for Resource Management Plans and Other Decisions

As described in Section 1.5, Relationship to Statutes, Regulations, and Other NEPA Documents, this EIS tiers to the NEPA analysis supporting the BLM RMP for each planning area. This analysis assumes that where the 17(d)(1) withdrawals are revoked but the land is not selected, the land would be managed according to the appropriate RMP, and the BLM would implement the regional operating procedures and stipulations applicable to each planning area. Additionally, this EIS tiers to the BLM’s *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program (2022a)* regarding effects expected to occur on lands conveyed as Alaska Native allotments.

3.1.2 Past or Present Actions

Past or present actions are those that have occurred in the past or are occurring in the present, respectively. Actions that have or are occurring in the analysis area for each resource area are considered in the description of the affected environment for all resources analyzed in Chapter 3. These are summarized by planning area at a broad scale in Table 3.1-5 and in Figures 3.1-1 through 3.1-5.

Table 3.1-5. Past and Present Actions by Planning Area

Planning Area	Past and Present Actions
Bay	Village and community infrastructure Limited and disconnected road system Small freshwater and marine ports ANCSA and Alaska Statehood Act conveyances Isolated areas of legacy mine contamination
Bering Sea- Western Interior	Village and community infrastructure Limited and disconnected road system Small freshwater and marine ports ANCSA and Alaska Statehood Act conveyances Isolated areas of legacy mine contamination
East Alaska	Village and community infrastructure Main road system connected to other planning areas and to Canada and the continental United States Trans-Alaska Pipeline System Major utility ROWs along road system (fiber optic, electrical, gas, etc.) Small to moderate-sized marine ports ANCSA and Alaska Statehood Act conveyances
Kobuk-Seward Peninsula	Village and community infrastructure Limited and disconnected road system Small to moderate-sized marine ports Existing large-scale mining ANCSA and Alaska Statehood Act conveyances Isolated areas of legacy mine contamination

Planning Area	Past and Present Actions
Ring of Fire	City and community infrastructure Major marine ports Main road system connected to other planning areas and to Canada and the continental United States Major utility ROWs along road system (fiber optic, electrical, gas, etc.) Rail system Oil and gas development ANCSA and Alaska Statehood Act conveyances

3.1.3 Reasonably Foreseeable Trends and Planned Actions

Reasonably foreseeable trends are existing trends that are likely to continue. Planned actions are those that have existing decisions, funding, or formal proposals or are highly probable. The BLM considers reasonably foreseeable trends and planned actions when they would affect resources of concern within the geographic scope and the timeframe of the analysis (40 CFR 1502.15). Reasonably foreseeable trends and planned actions are considered in the affected environment and cumulative impacts analysis for each resource. The cumulative impacts analysis considers impacts of a proposed action and its alternatives that may not be consequential when considered individually, but when combined with impacts of other actions, may be consequential (Council on Environmental Quality 1997). Cumulative impacts are impacts “on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency . . . or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.1[g][3]).

The cumulative impacts analysis assesses if the impacts of the project, together with other past, present, and reasonably foreseeable actions (RFAs), have the potential to accumulate over time and space, either through repetition or combination with other impacts, and what the effects of that accumulation would be. Table 3.1-6 lists the reasonably foreseeable or planned actions in the decision area; these actions are displayed by planning area at a broad scale in Figures 3.1-6 through 3.1-10.

Table 3.1-6. Reasonably Foreseeable or Planned Actions in or Near the Decision Area

Type of Project	Project Name	Description	Planning Area	Size of Project (if known)
Communication infrastructure	OTZ Microwave Tower Broadband Project	OTZ Telephone Cooperative proposes six microwave tower communication sites on BLM-managed lands to provide broadband from Kotzebue to Coldfoot.	Kobuk-Seward Peninsula	Unknown
Communication infrastructure	GCI Fiber Optic	Stakeholders are currently deciding between two options: broadband satellites or fiber-optic cables from Dillingham to Bethel.	Bay and Bering Sea-Western Interior	Depends on option pursued
Communication infrastructure	AT&T Fiber Optic Line Reroute near Hogan Hill	Reroute of the existing buried AT&T fiber-optic cable from Mile 160 to Mile 163 Richardson highway due to Alaska Department of Transportation and Public Facilities road construction.	East Alaska	Corridor: Approximately 15 feet wide and 2.6 miles long
Communication infrastructure	State of Alaska Tsina Communication Site power/fiber line installation	Alaska Public Safety Communication Services has applied for a ROW for the installation of an electric power cable and a fiber-optic cable from the Richardson Highway to the existing Tsina Communication site.	East Alaska	Corridor: Approximately 20 feet wide, 2.2 miles long corridor, and 5.4 acres total
Contaminant cleanup	Contamination on ANCSA Conveyed Lands	Congress appropriated \$20 million in 2023 for the U.S. Environmental Protection Agency to establish and implement a grant program to assist Alaska Tribal entities with addressing contamination on ANCSA lands that were contaminated at the time of conveyance.	All	Varies
Land management	Exxon Valdez Oil Spill Conservation Easement: Bookey	The BLM is working to acquire a private parcel of land as a conservation easement to advance the restoration objectives of the with Exxon Valdez Oil Spill Trustee Council by providing permanent protection for important habitat for populations and resources that were injured by the Exxon Valdez Oil Spill.	Ring of Fire	Unavailable
Land management and conveyance	Central Yukon Resource Management Plan Update	The BLM is assessing revocation of 17(d)(1) withdrawals in the Central Yukon planning area. (For purposes of this analysis only and in order to capture the largest potential impacts, this action is included as reasonably foreseeable. However, withdrawal decisions are reserved for the Secretary, not the BLM.)	Central Yukon	Up to approximately 11.2 million acres
Land management and conveyance	State of Alaska Proposal	The BLM has received a proposal from the State of Alaska to consider revocation of some withdrawals within the lands described in PLO 5150.	Central Yukon	Unknown
Land management and conveyance	Conveyance of ANCSA and Statehood Act Effective Selections	Effective selections on lands managed by the BLM will be conveyed to the State and ANCs. This will change management of those parcels and could lead to their development.	All	Varies
Land management and conveyance	Alaska Native Allotment Selection under the Dingell Act	Individuals may select parcels of up to 160 acres as an Alaska Native allotment from any available land in Alaska. The BLM predicts there are roughly 3,000 individuals eligible to select land under this program. The United States retains the mineral interests in any lands conveyed under this program.	All	Individually up to 160 acres; collectively up to 400,000 acres throughout Alaska
Mining	Red Devil Mine Cleanup	The mine closed in 1971 and has since undergone 40 years of testing and remediation. The final feasibility study for cleanup was released in 2020. The majority of the tailings and waste rock are situated in the main processing area located approximately 1,000 feet from the Kuskokwim River.	Kobuk-Seward Peninsula	12-acre main processing area

Type of Project	Project Name	Description	Planning Area	Size of Project (if known)
Mining	Tulsequah Chief Mine, Salt Chuck Mine, Ross Adams Mine, and Kennecott Mines and Mill Town Site Clean up	Cleanup and restoration of these site are in progress and will continue. Most sites are south of Juneau.	Ring of Fire	Varies
Mining	Donlin Gold Project	A permitted open pit gold mine at an undeveloped gold deposit in Southwest Alaska. A natural gas pipeline is proposed as the energy source for the mine (separate RFA). The project will also include a fiber-optic line, barging on the Kuskokwim River to Bethel, and a 30-mile road from the Jungjuk Port on the Kuskokwim River to the mine site.	Bay, Bering Sea-Western Interior	16,300 acres proposed mine and related facilities
Mining	Manh Choh Mine (traffic and bridgework)	Ore from the permitted new Manh Choh Mine (expected to begin production in 2024) will be trucked to the existing mill at Fort Knox to be processed.	East Alaska	Transport route: approximately 240 miles one way
Mining	Red Dog Expansion	The current Red Dog Mine is expected to continue operating until 2031. A permitted advanced exploration program will expand into adjacent prospects called Aktigiruaq and Anarraaq.	Kobuk-Seward Peninsula	13 miles of roads, 16 acres of ground disturbance
Mining	Nome Offshore Placer Deposits Continued exploration	The Nome Offshore placer area extends from Present Beach offshore for 2 miles to water depths of approximately 60 feet. It extends approximately 10 miles parallel to the modern strandline, commencing west of the mouth of Nome River and continuing westward to the vicinity of Penny River.	Kobuk-Seward Peninsula	20 square miles
Mining	Graphite One Mine	Continued exploration and potential development of an open pit mine with a processing plant producing approximately 66,140 tons of graphite concentrate annually in one full production. The manufacturing plant will convert the concentrate into 46,130 tons of coated spherical graphite per year for use in lithium-ion batteries. Graphite One is the biggest flake deposit in the United States; the life of the mine is expected to be 40 years. The preliminary economic assessment has been completed. The mine is proposed on State lands (prior conveyances) adjacent to State top filed lands.	Kobuk-Seward Peninsula	18,080 acres
Mining	Pebble Mine	The Pebble copper-gold-molybdenum-silver deposit is 18 miles northwest of Iliamna in the Bristol Bay region, and would include an 82-mile-long access road. The project is currently the subject of litigation challenging the EPA's 2023 determination prohibiting the discharge of mining waste.	Bay	153 square miles
Mining	Valdez Creek Mining Continued exploration and operation	Valdez Creek Mining District includes 398 mines (comprising 145 occurrences, 173 prospects, and 80 producers).	East Alaska	740 acres
Mining	Ambler Mining District continued exploration	Continued increased exploration in the area is expected (which began following the 2020 approval of the Ambler Road that would provide access to the Ambler Mining District; the Ambler Road ROWs were subsequently suspended in 2022).	Kobuk-Seward Peninsula	Varies; mining district: 3,862 square miles
Mining	Ambler Mining District Development	The Ambler Road, proposed by the Alaska Industrial Development and Export Authority, would access the Ambler Mining District and facilitate the development of four new major mining operations.	Kobuk-Seward Peninsula	Varies

Type of Project	Project Name	Description	Planning Area	Size of Project (if known)
Mining	Palmer Project Advanced Exploration	This copper-zinc-silver-gold-barite prospect is located in the Porcupine Mining District in the Haines Borough. It is connected by road to the community of Klukwan approximately 17 miles to the east and the community Haines approximately 35 miles to the southeast. Phase II, the plan of operations, was published in 2019.	Ring of Fire	Mining claims: approximately 15,965 acres
Oil and gas	Beluga River Unit Gas Well 211-35	Hilcorp Alaska, LLC, has applied for approval of an application for permit to drill for one gas well, Beluga River Unit 211-35, to be drilled on an existing gravel pad, Pad E, with two currently producing gas wells within the Federal unit, Beluga River Unit. No other surface disturbance is proposed.	Ring of Fire	Unavailable
Oil and gas	Donlin Mine Gas Pipeline	The permitted 315-mile-long pipeline would stretch from Cook Inlet to the mine site. The pipeline will supply natural gas to the mine to power its operations.	Ring of Fire, Bering Sea-Western Interior	315 miles
Oil and gas	Continued maintenance on the Trans-Alaska Pipeline System (specifically PLMP 758.9 Staging Area)	Equipment staging area for maintenance on Trans-Alaska Pipeline System.	East Alaska	Varies
Oil and gas	Alaska LNG	Permitted 800-mile liquid natural gas pipeline from the North Slope to Nikiski. Includes a liquification facility at tidewater.	Statewide – north to south	800 miles
Power generation	Susitna Watana Dam	A 700-foot dam in the upper Susitna River Valley would generate up to 619 megawatts of electricity and would create a 42-mile-long reservoir. The Governor of Alaska vetoed the project in 2016, but there has been renewed discussions of restarting construction for the dam. NOAA filed review of studies in 2019.	East Alaska	Surface area of impoundment: 23,488 acres; 750-foot-high dam with a 42-mile long reservoir
Timber harvest	Haines State Forest Timber Sales	Timber harvest and associated road construction and maintenance in the Haines and Klukwan area are in the State's 5-year forest management schedule 2022–2026.	Ring of Fire	1,821 acres and 19 miles of new roads
Transportation	Ambler Road	As proposed by the Alaska Industrial Development and Export Authority, a new 211-mile-long industrial access road along the southern flanks of the Brooks Range would extend west from the Dalton Highway to the south bank of the Ambler River and provide surface transportation to the Ambler Mining District.	Kobuk-Seward Peninsula	211 miles
Transportation	Cape Blossom Road	The permitted 11.2-mile-long road to access a wind farm will include upgrades to adjacent existing roads and a new two-lane gravel road from the wind farm south, crossing at Sadie Creek, to a beach access ramp above the high tide line at Cape Blossom.	Kobuk-Seward Peninsula	11.2 miles
Transportation	Emergency Flood Repairs Richardson Highway	Alaska Department of Transportation and Public Facilities requires emergency authorization of a temporary free use mineral material pit for emergency highway repairs due to flooding. The department would de-water the flooded area and use stockpiled material at an existing mineral material pit referred to as One Mile Pit at Mile 228.4 of the Richardson Highway.	East Alaska	Several portions of the highway between mileposts 209 and 234
Transportation	Shishmaref Relocation Road Planning and Environmental Linkage (PEL) Study	A PEL is currently being drafted to collect new information and consolidate past data to support the development of access to Ear Mountain. The final PEL is anticipated early 2025.	Kobuk-Seward Peninsula	Unavailable

Type of Project	Project Name	Description	Planning Area	Size of Project (if known)
Transportation	Port of Nome Modifications	The permitted modifications would enlarge the Nome harbor, create a new deep-water basin, and dredge to deepen and maintain the basins and associated navigation channels.	Kobuk-Seward Peninsula	Up to 144 acres
Transportation	Maintenance of existing Alaska Department of Transportation and Public Facilities infrastructure statewide	May include roadway or bridge resurfacing, utility upgrades, bridge improvements to existing infrastructure, etc.	All	Varies
Transportation	West Susitna Access Road	A new approximately 100-mile-long road will connect the contiguous highway system to State recreation lands west of the Susitna River. The project will construct a boat launch facility accessing the Susitna River.	Ring of Fire	Approximately 100 miles
Recreation	Jack River Trail Rehabilitation	Trail rehabilitation along the first 2 miles of Jack River Trail, including the installation of trail hardening panels (e.g., Geoblock), drainage and erosion control features, and culvert installation.	East Alaska	Approximately 2 miles
Recreation	Alaska Long Trail	A proposed NST that would extend from Seward to Fairbanks, crossing lands managed by multiple entities (BLM 2023a). Route includes existing trail segments and proposed new segments to complete the throughway.	East Alaska, Ring of Fire	500 miles total, 28 miles on BLM-managed lands
ROW	Moore Right of Way	20-year renewal of an existing ROW across BLM-managed lands to private property via foot, all-terrain vehicle, and snowmachine. 1.2 miles at the beginning and 3 miles at the end of the trail are on BLM-managed lands. The remainder of the access route is located on State land.	East Alaska	Approximately 24 total miles
ROW	Various pending ROWs	Pending ROWs on BLM-managed lands.	All	68,000 acres
Vegetation management	Alphabet Hills Prescribed Burn	In cooperation with the Alaska Department of Natural Resources and the BLM, the Alaska Department of Fish and Game (ADFG) will burn acreage near the Alphabet Hills for wildlife habitat enhancement.	East Alaska	Approximately 53,000 acres
Wildlife management	Wood Bison reintroduction to Innoko Herd	Wild wood bison were collared in 2022 for monitoring, and it was found that adults and calves were surviving well at that time. In all, 40 yearling wood bison were imported into the area from Canada and successfully integrated with the herd. From 2023 on, biologists will continue to monitor the growth of the Lower Innoko and Yukon rivers herd and introduce more individuals into the herd. Numerous bison died during the winter of 2022–2023.	Bering Sea-Western Interior	Lower Innoko and Lower Yukon River area
Wildlife management	Hunt closure, Game Management Unit (GMU) 13	Though it is unknown if the existing temporary hunting closures will remain in place in the future, for the purposes of analysis, the EIS assumes that the existing decline in the Nelchina caribou herd will create continued pressure for the temporary hunt closure to remain in place (or for restrictions for limited harvest) until the herd recovers (assumed to be at least 10 years) (Lieb 1994).	East Alaska	GMU 13

Sources: ADFG (2023); Alaska Department of Natural Resources (2023); Alaska Department of Transportation and Public Facilities (2023a, 2023b); Alaska Division of Forestry (2022); BLM (2012, 2018, 2021a, 2022b, 2023b, 2023c, 2023d, 2023e, 2023f, 2023g); Brehmer (2020); Constantine Mining (2019); The Diggings (2023); Graphite One Inc. (2022); Kincross (2023); MacArthur (2019); Mining Technology (2017); Moran (2023); NOAA (2023); Public Media for Alaska’s Yukon-Kuskokwim Delta (2020); Rosen (2018); Smith (2021); U.S. Army Corps of Engineers (2019); U.S. Geological Survey (2023).

In addition to these RFAs or planned actions, the existing trend of climate change is affecting the entire state and is expected to continue in the future (see Section 3.3, Climate). Observed and projected climate change trends are described in detail in Section 3.3, Climate, and are considered for all resources analyzed in the EIS. Although there are differences in the modeled degree and rate of change, BLM projects some general trends in Alaska (BLM 2021b), as follows:

- There has been an increase in the length of the growing season, with later fall freezes and earlier spring thaws.
- Warmer temperatures and a longer growing season are expected to increase evapotranspiration enough to outweigh a regional increase in precipitation. The most recent 10-year period (2011–2020) was approximately 1 degree Celsius (°C) warmer than any other 10-year period in the twentieth century. Since the 1990s, high temperature records have occurred three times more often than record lows.
- Continued reduction in the extent, thickness, and duration of sea ice. Arctic sea ice is approximately half of the volume observed prior to satellite monitoring in 1979. Since the early 1980s, annual average Arctic sea ice extent has decreased between 3.5 and 4.1 percent per decade, while the annual minimum Arctic sea ice extent in September has decreased between 10.7 and 15.9 percent per decade.
- There has been an increase in the intensity of storms and a significant increase in the number of coastal erosion events (in part due to changes to sea ice)
- Although there is no clear trend in statewide precipitation, most of Alaska has seen an increased frequency of extreme precipitation events.
- Glaciers have continued to melt, with an estimated 75 ± 11 gigaton of ice loss per year from 1994 to 2013.
- Permafrost temperatures between 1978 and 2020 have increased at an average rate of 0.6 degrees Fahrenheit per decade, with permafrost warming more quickly in northern Alaska than in Interior Alaska (EPA 2021).
- There has been an increase in the frequency and severity of wildfires.

3.2 BIRDS AND SPECIAL STATUS BIRD SPECIES

3.2.1 How would revocation of 17(d)(1) withdrawals change available migratory bird habitat?

The analysis area for available migratory bird habitat is high-value bird habitat (defined below) in the five BLM planning areas, including the land subject to the 17(d)(1) withdrawals in the decision area. This analysis area provides additional context for bird habitat that could be impacted by the project (Table 3.2-1, Figures 3.2-1 through 3.2-6).

The temporal scale for impacts to birds would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze this issue:

- Acres of high-value bird habitat (defined below) where the withdrawals would be revoked or revoked in part in the focused analysis area

3.2.1.1 Affected Environment

This analysis defines *high-value bird habitats* as those habitats known to be frequently used for nesting or foraging or hunting during the breeding season, as stopover habitat during migration, or in winter by resident species. High-value bird habitats include all high-functioning wetlands, tussock tundra, shrub tundra, mixed hardwood and deciduous forests, coastal habitats, and floodplains (Alaska Shorebird Group [ASG] 2019; Handel et al. 2021; Kushlan et al. 2002). High-value bird habitats were classified using 131 vegetation types in the LANDFIRE database (LANDFIRE 2022) and are summarized in EIS Appendix E. The qualitative analysis is focused on typical high-value habitats in the planning areas; the analysis is by planning area because habitats and bird species assemblages are more similar within planning areas than between.

Table 3.2-1. Acres of High-Value Bird Habitat by Planning Area

Planning Area	High-Value Bird Habitat (Acres)
Bay	358,000
Bering Sea-Western Interior	4,570,000
East Alaska	435,000
Kobuk-Seward Peninsula	4,526,000
Ring of Fire	72,000
Total	9,961,000

Alaska has records of over 470 species of birds in the State and is the breeding ground for millions of birds. Many of these species occur in the five BLM planning areas, including some rare western Alaska species and Asian accidentals. These birds migrate along the four major North American flyways, as well as the East Asian-Australasian Flyway and the Central Pacific Flyway. During their migration, birds that breed in Alaska reach virtually every state in the United States, as well as Central and South America, Russia, China, Japan, Africa, Australia, New Zealand, and Antarctica (ASG 2019). Recent work by Rosenberg et al. (2019) demonstrated a loss of nearly three billion birds to the North American avifauna since 1970; importantly, this work detailed a nearly 25 percent decrease in birds from Arctic tundra regions of North America and reinforces earlier reports of declines in Arctic breeding birds, particularly shorebirds (Andres et al. 2012; Morrison et al. 2006; Stehn et al. 1993). These declines are due to a host of reasons throughout their annual cycles; however, by definition, the breeding grounds are the only place where populations can be replenished. The breeding grounds in Alaska are highly productive, but they are at risk due to the rapid escalation in impacts from a climate changing at least three times faster in the Arctic than that of most of the globe (Arctic Monitoring and Assessment Programme 2021).

Migratory birds occupy every habitat type in the five planning areas, including riparian, wetland, forest, shrub, and alpine tundra areas. High-value habitats in each planning area are described in Section 3.16, Vegetation, Wetlands, and Special Status Plants. Habitats in the planning areas have limited disturbance and are in a mostly natural and nearly pristine condition given the roadless nature of the areas, difficulty in accessing the areas, and the low number of permitted activities occurring on BLM-managed lands. Because of the diversity of birds occupying the approximately 28-million-acre analysis area, most habitat types are important to at least one bird species (and often for multiple bird species) for either breeding or stopover sites.

Most waterbirds frequent rivers, river outlets, and coastal freshwater or brackish wetlands during migration because these areas are rich in food and are the first areas to become ice-free in spring (Kushlan et al. 2002). Waterbirds breed in a variety of aquatic habitats. Some species use primarily one habitat type

(e.g., common loon [*Gavia immer*] and Pacific loon [*G. pacifica*] prefer large lakes), whereas other species use multiple habitat types (e.g., mallard [*Anas platyrhynchos*] uses lakes, ponds, bogs, rivers, and palustrine wetlands) (Kushlan et al. 2002). Breeding shorebirds in forested regions are generally adapted to use open scrub forests, forest openings in the lowlands (e.g., scrub bogs, graminoid-dominated wetlands), lacustrine waterbodies, gravelly river bar and coastal habitats, and dwarf-scrub habitats in upland and alpine areas, whereas breeding shorebirds in tundra areas are found in all tundra habitat types (ASG 2019). Heavily vegetated wetlands dominated by sedges, grasses, and mosses constitute a small fraction of the total land area in many regions of the circumpolar Arctic but hold a disproportionate richness and abundance of birds. Migratory shorebirds rely heavily on sparsely vegetated coastal beaches and floodplains (ASG 2019).

Landbirds are the largest and most ecologically diverse guild of birds in Alaska and consist of more than 140 species of raptors, grouse, woodpeckers, flycatchers, jays, chickadees, thrushes, warblers, and sparrows (Handel et al. 2021). It is difficult to assign high-quality habitat to this diverse species assemblage that is adapted to many different habitats. However, key coastal forest habitats include low-elevation, medium-sized and large conifer forests of uneven age structure (Handel et al. 2021). Important interior forest habitat includes mature forests of upland and riparian white spruce and mixed white spruce and variable deciduous species. Additionally, certain high-value habitats are particularly sensitive to impacts from development and climate change. The loss of boreal wetlands due to climate change is of particular concern, and all high-functioning wetland habitat types are considered high value to landbirds (Handel et al. 2021).

Reasonably foreseeable or planned actions (see Table 3.1-6) will continue to impact high-value bird habitat. These actions include increases in urban and suburban development, timber and minerals development, oil and gas exploration and development, ROWs, the construction of infrastructure (roads, ports, communities), oil spills and other accidental releases, and recreational activities. These existing actions have altered or removed breeding and migratory habitat, disturbed and displaced birds, increased access for hunters, and increased predator populations, which may decrease adult survival and reproductive success. Development can increase predator populations because of associated anthropogenic food sources in industrial areas (National Research Council 2003); increased perch sites (in areas with limited perch sites) (National Research Council 2003; Stickney et al. 2014); the potential for predators to follow road corridors; and through differing response to anthropogenic disturbance between predators and prey, which can increase the likelihood of predators and prey overlapping (Murphy et al. 2021; Scoyoc et al. 2023). None of the actions are large-scale, nor have they impacted substantial portions of the analysis area. However, the reasonably foreseeable trend of climate change is large-scale and affects the entire analysis area by changing vegetation communities and precipitation levels and timing, as described more below and in Section 3.3, Climate.

Climate change could result in increasingly variable and unpredictable spring conditions, which may result in a mismatch between peak hatch and peak food availability (Saalfeld et al. 2019), an expansion of shrub habitat into tundra habitats (Tape et al. 2012), and changes in hydrology through permafrost melt and drying (Jones et al. 2011; Swanson et al. 2019). Increased precipitation due to a warming climate can result in additional surface water runoff, which would contribute to sediment loading of streams and rivers and can negatively impact nestling survival if heavy rain events occur during sensitive stages of nestling development.

3.2.1.2 Environmental Consequences

3.2.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. Reasonably foreseeable trends and planned actions described in Section 3.2.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact high-value bird habitat.

3.2.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Loss of high-value bird habitat is expected to occur on some of the lands where 17(d)(1) withdrawals are revoked, which may be permanent and potentially unregulated through State or Federal law.

Revoking 17(d)(1) withdrawals on lands not otherwise encumbered would allow State top filed lands to become effective selections; therefore, such Priority 1 and 2 lands would likely be conveyed to the State and opened to various uses, including resource extraction and development of new ROWs. Resource extraction could include a combination of oil and gas exploration and development, coal bed natural gas (CBNG), non-energy leasable minerals (e.g., phosphate, sulfur) mining, salable mineral (e.g., gravel, sand) mining, and locatable mineral (e.g., gold, silver, copper) mining. ROWs may include construction of roads, communications facilities, pipelines, and utility corridors. Where this occurs (which is most likely in the focused analysis area, as described in the RFD in EIS Appendix D), impacts to birds and bird habitat could occur. These impacts are described in more detail below.

Any increased human activity can lead to increased exposure to contaminants from spills or other accidental releases that reach nearby streams or rivers, which can impact both adult survival and reproductive success. The extent of these impacts may be mitigated through permit stipulations and planning efforts.

Birds and their habitats could be impacted by oil and gas exploration activities such as seismic tests, exploratory drilling, land clearing, accidental discharges, gravel roads, work camps, and gravel pads (National Resource Council 2003) if habitat is lost or degraded or if birds are displaced or disturbed. These effects would generally be localized. Seismic survey effects may be short to long term depending on vegetation type, snow conditions, and depth of frozen ground and may impact bird habitat for several years post-disturbance.

Oil and gas development would require construction of gravel roads and pads, bridges, culverts, and processing facilities and development of material sites and water sources resulting in the direct loss of habitat for birds. Birds may be disturbed and displaced by activities associated with oil and gas development. New gravel infrastructure and gravel material sites remove available habitat for birds and would increase surface water runoff, which may lead to increased sedimentation in nearby streams and rivers. This may result in direct breeding or foraging habitat loss and lower reproductive success. Water needed to support drilling and processing would come from nearby waterbodies, which could temporarily decrease the overall volume of water availability and can lead to temporary or seasonal water quality impacts (e.g., reduced dissolved oxygen, Ph, conductivity), which could impact waterbirds if foraging habitat is negatively impacted. Effects from oil and gas development would generally be localized and long term relative to exploration activities. The magnitude of development effects would be dependent upon the location, depth, size, and geology of the project.

CBNG development includes construction and operation of the well site, support sites, access roads, pump stations, and pipelines. Impacts would include direct habitat loss, disturbance from noise, habitat degradation from fugitive dust, and increased predator populations, resulting in reduced survival and lower reproductive success. Effects from CBNG exploration and development would generally be localized and long term. The magnitude of development effects would be dependent upon the location, depth, size, and geology of the project.

Mine development would have adverse effects on birds and bird habitat. Mining for gold and other hard-rock minerals has the potential to result in accidental discharges of chemical solutions (e.g., acids) and heavy metals into nearby waterbodies with associated negative impacts to birds as well as direct habitat loss, disturbance from noise, habitat degradation from fugitive dust, and increased predator populations. Placer mining removes and sorts material from streambeds and thus has the potential to impact bird habitat by directly affecting riparian function because many bird species rely on riparian areas for foraging and breeding habitat. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

ROWs expected to be granted because of development following a revocation would generally be for communication sites, utility corridors, and to access mining claims and mineral leases. Effects to birds could result from clearing and grubbing vegetation to construct corridors resulting in habitat loss, disturbance, and increased predator populations, resulting in reduced survival and lower reproductive success. It is anticipated that any road projects that might be proposed for crossing project lands following revocation of the withdrawals would be local in scale, and adverse effects would not extend to the regional level, though the impacts would be long term.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM 2022) and would result in minimal impacts to bird habitat.

3.2.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals to the north and east of Kotzebue would be retained specifically to avoid conflict with high densities of nesting yellow-billed loons (*Gavia adamsii*). There would be no direct or indirect impacts on high-value bird habitat for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how high-value bird habitat is managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.2.1.2.2, Impacts Common to All Action Alternatives. Table 3.2-2 summarizes the total acres of high-value bird habitat on lands where the 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area.

Table 3.2-2. Summary of Impacts to High-Value Bird Habitat where 17(d)(1) Withdrawals Would be Revoked under Alternative B

Planning Area	Acres of Habitat in Analysis Area	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*,†	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	358,000	6,000	< 1,000	0	0
Bering Sea-Western Interior	4,570,000	33,000	12,000	0	0
East Alaska	435,000	60,000	< 1,000	< 1,000	< 1,000
Kobuk-Seward Peninsula	4,526,000	64,000	3,000	0	0
Ring of Fire	72,000	11,000	2,000	0	0
Total	9,961,000	174,000	17,000	< 1,000	< 1,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.2.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on high-value bird habitat for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to high-value bird habitat from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres of high-value bird habitat could be affected in the focused analysis area. Additionally, under Alternative C, 17(d)(1) withdrawals would not be retained specifically to avoid conflict with natural areas as they would for Alternative B. Therefore, top filed lands in areas with yellow-billed loon habitat may be transferred and potentially developed.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to high-value bird habitat. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.2-3 summarizes the high-value bird habitat on lands more likely to be developed under Alternative C.

Table 3.2-3. Summary of Impacts to High-Value Bird Habitat where 17(d)(1) Withdrawals Would be Revoked under Alternative C

Planning Area	Acres of Habitat in Analysis Area	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*†	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	358,000	17,000	< 1,000	< 1,000	0
Bering Sea-Western Interior	4,570,000	701,000	81,000	< 1,000	0
East Alaska	435,000	273,000	42,000	20,000	3,000
Kobuk-Seward Peninsula	4,526,000	740,000	5,000	15,000	1,000
Ring of Fire	72,000	37,000	3,000	4,000	< 1,000
Total	9,961,000	1,768,000	131,000	39,000	4,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.2.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the withdrawals allowing for the disposal of lands and the location of mining claims. Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to high-value bird habitat. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the impacts described in Section 3.2.1.2.2, Impacts Common to All Action Alternatives. The greatest impacts to high-value bird habitat are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.2-4 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to high-value bird habitat as Alternative C but to a larger extent and magnitude because more acres of high-value bird habitat occur on the revocations.

Potential for impacts to high-value bird habitat are greatest under this alternative because the 17(d)(1) withdrawals would revoke the most acres; therefore, there would be more acres likely to be conveyed and more acres likely to be developed under this alternative than under Alternative B or Alternative C.

Table 3.2-4. Summary of Impacts to High-Value Bird Habitat where 17(d)(1) Withdrawals Would be Revoked under Alternative D

Planning Area	Acres of Habitat in Analysis Area	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	358,000	358,000	< 1,000	< 1,000	0
Bering Sea-Western Interior	4,570,000	4,570,000	81,000	2,000	0
East Alaska	435,000	435,000	42,000	20,000	3,000
Kobuk-Seward Peninsula	4,526,000	4,526,000	5,000	27,000	1,000
Ring of Fire	72,000	72,000	3,000	4,000	< 1,000
Total	9,961,000	9,961,000	131,000	53,000	4,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.2.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact high-value bird habitat as described in Section 3.2.1.2.2. Table 3.2-5 summarizes each alternative.

Table 3.2-5. Summary of Potential High-Value Bird Habitat Impacts by Alternative

Planning Area	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Habitat Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of Habitat on 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	174,000	17,000	< 1,000	< 1,000
Alternative C	1,768,000	131,000	39,000	4,000
Alternative D	9,961,000	131,000	53,000	4,000

* Consists of lands more likely to be developed on 1) effective selections, 2) State top filed lands that are not otherwise encumbered and are already open to mineral entry per their existing PLO, and 3) 17(d)(1) withdrawals that are not selected and are already open to mineral entry per their existing PLO.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.2.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect bird habitat in ways similar to those described in Section 3.2.1.2.2.

The continued trend of climate change is anticipated to exacerbate many of the effects on bird habitat in the analysis area, and this would occur under all alternatives. For example, the effects of water withdrawals from lakes and rivers for industrial uses or development activity may be intensified by climate change because water quantity and overall water quality are altered by the changing climate. Lower water levels in lakes could mean less water or shoreline nesting habitat available to birds. Loss and degradation of bird breeding and foraging habitat through the reasonably foreseeable or planned actions listed in Table 3.1-6 and described in Section 3.2.1.2.2 could lead to decreased breeding success for some bird species. Additionally, revocation of the 17(d)(1) withdrawals may further exacerbate habitat fragmentation occurring through climate change, development on land from past and future conveyances to the State and ANCs, and other reasonably foreseeable trends and planned actions. Habitat fragmentation degrades habitat for birds by reducing habitat into patches that can be too small, too isolated, and too influenced by edge effects to provide adequate habitat for birds. Habitat fragmentation can also lead to changes in biodiversity and functional diversity. Impacts to birds in Alaska would contribute to declines caused by impacts across their range. Issues faced by migratory birds throughout their lives and during their full annual cycle, including cumulative impacts, inform strategies for managing species' declines (Rosenburg et al. 2016).

3.2.2 How would revocation of 17(d)(1) withdrawals affect BLM special status bird species and Endangered Species Act bird species?

The analysis area for BLM special status bird species is the BLM special status bird guild habitats in the five planning areas, including the 17(d)(1) withdrawals in the decision area (these habitats are described below). This analysis area provides additional context for BLM special status bird species that could be impacted by the project (see Table 3.2-1, Figures 3.2-1 through 3.2-11, and Figures E-1 through E-25 in EIS Appendix E).

The temporal scale for impacts to birds would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze this issue:

- Acres of high-value habitat for BLM special status bird species grouped by guild (seabirds, raptors, shorebirds, waterbirds, and landbirds; defined below) on lands where the 17(d)(1) withdrawals would be revoked in the focused analysis area

3.2.2.1 Affected Environment

BLM special status bird species and Federally listed endangered and threatened bird species listed under the ESA may use 17(d)(1) withdrawals. Although ESA species have Federal protections through the ESA, BLM special status bird species only have special status on BLM-managed lands. The BLM designates special status species as either *sensitive* species or *watchlist* species (BLM 2019). BLM special status species must be native species that use BLM-managed land and for which the BLM has significant management capability to affect their conservation status. BLM special status species must also meet at least one of the following two criteria: 1) there is information that a species is known or predicted to undergo a downward trend such that viability of the species or a distinct population segment of the species is at risk across all or a significant portion of its range, or 2) the species depends on ecological refugia, specialized habitats or unique habitats, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk (BLM 2019). BLM watchlist species are species that were candidates for “sensitive” and did not warrant inclusion but are recorded to document that process, raise awareness, and retain them for the next BLM special status

species list review process. This analysis includes both sensitive and watchlist species as BLM special status species. All ESA species are also included on the BLM special status species list.

Three ESA bird species may use 17(d)(1) withdrawals in the decision area in the Kobuk-Seward Peninsula, Bering Sea-Western Interior, and Bay planning areas: spectacled eider (*Somateria fischeri*), Steller’s eider (*Polysticta stelleri*) and Eskimo curlew (*Numenius borealis*).

Historically, spectacled eiders, an ESA threatened species, nested discontinuously along the coast of Alaska from the Nushagak Peninsula on Bristol Bay to Utqiagvik (Barrow) and eastward nearly to the Yukon border on the Arctic Coastal Plain. Today, spectacled eiders’ breeding distribution is only on the Yukon-Kuskokwim Delta, and on the north coast of Alaska, but they do not breed within the 17(d)(1) withdrawals based on current knowledge of the species (Petersen et al. 2020). Spectacled eiders migrate between winter and breeding grounds following coastal and offshore migration corridors through the Bering and Chukchi seas to offshore wintering areas. Molting areas include the eastern portion of Norton Sound and Ledyard Bay, between Cape Lisburne and Point Lay. Their primary wintering areas are in the central Bering Sea south and southwest of St. Lawrence Island (USFWS 2002). Spectacled eiders do not migrate, breed, or molt within the analysis area. The Steller’s eider may use 17(d)(1) withdrawals in the Kobuk-Seward Peninsula planning area as a migrant while traveling between wintering and breeding areas (USFWS 2002). The Steller’s eider Alaska breeding population is listed as threatened (57 FR 19852, May 8, 1992). Their current breeding distribution includes the Arctic coastal regions of northern Alaska from Wainwright to Prudhoe Bay (up to 56 miles inland), and Arctic coastal regions of Russia (57 FR 19852, May 8, 1992). Historically, Steller’s eider was a common breeder in the Yukon-Kuskokwim Delta but now occurs there in low densities (USFWS 2002). Their preferred nesting habitat includes inland tundra ponds of various sizes. The USFWS developed a recovery plan for the species (USFWS 2002) and revised the plan in 2021 (86 FR 32968, June 23, 2021). Critical habitat is designated for spectacled eider (66 FR 9146, February 6, 2001) and Steller’s eider (66 FR 8850, February 2, 2001), but these critical habitats are marine habitats and would not be impacted by the project.

The Eskimo curlew has not been seen in Alaska since the mid-1800s. Critical habitat has not been designated for the species.

There are 27 BLM special status species that may use 17(d)(1) withdrawals in one or more of the five BLM planning areas (Table 3.2-6).

Table 3.2-6. Bureau of Land Management Special Status Species by Guild

Guild and Common Name	Scientific Name
Raptors	
Short-eared owl	<i>Asio flammeus</i>
Golden eagle	<i>Aquila chrysaetos</i>
Gyrfalcon	<i>Falco rusticolus</i>
Seabirds	
Kittlitz’s murrelet	<i>Brachyramphus brevirostris</i>
Aleutian tern	<i>Onychoprion aleuticus</i>
Shorebirds	
Dunlin	<i>Calidris alpina articola</i>
Red knot	<i>Calidris canutus roselaari</i>
Bering Sea rock sandpiper	<i>Calidris ptilocnemis ptilocnemis</i>

Guild and Common Name	Scientific Name
Hudsonian godwit	<i>Limosa haemastica</i>
Bar-tailed godwit	<i>Limosa lapponica</i>
Whimbrel	<i>Numenius phaeopus rufiventris</i>
Bristle-thighed curlew	<i>Numenius tahitiensis</i>
American golden-plover	<i>Pluvialis dominica</i>
Waterbirds	
Dusky Canada goose	<i>Branta canadensis occidentalis</i>
Emperor goose	<i>Chen canagica</i>
Spectacled eider	<i>Somateria fischeri</i>
Steller's eider	<i>Polysticta stelleri</i>
Yellow-billed loon	<i>Gavia adamsii</i>
Red-throated loon	<i>Gavia stellata</i>
Trumpeter swan	<i>Cygnus buccinator</i>
Landbirds	
Bank swallow	<i>Riparia riparia</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Rusty blackbird	<i>Euphagus carolinus</i>
Townsend's warbler	<i>Setophaga townsendi</i>
Gray-headed chickadee	<i>Poecile cinctus lathamii</i>
Rufous hummingbird	<i>Selasphorus rufus</i>
Blackpoll warbler	<i>Setophaga striata</i>
McKay's bunting	<i>Plectrophenax hyperboreus</i>

The BLM has significant management capability to affect the conservation status of BLM special status species; the BLM refers to their special status species list for planning purposes to avoid and minimize potential negative impacts of any proposed projects on special status species on BLM-managed lands with the goal of preventing the need to list these species under the ESA. They also publicize the list to raise awareness of rare and under-surveyed species and to prompt BLM staff to collect more data, which helps better understand the status and distribution of the species. Any BLM special status bird species not also listed under the ESA does not have any special management directed at improving their population trajectories if they occur on lands not managed by the BLM, though some other agencies also have their own management directives. Therefore, any BLM special status species occurring on lands currently managed by the BLM, would lose the benefits of BLM special status species planning if the land is conveyed out of BLM management.

High-value bird habitats for BLM special status bird species include the following by guild:

- Raptor species: All vegetation classes that indicate open country, rocky outcrops, cliffs, and steep slopes (Booms et al. 2020; Katzner et al. 2020; Wiggins et al. 2020)
- Seabird species: Coastal beaches, tundra, and meadows in subarctic and boreal areas and high elevation, low vegetation classes (Day et al. 2020; North 2020)
- Shorebird species: A variety of coastal meadows and beaches, Arctic and subarctic tundra, alpine tundra, grassland, and riparian vegetation classes (Baker et al. 2020; Gill et al 2020; Johnson et al.

2021; Marks et al. 2020; McCaffery and Gill 2020; Skeel and Mallory 2020; Walker et al. 2020; Warnock and Gill 2020)

- Waterbird species (geese, eiders, loons, and swans): Vegetation classes that indicate beach and coastal meadows, Arctic tundra, tidal salt and brackish marsh, and intertidal flat (Frederickson 2020; Mitchell and Eichholz 2020; Mowbray et al. 2020; Petersen et al. 2020; Rizzolo et al. 2020; Schmutz et al. 2020; Uher-Koch et al. 2020)
- Landbird species: Agriculture, conifer classes, grassland, alpine shrubland, dry bluffs, shrub swamps and bogs, floodplains, and riparian vegetation classes (Billerman et al. 2022)

High-value bird habitats were classified using 131 vegetation types in the LANDFIRE database. The qualitative analysis is focused on typical high-value habitats in the planning areas. Reasonably foreseeable trends and planned actions and their impacts on BLM special status species and ESA-listed species are the same as those described in Section 3.2.1.1.

3.2.2.2 Environmental Consequences

3.2.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.2.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact special status and ESA bird species.

3.2.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Management of ESA bird species would be the same for lands that are retained in Federal ownership. Any activities on Federal land that could impact ESA species would require consultation under Section 7 of the ESA. For lands that are conveyed out of Federal ownership, ESA consultation would only be required for projects that have a Federal nexus. Therefore, protection for ESA bird species would be reduced for lands conveyed out of Federal ownership compared to those retained in Federal ownership. Lands where the 17(d)(1) withdrawals are revoked and that are conveyed to the State would result in a loss of BLM management for BLM special status species. In such instances, increased development may occur, including resource extraction and development of new ROWs, especially in the focused analysis area. Resource extraction could include a combination of oil and gas exploration and development, CBNG, non-energy leasable minerals (e.g., phosphate, sulfur) mining, salable mineral (e.g., gravel, sand) mining, and locatable mineral (e.g., gold, silver, copper) mining. ROWs may include the construction of roads, communications facilities, pipelines, and utility corridors. Where these activities occur (as described in the RFD in EIS Appendix D), impacts to BLM special status bird species' habitat would be similar to those described for high-value bird habitat in Section 3.2.1.2.2, Impacts Common to All Action Alternatives. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.2.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or

proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals to the north and east of Kotzebue would be retained specifically to avoid conflict with high densities of nesting yellow-billed loons. There would be no direct or indirect impacts on special status bird species for lands that remain withdrawn under 17(d)(1) under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how special status bird species are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.2.2.2.2, Impacts Common to All Action Alternatives. Table 3.2-7 summarizes the total acres of special status bird habitat by guild on lands where the 17(d)(1) withdrawal would be revoked under Alternative B in the focused analysis area. The focused analysis area is the area more likely to be conveyed out of Federal ownership and developed, as described in Section 3.1.

3.2.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on special status bird species for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to special status bird species from the resulting development would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of special status bird species habitat could be affected (Table 3.2-8). Additionally, 17(d)(1) withdrawals would not be retained specifically to avoid conflict with bird habitat as they would for Alternative B (such as avoiding high densities of nesting yellow-billed loons).

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to high-value bird habitat. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.2.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the withdrawals allowing for the disposal of lands and the location of mining claims. Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to special status birds. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.2.2.2.2, Impacts Common to All Action Alternatives. The greatest impacts to special status birds are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.2-9 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to special status birds as Alternative C but to a larger extent and magnitude because more acres of special status birds occur on the revocations.

Potential for impacts to special status birds is greatest under this alternative because revocation of the 17(d)(1) withdrawals would occur over the most acres and would not avoid areas important to birds; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

Table 3.2-7. BLM Special Status Bird Species Habitat Where the 17(d)(1) Withdrawals Would be Revoked in the Focused Analysis Area by Guild under Alternative B

Guild	Bay	Bering Sea-Western Interior	East Alaska	Kobuk-Seward Peninsula	Ring of Fire	Total
Acres of Habitat where 17(d)(1) withdrawals would be revoked						
Raptors	7,000	8,000	41,000	138,000	6,000	200,000
Seabirds	3,000	5,000	24,000	76,000	5,000	113,000
Shorebirds	6,000	8,000	39,000	128,000	5,000	186,000
Waterbirds	4,000	5,000	2,000	70,000	2,000	83,000
Landbirds	4,000	51,000	122,000	4,000	19,000	200,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances						
Raptors	< 1,000	7,000	< 1,000	1,000	3,000	11,000
Seabirds	< 1,000	4,000	< 1,000	1,000	1,000	6,000
Shorebirds	< 1,000	7,000	< 1,000	1,000	2,000	10,000
Waterbirds	< 1,000	4,000	< 1,000	1,000	< 1,000	5,000
Landbirds	< 1,000	17,000	2,000	3,000	5,000	27,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed[†]						
Raptors	0	0	< 1,000	0	0	< 1,000
Seabirds	0	0	< 1,000	0	0	< 1,000
Shorebirds	0	0	< 1,000	0	0	< 1,000
Waterbirds	0	0	< 1,000	0	0	< 1,000
Landbirds	0	0	2,000	0	< 1,000	2,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed						
Raptors	0	0	< 1,000	0	0	< 1,000
Seabirds	0	0	< 1,000	0	0	< 1,000
Shorebirds	0	0	< 1,000	0	0	< 1,000
Waterbirds	0	0	< 1,000	0	0	< 1,000
Landbirds	0	0	2,000	0	< 1,000	2,000

Note: Guild habitat may overlap because some habitats are high value for more than one guild.

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially revoked only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

Table 3.2-8. BLM Special Status Bird Species Habitat Where 17(d)(1) Withdrawals Would be Revoked in the Focused Analysis Area by Guild under Alternative C

Guild	Bay	Bering Sea-Western Interior	East Alaska	Kobuk-Seward Peninsula	Ring of Fire	Total
Acres of Habitat where 17(d)(1) withdrawals would be revoked						
Raptors	13,000	472,000	1,292,000	1,292,000	128,000	3,197,000
Seabirds	14,000	254,000	811,000	712,000	196,000	1,987,000
Shorebirds	21,000	386,000	424,000	970,000	61,000	1,862,000
Waterbirds	6,000	75,000	23,000	521,000	5,000	630,000
Landbirds	22,000	1,082,000	528,000	336,000	71,000	2,039,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances						
Raptors	< 1,000	84,000	173,000	29,000	3,000	289,000
Seabirds	< 1,000	26,000	148,000	26,000	1,000	201,000
Shorebirds	< 1,000	57,000	98,000	12,000	2,000	169,000
Waterbirds	< 1,000	32,000	2,000	3,000	< 1,000	37,000
Landbirds	< 1,000	36,000	75,000	4,000	7,000	122,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed[†]						
Raptors	< 1,000	< 1,000	30,000	30,000	1,000	61,000
Seabirds	< 1,000	< 1,000	8,000	15,000	< 1,000	23,000
Shorebirds	< 1,000	< 1,000	10,000	18,000	1,000	29,000
Waterbirds	< 1,000	< 1,000	2,000	8,000	< 1,000	10,000
Landbirds	< 1,000	< 1,000	70,000	5,000	5,000	80,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed						
Raptors	0	0	1,000	4,000	0	5,000
Seabirds	0	0	1,000	2,000	0	3,000
Shorebirds	0	0	1,000	2,000	0	3,000
Waterbirds	0	0	< 1,000	1,000	0	1,000
Landbirds	0	0	19,000	< 1,000	< 1,000	19,000

Note: Guild habitat may overlap because some habitats are high value for more than one guild.

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

Table 3.2-9. BLM Special Status Bird Species Habitat Where the 17(d)(1) Withdrawals Would be Revoked in the Focused Analysis Area by Guild under Alternative D

Guild	Bay	Bering Sea-Western Interior	East Alaska	Kobuk-Seward Peninsula	Ring of Fire	Total
Acres of Habitat where 17(d)(1) withdrawals would be revoked						
Raptors	328,000	3,368,000	1,249,000	6,543,000	394,000	11,882,000
Seabirds	173,000	2,015,000	1,352,000	3,511,000	719,000	7,770,000
Shorebirds	339,000	2,682,000	778,000	5,545,000	159,000	9,503,000
Waterbirds	258,000	596,000	35,000	3,144,000	11,000	4,044,000
Landbirds	269,000	6,347,000	786,000	2,851,000	159,000	10,412,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances						
Raptors	< 1,000	84,000	173,000	29,000	3,000	289,000
Seabirds	< 1,000	26,000	148,000	26,000	1,000	201,000
Shorebirds	< 1,000	57,000	98,000	12,000	2,000	169,000
Waterbirds	< 1,000	32,000	2,000	3,000	< 1,000	37,000
Landbirds	< 1,000	36,000	75,000	4,000	7,000	122,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*						
Raptors	< 1,000	< 1,000	10,000	53,000	1,000	64,000
Seabirds	< 1,000	< 1,000	8,000	27,000	< 1,000	35,000
Shorebirds	< 1,000	< 1,000	10,000	38,000	1,000	49,000
Waterbirds	< 1,000	< 1,000	2,000	21,000	< 1,000	23,000
Landbirds	2,000	2,000	70,000	9,000	5,000	88,000
Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed						
Raptors	0	0	1,000	4,000	0	5,000
Seabirds	0	0	1,000	2,000	0	3,000
Shorebirds	0	0	1,000	2,000	0	3,000
Waterbirds	0	0	< 1,000	< 1,000	0	< 1,000
Landbirds	0	0	19,000	< 1,000	< 1,000	19,000

Note: Guild habitat may overlap because some habitats are high value for more than one guild.

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.2.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact special status bird species as described in Section 3.2.2.2.2. Table 3.2-10 summarizes each alternative.

Table 3.2-10. Summary of Acres Where 17(d)(1) Withdrawals Would be Revoked in the Focused Analysis Area by Bird Guild under each Alternative

Planning Area	Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*, †	Acres of Habitat where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A			
Raptors	0	0	0
Seabirds	0	0	0
Shorebirds	0	0	0
Waterbirds	0	0	0
Landbirds	0	0	0
Alternative B			
Raptors	11,000	< 1,000	< 1,000
Seabirds	6,000	< 1,000	< 1,000
Shorebirds	10,000	< 1,000	< 1,000
Waterbirds	5,000	< 1,000	< 1,000
Landbirds	27,000	2,000	2,000
Alternative C			
Raptors	289,000	61,000	5,000
Seabirds	201,000	23,000	3,000
Shorebirds	169,000	29,000	3,000
Waterbirds	37,000	10,000	1,000
Landbirds	122,000	80,000	19,000
Alternative D			
Raptors	289,000	64,000	5,000
Seabirds	201,000	35,000	3,000
Shorebirds	169,000	49,000	3,000
Waterbirds	37,000	23,000	< 1,000
Landbirds	122,000	88,000	19,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.2.2.2.7 CUMULATIVE IMPACTS

See Section 3.2.1.2.7, Cumulative Impacts, for a discussion of cumulative impacts to bird species. The BLM special status bird species all have declining populations, which makes them more susceptible to changes to their habitat or prey. These species are declining for several reasons, including habitat loss and fragmentation, climate change, changing predator populations, and changing prey populations. Loss of breeding habitat and displacement through land conveyance and development following revocation of 17(d)(1) withdrawals would exacerbate existing impacts to special status bird species.

The reasonably foreseeable and planned actions described in Section 3.1, Introduction and Methodology, in combination with the project would contribute to species decline, although the extent of the impacts would depend on the specific type and location of the activity. Though many of the reasonably foreseeable or planned actions constitute relatively small projects that would not lead to substantial changes in bird habitat, some of the larger projects (e.g., mine development, oil and gas development, port expansion) would contribute to local or even regional impacts to bird habitat that could be compounded when the effects of conveyance or development following revocation of 17(d)(1) withdrawals are added.

3.3 CLIMATE

3.3.1 How would revocation of 17(d)(1) withdrawals affect climate change and greenhouse gas emissions?

Impacts to climate change from project-related development are expected to occur under the action alternatives and are analyzed in detail below. This analysis provides a qualitative discussion about the types of impacts that can occur from such development, but it is not possible to quantify the greenhouse gas (GHG) emissions that could occur. Therefore, to compare alternatives, this analysis relies on the assumption that development of leasable minerals is most likely to impact climate change. Leasable minerals are minerals or materials designated as leasable under the Mineral Leasing Act of 1920 and include energy materials such as oil, gas, and coal, as well as non-energy minerals such as phosphate, potassium, sodium, gilsonite, oil shale, and sulfur. Therefore, the analysis presents the acres more likely to be developed for leasable minerals under each alternative (i.e., this is the indicator for this issue).

The analysis area for climate is the state of Alaska because it represents the primary area where land use change and GHG emissions could occur and recognizes other global effects. GHG emissions related to the production of any fossil fuels that may occur following development or conveyance of lands where the 17(d)(1) withdrawals are revoked could also occur outside the analysis area from construction, transport, processing, distribution, and end-use of fossil fuels.

The temporal scale for impacts to climate change would be long term, as defined in Section 3.1, Introduction and Methodology.

Additional discussion of climate change science and predicted impacts as well as the reasonably foreseeable and cumulative GHG emissions associated with the BLM's oil and gas decisions are included in the *2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate* (BLM 2022). This report presents the estimated emissions of GHGs attributable to fossil fuels produced on lands and mineral estate managed by the BLM, and is incorporated by reference as an integral part of the analysis (BLM 2022).

3.3.1.1 Affected Environment

Climate change is a global process that is affected by the sum of GHGs in the Earth's atmosphere. The incremental contribution to global GHGs from a single proposed land management action cannot be accurately translated into its potential effect on global climate change or any localized effects in the area specific to the action. Currently, global climate models are unable to forecast local or regional effects on resources. However, general projections regarding potential impacts to natural resources and plant and animal species may be attributed to climate change from GHG emissions over time. GHGs influence the global climate by increasing the amount of solar energy retained by land, waterbodies, and the atmosphere. GHGs can have long atmospheric lifetimes, which allow them to become well mixed and uniformly distributed over the entirety of the Earth's surface no matter their point of origin.

The continued increase of anthropogenic GHG emissions over the past 60 years has contributed to global climate change impacts. A discussion of past, current, and projected future climate change impacts is described in Chapters 8 and 9 of BLM (2022). These chapters describe currently observed climate impacts globally, nationally, and in each state, and present a range of projected impact scenarios depending on future GHG emission levels. These chapters are incorporated by reference in this analysis.

The climate of Alaska is influenced by four main factors: 1) latitude, 2) a wide range of elevations from sea level to the highest peak in the United States (Denali at 20,322 feet), 3) continentality (proximity to the ocean and its moderation of air temperatures), and 4) seasonal distribution of sea ice along the western and northern state borders. Annual average temperatures range from approximately 4°C in the southern portion of the state to approximately -11°C in the northern Arctic regions. Seasonal changes are the greatest in the state's interior, where the average maximum temperature in the summer is 16°C and the average minimum temperature in the winter is -30°C (National Centers for Environmental Information 2021).

The global mean surface temperature has increased since the last half of the nineteenth century, and observations and computer model predictions indicate that increases in temperature are likely to be greater at higher latitudes like those of the analysis area. Climate modeling predicts an increase in the length of the summer season, with fall freezes occurring later and spring thaws occurring earlier. Impacts of climate change visible in Alaska include coastal and river erosion, increased storm effects, retreat of sea ice, and permafrost thaw. Recent warming of the Alaskan climate has been linked to the Pacific Decadal Oscillation. The Pacific Decadal Oscillation is a long-lived (10–20 years) El Niño-like pattern of Pacific climate variability, and over the most recent 10-year period (2011–2020), the Alaskan climate was over 1°C warmer than any other 10-year period in the twentieth century (BLM 2022). Late-summer Arctic sea ice coverage and thickness have decreased over the last several decades, with lowest minimum coverage occurring in 2012 (BLM 2022). Other anticipated effects include changes in wildfire frequency and severity and changes in species abundance and diversity due to decreased Arctic sea ice extent. Warmer temperatures and a longer growing season are expected to increase evapotranspiration enough to outweigh a regional increase in precipitation. These changes in seasonal climate could have profound impacts on the condition and health of wildlife habitat. Such changes could lead to increased fire frequency and severity and contribute to the likelihood of permafrost degradation impacts such as decreased weight-bearing capacities of foundations and subsidence.

The annual U.S. GHG emissions in 2022 were an estimated 6,343.21 million metric tons (Mt) of carbon dioxide (CO₂) equivalent (CO₂e), which is an increase of 0.2 percent from 2021 (6,328.79 Mt CO₂e) and a decrease of 15.8 percent from 2007 (7,529.90 Mt CO₂e) (U.S. Environmental Protection Agency [EPA] 2023a). The annual GHG emissions in 2021 for Alaska were estimated to be 37.915 Mt of CO₂e, which was slightly up from 35.631 Mt of CO₂e in 2020, and also down from its peak in 2005 of 48.879 Mt of CO₂e (EPA 2023a). Chapters 4, 5, and 6 of BLM (2022), incorporated by reference, contain additional

information on GHGs and an explanation of CO₂e and contain the methodology and parameters for estimating emissions from cumulative BLM fossil fuel authorizations. State and national energy-related CO₂e emissions include emissions from fossil fuel use across all sectors (residential, commercial, industrial, transportation, and electricity generation) and are released at the location where the fossil fuels are consumed.

Sources of existing GHGs in the analysis area are located primarily in and near small communities and result predominantly from wildfires and prescribed fires, crude petroleum extraction, on- and off-road vehicle fuel combustion, and electric power generation. All these factors contribute to overall GHGs in the atmosphere. Table 3.3-1 shows GHG emissions for Alaska in 2020, as well as the percent contribution of each source category to CO₂e (EPA 2023b).

Table 3.3-1. Alaska Greenhouse Gas Emissions in 2020

Category	CO ₂ (tons)	CH ₄ (tons)	N ₂ O (tons)	CO ₂ e (Mt)	CO ₂ e (% contribution by category)
Fires	18,075,071	107,555	N/A	19.00	56.44%
Mobile*	4,036,235	563	71.65	3.64	10.80%
Airport operations	868,642			0.78	2.30%
Colleges, universities, and professional schools	243,146	27	4.02	0.22	0.65%
Copper, nickel, lead, and zinc mining	16,035	1	0.13	0.01	0.04%
Crude petroleum extraction	7,219,523	4,190	13.23	6.56	19.49%
Fossil fuel electric power generation	2,414,621	136	19.83	2.16	6.43%
National security	437,152	113	7.10	0.40	1.17%
Petroleum refineries	562,286	113	3.92	0.51	1.50%
Seafood product preparation and packaging	99,265	4	0.83	0.09	0.26%
Solid waste landfill	2,585	11,328	0.01	0.30	0.90%
Total	33,974,561	124,030	121.00	34.00	100.00%

Source: EPA (2023b).

Note: N/A = not available.

CO₂e is in Mt and assumes a 100-year global warming potential of 29.8 for methane (CH₄) and 273 for nitrous oxide (N₂O) from the Intergovernmental Panel on Climate Change Sixth Assessment Report (Intergovernmental Panel on Climate Change 2022). Converted from tons to Mt.

* The mobile category includes both on-road vehicles and non-road sources that use gasoline, diesel, and other fuels.

Global and U.S. GHG emissions declined by approximately 4.4 percent and 9.94 percent, respectively, in 2020, primarily due to the economic effects of the COVID-19 pandemic (BLM 2022). However, globally, the use of all fossil fuels and the CO₂ emissions associated with the combustion of these fuels continue to rise. Global energy-related CO₂ emissions are projected to increase by 0.6 percent per year from 2020 to 2050 from approximately 35 billion metric tons of CO₂ to approximately 43 billion metric tons of CO₂ (BLM 2022). Although aggregate CO₂ emissions from the energy sector are projected to continue to rise, the carbon intensity of future energy sources (i.e., the amount of CO₂ emissions produced per unit of energy used) is projected to decrease, indicating that sources of energy that do not produce CO₂ emissions (e.g., renewables) will make up a larger portion of future energy sources. U.S. energy-related CO₂ emissions from fossil fuel consumption are projected to slightly decrease over the next decade due primarily to significant decreases in coal consumption and a rise in the use of natural gas and renewable energy sources to meet demand. However, U.S. CO₂ emissions from energy consumption are expected to

increase beyond 2035 due to increases in population and economic growth and the associated increases in oil and natural gas consumption (BLM 2022).

Reasonably foreseeable or planned actions (described in Table 3.1-6) will continue to impact climate change. Although the project would not be a direct source of GHG emissions, future development, including oil and gas leasing and production as well as mining activities on lands where the 17(d)(1) withdrawals have been revoked, would be reasonably likely to generate emissions of CO₂ and other GHGs, which could influence local, regional, and global climate change. GHGs, primarily emitted by natural and anthropogenic sources, trap heat in the atmosphere, which is partly responsible for the ongoing global climate change issues. In Alaska, climate models predict more warming in the Arctic and interior areas than in the southern regions of the state. Arctic waters are predicted to be virtually free of summer sea ice by 2050, and near-surface permafrost is predicted to disappear on 16 percent to 24 percent of the landscape by the end of 2100 (IPCC 2022). Globally, the atmosphere and ocean have warmed, the amounts of snow and ice have diminished, the sea level has risen, and the concentrations of GHGs have increased (BLM 2022). The annual average temperature in the United States has increased by 1.2 degrees Fahrenheit over the last few decades and is expected to continue to increase to as much as 12 degrees Fahrenheit by the end of the century. Additionally, annual average precipitation in the United States has increased by 4 percent, with more frequent and intense precipitation events across the United States (BLM 2022).

3.3.1.2 Environmental Consequences

3.3.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.3.1.1, Affected Environment, would continue to impact climate.

3.3.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Impacts to the GHG emissions and climate change resources related to changes in land management (e.g., from Federal to State) or from potential project-related development are expected to occur under the action alternatives.

Emission sources associated with oil and gas development and mineral development include GHGs from vehicle exhaust emissions from construction, drilling (hydraulic fracturing and conventional), and operations; vehicle travel and reclamation activities; fuel combustion emissions from drilling, completions, compressor and oil pump engines, flares, combustors, and heaters; and methane emissions from glycol dehydrators, storage tanks, process piping fugitive emissions from facility components, pneumatic controllers, natural gas venting, and other ancillary sources would contribute to climate change.

GHG emissions associated with vehicle combustion exhaust due to increased vehicle traffic would depend on the number and types of vehicles and the types of travel surfaces used by the vehicles. Based on the RFD scenario (see EIS Appendix D), these GHG emissions would more likely occur if the 17(d)(1) withdrawals were revoked and the lands were open to location and entry under the U.S. mining laws and were open to mineral and geothermal leasing.

Conversely, areas that do not have a high potential for oil and gas or coal, are absent of known non-energy leasable minerals, or have a low likelihood for geothermal would be unlikely to be developed.

Therefore, GHG emissions–generating activities associated with these areas are anticipated to be minimal, with little influence on climate change.

If the 17(d)(1) withdrawals are revoked and the land is conveyed and becomes managed by the State of Alaska, portions of each planning area may be available to exploration and development. The impacts to the GHG emissions and to climate change within these specific acres would depend on the site-specific exploration and development plans.

Any development would be subject to State of Alaska air quality permitting requirements and must meet air quality standards. Projects with Federal permits or funding would undergo project-level environmental review and permitting, at which time, the amounts of GHGs would be calculated and disclosed. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Thawing permafrost may dry out overlying soils, which may release trapped methane and GHG. According to the NOAA Barrow Atmospheric Baseline Observatory's long-term records of CO₂, thawing permafrost in the northern region of Alaska during early winter emits 70 percent more CO₂ today than in 1975 (Stein 2017). Alternatives with the greatest potential for development are assumed to contribute to larger GHG emissions from permafrost thawing and loss of potential carbon sequestration.

Additionally, any revocation of 17(d)(1) withdrawals would remove flexibility for the Federal government to retain lands that could be available for village relocation due to climate change (such as lands that were used for the community of Newtok relocation) or lands used in a land exchange for that purpose. If the Federal government knew that lands would be needed, then the lands could be reserved for that purpose (e.g., relocation of the community of Shishmaref).

3.3.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts to the climate from development of leasable minerals for lands that remain withdrawn under Alternative B because there would be no change to the land status.

Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.3.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1. Table 3.3-2 summarizes the acres more likely to be developed for leasable minerals on 17(d)(1) revocations under Alternative B in the focused analysis area.

Table 3.3-2. Summary of Impacts to Climate (acres more likely to be developed for leasable minerals where 17(d)(1) withdrawals would be revoked) under Alternative B

Planning Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked [†]	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Bay	0	0
East Alaska	0	0
Ring of Fire	2,000	2,000

Planning Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked ^{*†}	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Kobuk-Seward Peninsula	0	0
Bering Sea-Western Interior	< 1,000	< 1,000
Total	2,000	2,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.3.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on climate for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to climate from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres could be developed for leasable minerals in the focused analysis area (Table 3.3-3). Therefore, there would be more GHG emissions from that development. Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to climate. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.3-3. Summary of Impacts to Climate (acres more likely to be developed for leasable minerals where 17(d)(1) withdrawals would be revoked) under Alternative C

Planning Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked ^{*†}	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Bay	0	0
East Alaska	0	0
Ring of Fire	53,000	16,000
Kobuk-Seward Peninsula	0	0
Bering Sea-Western Interior	3,000	< 1,000
Total	56,000	16,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.3.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the lands previously withdrawn allowing for the disposal of lands and the location of

mining claims. Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to climate. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.3.1.2.2, Impacts Common to All Action Alternatives. The greatest impacts to climate are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.4-4 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to climate as Alternative C but to a larger extent and magnitude because more acres of leasable development are possible under Alternative D.

Table 3.3-4. Summary of Impacts to Climate (acres more likely to be developed for leasable minerals where 17(d)(1) withdrawals would be revoked) under Alternative D

Planning Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked*	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Bay	0	0
East Alaska	0	0
Ring of Fire	53,000	16,000
Kobuk-Seward Peninsula	0	0
Bering Sea-Western Interior	3,000	< 1,000
Total	56,000	16,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM [2022]) and would result in minimal impacts to climate.

The potential for impacts to climate is greatest under Alternative D because the most acres of 17(d)(1) withdrawals would be revoked; therefore, more acres would likely be conveyed and be more likely to be developed and produce GHG emissions under this alternative than under Alternative B or Alternative C.

3.3.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would change the acres of leasable minerals that could be developed, have the potential to increase GHG emissions, and therefore impact climate. Table 3.3-5 summarizes each alternative.

Table 3.3-5. Comparison of Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked

Alternative	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked in Focused Analysis Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Alternative A	0	0
Alternative B	2,000*	2,000

Alternative	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked in Focused Analysis Area	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances
Alternative C	56,000	16,000
Alternative D	56,000	16,000

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.3.1.2.7 CUMULATIVE IMPACTS

Should the Secretary revoke the 17(d)(1) withdrawals and should the BLM convey the selected lands to the State of Alaska, the development identified in the RFDs would be more likely to occur, resulting in the climate change impacts discussed above. This conveyance and development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, are likely to have additional impacts on climate change because the development that would likely occur in addition to the existing and planned actions would likely also involve GHG emissions. Although many of the existing and planned actions would constitute relatively small actions that would not lead to substantial emissions, some of the larger projects (e.g., mine development, oil and gas development, port expansion), as well as any large development projects initiated on land conveyed to Alaska following Secretarial revocation of 17(d)(1) withdrawals, would contribute to an increase in overall emissions.

3.4 CULTURAL RESOURCES

3.4.1 How would revocation of 17(d)(1) withdrawals affect management and integrity of cultural resources?

Cultural resources are aspects of the human environment that groups consider culturally important. Cultural resources may include discrete physical places such as archaeological sites, travel routes, buildings and structures, isolated artifacts, and burials. The BLM's (2004) 8100 Manual *Foundations for Managing Cultural Resources* provides the following definition for cultural resource: "a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups." Archaeological resources are those resources that contain material evidence of past human life or activities, and in Alaska, common types of archaeological resources include lithic assemblages; house and village sites; harvesting and processing locations; cache/storage pits; and a variety of historic materials from past mining, commercial fishing, homesteading, and other historic activities associated with Euro-American presence.

Cultural aspects of the environment, however, are not limited only to discrete locations where physical remains of past human activities are preserved but may also include culturally valued places; the cultural use of the biophysical environment, such as religious and subsistence uses; and sociocultural attributes, such as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions (National Preservation Institute 2023). These ethnographic resources are cultural or natural features of a region where traditionally associated cultures have formed significant connections to the landscape. They

are closely linked with their own sense of purpose, existence as a community, development as ethnically distinctive peoples, and survival of their lifeways.

Ethnographic resources are held as traditionally meaningful and may be sites, landscapes, structures, objects, or natural resources, such as plants, animals, minerals, and bodies of water, that are assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group. The significance that cultures assigned to ethnographic resources may encompass both the tangible and the intangible aspects of these special places. These types of ethnographic resources provide knowledge regarding places important to identity, spirituality, and, in the case of ethnographic landscapes, a broader and more holistic way of viewing cultural resources within the natural setting that surrounds them.

Different groups use many terms to describe these ethnographic resources. Commonly used terms to describe the various types of ethnographic resources include the following:

- Traditional cultural places (TCPs)²
- Ethnographic landscapes
- Native American sacred sites
- Intangible cultural resources (e.g., oral traditions, Indigenous Knowledge, traditional skills)

Indigenous place names are another valuable source of cultural resource information and can provide information about natural and social environments as well as about human populations and their histories. Place names also provide insights into a culture's worldview and its perceptions of features of the environments it inhabits. Place names are a key component for identifying cultural resources in an area, as well as for establishing territorial range and means of travel throughout a traditional territory (Kari 2006).

Cultural resources that are eligible for the NRHP are called "historic properties" and must be addressed by Federal agencies under Section 106 of the NHPA prior to conducting any action or "undertaking" as defined in the NHPA. The NHPA defines *historic property* as "any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object" (54 USC 300308). To distinguish which ethnographic resources as well as which cultural resources are "historic properties" (under the NHPA) requires evaluating them on a case-by-case basis to see if they do or do not have the required characteristics necessary to qualify them for the NRHP. In keeping with NEPA, this EIS analyzes effects to cultural resources; the term "historic properties" is used only when referring to the development of a PA that will address the requirements of Section 106 of the NHPA in relation to Secretarial decision-making.

There are 27,735,000 acres withdrawn under 17(d)(1) in the decision area, and this is the analysis area for cultural resources. To ensure that locations with indigenous place names fell within the analysis area, the BLM evaluated a second analysis area consisting of a 5-mile (8-kilometer) buffer around the acres withdrawn under 17(d)(1) to identify geographic features and other locations that may intersect the 17(d)(1) withdrawals but whose identifying place name points were outside of those lands.

The temporal scale for impacts to cultural resources would be long term, as defined in Section 3.1, Introduction and Methodology.

Within this analysis area, broadened as described, the BLM relied on a quantitative analysis of the known cultural resources present in the AHRs, North Slope Borough Traditional Land Use Inventory (TLUI)

² The original National Register Bulletin 38 uses the term *traditional cultural properties*. Recent guidance by the National Park Service in their revised National Register Bulletin 38 has adopted the term *traditional cultural places*.

sites, traditional trails, and place names intersected by 17(d)(1) withdrawals to characterize the affected environment for cultural resources. These are the best available data, but the information is incomplete because archaeological surveys do not cover all of the land in the decision area. While archaeological surveys do not cover all of the land in the decision area, the known sites are representative of the types of cultural resources within the analysis area. The decision area includes over 27 million acres of land, and the overall costs of completing a comprehensive archaeological survey of all of the land is unreasonable. The missing data are relevant to the impact of the proposed action and to which areas include cultural resources that may be impacted. The action can lead to the conveyance of lands out of Federal ownership, leading to a significant adverse effect on cultural resources. The above-listed resources are the best existing credible scientific evidence of the cultural resources on the land.

3.4.1.1 Affected Environment

Cultural resources throughout the planning areas under evaluation in this EIS include sites and materials of Alaska Native, European, and Euro-American origin. Because of the broad scope of this EIS, the majority of archaeological traditions are represented within one or more of the planning areas. For further information regarding the sequence of major archaeological traditions and historic themes in the planning areas, the reader is referred to the BLM's most recent RMPs (BLM 2006a, 2006b, 2007a, 2007b, 2020).

This analysis of impacts to cultural resources relies on the following:

- AHRS files located at the Alaska Department of Natural Resources (ADNR) Office of History and Archaeology (ADNR 2023a).³ The AHRS is a database maintained by the ADNR Office of History and Archaeology and is the primary repository for cultural resource site locations in Alaska. The database includes objects, structures, buildings, sites, districts, and travel routes, with a general provision that they are over 50 years old. The fundamental use of the AHRS is to record the locations of cultural resource sites so that they may be accounted for in project planning, and if possible, protected from adverse impacts.
- Traditional trail database maintained by the ADNR Division of Mining, Land and Water (ADNR 2023b). Traditional highways, trails, and other ROWs are considered historical resources.
- North Slope Borough TLUI sites (for Kobuk-Seward Peninsula planning area only). The Department of Iñupiat History, Language and Culture of the North Slope Borough created the TLUI database to document place names, landmarks, traditional land use sites, travel routes, and important locations remembered by the Iñupiat (North Slope Borough 2023).
- Areas of critical and environmental concern (ACEC) reports. ACECs are places where special management is applied to protect important historical, cultural, and scenic values as well as fish and wildlife or other natural resources.
- Place names (Smith and Kari 2023). The Alaska Native Place Names database is one of the largest compilations of indigenous place names for Alaska with nearly 25,000 records. Place names are a key component for identifying cultural resources (including ethnographic resources) in an area as well as for establishing territorial range and means of travel throughout a traditional territory (Kari 2006).
- Scoping related to this EIS and previous RMP scoping to identify places of cultural significance.
- Information acquired through consultation with Tribes.

³ AHRS files were reviewed for this EIS in June 2023.

The cultural resources identified by regional ANCs through selections of historic places under ANCSA 14(h)(1) are evaluated in Section 3.4.2.

Past and present activities within the analysis area have included authorizations for ROWs for communications, roads, pipelines, material sites, power infrastructure, and other ROWs. These ROW authorizations have had the potential to impacts cultural resources. Additionally, prior to 1968, most of the analysis area was open to mineral location under the General Mining Law. These mining claims located prior to 1968 provide the claimants with a valid existing right that allows development despite the 17(d)(1) withdrawals. The past and current mining activities could have caused impacts to cultural resources. Likewise, certain 17(d)(1) withdrawals within the Kobuk-Seward Peninsula, East Alaska, and Bering Sea-Western Interior planning areas have been open to leasable, locatable, and salable minerals (see Table 1.2-1), and activities associated with those mineral developments could also have caused impacts to cultural resources.

Reasonably foreseeable trends and planned actions (described in Section 3.1, Introduction and Methodology) are expected to occur throughout the analysis area. These include actions that could affect cultural resources. The ongoing trend of climate change is primarily impacting cultural resources by increased rates of erosion (particularly along the coast and rivers) and melting permafrost, which can exacerbate the effects of aeolian (wind) erosion, cryoturbation (the action of seasonal freezing and thawing), and solifluction (the downslope the movement of soil as it thaws). These effects can lead to degradation of organic material and disturbance to site integrity and context. The instances of wildfires also increase as a result of climate change. Wildfires primarily impact historic structures but can also impact surface and subsurface archaeological sites. Impacts from climate change are not universal across the Arctic in Alaska; in some places, cultural resources may not be as affected (e.g., coastal accretion instead of erosion) or experience noticeable changes.

For the purposes of this analysis, the majority of land under 17(d)(1) withdrawals under consideration for revocation in this EIS has not been previously surveyed for cultural resources, and the BLM assumes that there is potential for cultural resources to exist on these lands. The following sections provide overviews of cultural resource information for the 17(d)(1) withdrawals by planning area.

3.4.1.1.1 BAY PLANNING AREA

In all, 13 AHRS resources are located on 17(d)(1) withdrawals under consideration for revocation in the Bay planning area (Table 3.4-1). These 13 AHRS resources include primarily buildings in addition to three districts, one site, and one unspecified cultural resource. All are historic or are from an unknown time period. Three traditional trails intersect with 17(d)(1) withdrawals in the Bay planning area (see Table 3.4-1). These are Telaquana Trail-Nondalton, Nakeen-Igiugig Winter Trail, and Lewis Point-Naknek.

There are no ACECs in the Bay planning area that overlap with 17(d)(1) withdrawals. Scoping comments for the Bay planning area stressed the need to look beyond AHRS resources and to consider intangible and landscape-level cultural resources. Place names are frequently identified on maps as points, even though the place name may represent larger natural features such as creeks, rivers, lakes, ancestral and modern village sites, resource locations, or mountain ranges that extend for some distance. Based on the Smith and Kari (2023) dataset, 684 place names occur on or within 5 miles of 17(d)(1) withdrawals in the Bay planning area; 474 of them are point features and 210 are line features. In many cases, the line features have corresponding point features and may be duplicate of the same named location (e.g., line and point for Nushagak River).

Table 3.4-1. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names on ANCSA 17(d)(1) Withdrawals – Bay Planning Area

Cultural and Ethnographic Resources	Number in Analysis Area
AHRS resources	13
Traditional trails	3
Place names	684
TLUI	0

Sources: ADNR (2023a, 2023b); Smith and Kari (2023).

Cultural resource efforts, as reported in the AHRS database for meridian, township, range, and sections (MTRS), that are intersected by 17(d)(1) withdrawals include 106 records of which most describe previous archaeological surveys and a smaller subset focuses on annual reporting requirements for large multi-year projects or PA requirements, data recovery reports, determinations of eligibility, letters, and other management documents (Table 3.4-2). The Bay planning area, along with the Bering Sea-Western Interior and Kobuk-Seward Peninsula planning areas, has the lowest ratio of previous archaeological surveys per potentially affected MTRS, and therefore limited survey information is available for lands subject to the 17(d)(1) withdrawals within the Bay planning area.

Table 3.4-2. Cultural Resource Identification Efforts on ANCSA 17(d)(1) Withdrawals – Bay Planning Area

Document Type	Number of Records
Survey	69
Annual reports	15
Data recovery report	2
Determination of eligibility	2
Letter	10
Other	8
Total	106

Source: ADNR (2023a).

Note: Results are based on an analysis of 17(d)(1) withdrawals intersecting associated MTRS. The Bay planning area included 3,059 MTRS totaling 1,957,760 acres. "Other" refers to various non-survey-related documents, including historic contexts, site records, building documentation, and NRHP nomination forms.

3.4.1.1.2 RING OF FIRE PLANNING AREA

In all, 39 AHRS resources are located on 17(d)(1) withdrawals under consideration for revocation in the Ring of Fire planning area (Table 3.4-3). These 39 AHRS resources are mostly historic sites followed by six structures, three buildings, and three districts, including the Dyea National Historic Landmark (NHL), the Skagway and White Pass NHL, and the Klondike Gold Rush National Historic Park. Most of the AHRS resources are classified as historic, nine have multiple/unknown time periods, and five are labeled as prehistoric. Thirteen traditional trails intersect with 17(d)(1) withdrawals in the Ring of Fire planning area. Most of these trails are located in the Southcentral region, particularly the Upper Cook Inlet areas associated with various gold rush events. One of these, the Girdwood-Eagle River via Crow Pass Trail, is also part of the Iditarod NHT. The Chilkoot NHT, near Haines in Southeast Alaska, is the only other traditional trail located outside of the Upper Cook Inlet area that overlaps 17(d)(1) withdrawals in the Ring of Fire planning area.

The Neacola Mountain ACEC in the Ring of Fire planning area overlaps with several 17(d)(1) withdrawals; however, it does not have relevance and importance criteria associated with cultural resources. During scoping, the Chilkat Indian Village identified the Chilkat River Watershed (Jilkáat Aani Ka Héeni) and trade routes and trails as important ethnographic resource to be considered in the 17(d)(1) planning process. Based on the Smith and Kari (2023) dataset, 890 place names occur on or within 5 miles of 17(d)(1) withdrawals in the Ring of Fire planning area; 628 of them are point features and 262 are line features. In many cases, the line features have corresponding point features and may be duplicate of the same named location (e.g., line and point for Susitna River).

Table 3.4-3. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names on ANCSA 17(d)(1) Withdrawals – Ring of Fire Planning Area

Cultural and Ethnographic Resources	Number in Analysis Area
AHRS resources	39
Traditional trails	13
Place names	890
TLUI	0

Sources: ADNR (2023a, 2023b); Smith and Kari (2023).

Cultural resource efforts, as reported in the AHRS database for MTRS, that are intersected by 17(d)(1) withdrawals include 441 records of which 336 describe previous archaeological surveys and a smaller subset focuses on annual reporting requirements for large multi-year projects or PA requirements, data recovery reports, determinations of eligibility, letters, and other management documents (Table 3.4-4). This planning area has the highest ratio of previous archaeological surveys (n = 336) per potentially affected MTRS (n = 2,343), but still relatively limited survey information is available for lands subject to the 17(d)(1) withdrawals within the Ring of Fire planning area.⁴

Table 3.4-4. Cultural Resource Identification Efforts on ANCSA 17(d)(1) Withdrawals – Ring of Fire Planning Area

Document Type	Number of Records
Survey	336
Annual reports	19
Data recovery report	2
Determination of eligibility	12
Letter	19
Other	53
Total	441

Source: ADNR (2023a).

Note: Results are based on an analysis of 17(d)(1) withdrawals intersecting associated MTRS. The Ring of Fire planning area included 2,343 MTRS totaling 1,499,520 acres. "Other" refers to various non-survey-related documents, including historic contexts, site records, building documentation, and NRHP nomination forms.

⁴ It would be unreasonable to survey all lands in Alaska to complete all cultural resource efforts (40 CFR 1502.21). The AHRS database and MTRS are the best available information. See Appendix I, Incomplete or Unavailable Data, for a discussion of this knowledge gap.

3.4.1.1.3 BERING SEA-WESTERN INTERIOR PLANNING AREA

In all, 129 AHRS resources are located within the 17(d)(1) withdrawals under consideration for revocation in the Bering Sea-Western Interior planning area (Table 3.4-5). Of these, 93 are classified as sites. Other AHRS resources include 22 buildings, 11 structures, and three districts. Nearly half of the AHRS resources are historic, with the remainder nearly evenly divided between prehistoric, multiple/unknown/modern, and paleontological time periods. Thirty traditional trails intersect with 17(d)(1) withdrawals in the Bering Sea-Western Interior planning area. Most of these trails connect various villages in the region, with additional trails terminating at various waterways or leading to other places such as old mining locales. Three trails are specifically identified as winter trails—Rainy Pass-Big River, Takotna-Nixon Fork (Winter), and Kaltag-Topkok-Solomon-Nome trails—and are also part of the Iditarod NHT.

No existing ACECs are located within the Bering Sea-Western Interior planning area, but several were nominated during the last Bering Sea-Western Interior planning process and were recently resubmitted to the BLM for reconsideration. Several new ACECs were also nominated by Tribal entities in 2022. In general, the ACEC nominations by the Tribal entities have a common theme of establishing the cultural and biological importance of the watersheds, habitat, and traditional subsistence hunting, fishing, and gathering areas associated with each community. Many of the nominated ACEC areas overlap with large portions of the 17(d)(1) withdrawals proposed for revocation (see Figures 3.10-6 through 3.10-11). Scoping for this EIS identified the need to look beyond discrete site locations to contemporary and traditional use areas as ethnographic resources such as TCPs and cultural landscapes. One scoping comment identified the Yukon-Kuskokwim Delta as an ethnographic resource essential to the Yup'ik and Cup'ik populations. Based on the Smith and Kari (2023) dataset, 2,178 place names occur on or within 5 miles of 17(d)(1) withdrawals in the Bering Sea-Western Interior planning area; 1,469 of them are point features and 709 are line features. In many cases, the line features have corresponding point features and may be duplicate of the same named location (e.g., line and point for Kuskokwim River).

Table 3.4-5. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names on ANCSA 17(d)(1) Withdrawals – Bering Sea-Western Interior Planning Area

Cultural and Ethnographic Resources	Number in Analysis Area
AHRS resources	129
Traditional trails	30
Place names	2,178
TLUI	0

Sources: ADNR (2023a, 2023b); Smith and Kari (2023).

Cultural resource efforts, as reported in the AHRS database, that are intersected by 17(d)(1) withdrawals include 298 records of which 239 describe previous archaeological surveys and a smaller subset focuses on annual reporting requirements for large multi-year projects or PA requirements, data recovery reports, determinations of eligibility, letters, and other management documents (Table 3.4-6). The Bering Sea-Western Interior planning area, along with the Bay and Kobuk-Seward Peninsula planning areas, has the lowest ratio of previous archaeological surveys per affected area, and therefore limited survey information is available for lands subject to the 17(d)(1) withdrawals within the Bering Sea-Western Interior planning area.

Table 3.4-6. Cultural Resource Identification Efforts on ANCSA 17(d)(1) Withdrawals – Bering Sea-Western Interior Planning Area

Document Type	Number of Records
Survey	239
Annual reports	16
Data recovery report	1
Determination of eligibility	13
Letter	7
Other	22
Total	298

Source: ADNR (2023a).

Note: Results are based on an analysis of 17(d)(1) withdrawals intersecting associated MTRS. The Bering Sea-Western Interior planning area included 24,943 MTRS totaling 15,963,520 acres. “Other” refers to various non-survey-related documents, including historic contexts, site records, building documentation, and NRHP nomination forms.

3.4.1.1.4 EAST ALASKA PLANNING AREA

In all, 395 AHRS resources are located within the 17(d)(1) withdrawals under consideration for revocation (Table 3.4-7). Of these, 366 are classified as sites (many of which are prehistoric and associated with the Tangle Lakes Archaeological District) and others include 19 structures, six buildings, three districts and one unknown. Two-thirds of documented AHRS resources are classified as prehistoric followed by 66 multiple/unknown/modern and 60 historic. In all, 34 traditional trails intersect with 17(d)(1) withdrawals in the East Alaska planning area. Most of these trails connect various communities or previous mining locations in the region. One trail is specifically identified as a winter trail.

There are no ACECs within the East Alaska planning area that overlap with a parcel where the withdrawal is proposed for revocation. During scoping for this EIS, Ahtna, Inc., stressed the importance of person-to-person consultation with Tribes to identify culturally important places. Based on the Smith and Kari (2023) dataset, 2,513 place names occur on or within 5 miles of 17(d)(1) withdrawals in the East Alaska planning area; 1,613 of them are point features and 900 are line features. In many cases, the line features have corresponding point features and may be duplicate of the same named location (e.g., line and point for Copper River).

Table 3.4-7. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names on ANCSA 17(d)(1) Withdrawals – East Alaska Planning Area

Cultural and Ethnographic Resources	Number in Analysis Area
AHRS resources	395
Traditional trails	34
Place names	2,513
TLUI	0

Sources: ADNR (2023a, 2023b); Smith and Kari (2023).

Cultural resource identification efforts, as reported in the AHRS database for MTRS, where the resource is intersected by 17(d)(1) withdrawals include 695 records of which 578 describe previous archaeological surveys and a smaller subset focuses on annual reporting requirements for large multi-year projects or PA requirements, data recovery reports, determinations of eligibility, letters, and other management documents (Table 3.4-8). This planning area has the second-highest ratio of previous archaeological

surveys (n = 578) per potentially affected MTRS (n = 6,271); however, relatively limited survey information is available for lands subject to the 17(d)(1) withdrawals within the East Alaska planning area.

Table 3.4-8. Cultural Resource Identification Efforts on ANCSA 17(d)(1) Withdrawals – East Alaska Planning Area

Document Type	Number of Records
Survey	578
Annual reports	15
Data recovery report	1
Determination of eligibility	9
Letter	14
Other	78
Total	695

Source: ADNR (2023a).

Note: Results are based on an analysis of 17(d)(1) withdrawals intersecting associated MTRS. The East Alaska planning area included 6,271 MTRS totaling 4,013,440 acres. "Other" refers to various non-survey-related documents, including historic contexts, site records, building documentation, and NRHP nomination forms.

3.4.1.1.5 KOBUK-SEWARD PENINSULA PLANNING AREA

In all, 292 AHRS resources are located within the 17(d)(1) withdrawals under consideration for revocation in the Kobuk-Seward Peninsula planning area (Table 3.4-9). Of these, 268 are classified as sites, many of which are prehistoric. Other AHRS resources include 11 buildings, eight structures, and one district (Cape Krusenstern Archeological District National Historic Landmark). Nearly half of documented AHRS resources are classified as prehistoric followed by 70 historic and 44 multiple/unknown/modern. Nineteen sites are paleontological. In all, 29 traditional trails intersect with 17(d)(1) withdrawals in the Kobuk-Seward Peninsula planning area. Similar to the Bering Sea-Western Interior planning area, most of these trails connect various villages in the region with additional trails terminating at various waterways or leading to other places such as old mining locales. Two trails are specifically identified as winter trails (Unalakleet-Beeson Slough Trail and Kaltag-Topkok-Solomon-Nome Trail), and one is a portage on the Pah River. The Unalakleet-Beeson Slough Trail and Kaltag-Topkok-Solomon-Nome Trail are also part of the Iditarod NHT.

The Western Arctic Caribou Insect Relief ACEC, Nulato hills ACEC, Inglutalik River ACEC, Ungalik River ACEC, Shaktoolik River ACEC, and Mount Osborn ACEC in this planning area overlap with several 17(d)(1) withdrawals; however, none have relevant and important criteria identified for cultural resources. In addition, several new and previously nominated ACECs that were recently resubmitted to the BLM for reconsideration associated with the Bering Sea-Western Interior planning area overlap with the Kobuk-Seward Peninsula planning area. In general, the ACEC nominations by the Tribal entities have a common theme of establishing the cultural and biological importance of the watersheds, habitat, and traditional subsistence hunting, fishing, and gathering areas associated with each community. These nominated ACEC areas overlap with portions of the proposed revocation parcels in the Kobuk-Seward Peninsula planning area. Based on the Smith and Kari (2023) dataset, 1,763 place names occur on or within 5 miles of 17(d)(1) withdrawals in the Kobuk-Seward Peninsula planning area; 1,217 of them are point features and 546 are line features. In many cases the line features have corresponding point features and may be duplicate of the same named location (e.g., line and point for Kobuk River). The North Slope Borough TLUI dataset shows 26 TLUI sites within the Kobuk-Seward Peninsula planning area 17(d)(1) withdrawals. These sites primarily consist of caribou hunting, furbearer trapping, and fishing areas; sod

house ruins; lookouts; graves; and forbidden locations. During the public comment period on this project, Kawerak, Inc., identified that their Indigenous Peoples of Alaska have been a part of their lands for millennia, and the lands contain countless sacred sites, burial grounds, ancient communities, camps, TCPs, and cultural landscapes. One public comment received on the draft EIS identified the Upper Kobuk region as a place of particular concern with evidence for cultural resources throughout the whole area, including old camp sites, traps, and stretching boards.

Table 3.4-9. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names on ANCSA 17(d)(1) Withdrawals – Kobuk-Seward Peninsula Planning Area

Cultural and Ethnographic Resources	Number in Analysis Area
AHRS resources	292
Traditional trails	29
Place names	1,763
TLUI	26

Sources: ADNR (2023a, 2023b); Smith and Kari (2023).

Cultural resource identification efforts, as reported in the AHRS database for MTRS, in areas that overlap with 17(d)(1) withdrawals include 255 records of which 191 describe previous archaeological surveys and a smaller subset focuses on annual reporting requirements for large multi-year projects or PA requirements, data recovery reports, determinations of eligibility, letters, and other management documents (Table 3.4-10). The Kobuk-Seward Peninsula planning area, along with the Bay and Bering Sea-Western Interior planning areas, has the lowest ratio of previous archaeological surveys per potentially affected MTRS, and therefore limited survey information is available for lands subject to the 17(d)(1) withdrawals within the Kobuk-Seward Peninsula planning area.

Table 3.4-10. Cultural Resource Identification Efforts on ANCSA 17(d)(1) Withdrawals – Kobuk-Seward Peninsula Planning Area

Document Type	Number of Records
Survey	191
Annual reports	22
Data recovery report	1
Determination of eligibility	1
Letter	9
Other	31
Total	255

Source: ADNR (2023a).

Note: Results based on analysis of 17(d)(1) withdrawals intersecting associated MTRS. The Kobuk-Seward Peninsula planning area included 19,423 MTRS totaling 12,430,720 acres. "Other" refers to various non-survey-related documents, including historic contexts, site records, building documentation, and NRHP nomination forms.

3.4.1.2 Environmental Consequences

3.4.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE)

Under Alternative A, the Secretary would not revoke any ANCSA 17(d)(1) withdrawals; therefore, there would be no change in the analysis area associated with their revocation. Existing trends and actions in the analysis area described in Section 3.4.1.1, Affected Environment, would continue, and there would be no additional project-related changes to cultural resources. Climate change, development, and other human activities would continue to impact cultural resources.

3.4.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals could affect cultural resources in two primary ways. First, cultural resources could lose Federal regulatory protection if located on land conveyed out of Federal ownership. Second, revocation of 17(d)(1) withdrawals would cause lands to be available for development activities and infrastructure, which could cause more direct and immediate cultural resource impacts. The impacts that may occur in these scenarios are discussed in general below. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

The Section 106 process under the NHPA for addressing potential effects of the undertaking (here, revocation of the withdrawals) on historic properties occurs concurrently with the NEPA process. The process includes consultation and other procedures as set forth in 36 CFR 800 that address the identification of historic properties and resolution of potential adverse effects through avoidance, minimization, or mitigation. The BLM is developing a PA to address the Section 106 process related to the conveyance of top filed lands to the State and the effects of opening the lands to the operation of the mining laws made possible by the proposed action. The PA will also address when the revocation of withdrawals could lead to a smaller number of potential activities in which additional Section 106 review is not required. This PA will be similar to the PA developed for Native allotments under the Dingell Act, which would apply to any lands made available to selection for Native allotments under the Dingell Act. Individual NEPA and Section 106 reviews will occur for the majority of future site-specific developments on lands where 17(d)(1) withdrawals are revoked and that remain under BLM management in accordance with 36 CFR 800 and the protocol for managing cultural resources on BLM-managed lands in Alaska (ADNR and BLM 2014).

Loss of Federal Regulatory Protection

The NHPA considers the transfer of lands out of Federal ownership to be an adverse effect to historic properties. Land conveyed out of Federal ownership would lose Federal regulatory protections, primary of which would be Section 106 of the NHPA, and instead be subject to the Alaska Historic Preservation Act (AHPA) regulations for conveyances to the State (which are less stringent than Federal regulations) or would have no Federal or State regulatory protection (for all other disposals, like Native allotments under the Dingell Act). Once transferred out of Federal ownership, these resources might not be managed in a manner that provides for their preservation or protection. As a result, these resources and the information and cultural, scientific, values they retain could be damaged, destroyed, or otherwise altered or diminished.

Although certain future actions on State lands could involve future Section 106 reviews (e.g., actions with Federal funding or Federal permits), actions that would typically trigger Section 106 consultation because the action has the potential to affect historic properties would no longer require consultation. In regulatory

terms, unless a future “project, activity or program is funded in whole or in part under the direct or indirect jurisdiction of a Federal agency,” or requires a “Federal permit, license or approval” (36 CFR 800.16[y]), then Section 106 regulations would no longer apply.

For projects on State land, the AHPA (Alaska Statute 41.35.070) affords a level of regulatory review that would lessen the chances for impacts to cultural resources. However, the specific language of the AHPA addresses preservation of historic, prehistoric, and archeological resources threatened by public construction and does not include as many regulatory considerations, particularly in regard to consultation, that are afforded under Section 106 of the NHPA. Other than the exceptions discussed above, projects on land conveyed to any other entity are not bound by Section 106 of the NHPA or the AHPA.

Increase in Lands Open to Development

Development, including the exploration, development, production, and abandonment and reclamation phases of any permitted development, could affect cultural resources (see EIS Appendix D for a description of the RFD scenario). Such potential impacts include physical destruction of, or damage to, all or part of a cultural resource; removal of a resource from its original location; a change in the character of the resource’s use; changes to physical features in a resource’s setting that alter important visual, auditory, or atmospheric characteristics that are important to the resource; or a change in access to traditional use sites by traditional users. See the RMPs for the affected planning areas (BLM 2006a, 2006b, 2007a, 2007b, 2020) for additional descriptions of the types of impacts associated with potential development activities.

When not directed away from cultural resources, ground-disturbing activities can cause the most direct and severe impacts on such resources. Examples of expected ground-disturbing activities include excavation of material sites; construction and maintenance of gravel roads, pads, airstrips, bridges, and culverts; construction of vertical support members for powerlines and pipelines; and any other disturbance of the ground surface near development project components. Other activities and events that could cause direct impacts on cultural resources include scientific and environmental surveys; seismic and other exploratory activities; damage caused by equipment during the exploration; development, production, and abandonment and reclamation phases of development projects; and unanticipated accidents, such as blowouts, spills, or fires, and subsequent cleanup activities. These activities, in addition to the infrastructure itself, could also introduce vibration, noise, visual, and atmospheric (e.g., dust, olfactory) impacts to cultural resources. Certain future impacts, such as oil spills, can contaminate site artifacts and organic materials to make them undatable.

Cultural resources beyond the development project footprints could be affected throughout the phases of a development project or during any general infrastructure development activity. Examples of these types of impacts on cultural resources could include increased access and potential removal, trampling, or dislocation of cultural resources and culturally sensitive areas by personnel and visitors; complete or partial destruction of a site from erosion, thawing permafrost, and thermokarsting; the loss of traditional meaning, identity, association, or importance of a resource; effects on beliefs and traditional religious practices; neglect of a resource that causes its deterioration; or visual impacts from light pollution on resources adjacent or nearby to 17(d)(1) withdrawals.

Additional development could cause additional indirect effects such as abandonment of traditional camping and fishing sites. The updated Nuiqsut Paisanjich (translation *Nuiqsut Heritage*) report documents an example of indirect effects affecting traditionally used fish camps near Nuiqsut (Stephen R. Braund & Associates [SRB&A] 2018). Although the site location is physically intact, Nuiqsut families, since the early 2000s, have not used the fish camps located at the traditional *Nanuq* site. Residents have

described the abandonment of these camping and fishing sites due to the impacts of nearby traffic and facilities on their harvest experience, as well as the availability of resources in these areas.

Cultural resource sites that could not be avoided or that would experience other effects (e.g., increased access, visual, audible, atmospheric) could experience adverse, local, and long-term impacts. To date, very few documented cultural sites in the areas under review have been evaluated for the NRHP; therefore, unevaluated sites are treated as historic properties pending review, and the BLM elects site avoidance as the best practice to avoid adverse impacts. If a future proposed discretionary project may adversely affect a potential historic property and require mitigation, NRHP eligibility would be evaluated as needed. The BLM would then take steps to avoid, minimize, and/or mitigate adverse effects to historic properties.

Broader cultural impacts on belief systems/religious practices, traditional uses and resources, and cultural ties could also occur. Alaska Native peoples have traditional and current cultural ties to places on 17(d)(1) withdrawals and the resources that move through them, and they hold locations on these lands as sacred to their culture. The presence of development would introduce a cultural impact to these groups because they believe that development would harm the land, waterways, subsistence resources, and associated cultural uses. Any potential impacts on these resources would constitute a cultural effect as shown in the following scoping comments (BLM 2022a):

Haa Atxaayí Haa Kusteeyíx Sitee (Our food is our life). Our health and well-being is tied to the health and well-being of wild salmon, other anadromous and terrestrial species, and the medicinal plants that live within the *Jilkáat Aani Ka Héeni* (Chilkat River Watershed). The health and well-being of these plants and animals rely upon a pristine *Jilkáat Aani Ka Héeni*. Our culture requires that our wisdom and understanding of our pristine watershed and way of life be passed down from generation to generation. We teach our ceremonial and traditional uses of the water, land, plants and animals, and where our sacred and culturally important sites are within the *Jilkáat Aani Ka Héeni*. A continued healthy supply of fish and other aquatic and terrestrial life is necessary for our customary practice of teaching and educating our younger members now and to the seventh generation. (Chilkat Indian Village Scoping Comment in BLM [2022a]:C-37)

These resources are vital to our communities as subsistence and culturally significant resources, and the loss or adverse impacts to fish and wildlife habitat and subsistence resources would compromise our way of life and food security. Across the Yukon-Kuskokwim Delta our fishing and hunting practices and ceremonies are essential to the social, cultural, spiritual, and economic well-being and survival of our people and traditions. There are also historical trails sites that are yet to be listed. The Yup'ik and Cup'ik populations have historically lived a semi-nomadic life, where they lived along the rivers for the summer and migrated away from the river into the same lands that are a part of the D-1 areas. During their travels between areas, they would use separate trails between summer and fall and winter and spring. Elders and unfortunate souls passed their life and were buried along these historical trails. This would show that there is a wide and unpredictable area of spiritual and sentimental value to the historical trails and the history of our peoples, that would ultimately be disrupted if the lands are opened to the extractive industry. (Mother Kuskokwim Tribal Coalition Scoping Comment in BLM [2022a]:C-37)

Given the information currently available and the undetermined locations and natures of future development in the decision area, potential impacts on traditional belief systems, religious practices, and other ethnographic cultural resources (such as TCPs and cultural landscapes) could be adverse, regional, and long term. As applicants pursue specific projects in the future on lands where the 17(d)(1) withdrawals are revoked but that remain in BLM management, the BLM would consult with the Tribes during the Section 106 processes to further identify ethnographic cultural resources and explore options to avoid, minimize, and mitigate impacts to those resources.

3.4.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on cultural resources for lands where the withdrawals are retained under Alternative B.

Top filed selections on withdrawals that are revoked under Alternative B could be conveyed to the State, which would change how cultural resources are managed and potentially lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts described in Section 3.4.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed and developed, as described in Section 3.1. Table 3.4-11 summarizes the total number of known cultural resources that could be impacted under Alternative B in the focused analysis area.

Because Alternative B would aim to refrain from revoking 17(d)(1) withdrawals on State top filed lands that have conflict with known cultural resources, direct impacts to cultural resources would be reduced; however, undocumented cultural resources likely occur on lands where withdrawals would be revoked, and therefore impacts would be reduced but not avoided.⁵

Table 3.4-11. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names under Alternative B

Cultural and Ethnographic Resources	Resources in Analysis Area	Resources Where 17(d)(1) Withdrawals Would be Revoked	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Resources Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed [†]	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
AHRS resources	867	95	8	1	1
Traditional trails	107	26	9	2	2
Place names	8,008	1,861	1,357	607	607
TLUI	26	0	0	0	0
Total	9,008	1,982	1,374	610	610

Sources: ADNR (2023a, 2023b); North Slope Borough (2023); Smith and Kari (2023).

Note: Some linear features (e.g., trails and place names) or large AHRS polygons may overlap more than one designation (e.g., revoke in part, revoke in full, priority conveyances, lands more likely to be developed).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.4.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts to cultural resources for lands where the withdrawals are retained under Alternative C.

The type of direct and indirect impacts to cultural resources on withdrawals that are revoked under Alternative C would be similar to Alternative B, but a different subset of lands would be impacted, and impacts would be more expansive due to the additional acres where the withdrawal would be revoked

⁵ It would be unreasonable to survey all lands in Alaska for potentially undocumented cultural resources (40 CFR 1502.21). Additionally, a PA would outline the steps that must be taken if undocumented cultural resources are discovered. See Appendix I, Incomplete or Unavailable Data, for a discussion of this knowledge gap.

(Table 3.4-12). Under Alternative C, the withdrawals covering some lands intersecting with the Tangle Lakes Archaeological District would be revoked. Revocation would lead to a loss of BLM-managed designated trails for many parts of the district where trails are designated to avoid impact to archaeological resources. If withdrawals were revoked and the land conveyed, the area would not maintain a special designation, and under State statutes, overland travel would be allowed under State of Alaska General Allowed uses, which do not require users to stick to designated trails.

Alternative C would also revoke a 17(d)(1) withdrawal that overlaps with the historic Chilkoot NHT. The likelihood of impacts to the Chilkoot NHT would be low because the withdrawal is an effective Priority 4 selection (i.e., is currently segregated and is likely to stay in Federal management) and is not in an area more likely to be developed. Additionally, large portions of the trail are already on State lands that are managed for recreation. All NHTs are established by Congress (Directors Order 45). Most Federal NHTs have ongoing cooperative agreements with states for the provision of route signs, law enforcement services, land protection, and other areas of common interest (National Park Service [NPS] 2023). The NPS has a memorandum of understanding with the ADNR to manage Chilkoot NHT “as a recreational experience along a hiking trail lined with in situ Klondike Gold Rush era historic archaeology.”

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to cultural resources. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Conveyance of Native allotments under the Dingell Act could occur under Alternative C; Native allotments have a high likelihood of containing indigenous cultural resources, and the conveyance of Native allotments under Alternative C would increase the likelihood for impacts to cultural resources.

Table 3.4-12. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names under Alternative C

Cultural and Ethnographic Resources	Resources in Analysis Area	Resources Where 17(d)(1) Withdrawals Would be Revoked	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Resources Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed [†]	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
AHRS resources	867	554	34	28	9
Traditional trails	107	35	21*	14*	3
Place names	8,008	5,061	2,096	1,468	734
TLUI	26	3	0	0	0
Total	9,008	5,653	2,151	1,510	746

Sources: ADNR (2023a, 2023b); North Slope Borough (2023); Smith and Kari (2023).

Note: Some linear features (e.g., trails and place names) or large AHRS polygons may overlap more than one designation (e.g., revoke in part, revoke in full, priority conveyances, lands more likely to be developed).

* Includes segment of Iditarod NHT.

[†] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.4.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, the Secretary would revoke all 17(d)(1) withdrawals; the BLM would manage any lands that were not selected under their respective RMPs, including Priority 3 and 4 selected lands that may later be relinquished due to overselection by the State and most ANCs. Top filed selections on withdrawals that are revoked under Alternative D would be conveyed to the State if they are Priority 1 or 2, which would change how cultural resources are managed and potentially lead to development (as described in the RFD in EIS Appendix D) and would result in the impacts described in Section 3.4.1.2.2. Similar to Alternative C, revocation of withdrawals under Alternative D would affect the Tangle Lakes Archaeological District and be a greater effect due to the Alternative D revoking all 17(d)(1) withdrawals within the district. Similar to Alternative C, Alternative D would also revoke a 17(d)(1) withdrawal that overlaps with the historic Chilkoot NHT, though the likelihood of impacts to the Chilkoot NHT would be low, as described under Alternative C.

Lastly, Alternative D would revoke 17(d)(1) withdrawals bordering Cape Krusenstern National Monument (to the west and the east), which is known for its rich concentration of culturally important sites. Though development in these areas could introduce impacts to the adjacent Cape Krusenstern National Monument (particularly indirect impacts), the likelihood would be low because these areas are not priority conveyances and are not on lands more likely to be developed. (This means they are likely to stay in Federal management and not be developed.)

The focused analysis area is the area more likely to be conveyed and developed. Table 3.4-13 summarizes the total number of cultural and ethnographic resources that could be affected under Alternative D in the focused analysis area.

Conveyance of Native allotments under the Dingell Act could occur under Alternative D; Native allotments have a high likelihood of containing indigenous cultural resources, and the conveyance of Native allotments under Alternative D would increase the likelihood for impacts to cultural resources.

Table 3.4-13. Alaska Heritage Resources Survey Resources, Traditional Trails, Traditional Land Use Inventory, and Place Names under Alternative D

Cultural and Ethnographic Resources	Resources in Analysis Area	Resources Where 17(d)(1) Withdrawals Would be Revoked	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Resources Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed [†]	Resources Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
AHRS resources	867	867	34	28	9
Traditional trails	107	107	21*	15*	3
Place names	8,008	8,008	2,096	1,600	734
TLUI	26	26	0	0	0
Total	9,008	9,008	2,151	1,643	746

Sources: ADNR (2023a, 2023b); North Slope Borough (2023); Smith and Kari (2023).

Note: Some linear features (e.g., trails and place names) or large AHRS polygons may overlap more than one designation (e.g., revoke in part, revoke in full, priority conveyances, lands more likely to be developed).

* Includes segment of Iditarod NHT.

[†] As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.4.1.2.6 COMPARISON OF ALTERNATIVES

Of the action alternatives, Alternative B would have the least likelihood for impacts to cultural resources due to the fewest 17(d)(1) revocations in the focused analysis area and therefore would have the fewest number of cultural and ethnographic resources that would transfer out of Federal management or be affected by future development (Table 3.4-14). Alternative D would introduce the greatest likelihood for impacts to cultural resources due to revocation of the greatest number of 17(d)(1) withdrawals in the focused analysis area. This would lead to the greatest number of resources either leaving Federal ownership or potentially being impacted by future development.

Table 3.4-14. Number of Known Cultural and Ethnographic Resources Affected under each Alternative

Cultural and Ethnographic Resources	Resources in Analysis Area	Resources where 17(d)(1) Withdrawals Would be Revoked	Resources where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Resources where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Resources where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	9,008	0	0	0	0
Alternative B	9,008	1,982	1,374	610*	610
Alternative C	9,008	5,653	2,151	1,510	746
Alternative D	9,008	9,008	2,151	1,643	746

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.4.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect cultural resources in similar ways to those described in Section 3.4.1.2.2.

Additional development when combined with the project could cause additional indirect effects such as abandonment of traditional camping and fishing sites; greater public access to cultural resources within the planning area; potential removal, trampling, or dislocation of cultural resources and culturally sensitive areas by personnel and visitors; complete or partial destruction of a site from erosion, thawing permafrost, and thermokarsting; the loss of traditional meaning, identity, association, or importance of a resource; effects on beliefs and traditional religious practices; or neglect of a resource that causes its deterioration.

Local (e.g., North Slope Borough Land Use and Permitting Form 400, 500, and 600), State, and Federal regulations provide for identification requirements that diminish the chances for direct impacts on cultural resources. In most instances, avoidance policies are implemented around documented cultural resource sites, particularly those that are eligible for the NRHP; however, the potential for impacts, particularly for undocumented cultural resource sites, increases with each type of future planned action or activity, particularly those involving ground-disturbing activities.

Climate change, as described in Section 3.4.1.1, Affected Environment, could influence the rate or degree of the potential for cumulative impacts from the development anticipated to occur following conveyance of the land in the event the Secretary revokes the 17(d)(1) withdrawals in part. In general, the effects of climate change are not uniform across Alaska but are negative in that they hasten erosion, permafrost thaw, thermokarsting, cryoturbation, and solifluction, which can disturb sites, degrade preservation, and eventually destroy cultural resource sites. The substantial erosion at the *Walakpa* site in Utqiagvik or the *Nunalleq* site by Quinhagak over a relatively short period of time are just two examples of many sites in Alaska being affected by additive effects of climate change.

Development would have the greatest effect on ethnographic resources, such as TCPs and cultural landscapes. This is because it is more difficult to avoid or mitigate impacts for these compared with the more localized cultural resource sites. The significance of TCPs and cultural landscapes is tied to historic and modern cultural identity that relates to a landscape and its natural resources. Therefore, a change to the landscape and resources within such an area by development can affect cultural identity and the significance of a TCP or cultural landscape.

Revocation of the 17(d)(1) withdrawals, as the step that would allow conveyance and subsequent development to occur, in combination with reasonably foreseeable trends and planned actions in the analysis area, has the potential to lead to cumulative impacts on cultural resources. Alternatives that allow the greatest amount of land to be developed or transferred out of Federal ownership are likely to have the greatest cumulative impact on cultural resources. This is because the conveyance and development likely to occur following revocation of the 17(d)(1) withdrawals in part could affect a greater number of documented and undocumented cultural resources and remove or reduce regulatory protections; therefore, among the action alternatives, Alternative D would have the largest contribution to cumulative impacts on cultural resources, whereas Alternative B would have the smallest contribution to cumulative impacts on cultural resources.

3.4.2 How would revocation of 17(d)(1) withdrawals affect cultural resources on lands applied for pursuant to ANCSA 14(h)(1)?

ANCSA was enacted in 1971 to settle aboriginal land title claims with Alaska Natives. ANCSA provides regional or village corporations the ability to select Federal lands within their legally defined regions to be conveyed to them. ANCSA 14(h)(1) allowed regional Native corporations to submit applications to obtain title to lands within their region containing Native historical places and cemetery sites. The lands selected by regional Native corporations are referred to in this EIS as *14(h)(1) lands*.

The analysis area for 14(h)(1) lands is the lands subject to 17(d)(1) withdrawals in the decision area within each of the five planning areas (Bay, East Alaska, Ring of Fire, Kobuk-Seward Peninsula, and Bering Sea-Western Interior) because this is the area where impacts could occur.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

3.4.2.1 Affected Environment

Currently, all pending 14(h)(1) lands in the decision area are segregated and protected from development, including from Native veteran selections under the Dingell Act. As part of its ANCSA Program, the Bureau of Indian Affairs (BIA) is responsible for investigating, reporting on, and certifying the 14(h)(1) applications of regional Native corporations. The BIA may reject applications if they do not meet the criteria specified in ANCSA 14(h)(1). Lands within a rejected 14(h)(1) application are no longer segregated by the 14(h)(1) application but may still have cultural importance; therefore, lands within

rejected 14(h)(1) applications are included within the lands identified as 14(h)(1) lands in the EIS analysis.

The BIA ANCSA Program has an important role in the documentation and protection of Alaska Native cultural resources and cultural heritage that occur on 14(h)(1) lands. Staff of the BIA ANCSA Program have conducted archeological field investigations and a wide range of research (including oral history research with Alaska Native elders) to document the roughly 2,300 sites identified in ANCSA 14(h)(1) applications (BIA 2023). The types of Native historical places and cemetery sites identified on these lands include villages, seasonal camps, and cemeteries. Table 3.4-15 details the number of these 14(h)(1) sites by planning area.

Table 3.4-15. 14(h)(1) Lands in the Decision Area

Planning Area	Pending (Number of Sites)	Rejected (Number of Sites)
Bay	2	5
Bering Sea-Western Interior	130	90
East Alaska	384	203
Kobuk-Seward Peninsula	86	183
Ring of Fire	1	12
Total	603	493

When the 14(h)(1) lands for pending applications are conveyed, restrictions on the use of the land would remain in place. As per 43 CFR 2653.5(a) (emphasis added):

The appropriate regional corporation may apply to the Secretary for the conveyance of existing cemetery sites or historical places pursuant to section 14(h) of the Act. The Secretary may give favorable consideration to these applications: *Provided*, that the Secretary determines that the criteria in these regulations are met: *And provided further*, **that the regional corporation agrees to accept a covenant in the conveyance that these cemetery sites or historical places will be maintained and preserved solely as cemetery sites or historical places by the regional corporation**, in accordance with the provisions for conveyance reservations in § 2653.11.

Therefore, conveyance of these lands from the BLM to any regional Native corporation would not change the protections that the sites within these lands are currently afforded. No development could occur that would have direct or indirect impacts on the cemetery sites or historical places.

The reasonably foreseeable trend of climate change has influenced and will continue to influence 14(h)(1) lands in the analysis area. As discussed in Section 3.4.1, Cultural Resources, the primary impacts from climate change on cultural resources are erosion (particularly along the coast and rivers) and melting permafrost, which can exacerbate the effects of erosion, cryoturbation (the action of seasonal freezing and thawing), and solifluction (the downslope the movement of soil as it thaws). These effects can lead to degradation of organic material and disturbance to site integrity and context. Impacts from climate change are not universal across the Arctic in Alaska; in some places, cultural resources may not be as affected (e.g., coastal accretion instead of erosion) or experience noticeable changes.

3.4.2.2 Environmental Consequences

3.4.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE) AND ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative A, none of the 17(d)(1) withdrawals would be revoked; therefore, there would be no project-related changes to the 14(h)(1) lands in the analysis area. Under Alternative B, the partial revocation would not occur on 14(h)(1) lands, so there would be no project-related changes to the 14(h)(1) lands in the analysis area. Climate change would continue to impact existing cemetery sites and historical places regardless of the alternative selected.

3.4.2.2.2 ALTERNATIVE C (PARTIAL REVOCATION) AND ALTERNATIVE D (2021 PROPOSED ACTION)

If 17(d)(1) withdrawals are revoked that contain lands within *pending* 14(h)(1) applications, the only change is that the lands would be available for Native veteran selection. The opening of these lands was not previously analyzed in the *Environmental Assessment for Alaska Native Vietnam-era Veterans Land Allotment Program* (BLM 2022b). Veterans can select ANCSA-selected lands, but the BLM will not convey the land unless the ANC agrees to relinquish it.

Alternatives C and D would have similar types of effects to rejected 14(h)(1) lands, but effects under Alternative D would be of a greater magnitude and extent because more rejected sites would be impacted (Table 3.4-16 and Table 3.4-17). Pending 14(h)(1) lands would remain protected.

For areas where the 17(d)(1) withdrawals are revoked that contain rejected 14(h)(1) sites, the rejected application under 14(h)(1) would not segregate the land, so the land would become available for disposal or mineral entry. The cultural resources on those sites would not be protected. Rejected 14(h)(1) sites would become open to Dingell Act Native allotment selections, and State top filings would become effective following the revocation.

The Secretarial decision-making evaluated in this EIS may also indirectly affect 14(h)(1) lands; if the land adjacent to it is revoked and potentially developed, it could affect the setting and feel of the site or increase access to the area, which could also increase the likelihood of trespassing or looting. Such indirect effects are described in Section 3.4.1.2.2, Cultural Resources, Impacts Common to All Action Alternatives.

Table 3.4-16. Number of Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked under Alternative C

Planning Area	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with State Selections (Priority 1 and 2)	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked More Likely to be Developed*	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that Overlap More Likely to be Developed
Bay	1	1	0	0	0
Bering Sea-Western Interior	52	3	17	0	0
East Alaska	164	96	44	10	1

Planning Area	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with State Selections (Priority 1 and 2)	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked More Likely to be Developed*	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that Overlap More Likely to be Developed
Kobuk-Seward Peninsula	57	9	9	1	0
Ring of Fire	15	2	1	5	0
Total	289	111	71	16	1

*As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

Table 3.4-17. Number of Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked under Alternative D

Planning Area	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with State Selections (Priority 1 and 2)	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked More Likely to be Developed*	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that Overlap More Likely to be Developed
Bay	3	3	0	0	0
Bering Sea-Western Interior	105	12	17	0	0
East Alaska	182	109	44	11	1
Kobuk-Seward Peninsula	196	11	9	2	0
Ring of Fire	16	3	1	5	0
Total	502	138	71	18	1

*As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.4.2.2.3 COMPARISON OF ALTERNATIVES

Table 3.4-18 summarizes the impacts to rejected 14(h)(1) sites from the alternatives.

Table 3.4-18. Comparison of Impacts to Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked by Alternatives

Planning Area	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with State Selections (Priority 1 and 2)	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked More Likely to be Developed	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that Overlap More Likely to be Developed
Alternative A	0	0	0	0	0
Alternative B	0	0	0	0*	0

Planning Area	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with State Selections (Priority 1 and 2)	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked More Likely to be Developed	Rejected 14(h)(1) Sites where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that Overlap More Likely to be Developed
Alternative C	289	111	71	16	1
Alternative D	502	138	71	18	1

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.4.2.2.4 CUMULATIVE IMPACTS

Because there would be no direct impacts to pending 14(h)(1) lands under any of the alternatives, there would not be any cumulative impacts to those sites. Rejected 14(h)(1) sites may be conveyed to the State (on top filed Priority 1 and 2 lands that are not otherwise encumbered) or conveyed as a Native allotment. Additionally, the State has effective selections that contain 138 rejected 14(h)(1) sites that may also be conveyed regardless of the Secretarial decision-making evaluated in this EIS. The additive effect of conveying these rejected 14(h)(1) sites on existing effective selections in combination with the rejected 14(h)(1) sites on new effective selections that would result from the Secretarial decision on the project would result in even more culturally important sites losing protections.

3.5 ECONOMICS

3.5.1 How would revocation of 17(d)(1) withdrawals affect the economic conditions?

The analysis area for this resource is the regions of Alaska that would potentially be affected by revocation of the 17(d)(1) withdrawals in the decision area. These regions are defined by the boundaries of 16 boroughs and census areas that intersect the focused analysis area, as defined in Section 3.1, Introduction and Methodology. These boroughs and census areas encompass a wide area of the state (see Figure 3.5-1).

This analysis considers the likely economic changes that could occur in the regions where mineral development is more likely to occur, as described in the RFD. Potential economic changes are described in terms of regional employment and income, nature and level of economic activity, as well as local and State government revenues. The timeframe for the assessment of potential economic effects would be long term. This EIS assumes that lands would be conveyed to the State within 10 years. The timeframe for any potential resource or industrial development on those lands would be longer since the average time it takes to bring a mine to production from mine concept is 17 years (Wood et al. 2021). This makes it difficult to assess potential economic impacts because the scale of mineral development and the levels and timing of exploration, development, and production that could occur so far in the future remain unknowable on an individual parcel-by-parcel level. The economic analysis presented in this EIS is therefore qualitative and is based on previous and existing resource development projects in Alaska.

3.5.1.1 Affected Environment

Tables 3.5-1 through 3.5-3 provide information on existing economic conditions in the regions in the analysis area. The existing economic conditions in these regions vary widely with respect to population, employment, income, and the nature and level of economic activity.

The Municipality of Anchorage, the Matanuska-Susitna Borough, and the Kenai Peninsula Borough are the most populated regions in the analysis area and in the entire state. Because these regions are population centers, many skilled workers who commute to industrial sites or work camps reside in these regions. The Municipality of Anchorage and the Kenai Peninsula Borough are also economic hubs. Most of the oil and gas, mining, construction, engineering, and support services that operate in Alaska have primarily offices in Anchorage. The Kenai Peninsula Borough, specifically Kenai and Nikiski, also has numerous companies that provide services to the oil and gas industry. The Kenai Peninsula Borough and the North Slope Borough are the centers of oil and gas production in Alaska.

Unemployment rates in most regions are relatively high compared to the statewide average (4 percent). Only the Municipality of Anchorage, Aleutians East Borough, Ketchikan Gateway Borough, and Chugach Census Area have lower unemployment rates at 3.3, 2.0, 3.8, and 2.9 percent, respectively. The regions with the highest unemployment rates are the Kusilvak Census Area (formerly Wade Hampton, 12.9 percent), Copper River Census Area (9.3 percent), Northwest Arctic Borough (9 percent), and Bethel Census Area (8.8 percent). These three regions have relatively limited economic base and employment opportunities. The Northwest Arctic Borough, however, is the location of one of the largest zinc mines in the world, the Red Dog mine. This is the largest industry in the Northwest Arctic Borough and has generated significant economic benefits to the region. The North Slope Borough despite its remote location has a low unemployment rate and relatively high gross domestic product (GDP) compared to other regions due to the predominant oil and gas industry in the region.

The labor force data provided in Table 3.5-1 by region reflect the number of workers that reside in the respective regions. As noted earlier, the Municipality of Anchorage, the Kenai Peninsula Borough, and the Matanuska-Susitna Borough have the highest populations in the analysis area; these regions have a large labor force that supports the economic activities in these regions. In contrast, the Yakutat City and Borough (322 workers), Bristol Bay Borough (422 workers), Lake and Peninsula Borough (638 workers), Skagway Municipality (745 workers), Wrangell City and Borough (886 workers), and Denali Borough (997 workers) all have a labor force size of fewer than 1,000 workers.

Table 3.5-1. Population and Employment by Region

Borough or Census Area	Population (# of people)	Resident Labor Force (# of people)	Resident Employment (# of workers)	Unemployment Rate (%)
Aleutians East Borough	3,685	2,434	2,386	2.00%
Municipality of Anchorage	289,810	151,342	146,302	3.3%
Bethel Census Area	18,207	6,680	6,091	8.8%
Bristol Bay Borough	800	422	404	4.3%
Chugach Census Area	7,013	3,387	3,290	2.9%
Copper River Census Area	2,619	1,405	1,275	9.3%
Denali Borough	1,645	997	934	6.3%
Dillingham Census Area	4,673	1,665	1,572	5.6%
Haines Borough	2,575	1,058	988	6.60%

Borough or Census Area	Population (# of people)	Resident Labor Force (# of people)	Resident Employment (# of workers)	Unemployment Rate (%)
Hoonah-Angoon Census Area	2,349	1,251	1,181	5.60%
Kenai Peninsula Borough	60,017	28,188	26,918	4.5%
Ketchikan Gateway Borough	13,762	6,786	6,529	3.80%
Kodiak Island Borough	12,832	5,983	5,723	4.30%
Kusilvak Census Area	8,158	2,254	1,963	12.90%
Lake and Peninsula Borough	1,407	638	601	5.8%
Matanuska-Susitna Borough	111,752	49,942	47,639	4.6%
Nome Census Area	9,682	4,138	3,854	6.9%
North Slope Borough	10,746	2,969	2,820	5%
Northwest Arctic Borough	7,346	2,787	2,537	9%
Petersburg Borough	3,357	1,446	1,362	5.80%
Prince of Wales-Hyder Census Area	5,720	2,693	2,545	5.50%
Skagway Municipality	1,146	745	695	6.7%
Southeast Fairbanks Census Area	7,046	3,252	3,083	5.2%
Wrangell City and Borough	2,084	886	841	5.10%
Yakutat City and Borough	673	312	296	5.10%
Yukon-Koyukuk Census Area	5,150	2,363	2,177	7.9%
Alaska (statewide)	736,556	356,799	342,400	4.0%

Source: Alaska Department of Labor and Workforce Development (2023a).

Table 3.5-2 presents GDP, personal income, and per capita income; these data also reflect income of the residents of the region. GDP measures the value of economic activity within a region. The Municipality of Anchorage and the North Slope Borough have the highest GDP in the analysis area. The Municipality of Anchorage and North Slope Borough's GDP values account for 43 percent and 12 percent of Alaska's statewide GDP, respectively. The Anchorage economy is the most diverse in the state and includes transportation, tourism, oil and gas, military, education, professional services, construction, and health care, whereas the North Slope Borough is characterized as having two types of economies (one is oil and gas extraction and the other is village-based), with local government and service jobs augmented by subsistence. The Matanuska-Susitna Borough and the Kenai Peninsula Borough also have a relatively high GDP compared to the other regions, each accounting for just over 5 percent of statewide GDP. The Kenai Peninsula Borough's rich natural resources have supported economic opportunities in fisheries, oil and gas, and recreation and tourism. The Matanuska-Susitna Borough on the other hand is a huge population center; it is one of the fastest growing regions in Alaska by virtue of its proximity to Anchorage and lower housing costs. This region's tourism sector benefits from its proximity to both Anchorage and Denali National Park and Preserve. The accommodations and food services sector employ many non-residents, whereas the health care and social assistance sector and retail trade employ most of the workers who live and work in the region (Alaska Department of Labor and Workforce Development [ADLWD] 2023a). The Skagway Municipality has the lowest GDP among the regions. This municipality has a small population and labor force. The visitor industry provides most of the business income, employment, and government revenue in this municipality.

In 2021, the Bristol Bay Borough and the Denali Borough had the highest per capita income among the regions, approximately \$155,000 and \$108,000, respectively. In comparison, statewide per capita income

was approximately \$66,000. The Bristol Bay Borough economy is primarily driven by harvesting and processing of sockeye salmon from Bristol Bay. The Denali Borough, like the Bristol Bay Borough, has a small population, but its economy is more diverse and stable, with tourism, coal mining, and the military generating much of the economic activity in the region. Tourism is the largest industry due to the presence of Denali National Park and Preserve. The Denali Borough's workforce rivals Bristol Bay's for the most seasonal in the state; peak employment in the summer can reach twice the number of the borough's resident population (Fried 2015).

Table 3.5-2. Gross Domestic Product and Income by Place of Residence in 2021 Dollars

Borough or Census Area	Gross Domestic Product	Personal Income	Per Capita Income
Aleutians East Borough	\$233,494	\$204,471	\$60,174
Municipality of Anchorage	\$24,832,047	\$20,754,004	\$72,032
Bethel Census Area	\$723,486	\$894,243	\$48,189
Bristol Bay Borough	\$148,048	\$130,020	\$155,155
Chugach Census Area	\$2,042,863	\$488,386	\$70,362
Copper River Census Area	\$133,945	\$145,645	\$55,378
Denali Borough	\$286,296	\$171,910	\$107,916
Dillingham Census Area	\$267,597	\$293,823	\$61,572
Haines Borough	\$116,205	\$182,562	\$88,152
Hoonah-Angoon Census Area	\$97,008	\$141,872	\$60,837
Kenai Peninsula Borough	\$3,070,355	\$3,528,727	\$59,041
Ketchikan Gateway Borough	\$957,850	\$994,117	\$72,278
Kodiak Island Borough	\$848,359	\$889,288	\$69,546
Kusilvak Census Area	\$173,275	\$307,258	\$36,753
Lake and Peninsula Borough	\$114,731	\$95,635	\$67,539
Matanuska-Susitna Borough	\$3,378,629	\$5,999,994	\$54,207
Nome Census Area	\$480,920	\$580,875	\$58,882
North Slope Borough	\$6,885,164	\$804,464	\$73,320
Northwest Arctic Borough	\$634,546	\$400,037	\$52,915
Petersburg Borough	\$204,797	\$262,757	\$78,295
Prince of Wales-Hyder Census Area	\$275,582	\$305,163	\$53,266
Skagway Municipality	\$76,420	\$80,835	\$71,409
Southeast Fairbanks Census Area	\$760,172	\$411,144	\$58,988
Wrangell City and Borough	\$91,110	\$126,026	\$61,327
Yakutat City and Borough	\$43,861	\$46,728	\$66,375
Yukon-Koyukuk Census Area	\$354,226	\$334,708	\$63,452
Alaska (statewide)	\$57,349,378	\$48,219,215	\$65,813

Source: Bureau of Economic Analysis (2023a).

Note: 2021 is the most current year for which data are available.

Table 3.5-3 summarizes current employment and wages by place of work in the analysis area. This includes jobs held by non-residents who commute to the regions for work and the wages associated with these jobs. Wages earned by non-residents are not all spent in these regions and therefore do not generate

as much induced income effects (i.e., indirect effects of people spending their income) and contribution to the regional economies as resident workers. Most of the induced income effects occur in the residential centers like the Municipality of Anchorage, Matanuska-Susitna Borough, and Kenai Peninsula Borough.

For all regions except the Yukon-Koyukuk and Kusilvak census areas, private sector employment accounts for more than 50 percent of the total wage and salary employment (resident and non-resident). In the Yukon-Koyukuk and Kusilvak census areas, the government sector accounts for 71 percent of total employment. The school district and the local Tribal councils that provide housing, health care, and other social services to residents are the largest employers of local residents in these two regions. Monthly average wages in these regions are among the lowest in the state (less than \$4,000). The Kusilvak Census Area has the lowest per capita income among all the regions (\$36,753) and has the highest unemployment rate at 12.9 percent. The Yukon-Koyukuk Census Area is vast, covering most of the state's interior region (approximately 25 percent of Alaska's landmass), and is mostly rural (Windisch-Cole 2001). The Kusilvak Census Area is similar and has been described as quintessential rural Alaska—remote and distant, without a commercial or hub city.

In all regions, subsistence hunting and fishing are important sources of food and important to the residents' way of life. On average across available study years, between 90 and 100 percent of households use subsistence resources annually (see EIS Appendix G Tables 6, 54, 132, 176, and 292). In rural regions of Alaska, annual wild food harvests provide an average of 25 percent of the population's required calories and 176 percent of the population's required protein (Fall 2016). And, in urban areas, annual wild food harvests provide 2 percent of the population's required calories and 12 percent of their required protein.

Table 3.5-3. Current Employment and Wages by Place of Work

Borough or Census Area	Total Private Sector Jobs	Total Local Government Jobs	Total State Government Jobs	Total Federal Government Jobs	Total Employment Jobs	Total Wages (2022 dollars, in millions)	Average Monthly Wages (2022 dollars)
Aleutians East Borough	1,920	257	15	15	2,207	\$152.48	\$5,757
Municipality of Anchorage	117,309	8,393	9,371	8,343	143,416	\$9,743.7	\$5,662
Bethel Census Area	3,564	2,561	275	80	6,480	\$327.0	\$4,206
Bristol Bay Borough	979	146	19	43	1,188	\$86.6	\$6,076
Chugach Census Area	2,764	685	168	64	3,681	\$248.7	\$5,631
Copper River Census Area	723	213	64	79	1,080	\$54.9	\$4,238
Denali Borough	1,525	121	16	185	1,847	\$113.9	\$5,139
Dillingham Census Area	1,366	602	64	48	2,081	\$121.5	\$4,864
Haines Borough	721	144	37	11	913	\$40.56	\$3,702
Hoonah-Angoon Census Area	523	265	10	120	917	\$41.27	\$3,750
Kenai Peninsula Borough	15,814	3,409	1,205	353	20,779	\$1,181.3	\$4,737

Borough or Census Area	Total Private Sector Jobs	Total Local Government Jobs	Total State Government Jobs	Total Federal Government Jobs	Total Employment Jobs	Total Wages (2022 dollars, in millions)	Average Monthly Wages (2022 dollars)
Ketchikan Gateway Borough	5,134	1,154	481	193	6,962	\$396.16	\$4,742
Kodiak Island Borough	4,058	1,050	245	257	5,610	\$315.07	\$4,680
Kusilvak Census Area	606	1,435	24	22	2,088	\$76.06	\$3,036
Lake and Peninsula Borough	450	370	6	44	870	\$39.1	\$3,744
Matanuska-Susitna Borough	22,670	3,402	1,568	260	27,900	\$1,455.1	\$4,346
Nome Census Area	2,267	1,439	179	54	3,938	\$258.7	\$5,474
North Slope Borough	8,193	1,911	58	16	10,178	\$1,172.0	\$9,596
Northwest Arctic Borough	1,735	890	57	48	2,730	\$219.5	\$6,701
Petersburg Borough	747	395	39	65	1,245	\$61.12	\$4,091
Prince of Wales-Hyder Census Area	1,023	964	31	83	2,101	\$101.44	\$4,023
Skagway Municipality	714	127	9	29	880	\$45.0	\$4,260
Southeast Fairbanks Census Area	1931	397	101	334	2,763	\$225.8	\$6,811
Wrangell City and Borough	480	137	20	37	674	\$34.91	\$4,316
Yakutat City and Borough	238	71	9	23	341	\$20.20	\$4,937
Yukon-Koyukuk Census Area	640	1,433	84	64	2,220	\$102.1	\$3,833
Alaska (Statewide)	243,411	38,162	22,513	15,003	319,088	\$20,645.5	\$5,392

Source: ADLWD (2023b).

Table 3.5-4 summarizes the percentage of non-resident workers in the analysis area. The Bristol Bay Borough by far has the highest percentage of non-resident workers at 93 percent, primarily workers in the fisheries industry. The Aleutians East Borough, North Slope Borough, Denali Borough, and Lake and Peninsula Borough also have a relatively high percent of non-resident employment at 83 percent, 78 percent, 75 percent, and 67 percent, respectively (ADLWD 2023a).

Table 3.5-4. Share of 2021 Resident and Non-Resident Workers by Region

Borough or Census Area	Percent Resident Workers	Percent Non-Resident Workers
Aleutians East Borough	18%	83%
Municipality of Anchorage	76%	24%
Bethel Census Area	74%	26%
Bristol Bay Borough	7%	93%
Chugach Census Area	43%	57%
Copper River Census Area	60%	40%
Denali Borough	25%	75%
Dillingham Census Area	51%	49%
Haines Borough	70%	30%
Hoonah-Angoon Census Area	55%	45%
Kenai Peninsula Borough	75%	25%
Ketchikan Gateway Borough	68%	32%
Kodiak Island Borough	68%	32%
Kusilvak Census Area	84%	16%
Lake and Peninsula Borough	33%	67%
Matanuska-Susitna Borough	79%	22%
Nome Census Area	77%	23%
North Slope Borough	22%	78%
Northwest Arctic Borough	60%	40%
Petersburg Borough	58%	42%
Prince of Wales-Hyder Census Area	66%	34%
Skagway Municipality	58%	42%
Southeast Fairbanks Census Area	52%	48%
Wrangell City and Borough	71%	29%
Yakutat City and Borough	52%	48%
Yukon-Koyukuk Census Area	65%	35%
Alaska (Statewide)	67%	33%

Source: ADLWD (2023a).

Note: 2021 is the most current year for which data are available.

This EIS considers potential economic consequences from development of the following minerals that are likely to be developed as determined in the RFD: 1) oil and gas (leasable mineral); 2) gold, copper, placer gold, platinum, and rare earth minerals (locatable minerals); and 3) sand, stone, gravel, pumice, clay, rock, and petrified wood (salable minerals). The following section describes the existing activities in the oil and gas extraction and mineral mining industries and in the salable minerals industries as well as their economic contribution; these are the industries that are likely to be impacted by resource development in areas withdrawn under ANCSA 17(d)(1) if the withdrawals are revoked.

3.5.1.1.1 OIL AND GAS INDUSTRY

The oil and gas industry is a major sector in the Alaska economy, and the industry's activities have pervasive economic effects across the state. Oil and gas production in Alaska occurs in the North Slope

Borough and the Kenai Peninsula Borough (Cook Inlet), with the industry's management offices mostly in Anchorage. These three regions account for over 90 percent of the industry's employment (ADLWD 2023c). Although most of the jobs in the industry are limited to these two regions, the workforce is drawn from all around the state and the United States. The North Slope Borough has the largest concentration of oil industry workers; however, very few oil workers reside there. The Kenai Peninsula Borough has the most diverse petroleum industry in the state, supporting oil and gas production, pipeline transportation, and a refinery. Oil industry employment in Valdez and Fairbanks is related to the transport of North Slope oil. Fairbanks is also a major logistic and supply center for the North Slope and has an oil refinery.

In 2022, annual average employment in the oil and gas industry numbered 7,039 (pre-Covid levels were higher at more than 9,900 jobs) accounting for 2.2 percent of total statewide employment. Total wages paid in 2022 accounted for 6 percent of total statewide wages. The industry pays the highest wages in the state—in 2022, the average monthly wage in the oil and gas extraction sector was \$20,668, and if the oilfield services sector is included, the average monthly wage was \$14,451 (ADLWD 2023b).

In 2021, the oil and gas extraction sector accounted for approximately 10 percent (\$5.6 billion) of the state's total GDP (\$57 billion, not including the oil and gas support industries). The pipeline transportation sector contributed \$5.2 billion to the GDP; combined, these two sectors accounted for nearly 20 percent of the State's GDP in 2021 (Bureau of Economic Analysis 2023a).

The State government is highly dependent on oil revenue. Petroleum-related revenues include oil and gas property tax, petroleum corporate income tax, oil and gas production taxes, mineral bonuses and rents, and oil and gas royalties (State and Federal). The State's oil industry continues to be a significant source of unrestricted revenue for the State. Unrestricted petroleum revenue amounted to \$2.0 billion in fiscal year 2019, \$1.1 billion in fiscal year 2020, \$1.2 billion in fiscal year 2021, and \$3.5 billion for fiscal year 2022 (Alaska Department of Revenue 2023).

Local governments also generate significant revenues from taxation of oil and gas property assets. In fiscal year 2019, local governments across Alaska received \$449 million from taxation of oil and gas properties within their jurisdictions, approximately 25 percent of total municipal tax revenue (\$1.8 billion), and 31 percent of total municipal property tax revenue (\$1.5 billion) (McDowell Group 2020). Oil and gas property taxes are the primary source of revenue for the North Slope Borough government. In fiscal year 2022, the State-assessed value of the oil and gas property was \$20.95 billion, and the tax revenues from these facilities increased to \$395.5 million (Office of the State Assessor 2023). In the Kenai Peninsula Borough, the State-assessed value of oil and gas property was \$1.5 billion. The Kenai Peninsula Borough generates nearly \$15 million in revenues from oil and gas properties, accounting for more than 18 percent of the Kenai Peninsula Borough's revenues.

3.5.1.1.2 MINING INDUSTRY

Locatable Minerals

Locatable minerals that support Alaska's mining industry include zinc, lead, copper, gold, and silver. Alaska has six large operating mines: Fort Knox, Greens Creek, Red Dog, Pogo, and Kensington. These mines provide high-paying mostly year-round jobs for residents of more than 70 communities throughout the state, half of which are in rural Alaska where few other jobs are available. In addition to jobs, mining creates public revenue by paying State and local taxes. Mines are the largest taxpayers in the City and Borough of Juneau, the Fairbanks North Star Borough, and the Northwest Arctic Borough, and important taxpayers in rural communities like Denali Borough and the City of Nome (McKinley 2022; Resource Development Council 2023).

The 11 existing and proposed mines throughout Alaska employ or would employ an average of 533 people during operations and more during construction (McKinley 2022; Resource Development Council 2023). Placer gold mines, including suction dredge operations, employ substantially fewer people, i.e., an average of 4.1 employees (McDowell Group 2014). Approximately 27 percent of placer mines are run by a single person, and 4 percent had 10 or more workers. The placer industry also operates exclusively during the summer (Loeffler and Watson 2022).

Salable Minerals

Minerals such as rock, sand, and gravel can be extracted and sold in Alaska communities to support construction of roads and other infrastructure needed for infrastructure development. The 2020 value of Alaska's rock, sand, and gravel minerals on State and Federal lands was at least \$5.7 million, from approximately 2.1 million short tons of product. Many local governments receive revenue from locally owned or leased rock quarries and from sand and gravel pits (McKinley 2022). Although many of these local government payments are relatively small, they may be important sources of revenue for some small communities.

3.5.1.1.3 NON-USE OR PASSIVE USE VALUES

Non-use (or passive use) values are values that are assigned to economic goods even if they never have and never will be used directly. Non-use values are distinguished from a use value, which is derived from direct use of goods by individuals and involve interaction with a resource, whereas non-use values arise from the continued existence of a resource (unrelated to use). The concept as applied to natural resources is used to describe the value of an area that is used for subsistence, recreation, or tourism. Additionally, an area may have value even if people do not directly use it or visit it; there is value in knowing it is available to visit or available for future generations.

Use and non-use values are important components of the total economic value of land. In Alaska, non-consumptive uses of nature are particularly important, especially in regard to ecosystem services, recreation, or tourism. For some of the remote regions of the analysis area, these non-use values can be a significant component of economic conditions.

Non-use values are particularly important in remote regions or wilderness areas. These non-use values are often characterized as an *existence* value (knowing an area exists even if one never visits), a *bequest* value (ensuring an area is available for future generations), and an *option* value (maintaining the option to visit an area in the future) (Holmes et al. 2016). While these non-use values are a component of an area's total economic value, they are difficult to quantify.

3.5.1.1.4 RECREATION ECONOMY

Outdoor recreation is an important economic sector in Alaska. Conventional outdoor recreation activities such as camping, hiking, boating, and hunting contributed an estimated \$417 million to the State's gross domestic product in 2022 (Bureau of Economic Analysis 2023b). Recreation and tourism activities in regions with 17(d)(1) withdrawals contribute to these regions' gross domestic product, provide jobs and income, and support local businesses (i.e., outfitters, guides, lodges, and chartered transportation providers). Though tourism may occur throughout Alaska, regions such as the Kenai Peninsula Borough, Matanuska-Susitna Borough, Denali Borough, and the Bristol Bay Borough may have a greater proportion of this economic sector.

3.5.1.2 Environmental Consequences

3.5.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.5.1.1, Affected Environment, would continue to impact economic conditions. Should the Secretary select Alternative A, the non-use value of the land would not be diminished by her decision. Existing effective selections that could be conveyed at any time regardless of this Secretarial decision could be developed, which would diminish non-use values of those and surrounding lands.

3.5.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

As stated in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, the act of revoking 17(d)(1) withdrawals would not cause any direct, specific measurable impacts to resources under Alternative B, C, or D. No development plans have been submitted; therefore, impacts to resources are analyzed through assumptions regarding types and levels of development, as described in the RFD scenario (see EIS Appendix D) and summarized below.

The RFD scenario identifies and quantifies potential development activity in the decision area, including the extraction of leasable, locatable, and salable minerals. Future mineral development in the areas more likely to be developed would result in direct and indirect economic and fiscal effects across different regions in Alaska. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked under any of the action alternatives, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Because no specific development is proposed at this time, the analysis of economic impacts draws on analogous or comparable mineral development projects across Alaska. Documented economic impacts from previous studies and projected impacts from proposed projects inform the potential direct and indirect impacts of mineral development that could occur in areas more likely to be developed due to revocation of 17(d)(1) withdrawals.

Table 3.5-5 shows the number of acres where leasable and locatable minerals are more likely to be developed in the analysis area.

Table 3.5-5. Acres More Likely to be Developed on 17(d)(1) Withdrawals in the Decision Area by Type of Mineral

Borough or Census Area	Leasable Mineral	Locatable Mineral
Aleutians East Borough	0	0
Municipality of Anchorage	< 1,000	0
Bethel Census Area	0	14,000
Bristol Bay Borough	0	0
Chugach Census Area	0	2,000
Copper River Census Area	212,000	90,000
Denali Borough	0	8,000

Borough or Census Area	Leasable Mineral	Locatable Mineral
Dillingham Census Area	0	0
Haines Borough	0	0
Hoonah-Angoon Census Area	0	0
Kenai Peninsula Borough	2,000	0
Ketchikan Gateway Borough	0	0
Kodiak Island Borough	0	0
Kusilvak Census Area	0	0
Lake and Peninsula Borough	0	7,000
Matanuska-Susitna Borough	9,000	17,000
Nome Census Area	0	131,000
North Slope Borough	0	63,000
Northwest Arctic Borough	0	38,000
Petersburg Borough	0	0
Prince of Wales-Hyder Census Area	0	0
Skagway Municipality	0	0
Southeast Fairbanks Census Area	0	< 1,000
Wrangell City and Borough	0	0
Yakutat City and Borough	0	0
Yukon-Koyukuk Census Area	0	0
Total	223,000	370,000

* The development of salable minerals as a result of revocation of 17(d)(1) withdrawals is only likely near areas where new infrastructure would be developed. As described in Section 2.7, Changes Since the Draft EIS, and in EIS Appendix D, Reasonably Foreseeable Development Scenario, the entire decision area is currently open to mineral sales; thus, the EIS overestimates the area more likely to be developed for salable minerals as a result of revocation.

Economic Impacts from Future Oil and Gas Development

Economic impacts of oil and gas development would occur over a period of several decades. Exploration, construction, and decommissioning would have a larger magnitude but shorter duration of economic impacts than production, which would have fewer impacts over a sustained period of decades. Exploration and development activities are typically seasonal and temporary and occur over several years. The magnitude or scale of economic effects correlates with the intensity of oil and gas activities (e.g., number of wells drilled) and the nature of these activities. Production activities are year-round. The magnitude of employment and income effects related to production would depend on project characteristics such as the number of wells; size of the discovery, which affects duration of production and production volumes; and the location of the reservoir. These factors also determine the level and scope of support activities required during production.

Without specificity regarding the volume of oil and gas, the number of wells, location of the wells, and construction and production activities, the magnitude and duration of the economic effects cannot be quantified. Provided below is a qualitative discussion of potential economic effects of oil and gas development in the regions that could be impacted by the project.

Potentially Impacted Regions

Oil and gas development is more likely to occur on 17(d)(1) withdrawals in the Cook Inlet and Copper River basins (see Figure 1 and Figure 2 of the RFD in EIS Appendix D). Oil and gas development in the Cook Inlet would primarily impact the Municipality of Anchorage, Kenai Peninsula Borough, and Matanuska-Susitna Borough, and development in the Copper River Basin would directly impact the Copper River Census Area (see Table 3.5-5). The impacts of oil and gas activities would extend beyond the regions where the development would occur; economic impacts would also be realized in areas where workers live and where the businesses that can supply goods and specialized services for these activities are located.

Types and Nature of Potential Economic Impacts

Oil and gas development would result in an increase in economic activity or business sales; increase in induced employment and wages; and increase in revenues by local, regional, and State governments. The economic impacts would include both the direct and indirect (or induced) impacts. Indirect impacts arise from business-to-business purchases, such as well drilling firms purchasing concrete for well casings. Induced impacts result from workers on a project spending their wages in the local economy.

Future oil and gas activities in the Cook Inlet would affect the Kenai Peninsula Borough and its communities, with indirect and induced effects extending beyond the Kenai Peninsula Borough. The oil and gas industry in the Cook Inlet has already had a significant impact on the economic wellbeing of the region. Given that the Cook Inlet has a robust oil and gas industry with supporting infrastructure, future oil and gas activities in the region are not likely to create a structural shift in economic conditions in the region. A number of companies that support the oil and gas industry in the Cook Inlet region are based in the Kenai Peninsula Borough. The ability of Kenai Peninsula Borough residents to fill future jobs in the oil and gas industry would depend not only on employment availability but also on the extent to which they have the necessary skills for those jobs or can be trained for them (Bureau of Ocean Energy Management 2016). Administrative or technical jobs associated with development would likely be based in the main offices of companies engaged in oil and gas activities, which are mostly in Anchorage. Some activities would require special equipment and trained workers that would come from outside the region and the state. In addition, most petroleum extraction jobs are rotation-based (2 weeks on, 2 weeks off), which means workers may reside outside the region. Oil and gas activities in the Cook Inlet would also impact the Anchorage and the Matanuska-Susitna Borough economies where a lot of the commuting oil and gas workers reside and where oil and gas companies have offices.

In addition to employment and income effects, oil and gas development would also generate local, regional, and statewide fiscal effects. At the local and regional levels, oil and gas activities could increase sales tax, bed tax, gravel royalties, and property taxes. At the State level, oil and gas development could generate production taxes (severance tax payments), royalty payments, corporate income taxes, and property taxes.

Other potential economic effects include the following:

- The potential for in-migration of workers as a result of additional local employment opportunities with higher wages. This may change the size and composition of the population at the community level. The communities in the Kenai Peninsula Borough that saw the highest growth rates in the past 10 years are the residential areas near the road system and surrounding the commercial and industrial centers (Cuyno et al. 2022). This trend would likely continue with additional oil and gas activity in the Cook Inlet area.

- Displacement or shifts in employment could occur if workers in other industries decide to switch to higher paid oil and gas jobs.
- Additional support for the utilities who are facing impending natural gas shortages, and a potential reduction in the cost of energy for their customers.
- Resource or infrastructure conflicts with existing economic activities such as fisheries, recreation and tourism, and subsistence.

The nature and magnitude of the economic effects of future development in the Copper River Census Area would likely be different since this region does not have the same level of economic diversity, labor force characteristics, and infrastructure as the Cook Inlet region. Given that the region is accessible by road and rail service, the oil and gas industry would likely rely on existing infrastructure in the Cook Inlet and in Anchorage for transportation and logistics support, labor, equipment and materials, and other support services. Furthermore, since none of the communities are incorporated and there is no borough or regional governments, there would be no revenues from local taxes, and 100 percent of the property taxes on oil and gas facilities would accrue to the State of Alaska.

Economic Impacts from Future Development of Locatable Minerals

Future development of locatable minerals could impact numerous regions (see Table 3.5-5).

For some of Alaska’s rural regions, a mine may be the only significant large private employer in the area. A mine can raise wages and create significant high-paying employment opportunities. Taxes from a large mine can also provide funding for local government. For example, the economic contribution of Red Dog Mine to the Northwest Arctic Borough is significant; it paid \$241 million to the NANA Regional Corporation in 2019, with \$140.5 million of that redistributed to other ANCs (McKinley 2022; Resource Development Council 2023).

In addition to employment and wages, mining projects can generate revenues to the State in the form of rents, royalties, mining license tax, and corporate income taxes. There are several ways the mining industry provides direct payment to local governments—this could include property taxes, sales tax, severance taxes, payments in lieu of taxes, and payments in lieu of development fees.

Future locatable mineral development where 17(d)(1) withdrawals are revoked could generate substantial economic effects, with the magnitude and duration of impacts depending on the details of specific projects.

Graphite One Project

The Graphite One mine is proposed on State lands adjacent to State top filed lands that are currently withdrawn under ANCSA 17(d)(1), approximately 34 miles north of Nome. This is an area that is more likely to be developed and more likely to be conveyed. The Graphite One Project includes a graphite mine as well as a processing plant adjacent to the mine. A preliminary resource assessment was completed in 2017 and projects that the mine could produce 55,350 tons of graphite per year. Pre-production capital costs is estimated to amount to approximately \$580 million and are expected to occur over a 36-month period that would involve engineering, construction, and commissioning activities. The proponent estimates an additional \$244 million in capital costs during the mine life required to sustain operations. These costs are projected to be spent in year 1 of operations and continue for 24 years of operations. Closure costs have been estimated to amount to \$125 million and are expected to be incurred in years 24 and 25. Operations of the mine are estimated to support 370 jobs (JDS Energy and Mining Inc. 2022) and generate State income taxes, mining license fees, and royalty payments to Kougarok LLC. The U.S.

Department of Defense recently announced up to \$37.5 million in subsidies for Graphite One and a \$4.7 million grant to develop a graphite-based firefighting foam (Herz 2023).

The Graphite One Project is very isolated, with road access to a small community that is serviced by barging on a seasonal basis. The closest significant port and industrial/population center is Nome. There is no current road access to the property; the closest seasonal road is 20 kilometers to the southeast (the Nome-Taylor Highway). The communities of Brevig Mission, Mary's Igloo, and Teller are closest to the project area. Brevig Mission has a population of 462 residents, and Teller has a population of 237 residents. Both communities have high unemployment and poverty rates. Most work is seasonal, and the majority of the residents depend on subsistence harvests each year. The primary employers in remote rural villages are the school and the local government entities such as the Tribe and city. The Graphite One Project could have a significant employment effect on these villages, and in Nome.

Although the Graphite One mine could be developed on existing State lands regardless of whether the Secretary revokes the 17(d)(1) withdrawals, lands adjacent to those lands could experience expanded or additional development. In 2019 and 2021, the State of Alaska requested that the lands be opened around the Graphite One Mine site to allow State selection (with high priority) and resulting conveyance (Feige 2021).

Economic Impacts from Future Development of Salable Minerals

All of the land subject to the 17(d)(1) withdrawals remain open to sales of minerals under the mineral materials disposal laws. A small portion of 17(d)(1) withdrawals where the land is withdrawn from mineral sales is likely to be developed for salable minerals should the withdrawals be revoked. Expected future demand for sand and gravel should the Secretary revoke the 17(d)(1) withdrawals would depend on the development of infrastructure to support resource extraction and village improvements (see RFD Scenario in EIS Appendix D).

Given that only a small portion of the 17(d)(1) withdrawals is more likely to be developed for salable minerals if the withdrawals are revoked, the magnitude and extent of the economic impacts are expected to be limited. As noted in the Affected Environment section, local governments would generate revenues from locally owned or leased rock quarries and from sand and gravel pits. For some small communities, this could be an important source of revenue.

Non-Use or Passive Use Values

Mineral development in the analysis area would diminish use and non-use values in and near the 17(d)(1) withdrawals; therefore, any revocation of the withdrawals in relevant part that allows mineral development would result in adverse impacts to recreation and tourism-based businesses that rely on the wilderness and pristine character of recreation sites.

Recreation Economy

In general, landscapes that retain their naturalness and quality of intactness are more desirable for recreational or tourist experiences. This means that the addition of industrial facilities and transportation infrastructure into previously undeveloped areas could diminish the quality of a recreationist or tourist experience, particularly where there is the potential for visual and auditory changes. Sites in the analysis area that offer primitive and pristine recreational or tourist experiences, such as wildlife viewing, hiking, camping, and rafting, would be affected. Section 3.11 describes the potential impacts on recreation.

As noted in Section 3.5.1.1.4, Recreation Economy, the recreation and tourism industry in certain regions in the analysis area contributes to the regions' economies. Businesses that provide recreational services

such as outfitters and guided tours would be adversely impacted, which could result in a reduction in regional gross domestic product, employment, and income. Revocations of 17(d)(1) withdrawals in regions with the most recreation and tourism (Kenai Peninsula Borough, Matanuska-Susitna Borough, Denali Borough, and the Bristol Bay Borough) would have the greatest effect on the recreational services industry.

3.5.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no change to economic conditions for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.5.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3. Table 3.5-6 summarizes the acres where 17(d)(1) withdrawals are revoked under Alternative B and are more likely to be conveyed and more likely to be developed.

Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Under Alternative B, the 17(d)(1) withdrawals would be revoked on 2,000 acres of lands more likely to be developed and more likely to be conveyed (see Table 3.5-6), the least effect among the action alternatives. Future mineral development would increase economic activities, employment, and wages in the potentially impacted regions and generate revenues to local, regional, and State governments.

Alternative B would retain the 17(d)(1) withdrawals across the largest area (27,302,000 acres), which would help preserve the non-use value of these lands and the value of the recreation economy associated with those lands.

Table 3.5-6. Summary of Economic Impacts where 17(d)(1) Withdrawals Would be Revoked Under Alternative B

Borough or Census Area	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutians East Borough	0	0	0	0
Municipality of Anchorage	9,000	6,000	0	0
Bethel Census Area	< 1,000	0	0	0
Bristol Bay Borough	12,000	< 1,000	0	0
Chugach Census Area	0	0	0	0
Copper River Census Area	118,000	2,000	2,000	2,000
Denali Borough	6,000	0	0	0

Borough or Census Area	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Dillingham Census Area	0	0	0	0
Haines Borough	< 1,000	< 1,000	0	0
Hoonah-Angoon Census Area	0	0	0	0
Kenai Peninsula Borough	5,000	0	< 1,000	< 1,000
Ketchikan Gateway Borough	0	0	0	0
Kodiak Island Borough	0	0	0	0
Kusilvak Census Area	0	0	0	0
Lake and Peninsula Borough	3,000	0	0	0
Matanuska-Susitna Borough	69,000	1,000	< 1,000	< 1,000
Nome Census Area	28,000	< 1,000	0	0
North Slope Borough	110,000	0	0	0
Northwest Arctic Borough	5,000	5,000	0	0
Petersburg Borough	0	0	0	0
Prince of Wales-Hyder Census Area	0	0	0	0
Skagway Municipality	< 1,000	1,000	0	0
Southeast Fairbanks Census Area	0	0	0	0
Wrangell City and Borough	0	0	0	0
Yakutat City and Borough	0	0	0	0
Yukon-Koyukuk Census Area	68,000	26,000	0	0
Total	433,000	41,000	2,000	2,000

*Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.5.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no change to the economic conditions for lands that remain withdrawn under Alternative C. For lands where the 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to economic conditions from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres could be developed in the focused analysis area (Table 3.5-7). Alternative C targets the revocation of 17(d)(1) withdrawals with the highest potential for mineral development; most of the expected economic activity associated with the newly opened lands would occur from the lands opened under this alternative.

Under Alternative C, the 17(d)(1) withdrawals would be revoked across approximately 118,000 acres in areas more likely to be developed; of those, 23,000 acres would also be more likely to be conveyed (see Table 3.5-7). Future mineral development would increase economic activities, employment, and wages in the potentially impacted regions and generate revenues to local, regional, and State governments.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to economics. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Alternative C would retain 21,933,000 acres of 17(d)(1) withdrawals, which would help retain the non-use value of these lands and the value of the recreation economy associated with those lands.

Table 3.5-7. Summary of Economic Impacts where 17(d)(1) Withdrawals Would be Revoked Under Alternative C

Borough or Census Area	Acres where 17(d)(1) Would be Revoked	Acres where 17(d)(1) Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Would be Revoked on Lands More Likely to be Developed*	Acres where 17(d)(1) Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutians East Borough	0	0	0	0
Municipality of Anchorage	30,000	8,000	< 1,000	< 1,000
Bethel Census Area	1,375,000	< 1,000	2,000	0
Bristol Bay Borough	10,000	< 1,000	0	0
Chugach Census Area	172,000	3,000	< 1,000	0
Copper River Census Area	569,000	120,000	76,000	19,000
Denali Borough	149,000	23,000	4,000	0
Dillingham Census Area	7,000	0	< 1,000	0
Haines Borough	73,000	< 1,000	0	0
Hoonah-Angoon Census Area	< 1,000	0	0	0
Kenai Peninsula Borough	51,000	< 1,000	< 1,000	< 1,000
Ketchikan Gateway Borough	< 1,000	0	0	0
Kodiak Island Borough	0	0	0	0
Kusilvak Census Area	152,000	6,000	0	0
Lake and Peninsula Borough	55,000	4,000	< 1,000	0
Matanuska-Susitna Borough	661,000	126,000	9,000	< 1,000
Nome Census Area	1,092,000	243,000	28,000	4,000
North Slope Borough	260,000	0	0	0
Northwest Arctic Borough	533,000	5,000	6,000	0
Petersburg Borough	0	0	0	0
Prince of Wales-Hyder Census Area	< 1,000	0	0	0
Skagway Municipality	8,000	0	0	0
Southeast Fairbanks Census Area	138,000	0	< 1,000	0
Wrangell City and Borough	0	0	0	0
Yakutat City and Borough	39,000	0	0	0

Borough or Census Area	Acres where 17(d)(1) Would be Revoked	Acres where 17(d)(1) Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Would be Revoked on Lands More Likely to be Developed*	Acres where 17(d)(1) Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Yukon-Koyukuk Census Area	426,000	26,000	0	0
Total	5,800,000	564,000	125,000	23,000

* Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.5.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the lands previously withdrawn allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements and restrictions for development. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.5.1.2.2, Impacts Common to All Action Alternatives. The greatest impacts are expected where development is more likely and conveyance out of Federal ownership is more likely, which is summarized in Table 3.5-8.

Under Alternative D, none of the 17(d)(1) withdrawals in the decision area would remain. The 17(d)(1) withdrawals would be revoked across approximately 155,000 acres in areas more likely to be developed; of those, 23,000 acres would also be more likely to be conveyed (see Table 3.5-8). Future mineral development would increase economic activities, employment, and wages in the potentially impacted regions and generate revenues to local, regional, and State governments. However, the non-use value of the lands and the value of the recreation economy associated with these lands would be degraded.

Table 3.5-8. Summary of Economic Impacts where 17(d)(1) Withdrawals Would be Revoked Under Alternative D

Borough or Census Area	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutians East Borough	5,000	0	0	0
Municipality of Anchorage	31,000	8,000	< 1,000	< 1,000
Bethel Census Area	2,769,000	< 1,000	3,000	0
Bristol Bay Borough	23,000	< 1,000	< 1,000	0
Chugach Census Area	230,000	3,000	< 1,000	0
Copper River Census Area	736,000	120,000	77,000	19,000
Denali Borough	281,000	23,000	4,000	0
Dillingham Census Area	517,000	0	< 1,000	0
Haines Borough	205,000	< 1,000	0	0

Borough or Census Area	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Hoonah-Angoon Census Area	< 1,000	0	0	0
Kenai Peninsula Borough	465,000	< 1,000	< 1,000	< 1,000
Ketchikan Gateway Borough	< 1,000	0	0	0
Kodiak Island Borough	< 1,000	0	0	0
Kusilvak Census Area	797,000	6,000	0	0
Lake and Peninsula Borough	654,000	4,000	2,000	0
Matanuska-Susitna Borough	1,309,000	126,000	9,000	< 1,000
Nome Census Area	5,341,000	243,000	34,000	4,000
North Slope Borough	1,432,000	0	16,000	0
Northwest Arctic Borough	4,066,000	5,000	10,000	0
Petersburg Borough	< 1,000	0	0	0
Prince of Wales-Hyder Census Area	< 1,000	0	0	0
Skagway Municipality	112,000	< 1,000	0	0
Southeast Fairbanks Census Area	182,000	0	< 1,000	0
Wrangell City and Borough	< 1,000	0	0	0
Yakutat City and Borough	39,000	0	0	0
Yukon-Koyukuk Census Area	8,541,000	26,000	0	0
Total	27,735,000	564,000	155,000	23,000

3.5.1.2.6 COMPARISON OF ALTERNATIVES

Table 3.5-9 summarizes the acres of priority conveyances and acres more likely to be developed for each alternative. Alternative D would have the maximum potential economic impacts of the alternatives. The extent and magnitude of the economic impacts under Alternatives B would be less than under Alternatives C and D.

Table 3.5-9. Summary of Economic Impacts where 17(d)(1) Withdrawals Would be Revoked

Alternative	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	432,000	41,000	2,000*	2,000
Alternative C	5,800,000	564,000	125,000	23,000
Alternative D	27,735,000	564,000	155,000	23,000

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.5.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect economic conditions in similar ways to those described in Section 3.5.1.2.2.

Past and present actions have resulted in the current economic conditions in the regions described in the affected environment section. Cumulative effects from the development that would follow any Secretarial revocation of the 17(d)(1) withdrawals, when combined with the reasonably foreseeable and planned actions would increase economic activity in various regions of Alaska and generate jobs, income, and revenues to governments and potentially impacted ANCs. This combination would have an additive effect on economic conditions.

As the No Action Alternative, Alternative A would not contribute any additional impacts to the current economic conditions in the regions described in the Affected Environment section. The potential cumulative impacts under the action alternatives would be similar, however, at different levels of magnitude as described above. Alternative D would result in the maximum possible employment, income, and revenue effects. The cumulative impacts of any Secretarial revocation of the 17(d)(1) withdrawals (and potential resulting development) when combined with the effects of reasonably foreseeable and planned actions would also additively diminish the non-use and passive use values in the different regions.

3.6 ENVIRONMENTAL JUSTICE

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) requires that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations, low-income populations, Native American tribes, and indigenous peoples.”⁶

Executive Order 14096 (Revitalizing Our Nation’s Commitment to Environmental Justice for All) highlights the need for a whole-of-government effort to confront longstanding environmental injustices and inequities. Consistent with Executive Order 12898, Executive Order 14096 calls on each agency to make achieving environmental justice part of its mission, including by carrying out environmental reviews under NEPA in a manner that analyzes direct, indirect, and cumulative impacts of Federal actions on communities with environmental justice concerns.

3.6.1 How would revocation of 17(d)(1) withdrawals affect environmental justice populations?

The analysis area for environmental justice relies on the analysis area established for subsistence (see Section 3.14) because impacts to subsistence would cause the greatest impact to environmental justice populations. Environmental justice populations would also be impacted by changes to social systems (see Section 3.12); however, those impacts are largely due to subsistence impacts. This analysis area consists

⁶ The term *indigenous peoples* includes state-recognized Tribes; indigenous and Tribal community-based organizations; individual members of Federally recognized Tribes, including those living on a different reservation or living outside Indian country; individual members of State-recognized Tribes; Native Hawaiians; Native Pacific Islanders; and individual Native Americans (EPA 2023).

of residents of subsistence communities within 50 miles of ANCSA 17(d)(1) withdrawals in the focused analysis area and are identified in Section 3.14, Subsistence.

Residents of boroughs or census areas that coincide with or are adjacent to ANCSA 17(d)(1) withdrawals or that would serve as hubs or headquarters (as discussed in Section 3.5, Economics) are not included in this analysis because any beneficial economic ramifications would affect the borough or census area as a whole. A discussion of these economic impacts that would be experienced by both environmental justice and non-environmental justice communities is provided in Section 3.5, Economics.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

3.6.1.1 Affected Environment

Environmental justice populations in subsistence communities were identified consistent with BLM's latest guidance, *Addressing Environmental Justice in NEPA Documents* (BLM 2022).

Minority populations were identified using both threshold and meaningfully greater analyses. A threshold analysis was conducted by calculating the minority population percentage,⁷ as reported in 2021 data from the American Community Survey (U.S. Census Bureau 2023), for each subsistence community. Subsistence communities containing a minority percentage of 50 percent or more were considered an environmental justice population of concern. A meaningfully greater analysis approach was also taken to identify populations that may have specific concerns or vulnerabilities but were not captured in the threshold analysis. Per the meaningfully greater approach, the State of Alaska was identified as a reference area. Boroughs and census areas were also used as a reference area to provide a more geographically specific comparison. Each subsistence community minority population was compared to the minority population in the State of Alaska and to the minority population in the appropriate borough or census area. Subsistence communities containing a minority percentage that is at least 110 percent greater than the state's minority population percentage or the borough or census area minority population percentage were considered an environmental justice population of concern.

Low-income populations were identified using two threshold analyses: the 50 percent threshold and low-income threshold. The 50 percent threshold analysis was conducted by calculating the percentage of people living at or below 200 percent of the poverty line, as reported in 2021 data from the American Community Survey (U.S. Census Bureau 2023). Subsistence communities containing a percentage of 50 percent or more were considered an environmental justice population of concern. Similar to the minority analysis, a low-income threshold approach was also taken to identify populations that were not captured in the 50 percent threshold analysis. Per the low-income threshold approach, the state of Alaska was identified as a reference area. Boroughs and census areas were also used as a reference area to provide a more geographically specific comparison. The low-income percentage of each subsistence community was compared to the percentage of people living at or below 200 percent of the poverty line in the state of Alaska and to the percentage in the appropriate borough or census area. Subsistence communities containing a low-income percentage that is equal to or greater than the state's low-income percentage or the borough or census area low-income percentage were considered an environmental justice population of concern.

Tables F-1 through F-9 in EIS Appendix F (Environmental Justice Technical Appendix) summarize the environmental justice determination of the 140 communities analyzed for potential significant restrictions to subsistence uses in the ANILCA 810 evaluation (EIS Appendix C). This includes communities within

⁷ All ethnicities other than the "White alone, non-Hispanic" category were included as a minority population.

50 miles of, or have subsistence use areas overlapping, the subsistence focused analysis area as summarized in Section 3.14, Subsistence. The ANILCA 810 evaluation found that up to 139 communities could experience a significant restriction to subsistence use. Of those, 115 communities are considered environmental justice populations; these communities had a combined total population of 46,137 in 2022. Appendix F provides tables that detail how the environmental justice communities were identified.

3.6.1.2 Environmental Consequences

3.6.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain, and there would be no change in the management of, or access to, the analysis area. Existing trends and actions in the analysis area affecting subsistence and therefore affecting environmental justice populations would continue as described in Section 3.14, Subsistence, and there would be no additional project-related changes to environmental justice populations. Climate change, development, and other human activities would continue to impact user access to subsistence resources in potentially impacted regions.

3.6.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals could affect environmental justice populations in two primary ways. First, on lands that lose Federal subsistence priority, hunting competition in certain areas may increase, thus reducing the availability of those resources to local subsistence users. Second, development in the focused analysis area (i.e., priority conveyances that are more likely to be developed) could affect subsistence resources by causing deflection, displacement, changes in resource behavior (including migratory behavior), or through the introduction of contaminants.

Impacts would be most likely to occur for communities near or with use areas overlapping with the focused analysis area; see Sections 3.12, Social Systems, and Section 3.14, Subsistence. Rural and Alaska Native residents rely heavily on subsistence hunting, fishing, and harvesting. Subsistence is a central aspect of rural life and culture and is the cornerstone of the traditional relationship of the indigenous people with their environment. Therefore, reduced harvest opportunities would represent a disproportionately high and adverse impact to environmental justice populations.

3.6.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. Therefore, impacts to subsistence and thus environmental justice populations would be minimized.

There would be no project-related changes to environmental justice populations from withdrawals that are retained under Alternative B because they would continue to be managed as withdrawals. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for State top filings to fall into place as effective selections. Once lands are effectively selected, they could be conveyed to the State, which will change how they are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts described in Section 3.6.1.2.2, Impacts Common to All Action Alternatives.

Under Alternative B, 47 environmental justice communities would be impacted through the loss of Federal subsistence priority or increased potential for development in their subsistence use area (see the ANILCA 810 evaluation in EIS Appendix C). Under Alternative B, a loss of Federal subsistence priority would occur on a smaller number of lands and affect fewer environmental justice communities. However, increased hunting competition and development activities could still reduce or alter subsistence resource availability for residents that rely on harvested plants and animals for their nutrition and cultural, economic, and social wellbeing. Therefore, subsistence impacts associated with the partial revocation would result in a disproportionately high and adverse impact to environmental justice populations.

3.6.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no project-related changes to environmental justice populations for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to environmental justice populations from the resulting development would be similar to Alternative B, but more and different minority populations, low-income populations, Native American tribes, and indigenous peoples would be impacted.

Under Alternative C, 108 environmental justice communities would be impacted through the loss of Federal subsistence priority (though some of the loss would be temporary until low priority State selections are rejected or relinquished) or increased potential for development in their subsistence use area (see the ANILCA 810 evaluation in Appendix C). As discussed under Alternative B, primary impacts to environmental justice populations would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development. Because Alternative C may revoke withdrawals on State top filed lands that have been identified as having conflicts with natural resources, cultural resources, subsistence resources, or proposed or existing ACECs in addition to revoking withdrawals on additional lands with high mineral potential, this alternative would increase the potential for adverse impacts to subsistence resource availability. Therefore, this alternative would result in a disproportionately high and adverse impact to environmental justice populations.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to environmental justice populations. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.6.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the areas previously withdrawn allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to subsistence. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.6.1.2.2.

This alternative would have the greatest geographic scope of all the action alternatives. Under Alternative D, 115 environmental justice communities would be impacted through the loss of Federal subsistence

priority (though some of the loss would be temporary until low priority State selections are rejected or relinquished) or increased potential for development in their subsistence use area (see the ANILCA 810 evaluation in Appendix C).

Similar to Alternatives B and C, the primary impacts to environmental justice populations under Alternative D would be an increase in the potential for development and a change in subsistence management that would result in a loss of Federal subsistence priority. Alternative D has the greatest potential to impact subsistence resource availability due to the magnitude of the number of acres that could experience changes in subsistence management and development, and the larger number of potentially affected environmental justice communities. Therefore, subsistence impacts associated with Alternative D would result in a disproportionately high and adverse impact to environmental justice populations.

3.6.1.2.6 COMPARISON OF ALTERNATIVES

All action alternatives evaluated in this EIS would result in a disproportionately high and adverse impact to environmental justice populations within the decision area (Table 3.6-1). Alternative D has the greatest potential to impact subsistence resource availability due to the magnitude of the number of acres that could experience changes in subsistence management and development, and the larger number of potentially affected communities. Alternatives B and C would affect fewer acres of land capable of providing subsistence hunting, fishing, and harvesting. Given the importance of activities associated with subsistence to strengthen community and family social ties, reinforce community and individual cultural identity, and provide a link between contemporary Natives and their ancestors, any reduction in subsistence resource availability is considered an adverse and disproportionate impact.

Table 3.6-1. Comparison of Environmental Justice Impacts in the Focused Analysis Area by Alternative

Alternative	Number of Environmental Justice Communities Impacted by Loss of Federal Subsistence Priority or Development in their Subsistence Use Area
Alternative A	0
Alternative B	47
Alternative C	108
Alternative D	115

Note: Table uses number of communities found to have significant restrictions to subsistence use in the ANILCA 810 evaluation to summarize impacts to environmental justice communities. Not all communities with subsistence impacts are environmental justice communities; therefore, there are fewer communities with environmental justice impacts than there are with subsistence impacts.

3.6.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect environmental justice populations in similar ways to those described in Section 3.6.1.2.2.

Development would increase economic activity and revenue in various regions of Alaska. Future actions could also result in the displacement of subsistence resources from areas of development activity, and diversion of resources from their usual migratory routes. Weather pattern shifts associated with climate change could further exacerbate these changes over time.

All action alternatives would incrementally add to changes in economic and subsistence resource availability in affected regions, with Alternative D resulting in the greatest potential adverse impacts due to the geographic size of the area affected and number of affected communities. Due to the importance of subsistence activities to environmental justice populations, when considered in conjunction with other reasonably foreseeable or planned actions, all action alternatives would result in an adverse and disproportionate cumulative impact.

3.7 FISH AND AQUATIC SPECIES

3.7.1 How would revocation of 17(d)(1) withdrawals change freshwater aquatic habitat?

The analysis area for aquatic habitat comprises the areas captured in 6-digit U.S. Geological Survey (USGS) hydrologic unit codes (HUCs) that overlap 17(d)(1) withdrawals in the decision area (Figures 3.7-1 through 3.7-5). This analysis area encompasses the watersheds in which aquatic habitat would be affected by the project and includes all surface waterbodies potentially affected by the project, including potential downstream effects beyond lands withdrawn under 17(d)(1).

The temporal scale for impacts to aquatic habitat would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicators were used to analyze this issue:

- Miles of rivers and streams on 17(d)(1) withdrawals (USGS 2023)
- Miles of anadromous rivers and streams on 17(d)(1) withdrawals (Alaska Department of Fish and Game [ADFG] 2023)
- Acres of lake surface on 17(d)(1) withdrawals (USFWS 2023)

Anadromous fish live most of their lives in the sea but return to freshwater to spawn. Anadromous streams are those that support fish species that migrate between freshwater and marine waters, such as salmon. ADFG (2023) is the most complete data source available for anadromous waters in Alaska; however, absence of anadromy in ADFG (2023) does not indicate that a waterbody is not anadromous since data may not be available for all waterbodies. Because it is the most complete data source available, it was used for the EIS.⁸

3.7.1.1 Affected Environment

The analysis area contains both freshwater and tidally influenced freshwater habitats that support anadromous and resident freshwater fish species. Anadromous species migrate upriver from the ocean to reproduce in freshwater, and resident species remain in freshwater (e.g., streams, rivers, lakes) throughout their lives.

3.7.1.1.1 PHYSICAL HABITAT

Waterbodies in the analysis area are detailed in Section 3.17, Water Resources, and are summarized in Table 3.7-1. These waterbodies (i.e., aquatic habitats) provide important spawning, rearing, and overwintering habitat for resident and anadromous fish. Non-anadromous waters (such as small

⁸ It would be unreasonable to survey all waters in Alaska to identify anadromous waters for the EIS. ADFG (2023) is the best available science (40 CFR 1502.21). See EIS Appendix I, Incomplete or Unavailable Data, for more detail.

headwater streams) are still important to anadromous species because they contribute to the quality of habitat and food resources downstream.

Table 3.7-1. Summary of Waterbodies in the Analysis Area

Area	Streams and Rivers (miles)	Anadromous Streams and Rivers (miles)	Lakes and Ponds (acres)	Wetlands (acres)
Analysis area	752,711	70,434	5,407,552	47,527,000
17(d)(1) withdrawals	64,741	6,276	166,474	2,464,000

Sources: ADFG (2023); USFWS (2023); USGS (2023).

The rivers, streams, lakes, and ponds in the analysis area are important producers of fish for subsistence, commercial, and sport fisheries. Many of the streams that are important for spawning and rearing habitat for anadromous fish occur on BLM-managed lands. The analysis area has an estimated 74,640 miles of rivers and streams on BLM-managed lands alone, and there are thousands of acres of lakes that support resident and anadromous fish species. The BLM has been collecting habitat assessment data over the last 10 years consistent with its National Aquatic Monitoring Framework. Most of the randomly selected sites that have been sampled are in an undisturbed condition; however, areas with past land uses such as mining have shown varying levels of residual impacts (Brady et al. 2018). At present, residual impacts from past land uses are extremely limited and generally associated with small headwater streams. Thus, fisheries habitat on BLM-managed lands in the analysis area is mostly undisturbed and currently should not be limiting to the production of resident and anadromous fish.

Analysis area waters provide an array of lotic and lentic aquatic habitat. Glaciers have influenced much of the area's geomorphology and lakes, ranging from small potholes to the largest freshwater lake in Alaska (Iliamna). Stream types range from small streams to large, wide-valley multiple-channel rivers.

Most 1st-order and 2nd-order higher gradient streams are likely to be quality rearing habitat for juvenile Dolly Varden and coho salmon.⁹ Moderately sloped tributary streams with cobble and gravel substrate provide some of the best salmon spawning habitat. The lower, middle, and upper reaches of larger streams provide migration, spawning, and rearing habitat for Pacific salmon as well as a variety of whitefish species and other important subsistence or recreation species (pike, burbot, Arctic grayling, etc.). Lower reaches of the major rivers influenced by saltwater with fine-material substrate are used by salmon as migratory routes to access spawning areas in the upper reaches and tributaries of streams. The conditions in glacial streams are typically less productive than clear waters. The analysis area's waterbodies support sport and subsistence fisheries and contribute to marine commercial fisheries.

Fish habitat on 17(d)(1) withdrawals in the Bay planning area is concentrated at the head of Bristol Bay, with extensive stream and lake networks throughout (see Figure 3.7-1). Although home to all Pacific salmon, the region has produced record sockeye salmon runs in recent years and supports trophy lake and rainbow trout fisheries. The 17(d)(1) withdrawals in the Kobuk-Seward Peninsula and Bering Sea-Western Interior planning areas are concentrated near Norton Sound on the coast as well as interior mountain and riverine regions. Several large rivers drain through the analysis area, including the Kuskokwim, Yukon, and Kobuk rivers, providing extensive habitat for Pacific salmon and whitefish, including sheefish. The East Alaska planning area includes interior drainages like the Tanana and Copper rivers, and the Copper River also supports a world class sockeye salmon fishery. The Ring of Fire planning area's major tributaries include the Susitna River and major tributaries such as the Yentna,

⁹ Scientific names for fish species are provided in Table 3.7-9.

Deshka, and Skwenta rivers, as well as extensive Alaska Range first- and second-order tributaries and lake systems that provide significant spawning and rearing habitat for all five Pacific salmon species.

Reasonably foreseeable trends and planned actions (described in Table 3.1-6) will continue to impact freshwater aquatic habitat. These trends and actions include climate change (warming water temperatures), fire and fire management, timber and minerals development, oil and gas exploration and development, oil spills and other accidental releases, recreational activities, and the construction of infrastructure (roads, ports, communities). These trends and actions have altered or removed riparian and aquatic habitat, impacted water quality, and contributed to increased sedimentation at the local scale; none of the actions are large scale nor have they impacted substantial portions of the analysis area. However, the trend of climate change is large scale and affects the entire analysis area by increasing water temperatures, augmenting stream geomorphology (because of permafrost degradation and surface water runoff), and otherwise altering water quality (e.g., increased sedimentation, reduced overwintering habitat), as described in Section 3.17.1.1, Affected Environment. Increasing water temperature in streams could substantially degrade aquatic habitat particularly for temperature-dependent life history phases (spawning and rearing) of Pacific salmon.

Climate change is also likely to expand species ranges and allow some aquatic species that were previously incapable of surviving at higher latitudes to use habitats previously not used by those species, such as salmon.

3.7.1.1.2 WATER QUALITY

Water quality in the analysis area is detailed in Section 3.17.1.1, Affected Environment.

3.7.1.1.3 ESSENTIAL FISH HABITAT

EFH, as designated by the Magnuson-Stevens Fishery Conservation and Management Act, is “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Freshwater EFH in Alaska is waters listed as anadromous in ADFG’s Catalog of Waters Important For The Spawning, Rearing, Or Migration Of Anadromous Fishes (Giefer and Graziano 2023a, 2023b, 2023c, 2023d, 2023e).

Many streams and rivers that cross BLM-managed lands in the analysis area are designated EFH. The quality of EFH in the analysis area is described above in Section 3.7.1.1.1, Physical Habitat, and Section 3.7.1.1.2, Water Quality.

3.7.1.2 Environmental Consequences

3.7.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.7.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact freshwater aquatic habitats.

3.7.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Lands where the 17(d)(1) withdrawals are revoked and that are conveyed to the State may be opened to multiple uses, including resource extraction and development. The RFD (see EIS Appendix D) describes where development is most likely to occur and where conveyances are most likely to occur (priority conveyances); these are the areas where the most effects to aquatic habitat could occur.

Gravel Infrastructure and Surface Disturbance

If development (of any kind) occurs in these areas, infrastructure (e.g., roads, gravel pads, airstrips, bridges, culverts, material sites) could alter or remove aquatic habitat or physically alter flow patterns of streams they intersect (Sergeant et al. 2022). Surface water runoff from this infrastructure could also increase turbidity and suspended solids in adjacent waterbodies, which could reduce water quality and cover spawning gravels with fine sediment. Alteration of flow patterns or flow volumes from culvert construction, or as a result of water withdrawals, can impact water quality (e.g., dissolved oxygen, PH, conductivity, temperature) or remove overwintering habitat. However, properly designed, installed, and maintained culverts should avoid and minimize impacts to any type of aquatic habitat, and the BLM's terms and conditions for lands that remain in Federal management would ensure this. The State Anadromous Fish Act (Alaska Statute 16.05.871) and the Fish Passage Act (Alaska Statute 16.05.841) would also ensure this would occur on lands conveyed to the State.

An increase in roads may increase sportfishing access, which could increase harvest of some salmonid populations. New roads could also provide a potential vector for introduction of invasive aquatic species from increased boats if new roads provide boat ramps.

ROWs established for the development expected would increase stream crossings for roads, trails, or utility corridors, which could increase sedimentation and alter fish and riparian habitat. Summer stream crossings using OHVs could create localized degradation of aquatic habitat and affect fish passage. Winter stream crossings with OHVs could affect sensitive overwintering habitat (including eggs of summer and fall spawning species).

Development and associated surface disturbances within the 100-year floodplain could also increase sediment loading in streams and degrade aquatic habitat. Development of lands adjacent to streams and rivers could damage or alter stream banks and riparian corridors, leading to increased sedimentation, loss of habitat, or changes to water quality.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change. Additionally, erosion impacts can migrate upstream of where an action occurs through knickpoints and subsequent channel incision (Kondolf et al. 2002).

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM 2022) and would result in minimal impacts to adjacent aquatic habitat.

If future development is large in scale, potential impacts to freshwater aquatic habitat would be commensurate and may reach beyond specific revoked withdrawals to landscape and watershed levels. General effects of development, such as increased vectors for invasive species introduction, habitat fragmentation, and changes in hydrologic regimes may also contribute to decreased aquatic biodiversity (Schindler et al. 2010). Reductions in biodiversity can also reduce a fish population's ability to adapt to environmental change (Brennan et al. 2019); this coupled with habitat loss and fragmentation can decrease the resiliency of a species overall within a region (Schindler et al. 2010). These impacts may be magnified by impacts from climate change (Des Roches et al. 2021).

Hard-Rock Mining

Hard-rock mining for gold and other materials often involves the development of a large mine footprint to facilitate material excavation and processing. The development of hard-rock mines may include the

placement of fill in stream drainages to store tailings (which removes or degrades aquatic habitat), excavation and maintenance of one or more pits, management of water that accumulates in the pits, and construction of supporting infrastructure such as roads and pipelines. Hard-rock mining has the potential to result in accidental discharges of chemicals and heavy metals into adjacent waterbodies (Limpinsel et al. 2023). Soil disturbances during mining also promote sedimentation into waterways through erosion. Dry-stack tailings disposal facilities and transport of ores over roads introduce the potential for fugitive dust, 95 percent of which could settle in waterbodies within 328 feet of the road (Walker and Everett 1987) and degrade water quality. Hard-rock mining often requires water withdrawals or diversions that can decrease water quality and quantity (Limpinsel et al. 2023).

Sand, Gravel, and Placer Mining

Placer mining (for gold and other locatable minerals) occurs in streambeds and thus has the greatest potential to impact aquatic habitat by directly affecting riparian function by removing pools and overwintering areas, destroying spawning beds, and degrading short- and long-term water quality (by increasing turbidity and suspended solids). Impacts from sand and gravel mining are described in detail in Kondolf et al. (2002). Literature describing the effects of placer mining on rivers and salmonids is scarce based on the lack of placer mining outside of Alaska and portions of Canada. Studies published since the 1980s highlight significant impacts to floodplains, stream channels, water quality, and instream habitats as a result of placer mining (e.g., Arnette 2005; BLM 1988a, 1988b, 1988c; Carlson et al. 1998; Limpinsel et al. 2023; Milner and Piorkowski 2004; Pentz and Kostaschuk 1999; Tidwell et al. 2000). Brady et al. (2018) compared previously mined sites to unimpacted sites within Interior Alaska and found that previously mined and reclaimed sites exhibited conditions that were different than most unmined streams. However, in some cases, those differences were completely outside of the range documented on unmined sites, suggesting impaired aquatic habitat functions. Since the 1980s, changes in placer mining practices under both Federal and State management have limited direct discharge of process water to adjacent rivers and streams; however, hundreds of stream miles are still considered impaired by placer mining due to elevated turbidities (ADEC 2022). As described in Harman et al. (2023), residual impacts from placer mining are likely due to reclamation approaches that rely on natural recovery processes based on a pilot channel and re-contoured valley bottoms compared to more deliberate approaches using hydrology, hydraulics, or geomorphology design criteria and contemporary stream rehabilitation methods. Consequently, the lack of attention to a design process, combined with the harsh Alaskan climate, has led to extensive channel and sometimes valley-wide erosion. Improved placer mine reclamation techniques and standardized effectiveness monitoring techniques have improved recovery trajectories of mined areas and the rehabilitation of habitats (Harman et al. 2023; U.S. Forest Service 2008). Despite these improvements, some degree of long-term aquatic and riverscape degradation is expected following placer mining. BLM reclamation requirements seek only to rehabilitate habitats and not to restore the full complement of aquatic ecosystem processes. The full recovery of aquatic ecosystems in mined areas could take decades to hundreds of years depending on a wide range of factors, including overall watershed condition, extent of disturbance, and reclamation approach (Arnett 2005; Brady et al. 2018; Harman et al. 2023).

Mining using suction dredging would have similar impacts to placer mining because it destroys benthic aquatic habitat, may entrain benthic aquatic species in the dredged materials, and creates high levels of turbidity. This type of mining ranges from small-scale portable dredges with intakes less than 4 inches, which are often used on small creeks as part of exploration mining phases, to much larger dredges with intakes greater than 6 inches, which are used on larger rivers and streams as part of commercial mining operations. A comprehensive review of the effects of suction dredging on stream habitats is provided in Harvey and Lisle (1998) and includes displacement of spawning substrates (which is particularly impactful in high gradient low-order streams with limited spawning habitat); deposition of fine sediment on downstream spawning habitat; introduction of fine sediment, which can alter dissolved oxygen levels

and decrease viability of eggs in redds; entrainment into the suction device; and simplification of habitat (e.g., reduction of pool habitat and removal of woody debris).

Fluid Mineral Development

Oil and gas and CBNG development would result in the same types of effects from infrastructure development as described above (surface water runoff and flow alteration), with the addition of water withdrawals (needed to support drilling and processing), which would decrease the overall volume of water and could lead to reduced dissolved oxygen, PH, conductivity (Arp et al. 2019; Cott et al. 2008). However, water withdrawals would be required to follow water withdrawal calculation guidelines and permitting requirements of ADNR, which would avoid and minimize effects to water quality and fish. Effects from oil and gas development would generally be localized and long term. The magnitude of development effects would be dependent on the location, depth, size, and geology of the development. However, oil and gas and CBNG development is most likely only in the Ring of Fire and East Alaska planning areas (as described in the RFD in EIS Appendix D). Therefore, effects from those actions would be limited to a small percent of the analysis area for all action alternatives (0.02 percent at the maximum).

Inadvertent Spills

Increased human activity can lead to increased possibility of spills or other accidental releases to waterbodies adjacent to infrastructure. In fact, recent studies indicate that spills may be more frequent than previously recognized (Lubetkin 2022). Contaminants that reach aquatic habitat would degrade the habitat, although the extent of these impacts may be mitigated through permit stipulations and planning efforts.

3.7.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals in high-value watersheds would be retained specifically to avoid conflict with high-quality aquatic habitat. As defined in BLM (2020), high-value watersheds are watersheds that contain the highest fisheries and riparian resource values within a planning area (a high-value watershed dataset is available only for the Bering Sea-Western Interior planning area). Outside the Bering Sea-Western Interior planning area, known high-quality or unique habitat was retained, such as parcels in the Imuruk Basin near Nome and the Mount Osborn ACEC, which were retained because the area is important to the genetically unique Kigluaik Mountains Arctic char.

Lands that remain withdrawn under Alternative B would cause no change to aquatic habitat because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how they are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.7.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1. Table 3.7-2 summarizes the total miles or acres of aquatic habitat where the 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area. Table 3.7-2 summarizes the total stream miles by river basin that would have withdrawals revoked under Alternative B.

Table 3.7-2. Summary of Impacts to Aquatic Habitat where 17(d)(1) Withdrawals Would be Revoked under Alternative B

Habitat	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*,†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Streams and rivers (miles)	752,711	978	86	22	22
Anadromous streams and rivers (miles)	70,434	103 total 53 spawning 64 rearing	15 total 8 spawning 8 rearing	1 total 1 spawning 1 rearing	1 total 1 spawning 1 rearing
Lakes and ponds (acres)	5,407,552	18,977	3,763	704	704
Wetlands (acres)	47,527,000	72,000	3,000	2,000	2,000

Note: Miles of spawning habitat and rearing habitat may overlap so they do not sum to the total miles of anadromous waters.

Source: ADFG (2023); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

Table 3.7-3. Stream Miles by Basin where 17(d)(1) Withdrawals Would be Revoked under Alternative B

Hydrologic Unit Code 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutian Islands	12,199	0	0	0	0
Central Southeast Coast	34,423	0	0	0	0
Cook Inlet	143	0	0	0	0
Copper River	45,012	355	7	7	7
Gulf of Alaska	16,558	0	0	0	0
Headwaters Yukon River	17,699	0	0	0	0
Kenai Peninsula	8,008	3	0	0	0
Knik Arm	10,290	78	21	0	0
Kobuk-Selawik Rivers	42,754	9	9	0	0
Kodiak - Shelikof	25,309	0	0	0	0
Koyukuk River	38,828	0	0	0	0
Kvichak-Port Heiden	30,177	25	0	0	0

Hydrologic Unit Code 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed ^{††}	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Lower Kuskokwim River	61,609	2	0	0	0
Melozitna River-Yukon River	20,895	0	0	0	0
Noatak River – Lisburne Peninsula	32,690	0	0	0	0
Northern Seward Peninsula	9,964	1	0	0	0
Northern Southeast Alaska	11,349	0	0	0	0
Norton Sound	22,876	30	0	0	0
Nushagak River	31,407	0	0	0	0
Outlet Yukon River	52,163	3	0	0	0
Prince William Sound	9,493	0	0	0	0
Southern Southeast Alaska	29,175	0	0	0	0
Susitna River	35,689	111	0	0	0
Tanana River	69,540	31	19	2	2
Upper Kuskokwim River	44,127	124	29	0	0
Western Arctic	10,939	203	0	0	0
Western Cook Inlet	18,109	2	1	0	0
White River – Yukon River	11,286	0	0	0	0
Total	752,711	977	86	9	9

Source: USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management.

3.7.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

Lands that remain withdrawn under Alternative C would cause no change to aquatic habitat. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to freshwater aquatic habitat from the resulting development would be of the same types as Alternative B but to a greater magnitude and extent because more acres of freshwater aquatic habitat in the focused analysis area could be affected (Table 3.7-4). Additionally, 17(d)(1) withdrawals would not be retained specifically to avoid conflict with aquatic habitat as they would for Alternative B.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the

number of requirements for avoidance and minimization of impacts to aquatic habitat. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection. Table 3.7-5 summarizes the total stream miles by river basin that would have withdrawals revoked under Alternative C.

Table 3.7-4. Summary of Impacts to Aquatic Habitat where 17(d)(1) Withdrawals Would be Revoked Under Alternative C

Habitat	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*,†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Streams and rivers (miles)	752,711	13,950	1,623	1,176	283
Anadromous streams and rivers (miles)	70,434	1,095 total 614 spawning 786 rearing	99 total 79 spawning 77 rearing	43 total 25 spawning 27 rearing	2 total 2 spawning 2 rearing
Lakes and ponds (acres)	5,407,552	58,088	8,484	17,061	2,722
Wetlands (acres)	47,527,000	675,000	42,000	54,000	17,000

Note: Miles of spawning habitat and rearing habitat may overlap so they do not sum to the total miles of anadromous waters.

Source: ADFG (2023); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

Table 3.7-5. Stream Miles by Basin where 17(d)(1) Withdrawals Would be Revoked under Alternative C

HUC 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutian Islands	12,199	0	0	0	0
Central Southeast Coast	34,423	1	0	0	0
Cook Inlet	143	0	0	0	0
Copper River	45,012	1,569	321	774	239
Gulf of Alaska	16,558	5	0	0	0
Headwaters of Yukon River	17,699	0	0	0	0
Kenai Peninsula	8,008	5	0	8	0
Knik Arm	10,290	419	32	69	0

HUC 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed ^{††}	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Kobuk-Selawik Rivers	42,754	766	9	9	0
Kodiak - Shelikof	25,309	0	0	0	0
Koyukuk River	38,828	7	0	0	0
Kvichak-Port Heiden	30,177	107	14	0	0
Lower Kuskokwim River	61,609	2,533	0	8	0
Melozitna River-Yukon River	20,895	7	0	0	0
Noatak River – Lisburne Peninsula	32,690	221	0	0	0
Northern Seward Peninsula	9,964	400	0	8	0
Northern Southeast Alaska	11,349	34	0	0	0
Norton Sound	22,876	2,245	708	177	41
Nushagak River	31,407	14	0	1	0
Outlet Yukon River	52,163	721	75	0	0
Prince William Sound	9,493	270	0	8	0
Southern Southeast Alaska	29,175	0	0	0	0
Susitna River	35,689	1,363	248	15	0
Tanana River	69,540	429	186	100	3
Upper Kuskokwim River	44,127	2,332	29	0	0
Western Arctic	10,939	349	0	0	0
Western Cook Inlet	18,109	124	1	0	0
White River – Yukon River	11,286	0	0	0	0
Total	752,711	13,921	1,623	1,177	283

Source: USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.7.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the land previously withdrawn allowing for the disposal of lands and the location of mining claims. Top filed lands that become effectively selected due to the withdrawal revocation would

be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to freshwater aquatic habitat. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the direct and indirect impacts described in Section 3.7.1.2.2. The greatest impacts to freshwater aquatic habitat are expected where development is more likely and conveyance out of Federal ownership is more likely. Alternative D would have similar types of impacts to freshwater aquatic habitat as Alternative C but to a larger extent and magnitude because more acres of freshwater aquatic habitat occur in the areas where the 17(d)(1) withdrawals would be revoked.

Potential for impacts to freshwater aquatic habitat is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C. Table 3.7-6 summarizes the total miles or acres of aquatic habitat where the 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Table 3.7-7 summarizes the total stream miles by river basin that would have withdrawals revoked under Alternative D.

Table 3.7-6. Summary of Impacts to Aquatic Habitat where 17(d)(1) Withdrawals Would be Revoked under Alternative D

Habitat	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Streams and rivers (miles)	752,711	64,741	1,623	1,405	283
Anadromous streams and rivers (miles)	70,434	6,276 total 3,407 spawning 4,221 rearing	99 total 79 spawning 77 rearing	45 total 28 spawning 30 rearing	2 total 2 spawning 2 rearing
Lakes and ponds (acres)	5,407,552	166,474	8,484	17,061	2,722
Wetlands (acres)	47,527,000	2,400,000	42,000	55,000	17,000

Note: Miles of spawning habitat and rearing habitat may overlap so they do not sum to the total miles of anadromous waters.

Source: ADFG (2023); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

Table 3.7-7. Stream Miles by Basin where 17(d)(1) Withdrawals Would be Revoked under Alternative D

HUC 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Aleutian Islands	12,199	14	0	0	0
Central Southeast Coast	34,423	2	0	0	0

HUC 6	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Cook Inlet	143	0	0	0	0
Copper River	45,012	2,123	321	776	239
Gulf of Alaska	16,558	5	0	0	0
Headwaters Yukon River	17,699	0	0	0	0
Kenai Peninsula	8,008	5	0	8	0
Knik Arm	10,290	420	32	69	0
Kobuk-Selawik Rivers	42,754	9,709	9	40	0
Kodiak - Shelikof	25,309	0	0	0	0
Koyukuk River	38,828	2,237	0	0	0
Kvichak-Port Heiden	30,177	1,497	14	15	0
Lower Kuskokwim River	61,609	5,392	0	20	0
Melozitna River-Yukon River	20,895	617	0	0	0
Noatak River – Lisburne Peninsula	32,690	3,105	0	113	0
Northern Seward Peninsula	9,964	3,172	0	10	0
Northern Southeast Alaska	11,349	177	0	0	0
Norton Sound	22,876	10,948	708	231	41
Nushagak River	31,407	1,345	0	1	0
Outlet Yukon River	52,163	11,539	75	0	0
Prince William Sound	9,493	287	0	8	0
Southern Southeast Alaska	29,175	0	0	0	0
Susitna River	35,689	2,827	248	15	0
Tanana River	69,540	544	186	100	3
Upper Kuskokwim River	44,127	6,978	29	0	0
Western Arctic	10,939	938	0	0	0
Western Cook Inlet	18,109	860	1	0	0
White River – Yukon River	11,286	0	0	0	0
Total	752,711	64,741	1,623	1,406	283

Source: USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.7.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact aquatic habitat as described in Section 3.7.1.2.2. Table 3.7-8 summarizes each alternative.

Alternative A would have no impacts to freshwater aquatic habitat (see Table 3.7-8). Alternative B would contribute modest impacts to aquatic habitat, Alternative C would have far greater impacts (approximately 14 times the miles of streams and 3 times the acreage of lakes and ponds as Alternative B), and Alternative D would have the most impacts on aquatic habitat because it would have the most acres where the 17(d)(1) withdrawals have been revoked (66 times the miles of streams and 9 times the acreage of lakes and ponds as Alternative B).

Table 3.7-8. Miles of Streams where 17(d)(1) Withdrawals Would be Revoked under each Alternative

Alternative	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	978 (103 anadromous)	86 (15 anadromous)	9* (1 anadromous)	9 (1 anadromous)
Alternative C	13,950 (1,095 anadromous)	1,623 (99 anadromous)	1,177 (43 anadromous)	283 (2 anadromous)
Alternative D	64,741 (6,187 anadromous)	1,623 (99 anadromous)	1,406 (45 anadromous)	283 (2 anadromous)

Note: Anadromous streams and rivers are designated EFH.

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.7.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect freshwater aquatic habitat in ways similar to those described in Section 3.7.1.2.2.

The development following revocation of the 17(d)(1) withdrawals in combination with the RFAs described in Section 3.1, Introduction and Methodology, may have adverse effects on drainage patterns and water quality, although the extent of the impacts would depend on the specific type and location of the development activity. Although many of the RFAs would constitute relatively small projects that would not lead to substantial habitat loss, some of the larger projects (e.g., mine development, oil and gas development, port expansion) would contribute to local or even regional impacts to aquatic habitat that could be compounded when the effects of development following revocation of the 17(d)(1) withdrawals are added to them. For example, much of the decision area comprises largely intact and minimally disturbed ecosystems. Though infrastructure siting is required to minimize infrastructure in aquatic

habitats per CWA Section 404 permitting, introduction of infrastructure for development may disconnect fish and aquatic species from important habitats for certain life history stages, such as side-channel spawning or floodplain-rearing habitats (Tockner and Stanford 2002; Trombulak and Frissell 2000). Over time, aquatic habitat may be fragmented, which can result in decreased spawning and rearing success at a watershed scale for fish like Pacific salmon, with complicated migratory, spawning, and rearing behavior.

Where revocation of 17(d)(1) withdrawals across areas with the most potential for development (the focused analysis area) overlap with reasonably foreseeable or planned large-scale development (e.g., Ambler Road and associated large-scale mining projects, the Susitna Watana Dam, the Donlin Mine and pipeline, the liquefied natural gas (LNG) pipeline, the Graphite One Mine, and the Manh Choh Mine), effects to aquatic habitat could be compounded. The amount of available aquatic habitat in these areas could cumulatively decrease or degrade. Large-scale mine developments typically require the construction of tailings facilities and other infrastructure that can completely remove aquatic habitat, reduce water levels, alter recharge rates, modify natural drainage, disrupt surface hydrology, or increase velocities of floodwater (see Section 3.7.2.2).

The continued trend of climate change is anticipated to exacerbate many of the effects of any development on aquatic habitat in the analysis area. For example, increased turbidity in streams from development on or adjacent to land where 17(d)(1) withdrawals are revoked could be compounded by climate change–induced permafrost thaw, resulting in degraded water quality and degraded habitat quality. The effects of water withdrawals from lakes and rivers for industrial uses or development activity may be intensified by climate change because water quantity, water temperatures, and overall water quality are altered by the changing climate. Additionally, if introduction of invasive species occurs due to increased vectors for introduction from development, climate change could allow establishment of aquatic species that were previously incapable of surviving at higher latitudes. These species may alter aquatic food web dynamics by increasing or decreasing certain species or introducing species that prey on native species (e.g., northern pike [*Esox lucius*]).

3.7.2 How would revocation of 17(d)(1) withdrawals affect fish and aquatic invertebrate populations?

The analysis area and temporal scale for potential impacts to fish and aquatic invertebrate populations are the same as that described in Section 3.7.1, Freshwater Aquatic Habitat.

The following indicators were used to analyze this issue:

- Qualitative description of changes to trends in fish populations for Pacific salmon, as determined from ADFG status reports
- Qualitative description of changes in fish and aquatic invertebrate species composition, as determined from scientific literature

3.7.2.1 Affected Environment

Fish species that use the habitats described in Section 3.7.1 are listed in Table 3.7-9. Aquatic habitat on BLM-managed lands in the analysis area are described in Section 3.7.1.1, Affected Environment. Native species are widely distributed and occur in a variety of habitats in the analysis area.

Table 3.7-9. Key Native Fish Species that Use the Analysis Area

Family or Subfamily	Scientific Name	Common Name	Habitat Use
Acipenserid	<i>Acipenser transmontanus</i>	White sturgeon	Anadromous
Agnathan	<i>Entospenus tridentatus</i>	Pacific lamprey	Anadromous
Agnathan	<i>Lampetra camtschatica</i>	Arctic lamprey	Anadromous
Cod	<i>Lota lota</i>	Burbot	Freshwater
Esocids	<i>Esox lucius</i>	Northern pike	Freshwater
Minnows	<i>Catostomus catostomus</i>	Longnose sucker	Freshwater
Minnows	<i>Couesius plumbeus</i>	Lake chub	Freshwater
Mudminnows	<i>Dallia pectoralis</i>	Alaska blackfish	Freshwater
Salmonid	<i>Coregonus autumnalis</i>	Arctic cisco	Anadromous
Salmonid	<i>Coregonus laurettae</i>	Bering cisco	Anadromous
Salmonid	<i>Coregonus nasus</i>	Broad whitefish	Anadromous
Salmonid	<i>Coregonus pidschian</i>	Humpback whitefish	Anadromous
Salmonid	<i>Coregonus sardinella</i>	Least cisco	Anadromous
Salmonid	<i>Oncorhynchus clarkii</i>	Cutthroat trout	Anadromous
Salmonid	<i>Oncorhynchus gorbuscha</i>	Pink salmon	Anadromous
Salmonid	<i>Oncorhynchus keta</i>	Chum salmon	Anadromous
Salmonid	<i>Oncorhynchus kisutch</i>	Coho salmon	Anadromous
Salmonid	<i>Oncorhynchus mykiss</i>	Rainbow trout, steelhead trout	Anadromous
Salmonid	<i>Oncorhynchus nerka</i>	Sockeye salmon	Anadromous
Salmonid	<i>Oncorhynchus tshawytscha</i>	Chinook salmon	Anadromous
Salmonid	<i>Prosopium coulteri</i>	Pygmy whitefish	Freshwater
Salmonid	<i>Prosopium cylindraceum</i>	Round whitefish	Freshwater
Salmonid	<i>Salvelinus alpinus</i>	Arctic char	Freshwater
Salmonid	<i>Salvelinus malma</i>	Dolly Varden	Anadromous
Salmonid	<i>Salvelinus namaycush</i>	Lake trout	Freshwater
Salmonid	<i>Stenodus leucichthys</i>	Sheefish or iconnu	Anadromous
Salmonid	<i>Thymallus arcticus</i>	Arctic grayling	Freshwater
Sculpin	<i>Cottus cognatus</i>	Slimy sculpin	Freshwater
Smelt	<i>Osmerus mordax</i>	Rainbow smelt	Anadromous
Smelt	<i>Thaleichthys pacificus</i>	Eulachon	Anadromous
Stickleback	<i>Gasterosteus aculeatus</i>	Threespine stickleback	Anadromous
Stickleback	<i>Pungitius pungitius</i>	Ninespine stickleback	Anadromous

Sources: BLM (2006a, 2006b, 2007a, 2007b, 2020).

Western Alaska salmon stocks have declined since the late 1990s, leading to seasonal restrictions and fishery closures (McKenna 2015), and in recent years, Chinook salmon, summer-run chum salmon, and coho salmon populations have continued their marked declines in abundance (United States and Canada Yukon River Joint Technical Committee 2022). These declines have led to restrictions on all commercial and recreational fishing and even the complete closure of subsistence fishing in the greater Yukon River watershed (Jallen et al. 2022). The Alaska Board of Fisheries has classified Yukon River Chinook salmon

as a stock of yield concern since 2000, and escapement goals were not met between 2020 and 2022 (Jallen et al. 2022). Similarly, drastic declines in summer-run and fall-run chum and coho salmon have been observed since 2020, leading to annual escapement goals not being met and continued closures to fishing (including subsistence) in 2023 (Jallen et al. 2022). The Alaska Board of Fisheries has previously classified Kuskokwim River Chinook and chum salmon as stocks of yield concern since 2000 (Linderman and Bergstrom 2006). ADFG closed the Kuskokwim River to subsistence fishing for both species in 2023. The Yukon Delta National Wildlife Refuge Manager determined that “Federal management was necessary for the conservation and the continuation of subsistence uses for Chinook, Chum, and Coho Salmon within the Federal public waters of the Kuskokwim River drainage” (Federal Subsistence Board 2023). The Yukon Delta National Wildlife Refuge closed the fishery to gillnet fishing since 2019 (Federal Subsistence Board 2023). Although there are many potential reasons for declines in Pacific salmon stocks in Alaska (e.g., overfishing, species-specific competition with hatchery), climate change is thought to have significantly impacted salmon numbers in recent years (Crozier et al. 2021; Murdoch et al. 2023; Rand and Ruggerone 2024).

In addition to population-level declines, the average body size of all species of adult salmon in Alaska since 2010 has gotten smaller (Oke et al. 2020). The decline is most pronounced for Chinook salmon throughout the Yukon, Arctic, Norton Sound, Kotzebue, and Kuskokwim drainages. Mean freshwater age in years and mean saltwater age in years have also generally declined for all Pacific salmon except chum and pink salmon. Several potential contributing factors to these trends include increasing average global air and seawater temperatures (e.g., changes in population structure due to changes in ocean conditions or food availability) and interspecies interactions (e.g., competition for food resources) (Oke et al. 2020).

In addition to fish species, one amphibian species uses the analysis area: the wood frog (*Rana sylvatica*). This species is capable of inhabiting diverse habitats (e.g., grassland, forest, muskeg, tundra) and is commonly found a considerable distance from freshwater waterbodies.

BLM special status species are those species that are listed as threatened or endangered (or candidate species) under the ESA, those listed by a State as being threatened or endangered, and those species designated as sensitive by the BLM State Director (sensitive species). The BLM maintains a watchlist of species that were candidates for sensitive designation but did not warrant inclusion at the time of evaluation. These include chum salmon in Clear Creek as well as Chinook salmon in Beaver Creek, Norton Sound, and the Yukon River. Three BLM special status species have ranges in the analysis area (and are also BLM sensitive species): Alaskan brook lamprey (*Lethenteron alaskense*), steelhead trout in the Gulkana River, and Arctic char in the Kigluaik Mountains region (BLM 2019). Resident rainbow trout and anadromous steelhead trout interbreed in the Gulkana River (Schwanke 2015; Sloat and Reeves 2014; Wuttig and Olsen 2004); thus, any discussion of steelhead trout also applies to rainbow trout (though rainbow trout is not listed as a BLM special status species). The northern-most population of rainbow trout occurs in the Gulkana River.

The BLM has significant management capability to affect the conservation status of BLM special status species; the BLM refers to their special status species list for planning purposes to avoid and minimize potential negative impacts of any proposed projects on special status species on BLM-managed lands with the goal of preventing the need to list these species under the ESA. They also publicize the list to raise awareness of rare and under-surveyed species and to prompt BLM staff to collect more data, which help better understand the status and distribution of the species. BLM special status species that are not also listed under the ESA do not have special management directed at improving their population trajectories if they occur on lands not managed by the BLM, though some other agencies also have their own management directives. Therefore, BLM special status species that occur on lands currently managed by the BLM would lose the benefits of BLM special status species planning if the land is conveyed out of BLM management.

ADFG tracks the status of salmon stocks and identifies three levels of concern (Yield, Management, and Conservation), with Yield being the lowest level of concern and Conservation being the highest level of concern. As of April 2022 (the last year stocks were reviewed), ADFG has designated 21 stocks of concern (ADFG 2022), five of which have ranges that would overlap the 17(d)(1) withdrawals. These five Management concern stocks are Chinook salmon from the Chilkat River, East Susitna River, Nushagak River, Yukon River, and Norton Sound.

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to impact fish and aquatic invertebrate populations. These trends and actions include climate change, fisheries harvest, and infrastructure construction, as described in Section 3.7.1.1. Construction and fisheries harvest have impacted fish individually and at the regional population level, and resource extraction projects have led to localized mortality and displacement (Sergeant et al. 2022); however, climate change is believed to be responsible for larger population effects across the region (Von Biela et al. 2022).

3.7.2.2 Environmental Consequences

3.7.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.7.2.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact fish and aquatic invertebrate populations.

3.7.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Changes in land use following revocation of 17(d)(1) withdrawals may result in the loss of individual fish or invertebrates due to increased human activities or development on those lands.

Contaminant spills from any type of development could kill or injure aquatic species. Contaminants can directly kill fish and aquatic invertebrates if concentrations or exposure times are great enough. Impacts from multiple, small inputs of chemical pollution may be compounded further downstream. Migrating fish, though only for a short time, may be exposed to chemical pollution during their travel even if no pollutant concentrations are found in their destination waterbodies. A long exposure time may occur for species whose spawning grounds are impacted by pollutants, resulting in deformities, kills, or bioaccumulation of contaminants.

Mine development (e.g., non-energy leasable minerals, coal, salable minerals, and locatable minerals) would increase sediment loading and increase the potential for spills of contaminants, which could result in localized mortalities of individuals. Increased runoff and sedimentation can cover and kill fish eggs. Mining activity that substantially alters water availability because of water withdrawals or diversions would affect local fish and aquatic invertebrate populations, including the potential for mortality. Effects of water withdrawals from lakes and rivers for industrial uses may be intensified by climate change.

The habitat impacts from placer mining could lead to fish mortality, as described in Section 3.7.1.2.2, Impacts Common to All Action Alternatives.

Oil and gas exploration activities such as seismic surveys could result in localized, short-term displacement or limited mortality of local fish and aquatic invertebrate populations. Localized mortality from fish entrainment during water withdrawals would be avoided through best management practices and

ADFG permitting requirements. Oil and gas and CBNG development is most likely in the Ring of Fire and East Alaska planning areas (as described in the RFD in EIS Appendix D).

CBNG exploration and development and ROW development would be unlikely to affect fish and aquatic invertebrate populations through mortality but could lead to localized displacement. The effects would be short term.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps, as described in BLM 2022), and it is anticipated these conveyances would have nominal impacts on fish and aquatic invertebrate populations, though some individuals may be killed as part of subsistence activities.

3.7.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. Alternative B would retain all 17(d)(1) withdrawals that are in high-value watersheds for fisheries and water quality, as described in Section 3.7.1.2.3, Alternative B. Specifically, 17(d)(1) withdrawals in the Imuruk Basin in the Kobuk-Seward Peninsula planning area would be retained to protect genetically unique Kigluaik Mountains Arctic char, a BLM sensitive fish species (this was the original rationale for designating the Mount Osborn ACEC [BLM 2008]). Therefore, Alternative B would largely avoid most impacts to fish or aquatic invertebrate populations.

Lands that remain withdrawn under Alternative B would cause no change to fish and aquatic invertebrate populations because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.7.1.2.2, Impacts Common to All Action Alternatives.

Alternative B could impact one BLM sensitive fish species (Gulkana River steelhead trout) because multiple priority conveyances are near the Gulkana River. Alternative B is not anticipated to have impacts on the other BLM sensitive fish species (Kigluaik Mountains Arctic char) because this species does not occur on or immediately downstream from where the 17(d)(1) withdrawals would be revoked.

Under Alternative B, 17(d)(1) withdrawals in the Chilkat River and Nushagak River basins would be retained, and effects to those Chinook salmon ADFG stocks of Management concern would be avoided. Effects to Chinook salmon ADFG stocks of Management concern from the East Susitna River, Yukon River, and Norton Sound would be largely minimized (see Table 3.7-3).

3.7.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

Lands that remain withdrawn under Alternative C would cause no change to fish and aquatic invertebrate populations. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be

opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts on fish and aquatic invertebrate populations from the resulting development would be of the same types as Alternative B (e.g., degradation of water quality, loss or alteration of habitat from road construction), but to a greater magnitude and extent because more acres of fish and aquatic invertebrate populations could be affected in the focused analysis area (see Table 3.7-5). Alternative C would also have more impacts to fish and aquatic invertebrate populations than Alternative B because it would revoke 17(d)(1) withdrawals in high-value watersheds, including those used by BLM sensitive fish species.

Alternative C could impact up to three BLM sensitive fish species (Alaskan brook lamprey, Kigluaik Mountains Arctic char, and Gulkana River steelhead trout) because multiple priority conveyances include habitat for these species. Specifically, 17(d)(1) withdrawals in the Imuruk Basin in the Kobuk-Seward Peninsula planning area would be revoked; these parcels are in the area where the Graphite One mine is proposed on State land. State top filed Priority 1 and 2 lands that are not otherwise encumbered would become effective selections and likely be conveyed to the State, making development of those parcels more likely. The conveyance of these top filed lands, which would likely result in mining activity, could ultimately impact water quality important to resident and anadromous species, including the genetically unique Kigluaik Mountains Arctic char. Additional revocations in the East Alaska planning area may have impacts on Gulkana River steelhead trout, particularly from increased road, mining, pipeline, or forestry projects, as well as any potential future military land use projects.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to fish and aquatic invertebrate populations. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Under Alternative C, some 17(d)(1) withdrawals in the East Susitna River Basin and Norton Sound would be revoked, and thus Chinook salmon ADFG stocks of Management concern from those basins could be affected. Effects to Chinook salmon ADFG stocks of Management concern from the Chilkat River, Nushagak River, and Yukon River would be largely minimized since few revocations would occur in those basins (see Table 3.7-5).

3.7.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to fish and aquatic invertebrate populations. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the direct and indirect impacts described in Section 3.7.1.2.2, Impacts Common to All Action Alternatives. The greatest impacts to fish and aquatic invertebrate populations are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.7-6 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to fish and aquatic invertebrate populations as Alternative C but to a larger extent and magnitude because more miles of stream and acres of lakes and ponds occur on 17(d)(1) withdrawals that would be revoked.

Potential for impacts to fish and aquatic invertebrate populations is greatest under this alternative because the 17(d)(1) withdrawals would not only be revoked as to the most acres but would not be retained for any high-value watersheds or areas important to BLM sensitive fish species, such as Kigluaik Mountains Arctic char. Therefore, more acres and more sensitive acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C. Alternative D could impact up to three BLM sensitive fish species (Alaskan brook lamprey, Kigluaik Mountains Arctic char, and Gulkana River steelhead trout) because multiple priority conveyances include habitat for Arctic char or are immediately adjacent to the Gulkana River.

Under Alternative D, the 17(d)(1) withdrawals in the Chilkat River, East Susitna River, Nushagak River, Yukon River, and Norton Sound basins would be revoked, and thus Chinook salmon ADFG stocks of Management concern from those basins could be affected due to degraded habitat (see Table 3.7-7).

3.7.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact fish and aquatic invertebrate populations as described in Section 3.13.1.2.2, Impacts Common to All Action Alternatives. Table 3.7-8 summarizes impacts under each alternative.

Alternative A would not impact fish or aquatic invertebrate populations. Alternative B would contribute modest impacts to fish or aquatic invertebrate populations but would avoid high-value watersheds. Alternative C would have far greater impacts, including to high-value watersheds. Alternative D would have the greatest impact on fish or aquatic invertebrate populations.

3.7.2.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect fish and aquatic invertebrate populations in similar ways to those described in Section 3.7.2.2.2.

The development following revocation of the 17(d)(1) withdrawals in combination with the RFAs described in Section 3.1, Introduction and Methodology, could have adverse effects on local fish and aquatic invertebrate populations, though the extent of the impacts would depend on the specific development that may occur on conveyed lands. Although many of the RFAs would constitute relatively small projects that would not lead to substantial mortality effects, some of the larger projects (e.g., mine development, oil and gas development, port expansion) would contribute to local or even regional impacts to fish and aquatic invertebrate populations that could be compounded when the effects of 17(d)(1) withdrawals are added to them.

Where revocation of 17(d)(1) withdrawals in areas with the most potential for development (the focused analysis area) overlap with reasonably foreseeable or planned large-scale development (e.g., Ambler Road and associated large-scale mining projects, the Susitna Watana Dam, the Donlin Mine and pipeline, the LNG pipeline, the Graphite One Mine, and the Manh Choh Mine), effects to aquatic species could be compounded. These areas could experience changes in species-specific population abundance or species patterns if effects to populations were additive. Large-scale mine developments typically require the construction of tailings facilities and other infrastructure that can completely remove aquatic habitat and impact larger fish and aquatic invertebrate populations, but these would likely be limited to the subwatershed (i.e., HUC 12) level. Large-scale hard-rock mines would increase the risk to subwatershed

fish and aquatic invertebrate populations due to the use of chemicals required for the processing of mined material.

The continued trend of climate change is anticipated to exacerbate many of the effects of the project on aquatic species in the analysis area. For example, the effects of water withdrawals from lakes and rivers for industrial uses or development activity following withdrawal revocation may be intensified by climate change because water quantity, water temperatures, and overall water quality are altered by the changing climate. This would further stress local fish and aquatic invertebrate populations and exacerbate effects on regional populations. Additionally, if the introduction of invasive species occurs due to increased vectors for introduction from development, climate change could allow establishment of aquatic species that were previously incapable of surviving at higher latitudes. These species may alter aquatic food web dynamics by increasing or decreasing certain species or introducing species that prey on native species (e.g., northern pike).

3.8 MINERALS

The analysis for locatable and leasable minerals focuses on mineral availability. The impacts of mineral extraction on other resources are analyzed in their respective resource sections in Chapter 3.

3.8.1 How would revocation of 17(d)(1) withdrawals affect the availability of locatable minerals?

Locatable minerals include commodities like gold, silver, copper, lead, zinc, barite, gypsum, and certain varieties of limestone, which are subject to appropriation under the General Mining Act of 1872. The revocation of 17(d)(1) withdrawals could open lands to mining claims and mineral extraction that are not already open to locatable mineral entry. To analyze the difference in potential impacts among alternatives, the total acres of lands opened to mining claims under the General Mining Act due to revocation of 17(d)(1) withdrawals were calculated under each alternative.

The analysis area for locatable minerals is the lands with high locatable mineral potential on 17(d)(1) withdrawals in the decision area. The area more likely to be developed for locatable minerals is the 17(d)(1) withdrawals within 1 mile of existing State or Federal mining claims, as described in the RFD. Impacts to locatable mineral availability are assumed to be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicators were used to analyze this issue:

- Acres opened to mining claims under each alternative
- Acres more likely to be developed for locatable minerals

3.8.1.1 Affected Environment

The 17(d)(1) withdrawals at issue include multiple PLOs, not all of which close the land to mineral entry. Table 1.2-1 summarizes the lands currently open to mineral entry within the 17(d)(1) withdrawals by planning area.

The RFD in EIS Appendix D summarizes locatable mineral potential and existing development within each of the five planning areas. Section 3 of the RFD describes mining activities and trends regarding locatable minerals on 17(d)(1) withdrawals, including the acres of high mineral potential for gold, silver, copper, lead, zinc, barite, gypsum, and certain varieties of limestone. The RFD also describes the

likelihood of development for locatable minerals in the five planning areas (RFD Table 7-2, RFD Figures 10, 13, 16, 19, and 22). Section 3 of the RFD summarizes the current management actions for locatable minerals overlapping with 17(d)(1) withdrawals.

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to impact locatable mineral availability because numerous mineral extraction projects are planned (Ambler Mining District, Graphite One Mine, Manh Choh Mine, Donlin Gold, Palmer Project advanced exploration, as well as expansion to Red Dog Mine and to mines in the Valdez Creek Mining District). The existing trend of climate change will continue to influence locatable mineral availability by potentially increasing access as some resources are currently inaccessible due to ice cover. Past development and resource extraction have resulted in reduced mineral availability but have also provided the infrastructure necessary for resource extraction in adjacent areas.

3.8.1.2 Environmental Consequences

3.8.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.8.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact locatable mineral availability.

3.8.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Section 3 of the RFD describes historical mineral occurrences and development, mining claims, notices and plans for mining activity, and locatable mineral potential development (see EIS Appendix D).

In the 17(d)(1) withdrawals where the land is closed to mineral location under the General Mining Act of 1872, revoking the 17(d)(1) withdrawals would allow miners to locate mining claims where not otherwise encumbered by State or ANC selections. Operators could also submit a notice (for exploration causing surface disturbance of 5 acres or less of public lands on which reclamation has not been completed, or less than 1,000 tons of presumed ore is to be removed), or a plan of operations for activities that exceed those requiring a notice. No more than 5 acres of land can be disturbed at a time. Submittals for both a notice or plan of operations must meet the requirements of 43 CFR 3809.301 and 43 CFR 3809.401, respectively, before they will be processed, and activities described within the submittals must prevent undue and unnecessary degradation. A plan of operations also requires a NEPA analysis; both require some type of bonding or financial guarantee before operations begin. A plan of operation is the only step where the BLM can exercise discretion to mitigate the impacts of mining; however, the BLM cannot prohibit mining.

On lands for which revocation would lead to conveyance to the State, Federal mining laws and regulations would no longer apply (such as requiring a notice or plan of operations, and the ability of the BLM to exercise discretion to mitigate the impacts). Federal mining claims that occur on land that could be conveyed to the State could be conditionally relinquished to allow a State mining claim to fall into place. The change in management of the land to State management removes the ability of the BLM to mitigate the impacts of the mining activities in the future.

Approximately 9,393,000 acres of 17(d)(1) withdrawals are currently open to mineral entry per their PLOs or PLO modifications. If State top filings that are on revocations currently open to mineral entry become effective selections (i.e., if the lands are not otherwise encumbered), the land would become

segregated and would no longer be open to mineral entry. This would reduce locatable mineral availability. However, the analysis assumes that Priority 3 and 4 top filings would be relinquished or rejected due to overselection, at which point the land would become open to mineral entry if the withdrawal is revoked in full or remain closed if revoked in part. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.8.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on locatable minerals for land status. This alternative would not open any lands to mineral entry under the General Mining Law of 1872, but could cause lands to be opened to mining locatable minerals where they are conveyed to the State. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how locatable minerals are managed and could lead to development (as described in the RFD in EIS Appendix D). BLM mining regulations would not apply to the extraction of the locatable minerals in this area.

Table 3.8-1 summarizes the impacts to locatable mineral availability on lands where the 17(d)(1) withdrawals would be revoked under Alternative B.

Table 3.8-1. Summary of Impacts to Locatable Mineral Availability under Alternative B

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed[†] for Locatable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	8,000	0	0	0	0
East Alaska	1,000	< 1,000	< 1,000	0	0
Kobuk-Seward Peninsula	< 1,000	0	0	0	0
Ring of Fire	6,000	0	0	0	0
Total	15,000	< 1,000	< 1,000	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.8.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on locatable mineral availability for lands that remain withdrawn under Alternative C. Alternative C opens all high mineral potential lands in the decision area to mineral entry. Most of the newly opened land would be Federally managed, but it will also lead to the conveyance of all Priority 1 and 2 top filings to the State, at which time the land would be State managed and will likely be available for mining locatable minerals under State law (Table 3.8-2). Those withdrawals retained under Alternative B due to their conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs are not retained under Alternative C. Impacts would be greatest for 56,000 acres identified as more likely to be developed (see Table 3.8-2, Column C).

Table 3.8-2 summarizes the impacts to locatable mineral availability on lands where the 17(d)(1) withdrawals would be revoked under Alternative C. Approximately 273,000 acres of the 17(d)(1) revocations are State top filings on lands that are not otherwise encumbered, are currently open to mineral entry per their PLOs or PLO modifications (Columns B and F in Table 3.8-2). If the 17(d)(1) withdrawals are revoked and these become effective selections, the land would become segregated and would no longer be open to mineral entry. As such, not all of the land would be opened immediately to locatable mineral entry under the General Mining Law of 1872 upon revocation, but the land could become available again under State management once the land is conveyed for Priority 1 and 2 top filings. However, the analysis assumes that Priority 3 and 4 top filings would be relinquished or rejected due to overselection, at which point the land (9,000 acres) would become open to mineral entry under the General Mining Law of 1872 if the withdrawal is revoked in full or remain closed if revoked in part (Column F in Table 3.8-2).

Table 3.8-2. Summary of Impacts to Locatable Mineral Availability under Alternative C

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed^{*,†} for Locatable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	49,000	1,000	0	< 1,000	9,000
East Alaska	205,000	27,000	1,000	3,000	< 1,000
Kobuk-Seward Peninsula	27,000	26,000	2,000	2,000	< 1,000
Ring of Fire	7,000	2,000	0	0	0
Total	288,000	56,000	3,000	5,000	9,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.8.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to locatable mineral availability. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.8.1.2.2. Alternative D would have similar types of impacts to locatable mineral availability as Alternative C but to a larger extent and magnitude because more acres would be revoked (Table 3.8-3). Impacts would be greatest for 92,000 acres identified as more likely to be developed (see Table 3.8-3, Column C).

Table 3.8-3 summarizes the impacts to locatable mineral availability on lands where 17(d)(1) withdrawals would be revoked under Alternative D. Approximately 322,000 acres of the 17(d)(1) revocations that are State top filings on lands that are not otherwise encumbered and are currently open to mineral entry per their PLOs or PLO modifications (Columns B and F in Table 3.8-3). If the 17(d)(1) withdrawals are revoked and these become effective selections, the land would become segregated and would no longer be open to mineral entry. As such, not all of the land would be opened immediately to locatable mineral entry under the General Mining Law of 1872 upon revocation, but the land could become available again under State management once the land is conveyed for Priority 1 and 2 top filings. However, the analysis assumes that Priority 3 and 4 top filings would be relinquished or rejected due to overselection, at which point the land (58,000 acres) would become open to mineral entry under the General Mining Law of 1872 if the withdrawal is revoked in full or remain closed if revoked in part (Column F in Table 3.8-3).

Table 3.8-3. Summary of Impacts to Locatable Mineral Availability under Alternative D

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed* for Locatable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	49,000	1,000	0	< 1,000	54,000
East Alaska	205,000	27,000	1,000	3,000	1,000
Kobuk-Seward Peninsula	27,000	26,000	2,000	2,000	3,000
Ring of Fire	7,000	2,000	0	0	< 1,000
Total	288,000	56,000	3,000	5,000	58,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.8.1.2.6 COMPARISON OF ALTERNATIVES FOR LOCATABLE MINERALS

Alternative A would retain all 17(d)(1) withdrawals; Alternative B would revoke fewer acres of 17(d)(1) withdrawals than either Alternative C or D (Table 3.8-4). Alternatives C and D would have the same acreage where the 17(d)(1) withdrawals are revoked across areas that are more likely to be developed for locatable minerals. Under Alternative D the 17(d)(1) withdrawals would be revoked across more acres of lands currently open to mineral entry that would immediately become effective selections and thus close them to mineral entry until they are conveyed, rejected, or relinquished. Table 3.8-5 summarizes the acres that would become open to locatable mineral entry under each alternative.

Table 3.8-4. Comparison of Impacts to Locatable Mineral Availability

Alternative	Acres of Priority Conveyances Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Locatable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Entry where 17(d)(1) Withdrawals Would be Revoked
Alternative A	0	0	0	0	0
Alternative B	15,000	< 1,000*	< 1,000	0	0
Alternative C	288,000	56,000	3,000	5,000	9,000
Alternative D	288,000	56,000	3,000	5,000	58,000

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

Table 3.8-5. Comparison of Acres Open to Locatable Mineral Entry

Alternative	Currently Open to Mineral Entry on 17(d)(1) Withdrawals	Newly Open to Mineral Entry Immediately Following Revocations of 17(d)(1) Withdrawals*	Immediately Closed to Mineral Entry for up to 10 Years After Revocations of 17(d)(1) Withdrawals**	Newly Open to Mineral Entry Within 10 Years of Revocations of 17(d)(1) Withdrawals†	Potentially Conveyed Out of Federal Management Within 10 years of Revocations of 17(d)(1) Withdrawals‡	Potentially Conveyed Out of Federal Management at Any Time Regardless of Secretarial Decision§
Alternative A	16,724,000	0	0	0	0 currently open 0 currently closed	4,000,000 currently open, but segregated 3,100,000 currently closed
Alternative B	16,724,000	9,000	0	0	6,000 currently open 35,000 currently closed	4,000,000 currently open, but segregated 3,100,000 currently closed
Alternative C	16,724,000	1,407,000	9,000	17,000	264,000 currently open 302,000 currently closed	4,000,000 currently open, but segregated 3,100,000 currently closed
Alternative D	16,724,000	7,511,000	58,000	86,000	264,000 currently open 302,000 currently closed	4,000,000 currently open, but segregated 3,100,000 currently closed

* Acres not selected or top filed that are currently closed to mineral entry and would be open upon revocation of the 17(d)(1) withdrawals.

** State Priority 3 and 4 top filings on lands not otherwise encumbered that are currently open to mineral entry. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals and the land would be segregated and closed to mineral entry until the land is relinquished or rejected. The EIS assumes Priority 3 and 4 top files would be relinquished by the State or rejected by the BLM within 10 years of a Secretarial revocation decision due to overselection.

† State Priority 3 and 4 top filings on lands not otherwise encumbered that are currently closed to mineral entry. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals and the land would be segregated and closed to mineral entry until the land is relinquished or rejected. The EIS assumes Priority 3 and 4 top files would be relinquished by the State or rejected by the BLM within 10 years of a Secretarial revocation decision due to overselection. This calculation assumes lands that return to Federal management would be open to entry.

‡ State Priority 1 or 2 top filings that are not otherwise encumbered. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals, which would segregate the lands and close them to mineral entry until they are conveyed. The EIS assumes Priority 1 and 2 top files would be conveyed within 10 years of a Secretarial revocation decision.

§ Effective selections on 17(d)(1) withdrawals.

3.8.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect locatable minerals in ways similar to those described in Section 3.8.1.2.2.

The RFAs and planned actions described in Section 3.1, Introduction and Methodology, in combination with the proposed 17(d)(1) revocations, may decrease the availability of locatable minerals, although the extent of the impacts would depend on the specific type and location of the activity. Although many of the RFAs and planned actions would constitute relatively small projects that would not lead to substantial changes in mineral availability, some of the larger projects (e.g., mine development) would contribute to local or even regional impacts to locatable mineral availability that could be compounded when the effects of the development that would follow revocation of 17(d)(1) withdrawals are added to them.

Potential development of new mines (e.g., Ambler Mining District, Graphite One Mine, Manh Choh Mine, Donlin Gold) as well as mine expansion (e.g., Red Dog Mine expansion, Valdez Creek Mining District) would decrease mineral availability in the analysis area. Where revocation of 17(d)(1) withdrawals in the areas with the most potential for development (the focused analysis area) overlap with planned or reasonably foreseeable large-scale development, effects to mineral availability could be compounded. For example, many of the lands in the area of the proposed Graphite One Mine have already been conveyed to the State. Although the Graphite One Mine could be developed on existing State lands regardless of the decision of this EIS, revocations of 17(d)(1) withdrawals adjacent to those lands could result in expanded or additional development. This would additively increase availability of mineral entry but decrease overall mineral availability as minerals are mined.

3.8.2 How would revocation of 17(d)(1) withdrawals affect the availability of leasable minerals?

Leasable minerals are minerals or materials designated as leasable under the Mineral Leasing Act of 1920 and include energy materials such as oil, oil shale, gas, and coal, as well as non-energy minerals such as phosphate, potassium, sodium, and gilsonite. The RFD summarizes leasable mineral potential and existing development in each of the five planning areas (see EIS Appendix D).

The analysis area for leasable mineral availability is the area with high leasable mineral potential on 17(d)(1) withdrawals in the decision area. The area more likely to be developed is land under 17(d)(1) withdrawals within 31 miles of the existing road system, railbelt, barge routes, and ports, as described in Section 2 of the RFD (see EIS Appendix D). Impacts to leasable mineral availability are assumed to be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicators were used to analyze this issue:

- Acres opened to mineral leasing under each alternative
- Acres more likely to be developed for leasable minerals

3.8.2.1 Affected Environment

The 17(d)(1) withdrawals at issue include multiple PLOs, not all of which close the land to mineral leasing. Table 1.2-1 summarizes the lands currently open to mineral leasing within the 17(d)(1) withdrawals by planning area.

The RFD summarizes leasable mineral potential and existing development within each of the five planning areas (see EIS Appendix D). Section 2 of the RFD describes activities and trends regarding leasable minerals on lands under 17(d)(1) withdrawals, including the acres of high mineral potential. The RFD also describes the likelihood of development for leasable minerals in the five planning areas (RFD Table 7-1, RFD Figures 1 and 2). Section 2 of the RFD summarizes the current management actions for leasable minerals on 17(d)(1) withdrawals.

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to impact leasable mineral availability because numerous mineral extraction projects are planned (Beluga River Unit Gas Well 211-35, Alaska LNG pipeline, Donlin Gold Project gas pipeline). The existing trend of climate change will continue to influence leasable mineral availability by potentially increasing access as some resources are currently inaccessible due to ice cover. Past development and resource extraction have resulted in reduced mineral availability but have also provided some of the infrastructure necessary for resource extraction in adjacent areas.

3.8.2.2 Environmental Consequences

3.8.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.8.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities listed would continue to impact leasable mineral availability.

3.8.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Section 2 of the RFD describes leasable minerals and activity related to leasable minerals on 17(d)(1) withdrawals (see EIS Appendix D). In the 17(d)(1) withdrawals where the land is closed to leasing under the Mineral Leasing Act of 1920, revoking the 17(d)(1) withdrawals would allow the BLM to review and potentially approve applications for mineral leasing. This would likely lead to an increase in exploration and other mineral development activities. Mineral leasing applications would be subject to the required operating procedures and stipulations in the applicable RMP and would be subject to Federal regulations and reviews such as NEPA, NHPA, ESA, and ANILCA 810.

On lands for which revocation would lead to conveyance to the State, Federal mining laws and regulations would no longer apply. Federal leases that occur on land that could be conveyed to the State could be conditionally relinquished to allow a State lease to fall into place. The change in management of the land to State management removes the ability of the BLM to mitigate the impacts of the extraction activities in the future.

Approximately 7,243,000 acres of 17(d)(1) withdrawals are currently open to mineral leasing per their PLOs or PLO modifications. If State top filings that are on 17(d)(1) withdrawals currently open to mineral leasing become effective selections (i.e., if 17(d)(1) withdrawals are revoked and the lands are top filed and not otherwise encumbered), the land would become segregated and would open to mineral leasing only with State concurrence. This would likely reduce mineral leasing availability. However, the analysis assumes that Priority 3 and 4 top filings would be relinquished or rejected due to overselection, at which point BLM would not need to seek State concurrence before mineral leasing if the 17(d)(1) withdrawal is revoked in full or remain closed if revoked in part. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres

where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.8.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on leasable minerals for lands that remain withdrawn under Alternative B because there would be no change to the land status. This alternative would not open any lands to mineral leasing under Federal management, but could cause lands to be opened to mineral leasing where they are conveyed to the State. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how leasable minerals are managed and could lead to development (as described in the RFD in EIS Appendix D). Federal mining laws and regulations would not apply to the extraction of leasable minerals in this area.

Table 3.8-6 summarizes the impacts to locatable mineral availability on lands where the 17(d)(1) withdrawals would be revoked under Alternative B. Approximately 2,000 acres of 17(d)(1) withdrawals are State top filed on lands that are not otherwise encumbered and are currently open to mineral leasing per their PLOs or PLO modifications (Column B in Table 3.8-6). If the 17(d)(1) withdrawals are revoked and these become effective selections, the land would become segregated and would no longer be open to mineral leasing. This would reduce leasable mineral availability.

Table 3.8-6. Summary of Impacts to Leasable Mineral Availability under Alternative B

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed[†] for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	0	0	0	0	0
East Alaska	2,000	2,000	2,000	0	0
Kobuk-Seward Peninsula	0	0	0	0	0
Ring of Fire	< 1,000	< 1,000	< 1,000	0	0
Total	2,000	2,000	2,000	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.8.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on leasable mineral availability for lands that remain withdrawn under Alternative C. Alternative C opens all high mineral potential lands in the decision area to mineral leasing. Most of the land newly opened to mineral leasing would be Federally managed, but it would also lead to the conveyance of Priority 1 and 2 top filings to the State, at which time the land would be State managed and would likely be available for mineral leasing under State law (see Table 3.8-7). On Federally managed land, mineral leasing would only occur if it is in compliance with the RMP. Those withdrawals retained under Alternative B due to their conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs are not retained under Alternative C. Impacts would be greatest for 16,000 acres identified as more likely to be developed (Table 3.8-7, Column C).

Table 3.8-7 summarizes the impacts to leasable mineral availability on lands where the 17(d)(1) withdrawals would be revoked under Alternative C. Approximately 16,000 acres of 17(d)(1) withdrawals are State top filed on lands that are not otherwise encumbered and are currently open to mineral leasing per their PLOs or PLO modifications (Columns B and F in Table 3.8-7). If the 17(d)(1) withdrawals are revoked and these become effective selections, the land would become segregated and would no longer be open to mineral leasing. This would reduce leasable mineral availability.

Table 3.8-7. Summary of Impacts to Leasable Mineral Availability under Alternative C

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed[†] for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	0	0	0	0	0
East Alaska	16,000	37,000	16,000	< 1,000	0
Kobuk-Seward Peninsula	0	0	0	0	0
Ring of Fire	< 1,000	3,000	< 1,000	0	0
Total	16,000	40,000	16,000	< 1,000	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.8.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the leasing of minerals. Lands that become effectively selected due to the withdrawal revocation would be conveyed if

they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to leasable mineral availability. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.8.2.2.2. Impacts would be greatest for the 40,000 acres identified as more likely to be developed (Table 3.8-8, Column C). On Federally managed land, mineral leasing would only occur if it is in compliance with the RMP.

Alternative D would have similar types of impacts to leasable mineral availability as Alternative C but to a larger extent and magnitude because the withdrawals covering more acres would be revoked. Table 3.8-8 summarizes the impacts to leasable mineral availability on lands where 17(d)(1) withdrawals would be revoked under Alternative D.

Approximately 20,000 acres of 17(d)(1) withdrawals are State top filed on lands that are not otherwise encumbered and are currently open to mineral leasing per their PLOs or PLO modifications (Columns B and F in Table 3.8-8). If the 17(d)(1) withdrawals are revoked and these become effective selections, the land would become segregated and would no longer be open to mineral leasing. This would reduce leasable mineral availability.

Potential for impacts to leasable mineral availability is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

Table 3.8-8. Summary of Impacts to Leasable Mineral Availability under Alternative D

Column A	Column B	Column C	Column D	Column E	Column F
Planning Area	Acres of Priority Conveyances Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed* for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked
Bay	0	0	0	0	0
Bering Sea-Western Interior	0	0	0	0	0
East Alaska	16,000	37,000	16,000	< 1,000	0
Kobuk-Seward Peninsula	0	0	0	0	0
Ring of Fire	0	3,000	< 1,000	0	0
Total	16,000	40,000	16,000	< 1,000	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.8.2.2.6 COMPARISON OF ALTERNATIVES FOR LEASABLE MINERALS

Alternative A would retain all 17(d)(1) withdrawals; Alternative B would revoke fewer acres of 17(d)(1) withdrawals than either Alternative C or D (Table 3.8-9). Alternatives C and D would have the same acreage of revocations in areas that are more likely to be developed for leasable minerals.

Table 3.8-9. Comparison of Impacts to Leasable Mineral Availability

Alternative	Acres of Priority Conveyances Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority Conveyances where 17(d)(1) Withdrawals Would be Revoked	Acres More Likely to be Developed for Leasable Minerals on Priority 3 and 4 Top Filings where 17(d)(1) Withdrawals Would be Revoked	Acres of Priority 3 and 4 Top Filings not Otherwise Encumbered Open to Mineral Leasing where 17(d)(1) Withdrawals Would be Revoked
Alternative A	0	0	0	0	0
Alternative B	2,000	2,000*	2,000	0	0
Alternative C	16,000	40,000	16,000	< 1,000	0
Alternative D	16,000	40,000	16,000	< 1,000	0

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

Table 3.8-10. Comparison Across Alternatives of Acres Open to Mineral Leasing

Alternative	Currently Open to Mineral Leasing on 17(d)(1) Withdrawals	Newly Open to Mineral Leasing Immediately Following Revocations of 17(d)(1) Withdrawals*	Immediately Closed to Mineral Leasing for up to 10 Years After Revocations of 17(d)(1) Withdrawals**	Open to Mineral Leasing Within 10 Years of Revocations of 17(d)(1) Withdrawals†	Potentially Conveyed Out of Federal Management Within 10 years of Revocations of 17(d)(1) Withdrawals‡	Potentially Conveyed Out of Federal Management at Any Time Regardless of Secretarial Decision§
Alternative A	7,243,000	0	0	0	0 currently open 0 currently closed	2,199,000 currently open but segregated 4,901,000 currently closed
Alternative B	7,243,000	9,000	0	0	0 currently open 41,000 currently closed	2,199,000 currently open but segregated 4,901,000 currently closed
Alternative C	7,243,000	2,583,000	< 1,000	26,000	22,000 currently open 544,000 currently closed	2,199,000 currently open but segregated 4,901,000 currently closed
Alternative D	7,243,000	14,892,000	4,000	141,000	22,000 currently open 544,000 currently closed	2,199,000 currently open but segregated 4,901,000 currently closed

* Acres not selected or top filed that are currently closed to mineral leasing and would be open upon revocation of the 17(d)(1) withdrawals.

** State Priority 3 and 4 top filings on lands not otherwise encumbered that are currently open to mineral leasing. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals and the land would be segregated and closed to mineral leasing until the land is relinquished or rejected. The EIS assumes Priority 3 and 4 top files would be relinquished by the State or rejected by the BLM within 10 years of a Secretarial revocation decision due to overselection.

† State Priority 3 and 4 top filings on lands not otherwise encumbered that are currently closed to mineral leasing. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals and the land would be segregated and closed to mineral leasing until the land is relinquished or rejected. The EIS assumes Priority 3 and 4 top files would be relinquished by the State or rejected by the BLM within 10 years of a Secretarial revocation decision due to overselection. This calculation assumes lands that return to Federal management would be open to leasing.

‡ State Priority 1 or 2 top filings that are not otherwise encumbered. These lands would immediately become effective selections upon revocation of the 17(d)(1) withdrawals. The EIS assumes Priority 1 and 2 top files would be conveyed within 10 years of a Secretarial revocation decision.

§ Effective selections.

3.8.2.2.7 CUMULATIVE IMPACTS

Cumulative impacts to leasable minerals would be similar to those described under locatable minerals (see Section 3.8.1.2.7, Cumulative Impacts).

Potential development of oil and gas facilities (e.g., Beluga River Unit Gas Well 211-35, Alaska LNG pipeline, Donlin Gold Project gas pipeline) would decrease leasable mineral availability in the analysis area but would increase some of the infrastructure necessary to extract them on adjacent lands. Where 17(d)(1) withdrawals with more potential for development overlap with reasonably foreseeable large-scale development, effects to mineral availability could be compounded (decreased availability of the resource and more infrastructure to extract the resource on adjacent lands) if the 17(d)(1) withdrawals are revoked. For example, some of the 17(d)(1) withdrawals are adjacent to or near the proposed Alaska LNG pipeline route. Although the Alaska LNG project could be developed regardless of whether the Secretary revokes the 17(d)(1) withdrawals, revocations of 17(d)(1) withdrawals adjacent to those lands could result in expanded or additional development. This would additively increase availability of mineral leasing but would decrease overall mineral availability as the resource is extracted.

3.9 PALEONTOLOGICAL RESOURCES

3.9.1 How would revocation of 17(d)(1) withdrawals affect scientifically important paleontological resources having Potential Fossil Yield Classifications Class 4, Class 5, or Class U?

Impacts to paleontological resources related to changes in land management (e.g., conveyance out of Federal ownership) or from potential development are expected to occur under the action alternatives and are analyzed in detail below.

The following indicator was used to analyze this issue:

- Total acres of 17(d)(1) withdrawals revoked in part or in full with Potential Fossil Yield Classification (PFYC) Class 4, Class 5, and Class U geologic units

The Environmental Consequences section includes a quantitative analysis of those units with an emphasis on areas that are more likely to be developed or have changes in management. The environmental consequences section also includes a qualitative assessment of the likely types of impacts that could occur following revocation of 17(d)(1) withdrawals.

The analysis area for paleontological resources is the 17(d)(1) withdrawals in the decision area because this is the area that may experience impacts (ground disturbance) should the withdrawals be revoked. This analysis area is approximately 28 million acres; areas where 17(d)(1) withdrawals would be retained would not experience impacts to paleontological resources.

The temporal scale for impacts to paleontological resources would be long term, as defined in Section 3.1, Introduction and Methodology.

3.9.1.1 Affected Environment

On BLM-managed surface lands, the primary authority under which the BLM manages, preserves, and protects paleontological resources is the Paleontological Resources Protection Act of 2009 (16 USC

470aaa et seq.) and its implementing regulations. In accordance with the act, paleontological resources on Federal land must be managed and protected using scientific principles and expertise. Among other provisions, the act authorizes collection of paleontological resources from public lands either by a permit for scientific collecting and common invertebrate and plant paleontological resources without a permit as casual collection. It also requires the agency to establish a program for public awareness and education of the importance of paleontological resources from public lands as well as the inventory of Federal lands for paleontological resources. These provisions do not apply on privately held surface lands or those administered or controlled by any entity other than the DOI or the U.S. Department of Agriculture.

When assessing impacts to paleontological resources in accordance with NEPA, the BLM is required to use the PFYC system as provided for under BLM Instruction Manual IM-2016-124 (BLM 2007a, 2016). The system provides a consistent and streamlined approach to determine if a potential action may affect paleontological resources on public lands. The PFYC is created from available geologic maps and assigns a class value to each geologic unit, representing the potential abundance and significance of paleontological resources that occur in that geologic unit. The probability for impacting significant paleontological resources is highest in PFYC Class 4 and Class 5 geologic units (Figure 3.9-1).

Potential paleontological impacts are determined at the geologic unit level. Every geologic unit can be assigned a PFYC class based on the probability and abundance of known vertebrate fossils and scientifically significant invertebrate and plant fossils as well as their sensitivity to adverse impacts (BLM 2007a, 2016).

PFYC values have been assigned to the mapped geologic units in the analysis area and applied to geospatial datasets using ArcGIS software. Mapped geologic units may occur over expansive geographic areas. PFYC values range from Class 1 (very low) to Class 5 (very high) and indicate the probability for the mapped unit to contain significant paleontological resources and the degree of management concern for the resource. Geologic units without enough information to assign a PFYC value are assigned Class U (Unknown Potential).¹⁰ The PFYC classes are listed in Table 3.9-1.

Inventories of paleontological materials on BLM-managed lands in Alaska are limited, including those within the analysis area. Nevertheless, a combination of desktop surveys, academic research projects, and other activities that produce field samples and finds (e.g., USGS sampling), indicate that a wide range of vertebrate, invertebrate, and plant fossils are known to occur in the analysis area. Additional details on the types of fossils and fossil-bearing geologic units identified within the analysis area are included in the RMPs for the five planning areas that encompass the decision area: Bay planning area (BLM 2007a:Chapter 3, Section 10), East Alaska planning area (2006a:Chapter 3, Section 8), Ring of Fire planning area (BLM 2006b:Section 3.2.15), Kobuk-Seward Peninsula planning area (BLM 2007b: Chapter 3, Section 11), and Bering Sea-Western Interior planning area (BLM 2020:Section 3.2.11). This information is incorporated by reference into this EIS.

Table 3.9-1. Potential Fossil Yield Classification Classes and Characteristics

PFYC Class	Characteristics	Acres in Analysis Area
Class 1: Very Low	Igneous or metamorphic units; units that are Precambrian or older.	4,176,000
Class 2: Low	Sedimentary units where significant fossils are unlikely; generally younger than 10,000 years before present; recent aeolian.	5,347,000

¹⁰ It would be unreasonable to survey all lands in Alaska to assign PFYC class to currently unknown class (40 CFR 1502.21). See Appendix I, Incomplete or Unavailable Data, for a discussion of this knowledge gap.

PFYC Class	Characteristics	Acres in Analysis Area
Class 3: Moderate	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.	922,000
Class 4: High	Geologic units that are known to contain a high occurrence of significant fossils.	1,580,000
Class 5: Very High	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.	1,976,000
Class U: Unknown	Geologic units that cannot receive an informed PFYC assignment; fossils could be present, but there is insufficient knowledge about the unit. These could include geological units where conditions would indicate that significant resources could be present, but there are little actual data in the area, reports of paleontological resources exist but have not been verified, or the area or geologic unit is poorly studied.	12,924,000
Class W: Water	Includes any surface area that is mapped as water. Most bodies of water do not normally contain paleontological resources.	40,000
Class I: Ice	Includes any area that is mapped as ice or snow.	764,000

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to impact paleontological resources. Past and present actions that have allowed for ground disturbance and/or increased access have likely caused irreversible disturbance and damage to paleontological resources. Climate change is increasing exposure to paleontological resources due to changes in permafrost, riverbank erosion, and weathering.

3.9.1.2 **Environmental Consequences**

3.9.1.2.1 **ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)**

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.9.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities listed would continue to impact paleontological resources.

3.9.1.2.2 **IMPACTS COMMON TO ALL ACTION ALTERNATIVES**

Revocation of 17(d)(1) withdrawals could affect paleontological resources in two primary ways. First, paleontological resources could lose Federal regulatory protection with conveyance out of Federal ownership. Second, revocation of 17(d)(1) withdrawals would cause more lands to be available for development activities and infrastructure, which could cause more direct and immediate paleontological resource impacts. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change. The general impacts that may occur in these scenarios are discussed below. The difference between alternatives would be the acres of PFYC with Class 4, 5, or U that would have the most potential for development.

Retaining the 17(d)(1) withdrawals would result in no change to regulatory protection and no increase to lands open to development.

Loss of Federal Regulatory Protection

The transfer of lands out of Federal ownership is considered an adverse impact to paleontological resources. Revoking 17(d)(1) withdrawals could lead to the conveyance of lands out of Federal ownership and to the loss of certain Federal regulatory protections, primary of which would be the Paleontological Resources Protection Act. Lands conveyed to the State would instead be subject to the State’s AHPA regulations, which are less stringent than Federal regulations.

Increase in Lands Open to Development

Opening lands to development could impact paleontological resources through direct and indirect effects. Direct effects are typically adverse and permanent because discovery typically occurs during activities that disturb the surface and subsurface; once the resource is disturbed, it is either destroyed or the geological context is diminished. Indirect effects could be created by increasing access to areas with fossil remains, which could result in looting or vandalism activities of significant fossils. Additionally, development could lead to increased erosion, which could impact paleontological resources.

The BLM’s most recent RMPs for the decision area (BLM 2006a, 2006b, 2007a, 2007b, 2020) provide additional descriptions of the types of impacts associated with potential development activities.

3.9.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on paleontological resources for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. If the withdrawals are revoked and the lands are effectively selected, they could be conveyed to the State, which will change how paleontological resources are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.9.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1. Table 3.9-2 summarizes the total acres on lands where the 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area.

Table 3.9-2. Acres of Potential Fossil Yield Classification Classes 4, 5, or U More Likely to be Developed under Alternative B

PFYC Class	Acres of PFYC Class 4, 5, or U in Analysis Area	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed [†]	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Class 4	1,580,000	22,000	0	0	0
Class 5	1,976,000	81,000	0	0	0
Class U	12,924,000	225,000	33,000	2,000	2,000
Total	16,480,000	328,000	33,000	2,000	2,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.9.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on paleontological resources for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to paleontological resources from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres of paleontological resources could be affected in the focused analysis area (Table 3.9-3). Impacts to paleontological resources could be mitigated by avoiding the conveyance of PFYC Class 4 and 5 land.

Lands conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in the *Environmental Assessment for Alaska Native Vietnam-era Veterans Land Allotment Program* [BLM 2022]) and would experience minimal impacts to paleontological resources.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to paleontological resources. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.9-3. Acres of Potential Fossil Yield Classification Classes 4, 5, or U More Likely to be Developed under Alternative C

PFYC Class	Acres of PFYC Class 4, 5, or U in Analysis Area	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed ^{*†}	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Class 4	1,580,000	352,000	< 1,000	2,000	0
Class 5	1,976,000	228,000	82,000	< 1,000	0
Class U	12,924,000	2,698,000	149,000	95,000	21,000
Total	16,480,000	3,278,000	231,000	97,000	21,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.9.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to paleontological

resources. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.9.1.2.2. The greatest impacts to paleontological resources are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.9-4 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to paleontological resources as Alternative C but to a larger extent and magnitude because more acres of paleontological resources occur on areas where the withdrawals would be revoked.

Potential for impacts to paleontological resources is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

Lands conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in the *Environmental Assessment for Alaska Native Vietnam-era Veterans Land Allotment Program* [BLM 2022]) and would experience minimal impacts to paleontological resources.

Table 3.9-4. Acres of Potential Fossil Yield Classification Classes 4, 5, or U More Likely to be Developed under Alternative D

PFYC Class	Acres of PFYC Class 4, 5, or U in Analysis Area	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Class 4	1,580,000	1,580,000	< 1,000	3,000	0
Class 5	1,976,000	1,976,000	82,000	< 1,000	0
Class U	12,924,000	12,924,000	149,000	110,000	21,000
Total	16,480,000	16,480,000	231,000	113,000	21,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.9.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact paleontological resources as described in Section 3.9.1.2.2. Table 3.9-5 summarizes each alternative.

Table 3.9-5. Comparison of Alternatives

Alternative	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0
Alternative B	33,000	2,000 †	2,000

Alternative	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of PFYC Class 4, 5, or U where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative C	231,000	97,000	21,000
Alternative D	231,000	113,000	21,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.9.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect paleontological resources in ways similar to those described in Section 3.9.1.2.2.

Planned actions can influence the potential for impacts to paleontological resources in various ways:

- Potential for encountering paleontological resources increases as surface and subsurface disturbance and human activity increase throughout the region, and these resources could be adversely affected if they are not managed appropriately. If previously unrecorded paleontological resources are identified, activities could also contribute to an increase in the knowledge of paleontological data in the area and collection of newly discovered specimens if development relies upon a Federal decision.
- Any new roads and increases in human activity can also lead to paleontological resource destruction or discovery/recovery. Improved access and other increases in human activity can also cumulatively impact paleontological resources through increased levels of authorized and unauthorized fossil collection, or vandalism; however, the likelihood of these effects depends on the proximity of proposed disturbances to known and unknown paleontological resources.

Past and present actions have resulted in the current condition for paleontological resources listed in Section 3.9.1.1, Affected Environment. Reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could result in ground disturbance or human activity, and would depend on the disturbance amount, placement, type, and duration of action, and agency requirements for paleontological resource assessment and preservation. Therefore, cumulative impacts from development following the revocation of 17(d)(1) withdrawals could occur if these actions overlap planned actions in areas with paleontological potential (PFYC 4, 5, or U).

3.10 REALTY AND LANDS

3.10.1 How would revocation of 17(d)(1) withdrawals affect land use authorizations?

The analysis area for land use authorizations is the 17(d)(1) withdrawals in the decision area in each of the five planning areas because this is the area where the BLM retained the right to make land use authorizations. For this analysis, contracts, leases, permits, ROWs, or easements are collectively referred to as land use authorizations.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze impact to land use authorizations:

- Acres of 17(d)(1) withdrawals that would be revoked

3.10.1.1 *Affected Environment*

The lands subject to the 17(d)(1) withdrawals under consideration are currently managed by the BLM as withdrawn from appropriation under the public land laws (i.e., the BLM cannot sell or exchange lands out of Federal ownership, but they may convey the land withdrawn if subject to an effective selection). The 17(d)(1) withdrawals do not, however, limit the BLM's ability to issue land use authorizations on those lands. Land use authorizations on 17(d)(1) withdrawals that are effectively selected may occur with concurrence from the State (under ANILCA 906(k)) or consultation with ANCs (per 43 CFR 2650.1). The State and ANCs receive the income from any of these authorizations upon transfer of the lands.

3.10.1.2 *Environmental Consequences*

3.10.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, they would continue to be withdrawn from appropriation under the laws specified in the PLOs, and the BLM would continue to be allowed to grant land use authorizations on withdrawals, as described in Section 3.10.1.1, Affected Environment.

3.10.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Several types of effects related to land use authorizations could occur should the Secretary revoke the 17(d)(1) withdrawals.

The types of authorizations allowed once the withdrawals are revoked would broaden to include land sales and exchanges assuming the land is not selected.

BLM land use authorizations specify times of use and address what happens to the authorization once lands are conveyed out of Federal ownership. Unless the authorization specifies that it expires once the land is no longer administered by the BLM, it would remain valid after conveyance until the specified time of expiration. The State would receive the income from any of these authorizations upon conveyance of the lands. When the authorization term expires, the State would be able to negotiate a new

authorization. Any conveyance of lands would be made subject to valid existing rights, which would include land use authorizations whose terms have not expired.

Lands available for Federal land use authorizations would decrease overall (though the amount of the decrease would vary by alternative) because revocations would allow top filings on acres not otherwise encumbered to become effective selections and some of those would be conveyed to the State. (It is assumed that Priority 1 and 2 top filings on lands not otherwise encumbered would be conveyed to the State and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.) When the lands are conveyed, they would not be available for Federal land use authorizations. Additionally, the BLM transfers 90 percent of funds collected from authorizations on those lands in accordance with ANILCA 906(k) from the time when a top filing becomes an effective selection until date the lands are conveyed to the State of Alaska.

When the Priority 3 and 4 top filings that become effective selections are relinquished or rejected (expected within 10 years of a Secretarial revocation decision), the lands would no longer be segregated and would be available for all land use authorizations described in the applicable RMP. Therefore, in the long term, many lands where the withdrawals are revoked would be available for full appropriation.

In and near areas more likely to be developed, revocation of the withdrawal may lead to development activities that would increase the number and types of land use authorizations requested. For example, if the revocation opens an area to mineral leasing, leases may be sold, and lessees may apply for ROWs to access leases. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Additionally, when lands are conveyed and no longer available for Federal land use authorizations, requests for ROWs would have to be approved by the new landowner. If that landowner is unwilling to cooperate, it could decrease public access. Because of the number of large-scale planned projects or RFAs (see Table 3.1-6) that would require access corridors, if access on non-Federal lands is denied, it could compound the limits to the public's ability to access resources.

3.10.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on land use authorizations where withdrawals are retained under Alternative B because there would be no change to the land status.

Where withdrawals are revoked and the land is not otherwise encumbered, Priority 1 and 2 top filings would become effective selections, which would increase the amount of land available for conveyance to the State. This would in turn increase the amount of land where the BLM is required to seek input or concurrence from the State prior to the BLM granting a land use authorization. Impacts on land use authorizations for lands that are conveyed out of BLM management or returned to BLM management are described in Section 3.10.1.2.2, Impacts Common to All Action Alternatives.

Table 3.10-1 describes the acres expected to be conveyed (priority conveyances, Column C) and the acres expected to be returned to BLM management (State top filed Priority 3 and 4, Column F) under each action alternative. Column D of the table summarizes the areas more likely to receive requests for land use authorizations because they would be more likely to be developed.

Table 3.10-1. Summary of Impacts to Land Use Authorizations under each Alternative

Column A	Column B	Column C	Column D	Column E	Column F
Alternative	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed	Acres where 17(d)(1) Withdrawals Would be Revoked on Top Filings Priority 3 and 4
Alternative A	0	0	0	0	0
Alternative B	431,000	41,000	2,000 [†]	2,000	0
Alternative C	5,802,000	565,000	23,000 [‡]	23,000	145,000
Alternative D	27,734,000	565,000	23,000	23,000	400,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

[‡] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.10.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on land use authorizations for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to land use authorizations from the resulting development would be of the same type as Alternative B but to larger extent because more acres could be affected in the focused analysis area (see Table 3.10-1).

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to land use authorizations. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.10.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. Alternative D would have similar types of impacts to land use authorizations as Alternative C but to a larger extent because more acres could be affected in the focused analysis area (see Table 3.10-1).

3.10.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres of Priority 1 and 2 top files with no other encumbrances, the greater the number of acres that may be conveyed out of Federal

ownership and therefore no longer available for the BLM to grant land use authorizations and no longer available to be exchanged or sold. Table 3.10-1 summarizes each alternative. No alternative would change the State's total entitlement or change the total amount of lands conveyed to them statewide.

3.10.1.2.7 CUMULATIVE IMPACTS

The RFAs and planned actions (described in Section 3.1, Introduction and Methodology), in combination with the revocation of the 17(d)(1) withdrawals, would likely result in more BLM land and realty authorizations on lands where the 17(d)(1) withdrawals are revoked in and around the parcels that are conveyed regardless of whether those lands stay in BLM management or not. Parcels that are more likely to be conveyed and more likely to be developed (i.e., the focused analysis area) are the areas that would more likely create the need for more ROWs or other land use authorizations (for roads, transmission, or pipeline construction). Prior conveyances coupled with revocation of 17(d)(1) withdrawals would additively reduce lands available for Federal land use authorizations. This could lead to instances where the BLM cannot grant a full transportation or utility corridor ROW due to a patchwork of landowners and managers.

3.10.2 How would revocation of 17(d)(1) withdrawals affect lands with BLM special designations?

The analysis area for lands with special designations is the 17(d)(1) withdrawals in the decision area that intersect with special designations because this is the area that may experience change in management should the Secretary revoke 17(d)(1) withdrawals.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

3.10.2.1 Affected Environment

Three BLM-designated wild and scenic rivers are in the analysis area: the Unalakleet, Delta, and Gulkana rivers. Lands within the boundaries of these wild and scenic river corridors were withdrawn pursuant to the Wild and Scenic Rivers Act from "entry, sale, or other disposition under the public land laws of the United States." Additionally, Section 606 of ANILCA amended Section 15(2) of the Wild and Scenic Rivers Act to withdraw the minerals for all land within 0.5 mile of the banks of these rivers. Given this, the revocation of the 17(d)(1) withdrawals would neither result in mineral entry within 0.5 mile of the rivers nor make the lands available for disposal under the public land laws within the river corridors. Therefore, any Secretarial decision to revoke 17(d)(1) withdrawals would not affect wild and scenic river corridors, and they are not discussed further in this EIS.

Other special designations include recreation management areas (RMAs) comprising special recreation management areas (SRMAs) and extensive recreation management areas (ERMAs), ACECs, and trails. These are detailed in the following sections.

3.10.2.1.1 SPECIAL RECREATION MANAGEMENT AND EXTENSIVE RECREATION MANAGEMENT AREAS

The BLM manages several SRMAs that are in the analysis area. SRMAs are administrative units where the existing or proposed recreation opportunities and recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially as compared to other areas used for recreation. The BLM manages SRMAs to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics. Within SRMAs, recreation and visitor services

management are recognized as the predominant land use plan focus, where specific recreation opportunities and recreation setting characteristics are managed and protected on a long-term basis.

The decision area contains one ERMA, the Haines ERMA, that is within the analysis area. ERMAs are administrative units that require specific management consideration to address recreation use, demand, and/or recreation and visitor services program investments. The BLM manages ERMAs to support and sustain the principal recreation activities and the associated qualities and conditions. ERMA management is commensurate with and considered in context with the management of other resources and resource uses.

The SRMAs and the ERMA on lands subject to the 17(d)(1) withdrawals in the decision area are listed in Table 3.10-2 and shown in Figures 3.10-1 through 3.10-5. Past and present actions that have affected and will continue to affect these SRMAs are prior conveyances. The ERMA and some of the SRMAs described in the table have had some acres removed from Federal management due to prior conveyances, meaning the BLM manages less of the land now than originally designated in the SRMA or ERMA. Additionally, lands adjacent to some of the SRMAs or the ERMA have been conveyed, which has reduced some recreation opportunities and recreation setting characteristics for which the areas were designated. For example, lands adjacent to the Denali Highway SRMA have been conveyed to Ahtna, Inc., and the State. Recreational opportunities on the lands conveyed to Ahtna, Inc., are now limited. These prior conveyances could lead to developments that would degrade the scenic value and recreational opportunities for which the area was designated an SRMA. The BLM will evaluate, through a separate land use planning process, whether special designations that have had conveyances still meet the purposes for which they were designated.

Table 3.10-2. Recreation Management Areas on Lands Subject to the 17(d)(1) Withdrawals in the Decision Area

SRMA or ERMA and Associated Planning Area	Acres in Planning Area	Description
Delta Range SRMA – East Alaska	333,212 original SRMA 294,117 remaining after prior conveyances 2 of effective selections on remaining acres	The Delta Range SRMA has high scenic values: the Richardson Highway crosses the Alaska Range in the area, providing views of mountains and glaciers. The Trans-Alaska Pipeline System also runs north-south through the area roughly paralleling the highway. Numerous dispersed recreational opportunities are in the area, e.g., hiking, OHV use, and rafting. A pipeline access road at Jarvis Creek provides access to several small lakes stocked by the ADFG. Dispersed campsites have been established in this area, and several trails can be accessed from the road. The Delta Range area is a popular winter use area for residents of Delta Junction and Fairbanks. Several glaciers in the area (including Canwell, Augustana, and Fels) and a portion of the Alaska Range have been traditionally used by backcountry climbers, skiers, and mountaineers seeking a challenging primitive backcountry experience. The McCallum Creek drainage receives greater snowfall than the higher elevations or steeper slopes and is favored by backcountry skiers. The annual Arctic Man Ski and Sno-Go Classic is held in the southern end of the area, which has led to increases in the amount of dispersed snowmachine use in the area.
Denali Highway SRMA – East Alaska	557,672 original SRMA 199,742 remaining after prior conveyances 185,372 of effective selections on remaining acres	The Denali Highway SRMA consists of the middleground and foreground viewshed off the Denali Highway. The highway connects the urban centers of Fairbanks and Anchorage and experiences high visitation of tourists and out-of-state visitors and a high level of recreation. This SRMA offers year-round recreation and is primarily used for hiking, skiing, snowmobiling, snowcat use, hunting, and berry picking (BLM 2021). The Denali Highway SRMA offers settings ranging from primitive to roaded natural (BLM 2006a). This range of settings also offers a variety of types of recreation, including more remote, backcountry opportunities and more developed opportunities in the roaded natural areas (exact recreation use is unknown). The Denali Highway SRMA is predominantly State-selected land. There are two management scenarios listed in the East Alaska RMP: interim and long term. Interim describes management of State- and ANCSA-selected lands in the area until conveyance could occur, and long term describes management of lands if they are retained in long-term Federal ownership. Interim objectives would be to manage for roaded natural, semi-primitive non-motorized, and semi-primitive motorized recreation experiences; to mitigate impacts to the viewshed; and to provide education and interpretive opportunities. Management objectives are to maintain the existing recreation opportunities, including primitive, semi-primitive non-motorized, semi-primitive motorized, and roaded natural (BLM 2006a).
Haines Block SRMA – Ring of Fire	65,467 original SRMA 65,200 remaining after prior conveyances 44,363 of effective selections on remaining acres	The Haines Block SRMA has high cultural, recreational, and ecological values. There are approximately 128 cultural resource sites in the general vicinity of the proposed Haines Block SRMA; 37 of these sites are identified as historic and three sites as prehistoric. Many these documented sites are associated with mining. Commercial recreation activities, specifically heli-skiing and helicopter-based tourism, have grown in the area for over a decade, and the amount of helicopter use has raised concern for the potential effects to mountain goats, as well as being locally controversial because of the noise it creates. Brown bears (<i>Urus arctos</i>) are also common on BLM-managed lands in the Haines block at the head of Lynn Canal. Brown bears use habitats from sea level to alpine areas throughout Southeast Alaska. The late-summer season has been identified as the most critical or limiting period for brown bears. Parcels in this area include lands used for subsistence by residents of Haines and Klukwan; however, most of the lands in this block have been selected by the State of Alaska and are not subject to the Federal subsistence priority. Resources harvested in these parcels may include anadromous and freshwater fish, terrestrial mammals, and vegetation.

SRMA or ERMA and Associated Planning Area	Acres in Planning Area	Description
Haines ERMA – Ring of Fire	251,629 original ERMA 251,027 remaining after prior conveyances 16,158 of effective selections on remaining acres	The objective statement for the Haines ERMA states the following: “Provide a setting for backcountry recreation activities, consisting primarily of hiking, skiing, and hunting opportunities, while meeting demand for increased commercial recreation opportunities consisting primarily of aviation related special recreation permits. Increase landings for permitted commercial recreation opportunities if goat populations are stable, operators demonstrate a need for increased landings, and a 75 percent utilization rate of previously permitted landings is achieved. Through user survey ensure at least 85 percent of backcountry users are fulfilling their planned objectives and experiences on BLM lands” (BLM 2019:229). The Haines ERMA comprises State-selected lands.
Iditarod SRMA – Bering Sea-Western Interior	340,578 original SRMA 340,578 remaining after prior conveyances 446 of effective selections on remaining acres	The Iditarod SRMA encompasses the approximately 77 miles of Iditarod NHT segments that are managed by the BLM in the Bering Sea-Western Interior planning area. The main recreational opportunities in the Iditarod SRMA include dog mushing, snowmobiling, winter mountain biking, cross-country skiing, hunting, and trapping.
Knik River SRMA – Ring of Fire	79,498 original SRMA 12,317 remaining after prior conveyances 12,317 of effective selections on remaining acres	The Knik River SRMA consists of State- and ANCSA-selected lands approximately 30 miles north of Anchorage. The Knik River flows through these lands and is used by recreational and commercial boaters. Various drainages flowing into the Knik River support anadromous fisheries. Dall sheep (<i>Ovis dalli dalli</i>) are found in the upper reaches, and brown bear and moose (<i>Alces alces</i>) are common in the valley. Dispersed recreation, including hunting, fishing, hiking, winter fat-tire biking, and horseback riding, is common in the area. Small aircraft pilots practicing take-offs and landings routinely use portions of the valley floor. The area receives heavy OHV use of all types. Because of the ease of access, these lands are subject to the dumping of stolen vehicles and are at times used as an unregulated shooting range. There is no implementation plan for the Knik River SRMA. The plan is being deferred until land conveyance is complete. A plan would not be completed if the BLM does not retain ownership of the lands in the proposed SRMA (BLM 2006b).
Salmon Lake-Kigluaik SRMA – Kobuk-Seward Peninsula	290,000 original SRMA 192,000 acres remaining after prior conveyances 62,344 acres of effective selections on remaining acres	The Salmon Lake-Kigluaik SRMA is located approximately 30 miles north of Nome, between the Nome-Teller Highway and Nome-Taylor Highway. Major recreational opportunities include hunting, fishing, trapping, plant gathering, hiking, backpacking, photography, camping, picnicking, wildlife viewing, river rafting, boating, and OHV use (BLM 2007). The Salmon Lake-Kigluaik SRMA offers exceptional salmon fishing opportunities, and the BLM also provides a public campground and a boat launch for public use at the lake (BLM 2007).
Squirrel River SRMA – Kobuk-Seward Peninsula	726,379 original SRMA 595,863 remaining after prior conveyances 30,396 of effective selections on remaining acres	The Squirrel River SRMA offers remote recreation experiences. Popular activities include river floating, camping, hunting, fishing, OHV use, snowmobile use, hiking, bird watching, wildlife viewing, scenery viewing, and trapping (BLM 2007).
Gulkana SRMA – East Alaska	104,425 original SRMA 90,602 remaining after prior conveyances 3,541 of effective selections on remaining acres	The management for the Gulkana SRMA—maintaining primitive, semi-primitive, and developed recreational opportunities—is consistent with the <i>Gulkana River Management Plan</i> (BLM 2006c). The river corridor is primarily undeveloped, and the lands encompassed by the SRMA are unencumbered (BLM 2006c). The corridor provides for boating, fishing, hunting, camping, hiking, skiing, snowmobiling, wildlife viewing and photography, and dogsledding opportunities (BLM 2006c).
Tiekel SRMA – East Alaska and Ring of Fire	1,166,105 original SRMA 486,052 remaining after prior conveyances 139,585 of effective selections on remaining acres	The Tiekel SRMA is OHV-limited, and management intends to provide roaded natural, semi-primitive non-motorized, and semi-primitive motorized recreational settings (BLM 2007). Recreational facilities in this SRMA include updated and newly developed trailheads, a wayside, and a potential bike trail (BLM 2007). The BLM is also considering public use cabins. Recreational uses include heliskiing, OHV use, and hiking.

Reasonably foreseeable or planned actions that will affect SRMAs or the ERMA (see Table 3.1-6) include continued conveyances of effective selections and large-scale development projects, such as the Graphite One Mine. The mine is proposed on State lands (prior conveyances) adjacent to State top filed lands. It could be developed on State lands regardless of any Secretarial decision regarding revocation of 17(d)(1) withdrawals. This will degrade the quality of the Salmon Lake-Kigluaik SRMA, which is adjacent to the State land and contains State top filed lands.

3.10.2.1.2 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

ACECs are a designation unique to the BLM. FLPMA and BLM regulations (43 CFR 1610) define an ACEC as an area “within the public lands where special management attention is required (when such areas are developed or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.” Although an ACEC may emphasize one or more unique resources, other existing multiple-use management can continue within an ACEC so long as the uses do not impair the values for which the ACEC was designated. ACECs in the decision area are described in Table 3.10-3 and shown in Figures 3.10-6 through 3.10-11. In addition to the existing ACECs, the BLM is in the process of evaluating numerous ACEC nominations; these are also depicted on Figures 3.10-6 through 3.10-11.

The past and present actions that have affected SRMAs or the ERMA also affect ACECs, as described in Section 3.10.2.1.1 (see Table 3.1-5). Similarly, reasonably foreseeable or planned actions that will affect SRMAs or the ERMA will affect ACECs (described in Section 3.10.2.1.1; see Table 3.1-6). The Mount Osborne ACEC overlaps with the Salmon Lake-Kigluaik SRMA and would be similarly affected by reasonably foreseeable or planned actions.

Table 3.10-3. Areas of Critical Environmental Concern on 17(d)(1) Withdrawals in the Decision Area

ACEC and Associated Planning Area	Acres in Planning Area	Description
Neacola Mountains ACEC – Bay and Ring of Fire	495,000 original ACEC 287,000 acres remaining after prior conveyances 0 acre of effective selections on remaining acres	The Neacola Mountains ACEC is managed to maintain the visual resources and scenic values (BLM 2008a). This ACEC changes in elevation from 1,000 feet to nearly 8,000 feet and is characterized by rugged mountains, hanging valleys, and ice and snow fields. It is interspersed with sharp ridgelines. At the core of the ACEC is Blockade Glacier and Lake. Seasonally, Blockade Lake melts enough to reveal “apartment sized” blocks of ice floating in the water (BLM 2013:2). Today, the area is used by skiers; the BLM permits helicopter-supported skier descents. There are no roads within or adjacent to the ACEC.
Nulato Hills ACEC – Kobuk-Seward Peninsula	1,080,000 original ACEC 1,074,000 acres remaining after prior conveyances 0 acre of effective selections on remaining acres	This ACEC contains a critical wintering area for the Western Arctic caribou herd (WACH). Although caribou are known for their wandering lifestyle and everchanging distribution, the Nulato Hills were a critical portion of the WACH winter range during the mid-80s to mid-90s, and has received heavy use during some winters since that time. The herd is one of the most important subsistence resources in the entire northwest portion of the state. Approximately 40 villages utilize the herd for subsistence purposes, with 15,000–20,000 animals being harvested annually (BLM 2008b).
Mount Osborn ACEC – Kobuk-Seward Peninsula	82,000 original ACEC 74,000 acres remaining after prior conveyances 12,514 acres of effective selections on remaining acres	The Mount Osborn ACEC was designated to protect genetically unique Kigluaik Arctic char.
Inglutalik River ACEC – Kobuk-Seward Peninsula	466,000 original ACEC 465,000 acres remaining after prior conveyances 0 acre of effective selections on remaining acres	The Inglutalik Watershed ACEC was designated to protect salmon habitat as well as providing important habitat for both resident and anadromous fish. There are no roads or existing development within or adjacent to this ACEC (BLM 2008b).
Shaktoolik River ACEC – Kobuk-Seward Peninsula	234,000 original ACEC 232,000 acres remaining after prior conveyances 510 acres of effective selections on remaining acres	The Shaktoolik River ACEC was designated to protect anadromous fish habitat. There are no roads or existing development within or adjacent to this ACEC (BLM 2008b).
Ungalik River ACEC – Kobuk-Seward Peninsula	264,000 original ACEC 259,000 acres remaining after prior conveyances 0 acre of effective selections on remaining acres	The Ungalik River ACEC was designated to protect anadromous fish habitat. There are no roads or existing development within or adjacent to this ACEC (BLM 2008b).
Western Arctic Caribou Insect Relief ACEC – Kobuk-Seward Peninsula	1,529,000 original ACEC 1,446,000 acres remaining after prior conveyances 11,230 acres of effective selections on remaining acres	The Western Arctic Caribou Insect Relief ACEC protects the WACH critical insect relief habitat and calving grounds. There is cause for concern due to the potential for future development in the area. The ACEC is adjacent to high quality coal reserves and there is potential for future development of infrastructure to support development of coal resources. Caribou are plagued by numerous insect pests such as warble flies, mosquitoes, and nose bots during this period. They seek windy spots, ground devoid of vegetation, and snow fields to reduce intense insect harassment. (BLM 2008b).

3.10.2.1.3 NATIONAL TRAILS: EXISTING AND PROPOSED

The Iditarod NHT, designated by Congress in 1978, is one of two NHTs in Alaska (BLM 2023b). On BLM-managed lands, the Iditarod NHT Seward to Nome Trail is a unit of the National Lands Conservation System. The trail starts in Seward and extends to Nome. The Iditarod NHT crosses lands managed by 10 institutional land management entities and a number of private owners, with BLM managing roughly 200 miles (BLM 2023b). The trail is managed by these entities under a cooperative comprehensive management plan from 1986, with the primary goal of promoting “the preservation, enjoyment, use, and appreciation of the historic route of the Iditarod Trail” (BLM 1986:6). Connecting trails were also included in the NHT study for the Iditarod NHT, and certain connecting trails were also included for active management, such as trail maintenance, in the comprehensive plan (BLM 1986). The comprehensive plan also recommends that, for lands that have been selected by the State, a Federal ROW be retained to fulfill the purpose of the National Trails System Act (BLM 1986).

The Alaska Long Trail is a proposed NST that would extend for 500 miles from Seward, north to Fairbanks, crossing lands managed by multiple entities (BLM 2023a). The route includes existing trail segments and new proposed segments to complete the throughway. The Alaska Long Trail proposed NST crosses through 28 miles of BLM-managed land. This proposed trail is currently undergoing an NST feasibility study, mandated by U.S. Congress in December 2022 to inform the feasibility, suitability, and desirability of the proposed NST route (BLM 2023a).

The Bering Sea-Western Interior RMP designated 1,000-foot-wide national trail management corridors (NTMCs) around portions of the Iditarod NHT managed by the BLM to manage for the scenic, historic, cultural and natural resources, qualities and values associated with the NHT. The Iditarod SRMA was created specifically to provide management of contemporary recreation on the contemporary Iditarod Trail, which happens to be colocated with the Iditarod NHT and overlaps entirely with the NTMCs.

The NST and NHT on 17(d)(1) withdrawals are shown in Figures 3.10-1 through 3.10-5.

The past and present actions that have affected SRMAs and the ERMA also have affected trails, as described in Section 3.10.2.1.1 (see Table 3.1-5). Similarly, reasonably foreseeable or planned actions that will affect SRMAs or the ERMA will affect trails (described in Section 3.10.2.1.1; see Table 3.1-6).

3.10.2.2 Environmental Consequences

3.10.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area due to the Secretary’s decision on the project. The reasonably foreseeable trends and planned actions described in Section 3.10.2.1, Affected Environment, would continue, and prior conveyances and future conveyances of effective selections would continue to impact BLM special designations. For some BLM special designations, effective selections comprise a substantial proportion of the remaining BLM-managed acres in the SRMA, ERMA, or ACEC boundary. Conveyance of these lands would degrade the qualities required for those special designations. Specifically, the qualities considered for the Denali Highway SRMA designation would only be met if lands retained in Federal ownership are in large contiguous blocks. As described in Section 3.10.2.1, Affected Environment, lands adjacent to this SRMA have already been conveyed and reduced the acres in Federal ownership. Also, 93 percent of the BLM lands remaining in the Denali Highway SRMA (185,372 acres) are effective selections and could be conveyed at any time regardless of the Secretary’s decision from this EIS. The RMP for this area specifies that the area would not be managed as an SRMA if the

lands within it are conveyed. Thus, the area may no longer be managed as an SRMA in the future even under the No Action Alternative.

Similarly, much of the Knik River SRMA has been conveyed and 100% of the remaining BLM-managed acres in the SRMA are effective selections. If the BLM does not retain ownership of the remaining lands within the SRMA, no implementation plan would be developed, and these lands would not be managed as an SRMA.

3.10.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals could affect BLM-managed lands with special designations in two primary ways. First, there would be a loss of Federal management and potential loss of public access where the revocation leads to a conveyance out of Federal ownership. Second, revocation of 17(d)(1) withdrawals could cause more lands to be available for development activities and infrastructure, which could degrade the qualities required for BLM special designations and adversely affect visitors using those BLM-managed lands or adjacent BLM-managed lands. The general impacts that may occur in these scenarios are discussed below. The difference among alternatives would be the acres of lands that would be more likely to be conveyed and the more likely to be developed. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Retaining the 17(d)(1) withdrawals would result in no change to regulatory protection and no increase to lands open to development.

Loss of Federal Management or Public Access

Revocation of 17(d)(1) withdrawals that results in conveyance of land out of Federal management would mean these areas are no longer managed by the BLM for special designations. Land conveyance may have adverse impacts to recreation within the SRMAs and ERMA, and to the trails should the new land managers create restrictions on recreational uses and access on lands adjacent to BLM-managed lands. Impacts to recreation are described in Section 3.11.1 (Recreation Management and Public Access).

Under the National Trails System Act and ANILCA 906(1), if land within the Iditarod SRMA is conveyed to the State or an ANC, the BLM would reserve a ROW for the Iditarod NHT (BLM 2020, 2021). Thus, if the land within this SRMA is conveyed, the area would no longer be a designated SRMA, but the BLM would reserve a ROW that would allow the segments of the Iditarod NHT to remain managed by the BLM as an NHT.

Degradation of Qualities Required for Special Designation

If the revocation of 17(d)(1) withdrawals leads to conveyances to the State, that land may be opened to multiple uses, including resource extraction and development. The RFD in EIS Appendix D describes where development is more likely to occur and where conveyances are more likely to occur (priority conveyances); these are the areas where the most effects to lands with BLM special designations could occur (also described as the focused analysis area). Development on lands adjacent to SRMAs, the ERMA, ACECs, or national trails would degrade the qualities required for those special designations.

Numerous ACECs have been nominated in the decision area (see Figures 3.10-6 through 3.10-11); the BLM is in the process of evaluating these potential ACECs.

3.10.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on special designations for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in impacts described in Section 3.10.2.2.2, Impacts Common to All Action Alternatives.

Under Alternative B, State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals on all existing ACECs would be retained to 1) avoid conflict with important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes, or 2) to protect life and safety from natural hazards. Similarly, 17(d)(1) withdrawals on nominated ACECs would be retained to protect potential relevant and important values until the BLM completes an ACEC evaluation¹¹ (see Figures 3.10-6 through 3.10-11).

The focused analysis area is the area most likely to be conveyed out of Federal ownership or developed, as described in Section 3.1. Table 3.10-4 and Table 3.10.5 summarize the acres of ACECs, SRMAs, and trails on lands where the 17(d)(1) withdrawals would be revoked in the focused analysis area under Alternative B. These tables also identify the acres of existing effective Priority 1 and 2 selections; although they are not dependent upon any Secretarial revocation of the 17(d)(1) withdrawals, the effect of these effective selections on BLM special designations is considered as part of the context for such Secretarial decision-making (see Section 3.10.2.2.7, Cumulative Impacts).

Under Alternative B, the Iditarod NHT NTMC would be retained, as well as additional 500 feet on either side of the NHT where NTMCs are not present. The Alaska Long Trail proposed NST would be similarly retained through a 500-foot buffer on either side of the proposed trail route (as of February 2024). Therefore, there would be no impacts to either trail under Alternative B.

¹¹ There are 13,100,000 acres of nominated ACECs on 17(d)(1) withdrawals.

Table 3.10-4. Impacts to Recreation Management Areas and Trails under Alternative B

SRMA or ERMA and Associated Planning Area	Acres Remaining in RMA or NTMC After Prior Conveyances or Miles of Trail in Planning Area	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed [‡]	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that are More Likely to be Developed	Acres of RMA or Miles of Trail that are Effective Selections (Priority 1 and 2) [†]
Delta Range SRMA – East Alaska	294,117	0	0	0	0	< 1,000
Denali Highway SRMA – East Alaska	199,742	< 1,000	< 1,000	0	0	185,000
Gulkana River SRMA – East Alaska	90,602	0	0	0	0	4,000
Haines Block SRMA – Ring of Fire	65,200	0	0	0	0	44,000
Haines ERMA – Ring of Fire	251,027	< 1,000	< 1,000	0	0	16,000
Iditarod NHT SRMA – Bering Sea-Western Interior	340,574	0	0	0	0	< 1,000
Knik River SRMA – Ring of Fire	12,317	11,000	< 1,000	0	0	12,000
Salmon Lake-Kigluaik SRMA – Kobuk-Seward Peninsula	191,863	0	0	0	0	62,000
Squirrel River SRMA – Kobuk-Seward Peninsula	595,863	5,000	5,000	0	0	30,000
Tiekel SRMA – East Alaska and Ring of Fire	486,052	32,000	0	0	0	0
Iditarod NHT	933	0	0	0	0	0
Alaska Long Trail (proposed NST)	1,111	0	0	0	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the RMA or trail, not just those on 17(d)(1) withdrawals.

‡ Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

Table 3.10-5. Impacts to Area of Critical Environmental Concern under Alternative B

ACEC and Associated Planning Area	Acres Remaining in ACEC After Prior Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*‡	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that are More Likely to be Developed	Acres of ACEC that are Effective Selections (Priority 1 and 2)†
Neacola Mountains ACEC – Bay and Ring of Fire	287,000	0	0	0	0	0
Nulato Hills ACEC – Kobuk-Seward Peninsula	1,074,000	0	0	0	0	0
Mount Osborn ACEC – Kobuk-Seward Peninsula	74,000	0	0	0	0	13,000
Inglutalik River ACEC – Kobuk-Seward Peninsula	465,000	0	0	0	0	0
Shaktoolik River ACEC – Kobuk-Seward Peninsula	232,000	0	0	0	0	< 1,000
Ungalik River ACEC – Kobuk-Seward Peninsula	259,000	0	0	0	0	0
Western Arctic Caribou Insect Relief ACEC – Kobuk-Seward Peninsula	1,446,000	0	0	0	0	11,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the ACEC, not just those on 17(d)(1) withdrawals.

‡ Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.10.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on BLM special designations for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to BLM special designations from the resulting development would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of BLM special designations could be affected in the focused analysis area (Table 3.10-6 and Table 3.10-7). Also, 17(d)(1) withdrawals would not be retained specially to avoid conflict with recreation areas as they would under Alternative B. The highest likelihood for degradation of SRMAs or the ERMA from Alternative C would occur in areas that are more likely to be conveyed (priority conveyances), especially where these overlap with areas more likely to be developed (see Table 3.10-6). In these areas, the special qualities required for SRMA designation would be degraded, and the BLM would need to reassess if these areas can still be managed as a special designation. The largest acres of impacts would be in the Salmon Lake-Kigluaiq, Denali Highway, and Gulkana River SRMAs.

Lands that are likely to stay in Federal management following revocation of 17(d)(1) withdrawals (i.e., lands that are not priority conveyances) would remain managed as an SRMA per the existing RMP for the area. These lands would be opened to mineral entry, but surface occupancy and activities would be limited to the special management conditions identified in the RMP (SRMAs typically have special management that protects the lands and resource values by limiting some uses of them). The majority of revocations under Alternative C fall into this category for the Delta Range, Haines, Gulkana River, Iditarod NHT, Knik River, and Squirrel River RMAs.

For ACECs, the same would be true for the Mount Osborne ACEC (see Table 3.10-7); 78 percent of it would be 17(d)(1) withdrawals that would be revoked (with 27 percent being priority conveyances that would become effective selections). If all effective selections are conveyed, the ACEC may need to be reassessed to determine if it should still be managed as a special designation. The Mount Osborne ACEC was 82,000 acres at the time of designation. Approximately 39,000 of those acres are effective selections and may be conveyed regardless of a Secretarial decision to revoke 17(d)(1) withdrawals. Another 22,000 acres are priority conveyances that would immediately become effective selections upon revocation of the 17(d)(1) withdrawals under Alternative C.

Revocations of 17(d)(1) withdrawals under Alternative C would overlap with nominated ACECs (see Figures 3.10-6 through 3.10-11); the BLM is in the process of evaluating these potential ACECs.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to adjacent BLM special designations.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to BLM special designations. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.10-6. Impacts to Recreation Management Areas and Trails under Alternative C

SRMA or ERMA and Associated Planning Area	Acres Remaining in RMA or NTMC After Prior Conveyances or Miles of Trail in Planning Area	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*‡	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances and that are More Likely to be Developed	Acres of RMA or Miles of Trail on Effective Selections (Priority 1 and 2)†
Delta Range SRMA – East Alaska	294,117	55,000	0	0	0	< 1,000
Denali Highway SRMA – East Alaska	199,742	145,000	8,000	< 1,000	< 1,000	185,000
Gulkana River SRMA – East Alaska	90,602	1,000	< 1,000	0	1,000	4,000
Haines Block SRMA – Ring of Fire	65,200	19,000	< 1,000	0	0	44,000
Haines ERMA – Ring of Fire	251,027	62,000	< 1,000	0	0	16,000
Iditarod NHT SRMA – Bering Sea-Western Interior	341,000	62,000	0	0	0	< 1,000
Knik River SRMA – Ring of Fire	12,317	12,000	< 1,000	2,000	0	12,000
Salmon Lake-Kigluaik SRMA – Kobuk-Seward Peninsula	191,863	164,000	26,000	15,000	2,000	62,000
Squirrel River SRMA – Kobuk-Seward Peninsula	595,863	145,000	5,000	0	0	30,000
Tiekel SRMA – East Alaska and Ring of Fire	486,052	261,000	4,000	5,000	0	0
Iditarod NHT	933	19	3	0	0	22
Alaska Long Trail (proposed NST)	1,111	18	5	1	0	15

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the RMA or trail, not just those on 17(d)(1) withdrawals.

‡ Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

Table 3.10-7. Impacts to Area of Critical Environmental Concern under Alternative C

ACEC and Associated Planning Area	Acres Remaining in ACEC After Prior Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*[‡]	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances and that are More Likely to be Developed	Acres of ACEC that are Effective Selections (Priority 1 and 2)[†]
Neacola Mountains ACEC – Bay and Ring of Fire	287,000	4,000	0	0	0	0
Nulato Hills ACEC – Kobuk-Seward Peninsula	1,074,000	2,000	0	0	0	0
Mount Osborn ACEC – Kobuk-Seward Peninsula	74,000	64,000	22,000	< 1,000	0	13,000
Inglutalik River ACEC – Kobuk-Seward Peninsula	465,000	0	0	0	0	0
Shaktoolik River ACEC – Kobuk-Seward Peninsula	232,000	0	0	0	0	< 1,000
Ungalik River ACEC – Kobuk-Seward Peninsula	259,000	0	0	0	0	0
Western Arctic Caribou Insect Relief ACEC – Kobuk-Seward Peninsula	1,446,000	61,000	0	0	0	11,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the ACEC, not just those on 17(d)(1) withdrawals.

[‡] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.10.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM could take discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn lands allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to BLM special designations. In these instances, development could occur (as described in the RFD in EIS Appendix D) and would result in the impacts described in Section 3.10.2.2.2.

The greatest impacts to BLM special designations are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.10-8 and Table 3.10-9 summarize the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to BLM special designations as Alternative C, but to a larger extent and magnitude because more acres of BLM special designations occur where the 17(d)(1) withdrawals would be revoked.

Under Alternative D, the Haines Block, Knik, Salmon Lake-Kigluaik, and Squirrel River SRMAs and the Haines ERMA would have most or even all the withdrawals within their boundaries revoked (though not all the revocations would be on lands identified as priority conveyances; see Table 3.10-8). In areas that are more likely to be conveyed (priority conveyances) and more likely to be developed, the special qualities required for SRMA designation would be degraded, and the BLM may need to reassess if these acres should still be managed as special designations.

The Mount Osborne ACEC would be affected as described for Alternative C. There are also nominated ACECs on the 17(d)(1) withdrawals that would be revoked under Alternative D (see Figures 3.10-6 through 3.10-11); the BLM is in the process of evaluating these potential ACECs.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to adjacent BLM special designations.

Potential for impacts to BLM special designations is greatest under this alternative because the 17(d)(1) withdrawals would be revoked as to the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

3.10.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact SRMAs, as described in Section 3.10.2.2.2. Tables 3.10-10 and 3.10-11 summarize the number of acres potentially affected under each alternative for those SRMAs, the ERMA, and ACECs that have impacts to acres that overlap priority conveyances under any of the alternatives. Table 3.10-11 summarizes the number of acres potentially affected under each alternative for the Iditarod NHT and the Alaska Long Trail.

Table 3.10-8. Impacts to Recreation Management Areas and Trails under Alternative D

SRMA or ERMA and Associated Planning Area	Acres Remaining in RMA or NTMC After Prior Conveyances or Miles of Trail in Planning Area	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*	Acres of RMA or Miles of Trail where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances and that are More Likely to be Developed	Acres of RMA or Miles of Trail on Effective Selections (Priority 1 and 2) [†]
Delta Range SRMA – East Alaska	294,117	79,000	0	0	0	< 1,000
Denali Highway SRMA – East Alaska	199,742	196,000	8,000	< 1,000	< 1,000	185,000
Gulkana River SRMA – East Alaska	90,602	1,000	< 1,000	0	0	4,000
Haines Block SRMA – Ring of Fire	65,200	65,000	< 1,000	0	0	44,000
Haines ERMA – Ring of Fire	251,027	251,000	< 1,000	0	0	16,000
Iditarod NHT SRMA – Bering Sea-Western Interior	341,000	292,000	0	0	0	< 1,000
Knik River SRMA – Ring of Fire	12,317	12,000	< 1,000	2,000	0	12,000
Salmon Lake-Kigluaik SRMA – Kobuk-Seward Peninsula	191,863	192,000	26,000	17,000	3,000	62,000
Squirrel River SRMA – Kobuk-Seward Peninsula	595,863	596,000	5,000	0	0	30,000
Tiekel SRMA – East Alaska and Ring of Fire	486,052	358,000	4,000	5,000	0	0
Iditarod NHT	933	75	3	0	0	48
Alaska Long Trail (proposed NST)	1,111	18	5	1	0	15

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the RMA or trail, not just those on 17(d)(1) withdrawals.

Table 3.10-9. Impacts to Areas of Critical Environmental Concern under Alternative D

ACEC and Associated Planning Area	Acres Remaining in ACEC after Prior Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*	Acres of ACEC where 17(d)(1) Withdrawals Would be Revoked with Priority Conveyances that are More Likely to be Developed	Acres of ACEC that are Effective Selections (Priority 1 and 2)[†]
Neacola Mountains ACEC – Bay and Ring of Fire	287,000	227,000	0	0	0	0
Nulato Hills ACEC – Kobuk-Seward Peninsula	1,074,000	1,074,000	0	0	0	0
Mount Osborn ACEC – Kobuk-Seward Peninsula	74,000	74,000	22,000	< 1,000	0	13,000
Inglutalik River ACEC – Kobuk-Seward Peninsula	465,000	465,000	0	0	0	0
Shaktoolik River ACEC – Kobuk-Seward Peninsula	232,000	232,000	0	0	0	< 1,000
Ungalik River ACEC – Kobuk-Seward Peninsula	259,000	259,000	0	0	0	0
Western Arctic Caribou Insect Relief ACEC – Kobuk-Seward Peninsula	1,446,000	1,445,000	0	0	0	11,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though not a part of the Secretarial decision regarding the project, effective selections may cumulatively affect BLM special designations (see Section 3.10.2.2.7, Cumulative Impacts). This table presents total effective selections in the ACEC, not just those on 17(d)(1) withdrawals.

Table 3.10-10. Comparison of Impacts to BLM Special Designations by Alternative: Acres of Withdrawals that Would be Revoked

Alternative	Delta Range SRMA	Denali Highway SRMA	Gulkana River SRMA	Haines Block SRMA	Haines ERMA	Iditarod NHT SRMA	Knik River SRMA	Salmon Lake-Kigluaik SRMA	Squirrel River SRMA	Tiekel SRMA	Mount Osborne ACEC
Alternative A	0	0	0	0	0	0	0	0	0	0	0
Alternative B	0	< 1,000 (< 1,000)	0	0	< 1,000 (< 1,000)	0	12,000 (< 1,000)	0	5,000 (5,000)	32,000 (0)	0
Alternative C	55,000 (0)	145,000 (8,000)	1,000 (< 1,000)	19,000 (< 1,000)	62,000 (< 1,000)	62,000 (0)	12,000 (< 1,000)	164,000 (26,000)	145,000 (5,000)	261,000 (4,000)	64,000 (22,000)
Alternative D	79,000 (0)	196,000 (8,000)	1,000 (< 1,000)	65,000 (< 1,000)	251,000 (< 1,000)	292,000 (0)	12,000 (< 1,000)	192,000 (26,000)	596,000 (5,000)	358,000 (4,000)	74,000 (22,000)

Note: acres on priority conveyance are in parentheses.

Table 3.10-11. Comparison of Impacts to Trails by Alternative

Alternative	Miles of Trails on Withdrawals that Would be Revoked (miles on priority conveyance) Iditarod NHT	Miles of Trails on Withdrawals that Would be Revoked (miles on Priority conveyance) Alaska Long Trail
Alternative A	0	0
Alternative B	0	0
Alternative C	19 (3)	18 (5)
Alternative D	75 (3)	18 (5)

3.10.2.2.7 CUMULATIVE IMPACTS

Lands where the 17(d)(1) withdrawals are revoked and that become effective selections would be additive to existing effective selections. If all effective selections are conveyed, then the cumulative impact on an SRMA, ERMA, ACEC, or trail would be additive to the point where the BLM may need to reassess some areas to determine if they should still manage these areas as a special designation. Because BLM special designations provide certain protections within their boundaries, if the designation is removed, those protections would be removed. The BLM would evaluate, through a separate land use planning process, whether special designations that have future conveyances still meet the purposes for which they were designated. Thus, revocation of withdrawals that lead to effective selections would not immediately result in removal of a special designation. The exception to this would be where an existing RMP states that a specific special designation would be removed if lands are conveyed, such as for the Denali Highway SRMA.

When the prior conveyances, existing effective selections, conveyances currently allowed under the Dingell Act, and priority conveyances that would occur following Secretarial revocation of 17(d)(1) withdrawals as evaluated in this EIS are considered, the cumulative impacts on some specially designated areas would be substantial. For example, revocation of the 17(d)(1) withdrawals would essentially complete the degradation of the values that supported the designation of the Denali Highway SRMA. As discussed in the Affected Environment section and Table 3.10-2, 93 percent of the lands along the Denali Highway are effective selections. Another 4 percent of the lands remaining in the SRMA are priority conveyances that would become effective selections upon revocation of the 17(d)(1) withdrawals (Table 3.10-8). These additional land disposals or subsequent development along the road following revocation of the 17(d)(1) withdrawals could further restrict the recreational use of the road and degrade the scenic value of the area, which is one of the highlights of this SRMA. Similarly, any additional conveyance of the effective selections across the Knik SRMA would essentially complete the degradation of the values that supported the designation of this SRMA since prior conveyances have already reduced this SRMA considerably (see Table 3.10-2 and 3.10-10).

3.11 RECREATION AND TRAVEL MANAGEMENT

3.11.1 How would revocation of 17(d)(1) withdrawals affect recreation management and public access?

The analysis for recreation management and public access was prepared to comply with Secretarial Order 3373 (Evaluating Public Access in Bureau of Land Management Public Land Disposals and Exchanges). The analysis area for recreation management and public access is the ANCSA 17(d)(1) withdrawals in the decision area that intersect special designation areas specific to recreation (i.e., SRMAs, ERMAs, and national trails) because these are the areas where there are likely to be project-related impacts to

recreation management. Recreation is occurring in non-specially designated areas, but for the purposes of this analysis, SRMAs on BLM-managed lands that overlap the ANCSA 17(d)(1) withdrawals are used to assess current conditions of recreational resources. This analysis area was chosen because revocation of the withdrawals across SRMAs, in particular, would represent the most tangible impacts to areas explicitly managed for recreation. It is assumed that, although some SRMAs are known for specific kinds of recreational activities, recreation is generally occurring in all areas of the SRMAs discussed in this section.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze this issue:

- Acres of ANCSA 17(d)(1) withdrawals that are more likely to be conveyed and developed (the focused analysis area), should the withdrawals be revoked

Additionally, potential development impacts on different recreation settings are qualitatively discussed. The analysis for this issue assumes that more recreational access would occur on lands conveyed to the State.

3.11.1.1 Affected Environment

Eight SRMAs, one ERMA, one NHT, and one NST overlap 17(d)(1) withdrawals. These SRMAs, ERMAs, and trails are listed below, and are further described and quantified in Section 3.10.2.

- Alaska Long Trail (proposed NST)
- Delta Range SRMA
- Denai Highway SRMA
- Gulkana SRMA
- Haines Block SRMA
- Haines ERMA
- Iditarod NHT
- Knik River SRMA
- Salmon Lake-Kigluaik SRMA
- Squirrel River SRMA
- Tiekkel SRMA

In addition to the specially designated recreation areas, casual recreation use occurs along the existing road system (included disconnected and limited road systems, such as in the Bay planning area) and along rivers. For example, recreation occurs along the public side of the Denali Highway corridor. The BLM also issues special recreation permits to businesses, organizations, and individuals to allow the use of specific public land and related waters for commercial, competitive, and organized group use.

Past and present actions that have resulted in ground disturbance and increased access have both expanded recreational opportunities and degraded the naturalness of recreation settings in the analysis area. Climate change is increasing the potential for damage to recreation access resources (e.g., roadways) due to riverbank erosion and weathering, including freeze-thaw impacts on paved surfaces. Climate

change impacts, such as increased incidence of wildfires and changes in permafrost, are also altering recreation setting characteristics. The pattern of both past and future land conveyances affects the public's ability to access recreation. For example, one side of the Denali Highway is a large area that is currently blocked from recreation use due to the conveyance to Ahtna, Inc. Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to alter recreation resources.

Due to prior conveyances (described in Section 3.10.2.1, Affected Environment), the SRMAs and ERMA described in Section 3.10.2 may have fewer acres remaining in Federal management than they did at their original designation, meaning the BLM manages less of the land originally contained in the SRMA or ERMA. Similarly, many of the remaining lands are effective selections that could be conveyed at any time regardless of the Secretary's decision on this project. These actions have and will continue to impact the recreational value of these designated areas.

In addition to the SRMA, ERMA and Trails managed by BLM, the State of Alaska has developed area management plans for different areas of the state. Portions of the Northwest Alaska, including the Kigluaik Mountains, are to be managed for recreation and mineral values (ADNR 2008). In the Kantishna region of the Yukon Tanana Area, which includes the area near Lake Minchumina, the State intends to manage for the continuation of current uses, with a major emphasis on protecting habitat and recreational resources. Multiple use, including recreation, is the management intent for most units (ADNR 2014). Public recreation is listed as a primary use of the Denali Highway Management Unit in the Susitna Area near the upper Susitna River (ADNR and ADFG 1985). The Gulkana River – Richardson Highway Management Unit in the Copper River Basin Area will also be managed for public recreation (ADNR and ADFG 1986). The Slana-Mentasta Management region, which contains the Mentasta Mountains, also notes public recreation as a primary use in many subunits (ADNR and ADFG 986). Additionally, the area near Kenibuna Lake and Chakachamna Lake is designated for dispersed recreational use (ADNR 2001). The *Knik River Public Use Area Management Plan* also includes a goal to perpetuate and enhance recreational opportunities (ADNR 2012).

3.11.1.2 Environmental Consequences

3.11.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions in the analysis area described in Section 3.11.1.1, Affected Environment, would continue, and recreational uses such as OHV use, hunting, and backcountry activity would continue. Effective selections near recreational areas (such as the Chakachamna River and the Denali Highway) could be conveyed at any time. As described in Section 3.10.2.2.1 (Alternative A), 93% of the BLM-managed lands remaining in the Denali Highway SRMA are effective selections that could be conveyed at any time regardless of the Secretary's decision from this EIS. Conveyance of these lands would degrade the qualities required for that special designation. Specifically, the RMP for this area specifies that the area would not be managed as an SRMA if the lands within it are conveyed. Thus, the area may no longer be managed as an SRMA in the future even under the No Action Alternative.

Similarly, much of the Knik River SRMA has been conveyed and 100% of the remaining BLM-managed acres in the SRMA are effective selections. If the BLM does not retain ownership of the remaining lands within the SRMA, no implementation plan would be developed, and these lands would not be managed as an SRMA.

3.11.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Impacts to recreation and public access related to changes in land management (e.g., Federal to State) or from potential development are expected to occur under the action alternatives. Recreation can provide numerous and diverse positive benefits including

- personal benefits, such as improved fitness and mental health;
- social and community benefits, such as positive lifestyle choices, improved social skills, and increased community involvement;
- economic benefits, such as recreation-based business and related employment opportunities; and
- environmental benefits, such as public drive to steward natural resources due to involvement in outdoor activities (BLM 2014).

A reduction or change in recreational opportunities or use in certain areas due to the revocation and potential development of (17)(d)(1) withdrawals would likely decrease those recreational benefits.

If lands that are conveyed have special recreation permits in place, the BLM would notify permit holders that the affected lands are now privately owned and their authorization is no longer valid. This would occur for permits on Priority 1 and 2 top filings on lands that are not otherwise encumbered because it is assumed these lands would be conveyed within 10 years of any Secretarial revocation of the 17(d)(1) withdrawals.

Lands that are conveyed and are more likely to be developed would experience an increase in roads, increased connections for communities to less accessible areas, and intentional improvement of existing roads (as described in Section 3.11.2, Transportation Systems and Traffic). Such expansion would also likely include creation of new roads, which could introduce far-reaching impacts to recreation settings, such as noise and light pollution from traffic and increased presence of workers. Development may impact the characteristics of areas previously used for recreation. Development would change the visual characteristics of areas and reduce the availability of primitive recreation experiences. Additionally, BLM infrastructure (cabins, campgrounds, waysides, or trails) on State top files that become effective selections may be conveyed out of Federal ownership. However, as noted above in Section 3.11.1.1, a number of State plans list recreation as a priority use in areas near State top filed lands, meaning that some of these lands may maintain recreation access and value if transferred to State ownership, and infrastructure may continue to be managed for public use. Similarly, the comprehensive plan for the Iditarod NHT (BLM 1986) emphasizes the recreational importance of the Iditarod NHT and some of its connecting trails, meaning that if the lands are transferred to State ownership, the recreational value of the trail itself may not be compromised. Some recreation experiences in Alaska benefit from large areas of intact connected landscapes. Development in previously undeveloped areas may reduce the desirability of or complicate the logistics of recreational use in adjacent areas.

Additionally, the transfer of certain priority conveyances or the development of the land staying in Federal ownership could block recreation access. Notably, in Alaska, most of the routes of access, especially to recreation, have not been formally recognized in a ROW. One impact of land leaving Federal ownership is that nothing will ensure that these access routes stay accessible, even on State land.

In the case of the Alaska Long Trail proposed NST, if there are top filed lands that overlap the proposed route, the Secretary may elect to retain the 17(d)(1) withdrawals that are in the NST study area until the study has been completed and Congress has had an opportunity to act.

The ERMA and SRMAs noted in Section 3.11.1.1 have various levels of special recreation permits authorized on BLM-managed lands. If those lands were conveyed, the current authorized permit holders would no longer have authorizations for BLM-managed lands and would have to apply for permitting with the State of Alaska or other owners to gain access, potentially resulting in a lapse in their ability to offer services to clients. However, conveyance and development may also make previously impassable areas of land more accessible to recreationists and present new opportunities for recreationists. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Because recreation contributes to the economy of Alaska (see Section 3.5.1.1.4, Recreation Economy), a reduction in recreation opportunities and access due to land conveyances and development could result in a reduction in business for guiding services and other recreation-based tourism. These effects are described in the Recreation Economy section in Section 3.5.1.2.2, Impacts Common to All Action Alternatives.

Conveyed Native allotments could block access to State or Federal public lands if access routes are not reserved in patent documents. Conveyance of lands to the State could result in the creation of private lands through its remote cabin or land sales programs and could block access to State or Federal lands or create the need for construction of additional access routes to reach public lands. Revocation of 17(d)(1) withdrawals and subsequent conveyances could also create isolated parcels that are land locked requiring ROWs or other resolutions to access private lands.

3.11.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals near Eagle River and Takotna would be retained specifically to avoid conflict with the Iditarod NHT. Additionally, parcels near Chakachamna Lake would be retained specifically for their high recreational value, as well as parcels near the Salmon Lake-Kigluaik SRMA. (Parcels near the Chakachamna River would also be retained but are effective selections that could be conveyed regardless of the Secretary's decision on this project, as described under Alternative A.) Alternative B would retain withdrawals that overlap the Iditarod NHT and the Alaska Long Trail proposed NST (see Section 3.10.2.2.3).

There would be no direct or indirect impacts on recreation management and access for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B and on which there are no other encumbrances would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how travel management occurs and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.11.1.2.2, Impacts Common to All Action Alternatives. Table 3.10-4 summarizes the acres of impacts to RMAs and trails.

Although Alternative B would revoke 11,000 acres of the Knik SRMA (see Table 3.10-4), approximately 86 percent (68,000 acres) of the SRMA has already been conveyed to ANCs, and all of the lands remaining in BLM-management are effective selections that would not be affected by the Secretary's decision on this project. No BLM recreation sites or areas are revoked under Alternative B.

3.11.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on recreation management and access for lands that remain withdrawn under Alternative C. For lands where an ANCSA 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to recreation and access from the resulting development would be similar to Alternative B, but impacts would be of a greater magnitude and extent due to the additional acres that would be revoked (see Table 3.10-6). Also, 17(d)(1) withdrawals would not be retained specifically to avoid conflict with recreation areas as they would for Alternative B. Therefore, top filed lands in SRMAs and the ERMA, as well as parcels near State area plan lands with recreational value, may be transferred and potentially developed, impacting recreational values and characteristics. Alternative C would revoke approximately 19 and 18 miles of the Iditarod NHT and Alaska Long Trail proposed NST, respectively. One mile of the Alaska Long Trail proposed NST is on an area identified as more likely to be developed, and if development occurs it could affect the use of the trail (see Section 3.10.2.2.4). For RMAs specifically, such a transfer may make RMA lands no longer eligible for RMA designation due to reduction in quality or quantity of recreational values. ANCSA 17(d)(1) withdrawals revoked and conveyed as Native allotments would likely see little development (as described in BLM [2022]).

Additionally, withdrawals adjacent to the Neacola Mountains ACEC would be revoked under Alternative C. These lands contain similar recreational and scenic value as the designated ACEC. Special recreation permit holders use this area for guided recreation opportunities. Loss of Federal ownership on lands in this area would reduce recreation opportunities on BLM-managed land.

Revocation of 17(d)(1) withdrawals that contain recreation sites (and facilities) could change management and recreation opportunities for those sites. The 10 sites that would be affected under Alternative C are listed in Table 3.11-1. The State may or may not continue to use these sites for public recreation.

Table 3.11-1. BLM Recreation Sites on 17(d)(1) Withdrawals that Would be Revoked under Alternative C

Recreation Site or Area Name
Alaska Range Viewpoint
Alphabet Hills Trailhead
Clearwater Creek Wayside
Denali Highway Mile 13 Interpretive Site
Dickey Lake Trailhead
Landmark Gap Trailhead
Maclaren Summit Trailhead
Osar Lake Trailhead
Swede Lake Trailhead
Wrangell Mountain Viewpoint

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to recreation management and access. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2

top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.10-6 in Section 3.10.2.2.4 summarizes the acres of impacts to RMAs and trails.

3.11.1.2.5 ALTERNATIVE D (PARTIAL REVOCATION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under their respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation could be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to recreation management and access. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the impacts described in Section 3.11.1.2.2. The greatest impacts to recreation and access are expected where development is more likely and conveyance out of Federal ownership is more likely.

Table 3.10-8 summarizes the acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area (the area more likely to be conveyed and developed). Alternative D would have similar types of impacts to recreation and access as Alternative C but to a larger extent and magnitude because more acres of recreation and access opportunities occur on the revocations. Alternative D would revoke all 17(d)(1) withdrawals; the BLM would manage any lands that were not selected under their respective RMPs, including Priority 3 and 4 selected lands that may later be relinquished due to overselection by the State and most ANCs. Selected lands where the withdrawals are revoked under Alternative D could be conveyed to the State or ANC if they are Priority 1 or 2, which would change how recreation is managed and potentially lead to development (as described in the RFD in EIS Appendix D) and would result in the impacts described in Section 3.11.1.2.2.

Land where the ANCSA 17(d)(1) withdrawals are revoked and where the acres are conveyed as Native allotments would likely see little development (as described in BLM [2022]).

Revocation of 17(d)(1) withdrawals that contain recreation sites (and facilities) could change management and recreation opportunities for those sites. The 14 sites that would be affected under Alternative D are listed in Table 3.11-2. The State may or may not continue to use these sites for public recreation.

Table 3.10-8 in Section 3.10.2.2.5 summarizes the acres of impacts to RMAs and trails.

Table 3.11-2. BLM Recreation Sites on 17(d)(1) Withdrawals that Would be Revoked under Alternative D

Recreation Site or Area Name
Alaska Range Viewpoint
Alphabet Hills Trailhead
Bear Creek Cabin
Clearwater Creek Wayside
Denali Highway Mile 13 Interpretive Site
Dickey Lake Trailhead
Foothills Cabin
Landmark Gap Trailhead

Recreation Site or Area Name
Maclaren Summit Trailhead
Old Woman Cabin
Osar Lake Trailhead
Swede Lake Trailhead
Tripod Flats Cabin
Wrangell Mountain Viewpoint

3.11.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact recreation as described in Section 3.11.1.2.2. Each alternative revokes the withdrawals across a different subset of land as shown in Table 3.10-10 in Section 3.10.2.2.6.

3.11.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect recreation in similar ways to those described in Section 3.11.1.2.2.

The RFAs and planned actions described in Section 3.1, Introduction and Methodology, could result in development in the analysis area. Some of these RFAs or planned actions will create additional transportation infrastructure (Ambler Road, Cape Blossom Road, Graphite One Mine, etc.) or involve intentionally improved transportation networks, potentially opening more areas to recreation. These RFAs and planned projects in combination with the project would additively expand the road and travel system. However, such development would also create disturbance due to increased traffic, noise, presence of humans, and construction or maintenance activities. Such disturbance may reduce the desirability of recreational activities, particularly backcountry recreation activities, in the decision area.

3.11.2 How would revocation of 17(d)(1) withdrawals change transportation systems and traffic?

The analysis area for transportation systems and traffic is a 31-mile buffer of the existing road system, railbelt, barge routes, and ports. The analysis in the EIS relies on the 31-mile distance because this was the median distance of access roads for seven recent resource development projects in Alaska; therefore, for analysis purposes, the EIS assumes that this is, on average, the extent of impacts on transportation systems and traffic from new development. The analysis for this issue also assumes that more roads would be implemented where lands are conveyed to the State than if retained under Federal management and where development is more likely, and that more traffic would occur as a result.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze this issue:

- Acres of ANCSA 17(d)(1) withdrawals that, if the withdrawals are revoked, may change to State management or are adjacent to existing transportation infrastructure and therefore are more likely to be developed

3.11.2.1 Affected Environment

The travel resources in the analysis area are not evenly distributed. Most roads are in the southcentral portion of the state (see Figures 3.1-1 through 3.1-5) due to higher demand in the more urbanized region of Anchorage, Seward, and other coastal cities and towns (Alaska Department of Transportation and Public Facilities [ADOTPF] 2023). The Dalton Highway provides a route to the northernmost area of the state (ADOTPF 2023). Additionally, several State routes are on the Kobuk-Seward Peninsula, though none penetrate far into the interior of the analysis area. Several road segments are scattered throughout the interior of the analysis area (ADOTPF 2023). Generally, the northern and western portions of the analysis area have far fewer existing roads than the southcentral portion.

The southcentral portion of the state also has far more ports and harbors than the rest of the analysis area (see Figures 3.1-1 through 3.1-5). In the western portion, some ports are along the western coast or located slightly inland along major waterways, and a single port exists in the more central inland area at Nenana (Alaska Geospatial Council 2023a). Airports are more widespread throughout the analysis area, with more dense airport distribution along the southern and western coasts, fewer on the northern coast, and several dozen scattered throughout the interior of the analysis area (Alaska Geospatial Council 2023b). The sole railroad in the analysis area is also located in the southcentral portion (Alaska Geospatial Council 2023c).

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to alter travel resources. Past and present actions, including railroad and roadway development and activities such as mineral exploration, have resulted in the creation and maintenance of existing routes, rail lines, ports, and airstrips. Climate change is increasing the potential for damage to travel resources, including roadways, due to riverbank erosion and weathering, including freeze-thaw impacts on paved surfaces.

3.11.2.2 Environmental Consequences

3.11.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.11.2.1, Affected Environment, would continue, and State maintenance activities on routes; population growth necessitating additional development; and transportation activity from citizen use or construction, mineral development, and other such projects would continue to impact transportation and traffic.

3.11.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

There could be some degree of development of mineral resources, oil and gas, ROWs, or other resources across the analysis area, especially if lands are conveyed, as described under the action alternatives. Such development would likely result in an increase in roads in these areas, increased connections for communities to less accessible areas, and intentional improvement of existing roads. Transportation infrastructure would likely be constructed and/or expanded throughout the analysis area to access resources. Construction activity would likely lead to an increase in traffic and presence of construction workers, vehicles, and traffic. Resource extraction operations could also lead to an increase in traffic levels into the future (although likely to a lesser degree than construction activity) and would likely keep roads maintained and operational. Additionally, the new landowner would likely decide to keep transportation networks developed for resource extraction purposes operational even if the resource operation ceases, meaning that such development may have lasting impacts on the extent of the

transportation network far into the future. Where lands are conveyed, the BLM would not retain control of access; however, the State may decide to maintain or grant public access upon conveyance. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.11.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on transportation systems and traffic for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how transportation systems and traffic are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.11.2.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3, Analysis Areas. Table 3.11-3 summarizes impacts to transportation systems on lands where the ANCSA 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area.

Table 3.11-3. Summary of Impacts to Transportation Systems where 17(d)(1) Withdrawals Would Be Revoked under Alternative B

Planning Area	Acres in Analysis Area	Total Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*†	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	15,280,000	16,000	< 1,000	0	0
Bering Sea-Western Interior	39,586,000	69,000	26,000	0	0
East Alaska	23,211,000	170,000	3,000	2,000	2,000
Kobuk-Seward Peninsula	23,177,000	28,000	< 1,000	0	0
Ring of Fire	47,498,000	27,000	7,000	< 1,000	< 1,000
Total	148,752,000	310,000	36,000	2,000	2,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.11.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on transportation systems and traffic for lands that remain withdrawn under Alternative C. For lands where an ANCSA 17(d)(1) withdrawal is revoked under

Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to travel from the resulting development would be similar to Alternative B, but impacts would be more expansive due to the additional acres where the withdrawals would be revoked (Table 3.11-4).

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to transportation systems and traffic. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

ANCSA 17(d)(1) withdrawals conveyed as Native allotments would likely see little transportation development (as described in BLM [2022]).

Table 3.11-4. Summary of Impacts to Transportation Systems where 17(d)(1) Withdrawals Would be Revoked under Alternative C

Planning Area	Acres in Analysis Area	Total Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed ^{*†}	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	15,280,000	75,000	4,000	< 1,000	0
Bering Sea-Western Interior	39,586,000	1,768,000	210,000	2,000	< 1,000
East Alaska	23,211,000	1,449,000	273,000	83,000	19,000
Kobuk-Seward Peninsula	23,177,000	1,213,000	28,000	34,000	4,000
Ring of Fire	47,498,000	211,000	8,000	7,000	< 1,000
Total	148,752,000	4,716,000	523,000	126,000	23,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.11.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under their respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn lands allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation could be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to transportation systems and traffic. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the impacts described in Section 3.11.2.2.2. The greatest impacts to travel are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.11-5

summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area.

Lands where ANCSA 17(d)(1) withdrawals are revoked and where the acres are conveyed as Native allotments would likely see little transportation development (as described in BLM [2022]).

Table 3.11-5. Summary of Impacts to Transportation Systems where 17(d)(1) Withdrawals Would be Revoked under Alternative D

Planning Area	Acres in Analysis Area	Total Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Bay	15,280,000	1,221,000	4,000	2,000	0
Bering Sea-Western Interior	39,586,000	8,781,000	210,000	3,000	< 1,000
East Alaska	23,211,000	2,408,000	273,000	83,000	19,000
Kobuk-Seward Peninsula	23,177,000	6,590,000	28,000	56,000	7,000
Ring of Fire	47,498,000	601,000	8,000	7,000	< 1,000
Total	148,752,000	19,601,000	523,000	151,000	26,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.11.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact transportation systems and traffic, as described in Section 3.11.2.2.2. The greatest impacts to travel are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.11-6 summarizes impacts from the alternatives.

Table 3.11-6. Acres where 17(d)(1) Withdrawals would be revoked in Transportation Systems Analysis Area under Each Alternative

Alternative	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Acres of Transportation Systems where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0
Alternative B	36,000	2,000*	2,000
Alternative C	523,000	126,000	23,000
Alternative D	523,000	151,000	26,000

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.11.2.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect transportation systems in similar ways to those described in Section 3.11.1.2.2.

The RFAs and planned actions described in Section 3.1, Introduction and Methodology, could result in development in the analysis area. Some of these RFAs or planned actions will create additional transportation infrastructure (Ambler Road, Cape Blossom Road, Graphite One Mine, etc.) or involve intentionally improved transportation networks, potentially benefiting and increasing the transportation systems in the analysis area. These RFAs or planned actions in combination with the project would additively expand the road and travel system.

3.12 SOCIAL SYSTEMS

3.12.1 How would revocation of 17(d)(1) withdrawals affect social systems?

The analysis area for social systems is the regions of Alaska that would potentially be affected by the project. These regions are defined by the boundaries of the boroughs and census areas that intersect the focused analysis area, as defined in Section 3.1, Introduction and Methodology.

The temporal scale for impacts would be long term, as defined in Section 3.1.

The following indicators were used to analyze this issue in the regions where future mineral development is assumed, as described in the RFD in EIS Appendix D:

- Potential changes to community facilities, services, and infrastructure
- Potential changes to community characteristics and culture

This EIS assumes that any of the land selections impacted by the revocations would be conveyed within 10 years of any Secretarial revocation of the 17(d)(1) withdrawals. The timeframe for most kinds of resource or industrial development from the permitting stages to exploration activities through the development and production phases would take at least another 20 to 30 years from when the lands are conveyed. For placer mining, the timeframe could be shorter: 5 years from when the lands are conveyed. The social analysis presented in this EIS is therefore qualitative and is based on previous and existing resource development projects in Alaska, wherein social impacts have been described and analyzed.

3.12.1.1 *Affected Environment*

3.12.1.1.1 COMMUNITY FACILITIES, SERVICES, AND INFRASTRUCTURE

Section 3.5, Economics, provides a summary of existing economic regions that could be impacted by the project. Community facilities, services, and infrastructure in the analysis area are described below.

Health clinics offering primary care are located across the analysis area. However, the staff, equipment, and other resources for some clinics may be limited, meaning that trauma and serious illness cases must

be sent to an outside hospital, usually by airplane or helicopter. Alaska also has the highest health care costs of any state (ADLWD 2023).

Law enforcement in the analysis area is primarily the responsibility of Alaska State Troopers, provided by a central headquarters with area posts in Bethel, Fairbanks, Kotzebue, Nome, Dillingham, and Glennallen. The logistical issues created by distance between posts and communities, together with erratic weather conditions and limited weather stations, can create challenges for troopers who are largely dependent on aircraft to conduct their work. Some communities have no law enforcement services, which means that there is less deterrence to crime and less enforcement of protective orders (Alaska Advisory Committee to the U.S. Commission on Civil Rights 2002).

Alaska's water and wastewater systems can be generally divided into two categories: municipal and rural. Most municipal systems that serve more densely populated areas have long-term operations, maintenance staff, and funding. For rural communities that have water and wastewater systems, operating and maintaining systems are challenged by limited access, environmental conditions (i.e., permafrost), high operation and maintenance costs, and lack of population (American Society of Civil Engineers 2021). Many of the water and sewer improvements were built using grants but lack funds to maintain systems (American Society of Civil Engineers 2021).

Although taxes tend to be lower in Alaska, the costs of transportation, food, energy, and fuel are higher than in many other states (ADLWD 2023), which is compounded in rural areas. Costs are generally highest in communities served by air and seasonally by barge. Although the cost of living can be high in rural communities, subsistence hunting and fishing helps provide for the needs of families and communities. However, subsistence hunting and fishing activities can be expensive in rural communities because of the higher cost of supplies, such as fuel, ammunition, and vehicles.

Limited road access also makes dealing with solid waste a challenge. Most waste must be disposed of in the community, unless it can be shipped out, which is often expensive. Class III landfills, which serve communities with less than 1,500 people, often face a variety of challenges including high costs of design, construction, and maintenance, as well as waste streams that contain increased quantities of pharmaceuticals, plastics, hazardous waste, and electronics (American Society of Civil Engineers 2021).

As noted in the public comments on the draft EIS, housing in some communities, especially in rural areas, is in limited supply.

3.12.1.1.2 CULTURAL CONTINUITY AND PUBLIC HEALTH

Many communities in the analysis area (listed in Tables 3.5-1 to 3.5-3 in Section 3.5) rely heavily on subsistence, and participation in subsistence activities is central to the culture and community characteristics. Activities associated with subsistence—processing and sharing of resources; participation in redistribution networks; cooperative and individual hunting, fishing, and gathering; and engaging in ceremonial activities—strengthen community and family social ties, reinforce community and individual cultural identity, and provide a link between contemporary Alaska Natives and their ancestors. Comments received from local residents and subsistence users during the public comment period stressed the important spiritual, mental, and physical benefits of engaging in these subsistence activities and being on the land. Subsistence harvests of plant and animal resources provide nutrition and contribute to cultural, economic, and social wellbeing. Detailed information about subsistence is provided in Section 3.14, Subsistence.

Cultural continuity is the continuation and passing down of a community's values and traditions and plays a role in community health. Community values and traditions can take many forms. As one example, a

total of 237,000 Native American language speakers resided in American Indian or Alaska Native areas¹² in the 2006–2010 American Community Survey (Siebens and Julian 2011). This represents roughly 5 percent of the total population in these areas. Yupik and Iñupiat speakers numbered approximately 16,000 and 6,000, respectively. Cultural continuity also includes the continuation of subsistence activities, such as harvesting resources and sharing those resources within the community as well as using and teaching the traditional Native language.

In rural communities throughout Alaska, subsistence foods can account for more than half of a household's diet. Although the percentage of households relying on subsistence to this degree may vary among communities, the role of subsistence in food security is consistent. In some communities, supplementing subsistence foods with store-bought food can be difficult and lead to stress and feelings of food insecurity.

Many communities in the analysis area are not on the connected road system and are accessible only by boat or air. This limits the accessibility of the community and means that regular access by non-residents is limited.

Economic conditions (described in Section 3.5, Economics) also contribute to the overall health of the communities in the analysis area, and to individuals' ability to purchase items such as tools, supplies, and fuel to support subsistence activities. Income from employment or dividends from ANCs for shareholders and the Alaska Permanent Fund help some residents maintain their culture and community cohesion.

3.12.1.2 Environmental Consequences

3.12.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of or social systems in the analysis area. Reasonably foreseeable trends and planned actions described in Section 3.12.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities listed would continue to impact social systems in potentially impacted regions.

3.12.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Community Facilities, Services, and Infrastructure

Revocation of 17(d)(1) withdrawals is anticipated to increase the potential for

- oil and gas exploration and development on 17(d)(1) withdrawals in the Ring of Fire and East Alaska planning areas, particularly in the Cook Inlet and Copper River basins;
- locatable minerals development on 17(d)(1) withdrawals within the Municipality of Anchorage, Bethel Census Area, Chugach Census Area, Copper River Census Area, Denali Borough, Matanuska-Susitna Borough, North Slope Borough, Northwest Arctic Borough, Southeast Fairbanks Census Area, and the Yukon-Koyukuk Census Area; and

¹² "American Indian or Alaska Native area" was a Census Bureau term referring to Federally recognized American Indian reservations and off-reservation trust land areas, the Tribal subdivisions that can divide these entities, State-recognized American Indian reservations, regional Native corporations, Alaska Native village statistical areas, Tribal designated statistical areas, and state designated Tribal statistical areas.

- salable minerals development on limited 17(d)(1) withdrawals within the Bay, Ring of Fire, Bering Sea-Wester Interior, East Alaska, and Kobuk-Seward Peninsula planning areas in support of infrastructure that may be needed for other development as a result of revocation of 17(d)(1) withdrawals (see Section 3.5, Economics, and Appendix D, Reasonably Foreseeable Development Scenario, for details).

During temporary and short-term exploration and development of any potential project, as well as long-term production, staff may be housed in a central location or in a field camp, as is often the case in other parts of Alaska where remote operations occur. If work camps are used, no increase in demand for community services and other public infrastructure is anticipated. In addition to housing facilities, the camps would likely be equipped with appropriate emergency medical facilities, electrical power generation, fuel storage, facilities for sewage treatment and solid waste disposal and management, and potable water.

Revenue from development could be used to support education, health facilities, housing, and other community infrastructure investments, such as water and sewer improvements, in affected communities, as well as reduce the cost of living due to increased access to goods and services. This could have a beneficial impact on the social wellbeing and health of individuals and families in affected communities, as described in the Cultural Continuity and Public Health section below.

Cultural Continuity and Public Health

As described in Section 3.14, Subsistence, revocation of 17(d)(1) withdrawals would result in a loss of Federal lands on which rural residents have the benefits of subsistence priority, including higher harvest limits, more advantageous hunting seasons, and the ability to hunt according to traditional customs. In some cases, the loss of lands with Federal subsistence priority could result in residents traveling farther to access lands where Federal subsistence priority remains. If 17(d)(1) withdrawals were revoked and the lands changed from Federal to State management, priorities such as the ones mentioned above would permanently not be available for rural residents, and residents would likely see an increase in outside harvesters in these areas, thus increasing pressure on caribou, moose, and salmon populations and decreasing the portion of takes that would provide food for the community.

These changes to subsistence access and resource abundance and availability would decrease cultural continuity in the communities impacted (communities are listed in Section 3.14, Subsistence). Because subsistence activities strengthen community and family social ties, as well as reinforce community and individual cultural identity, decreasing the role of subsistence in a community decreases cultural continuity and the ability of the community to pass on the cultural traditions. The magnitude of these impacts would be commensurate with the magnitude of the impacts to subsistence (described in Section 3.14, Subsistence).

Additionally, changes to subsistence access and resource abundance or availability would affect food security and the nutritional value of residents' diets (see Section 3.14 for additional details). Also, concerns about contamination of subsistence resources from any type of development could result in lower rates of consumption of subsistence foods.

Where development is more likely to occur, the action alternatives could increase revenues to boroughs and census areas. Indirectly, these increased revenues would be expected to increase employment and incomes in communities, with potential benefits to community health. This would likely result in minor changes in direct employment of residents, with corresponding increases in income. There would also be the potential for indirect increases in resident employment (and income) in industry support activities with ANC subsidiaries or government-related service sectors.

An increase in resident income from employment could help some residents stay in their communities and maintain their culture and community cohesion. Increased incomes would provide more resources to support subsistence activities (purchase tools, supplies, and fuel) or purchase food from the store, which may offset the reduction in subsistence access and resource abundance and availability, and offset subsistence-related impacts on food security and nutrition.

Therefore, any of the action alternatives would have mixed effects on food security, nutrition, and subsistence. Although the action alternatives may decrease the availability of subsistence resources or access to them, and adversely affect nutrition, food security, and cultural continuity, development following revocation of the 17(d)(1) withdrawals and conveyance of land would also increase employment and income, which would have beneficial effects on residents' ability to engage in subsistence activities and increase the ability to purchase foods from the store, thus reducing food insecurity.

Potential development could also provide funds for programs and facilities that support community health and support cultural, civic, and educational programs.

Construction camps from some types of development could disrupt traditional Indigenous ways of life and cultural practices. Though there are no data available for Alaska, data from other states (North Dakota and Montana) indicate that increases in non-local workers and construction camps can lead to increased crime and violence. A study completed in 2019 found a relationship between an influx of non-local workers and construction camps and a corresponding increase of violent crime in the Bakken oil region of Montana and North Dakota (Martin et al. 2019). Indigenous women are particular targets of gender violence and sex trafficking near camps where the majority of male extractive workers live (Kojola and Pellow 2021). While there are clear and distinct demographic and geographic differences between these study areas and the EIS decision area, these are the only data available on this topic. An extensive literature review was completed for the Ambler Road EIS (NewFields 2019) and the BLM contacted the authors of studies from the Bakken region to inquire about data availability for Alaska. These data searches returned no data for Alaska.

For construction that would result in an on-site operations workforce, most industry policies require maintaining separate work camps that are isolated from any nearby communities, which would help limit interactions between non-resident industry workers and residents, and thus reduce impacts to community cultures and housing. Most industries also have strict policies against, and testing for, drug and alcohol use. For large-scale projects, non-resident industry workers are also not allowed to hunt or fish while on rotation at the work camp and thus would not increase competition for subsistence resources.

Because communities in Alaska typically do not have an existing housing supply to house construction workers for large projects and because most industry policies require maintaining separate work camps that are isolated from any nearby communities, development is not expected to affect the existing housing supply in communities.

Some of the communities that would be affected by impacts to social systems are environmental justice communities, as discussed in Section 3.6.

3.12.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective

selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.12.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership and developed, as described in Section 3.1.1.3.

Because fewer acres of 17(d)(1) withdrawals would be revoked than Alternatives C and D, there would be fewer changes to social systems.

3.12.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

Where 17(d)(1) withdrawals are revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to social systems from the resulting development would be of the same type as Alternative B, but to a potentially greater magnitude and extent because the withdrawals across more acres would be revoked and thus these acres could be developed. Likewise, Alternative B was designed to avoid opening areas with the highest potential for conflict with subsistence, so the additional lands opened are not just more in quantity but also lands with a higher likelihood to cause changes in Federal subsistence priority.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to social systems. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.12.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn lands allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to social systems. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.12.1.2.2, Impacts Common to All Action Alternatives. The greatest impacts to social systems are expected where development is more likely and conveyance out of Federal ownership is more likely. Alternative D would have similar types of impacts to social systems as Alternative C but to a potentially larger extent and magnitude because more acres occur across the areas where the 17(d)(1) withdrawals would be revoked. Under Alternative D, more areas could be developed or experience changes in Federal subsistence priority.

3.12.1.2.6 COMPARISON OF ALTERNATIVES

All action alternatives could result in impacts to community facilities, services, infrastructure, cultural continuity, and public health. Alternative D has the greatest potential for impact due to high number of acres that could experience changes in Federal subsistence priority or be developed over time, and the larger number of potentially affected communities. Alternatives B and C would affect fewer acres of land and communities (see Table 3.5-9 in Section 3.5.1.2.6 for acres of conveyance by alternative).

3.12.1.2.7 CUMULATIVE IMPACTS

The RFAs described in Section 3.1, Introduction and Methodology, taken together, would increase economic activity and revenue in various regions of Alaska. Community employment opportunities for these future actions could improve infrastructure, services, and food security but also adversely impact subsistence access and resources, decrease community cohesion, and increase some health risks. Climate change could further exacerbate these changes over time. All action alternatives would incrementally add to these social changes in affected regions, with Alternative D resulting in the greatest potential adverse impacts due to the geographic size and number of affected communities.

3.13 SOILS AND PERMAFROST

3.13.1 How would revocation of 17(d)(1) withdrawals affect soils and permafrost?

The analysis area for soils and permafrost is defined as areas of permafrost within each planning area (Figures 3.13-1 through 3.13-6).

Regions of permafrost characteristics are identified by Jorgenson et al. (2008) “Permafrost Characteristics of Alaska.” This permafrost map of Alaska provides permafrost distribution based on climate and surficial geology.

The following indicator was used to analyze this issue:

- Acres of permafrost in the analysis area (continuous, discontinuous, sporadic, and isolated permafrost types)

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology. However, depending on site-specific permafrost and soil conditions coupled with specific development and construction plans, impacts to soils and permafrost may be more immediate but have long-term consequences. Any permafrost thaw, thaw consolidation, or non-thaw consolidation of soils due to development activities would cause irreversible changes to the existing conditions.

3.13.1.1 Affected Environment

Surface soils, subsurface soils, and subsurface thermal conditions (i.e., presence of permafrost) vary by planning area. The presence and conditions of permafrost on the landscape can change due to temperature increase, annual variations in snowfall, and changes in vegetation. Human impacts, such as construction of roads, airfields, and temporary and permanent infrastructure, can also change the underlying and surrounding soil and permafrost conditions. These past actions (see Table 3.1-5) may have degraded permafrost, which would physically and chemically alter the soils. Reasonably foreseeable and planned actions (see Table 3.1-6) will continue to physically and chemically alter the soils and permafrost. Specific soil conditions differ and are uniquely vulnerable to alterations from human activity.

Because of the extreme variety of surface and subsurface conditions in the analysis area, simplified soil and subsurface thermal conditions are described in this section.

Soils in the Ring of Fire and East Alaska planning areas usually contain isolated and sporadic permafrost or are entirely free from permafrost. The formation or deposition of soils in this area is influenced by the mountainous terrain, rivers and streams, and recent or current glacial activity. Soils range from glacially consolidated silt, sand, and gravels to unconsolidated saturated organic soils (peat). With steep

topography and many miles of rivers and coastlines, soils in these planning areas are commonly subject to slope instability and fluvial and coastal erosion.

Soils across western Alaska in the Bering Sea-Western Interior, Kobuk-Seward Peninsula, and Bay planning areas range from continuous permafrost in the north to sporadic and isolated in the south. Soils in western Alaska are generally sands and silts associated with large river deltas (Yukon, Kobuk, Kuskokwim). With few mountain ranges in this area, the low-laying topography creates meandering streams and rivers across wetlands depositing smaller sediment, thus creating the sand and silts. Soils within these planning areas are subject to fluvial and coastal erosion, as well as permafrost thaw and the formation of thermokarst features.

The existing trend of climate change has affected and will continue to affect soils and permafrost. Warmer temperatures are melting ice and thawing permafrost, which are causing increased intensity of storms and coastal erosion events. Most of Alaska has experienced an increased frequency of extreme precipitation events. More intense precipitation can increase erosion. Degradation of permafrost results in physical and chemical alterations to the soils. These changes include thawing, thaw settlement, increased soil moisture content, modifications in surface topography, elevated carbon levels, release of methane, and accelerated erosion (U.S. Department of Agriculture 2017). Additionally, an increased frequency and severity of wildfires is projected (as described in Section 3.1, Introduction and Methodology), which would exacerbate thawing and accelerate erosion.

3.13.1.2 Environmental Consequences

3.13.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area (Table 3.13-1). The reasonably foreseeable trends and planned actions described in Section 3.13.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities listed would continue to impact soils and permafrost.

Table 3.13-1. Summary of Impacts to Soils and Permafrost where 17(d)(1) Withdrawals Would be Revoked under each Alternative

Alternative	Acres of Permafrost in Analysis Area	Acres of Permafrost where 17(d)(1) Withdrawals Would be Revoked	Acres of Permafrost where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of Permafrost where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed ^{†‡}	Acres of Permafrost where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	142,571,000	0	0	0	0
Alternative B	142,571,000	418,000	39,000	2,000 [†]	2,000
Alternative C	142,571,000	5,248,000	563,000	123,000 [‡]	23,000
Alternative D	142,571,000	26,445,000	563,000	152,000	23,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

[‡] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.13.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Mining exploration and development, seismic surveys, oil and gas operations, or establishment of permanent infrastructure could occur in the focused analysis area, with likely intensification of all these activities under the action alternatives. The infrastructure required to support these development activities can impact soils and permafrost conditions by resulting in changes in the depth of seasonal thaw, thermokarst feature formation, alterations in drainage patterns, the retention of surface water, exposure of soils to erosion, and modifications in overburden vegetation. These environmental changes are expanded on below:

- *Depth of seasonal thaw* refers to the depth at which the soil thaws during the warmer months of the year. Any land disturbance can expose underlying permafrost to warmer temperatures, causing it to thaw deeper than normal. This alteration can lead to changes in groundwater levels, hydrological processes, and soil material properties.
- Thermokarst formation is the process of ground subsidence or collapse caused by thawing ice-rich permafrost. As the permafrost thaws, the ice within it melts, causing the ground to sink and form depressions known as thermokarst features. These features, ranging from small pits to large sinkholes, can alter the topography and hydrology of the area and pose challenges for infrastructure stability.
- Development activities can alter natural drainage patterns by modifying the landscape's topography. Construction of roads, pads, and infrastructure can redirect surface water flow, leading to changes in the direction, volume, and timing of water movement, see Section 3.17, Water Resources, for more details. These alterations in drainage patterns can impact the distribution of water across the landscape, affecting soil moisture levels, soils chemistry, soil material properties, subsurface thermal conditions, and groundwater recharge.
- In addition to altering drainage patterns, development activities such as road and pad construction have the potential to impede natural drainages of surface water creating ponding. Retention of surface water can lead to increased saturation of soils, increased slope instability, and increased depth of seasonal thaw.
- Vegetation removal and soil disturbance associated with exploration and development activities can increase the vulnerability of soils to erosion. Without the protective cover of vegetation, soils become more susceptible to erosion by wind and water.
- Development activities often involve clearing vegetation. The removal, compaction, or damage to the overburden vegetation can change its thermal conductive properties. These modifications also have the potential to change thermal conditions within the subsurface soils.

Permafrost vulnerability to degradation depends on a complex interaction between surface changes and soil and permafrost characteristics (Jorgenson et al. 2015). Exploration and development activities such as construction of roads, pads, and airstrips directly impact permafrost conditions. These activities often involve removal or alteration of vegetation and placement of gravel fill material, directly modifying the seasonal thaw or thermal conditions below and adjacent to the development sites. Development can also affect surface water drainage and lead to surface water retention or ponding, indirectly impacting the depth of seasonal thaw. Other indirect impacts on permafrost can occur as a result of dust distribution from roads and pads, ongoing climate change, and changes in vegetation. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Depending on specific conditions, thawing permafrost can have far-reaching effects on infrastructure, ecosystems, regional drainage patterns, and even global climate change dynamics.

The level of impacts on permafrost would depend on land selection status (see Tables 3.1-1 through 3.1-3). Lands that are more likely to be conveyed following revocation of the 17(d)(1) withdrawals and more likely to be developed would have the most impacts. Lands where the 17(d)(1) withdrawals are revoked that would stay in BLM management, including Priority 3 and 4 selected lands that may later be relinquished due to overselection by the State, could be available for development as allowed under management prescriptions of the existing RMP. Because these lands would remain under Federal management, which has more stringent requirements and restrictions, the impacts from development would be less than those from development on lands that are conveyed to the State. Lands that are conveyed would be available for development without BLM management protections; other Federal protections such as the CWA would still apply. Therefore, impacts to permafrost following withdrawal revocation in the focused analysis area would be the greatest and are therefore the focus of the analysis.

3.13.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on soils and permafrost conditions for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.13.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3. Table 3.13-1 summarizes the total acres of permafrost on lands where the 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area.

3.13.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on soils and permafrost conditions for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to permafrost from the resulting development would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of permafrost could be affected in the focused analysis area (see Table 3.13-1).

Parcels where the 17(d)(1) withdrawals are revoked and that are conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to adjacent soils and permafrost.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to soils and permafrost. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.13.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn lands allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to permafrost. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.13.1.2.2. The greatest impacts to permafrost are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.13-1 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to permafrost as Alternative C, but to a larger extent and magnitude because more acres of permafrost occur across the areas where the 17(d)(1) withdrawals would be revoked.

Parcels where the 17(d)(1) withdrawals are revoked and that are conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction of cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to adjacent soils and permafrost. Potential for impacts to permafrost is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

3.13.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact soils and permafrost conditions as described in Section 3.13.1.2.2. Table 3.13-1 summarizes the effects under each alternative.

3.13.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect soil and permafrost resources in ways similar to those described in Section 3.13.1.2.2.

The RFAs and planned actions described in Section 3.1, Introduction and Methodology, in combination with the 17(d)(1) withdrawals revoked as proposed, may compound and accelerate effects on soils and permafrost, although the extent of the impacts would depend on the specific type and location of the activity. Walker et al. (2022) documented the long-term cumulative impacts of road-related and climate-related effects on permafrost in the north slope of Alaska. This study identified numerous factors that contributed to degraded permafrost: road dust coupled with climate change impacts, thermokarst ponds, changes to ice-wedge-polygon morphology, snow distribution, thaw depths, dominant vegetation types, and shrub abundance. The potential collective effects of reasonably foreseeable trends and planned actions, and the increased development likely to follow revocation of the 17(d)(1) withdrawals, would encompass alterations in topography and landforms that subsequently impact soil composition, drainage patterns, soil erosion, subsurface thermal conditions, and vegetation dynamics.

Effects of project-related soil compaction, permafrost thaw, and thermokarst formation may be intensified by climate change. For example, increased erosion from development on 17(d)(1) revocations could be compounded by climate change–induced permafrost thaw, resulting in degraded soil conditions or more turbidity in surrounding streams. The permanency and scale of impacts vary by type of development and use but would be in proportion to the amount of area impacted. The most observable changes are expected in areas with the highest concentration of human activity or management change.

Effective selections on 17(d)(1) withdrawals can be conveyed at any time regardless of whether the Secretary revokes any 17(d)(1) withdrawals; therefore, conveyances of effective selections are RFAs. Table 3.13-1 summarizes the total acres of effective selections for each alternative and the acres of priority conveyances (i.e., new effective selections) that would result from revocation of the 17(d)(1) withdrawals. The resulting sum is the total acres of permafrost on non-Federal lands resulting from implementation of the project. As stated above, because Federal lands have more stringent requirements and restrictions, impacts to permafrost would be greater on non-Federal lands.

3.14 SUBSISTENCE

This section summarizes the relevant subsistence activities of communities that use the lands subject to 17(d)(1) withdrawals or the resources that migrate through the 17(d)(1) withdrawals and are harvested elsewhere. In addition, this section provides an overview of the subsistence regulatory framework on 17(d)(1) withdrawals. The analysis communities consist of all rural (i.e., excluding any communities in Federally designated non-rural areas or communities with a population of zero) communities located within 50 miles of the 17(d)(1) withdrawals. The 50-mile criterion for analysis community selection has been used in several EISs previously prepared to support decisions in Alaska and is meant to capture communities that could experience direct and indirect impacts from development (BLM 2020; SRB&A 2017; U.S. Army Corps of Engineers [USACE] 2018). Based on this criterion, there are 223 subsistence analysis communities, most of which are located in the five EIS planning areas: Kobuk-Seward Peninsula, Bering Sea-Western Interior, Bay, Ring of Fire, and East Alaska. Twenty-four communities are located outside one of the five planning areas but are within 50 miles of 17(d)(1) withdrawals. The 223 analysis communities and their associated BLM planning areas are provided in Table 3.14-2.¹³ Each community has been further grouped into subregions based on their geographic location (see Table 3.14-2). This section provides a summary of subsistence uses by planning area and, where available, subregion. Individual community-level data are provided in EIS Appendix G.

The decision area is all 17(d)(1) withdrawals considered for this EIS. The analysis area for subsistence is all subsistence use areas for the 223 subsistence analysis communities because impacts of changes to 17(d)(1) withdrawals could extend outside of individual parcels. Because of the large number of analysis communities, this EIS groups the subsistence discussion by planning area. While the subsistence analysis focuses on rural Alaskan communities that have subsistence priority status under Federal regulations, residents of nonrural communities (e.g., Anchorage, Fairbanks, Valdez, Seward) who hunt and fish on 17(d)(1) withdrawals may also experience impacts from revocation of withdrawals. The analysis identifies where the discussion of impacts may also be relevant to these communities.

All of the planning areas are inhabited by rural and Alaska Native residents who rely heavily on subsistence hunting, fishing, and harvesting. Subsistence is a central aspect of rural life and culture and is the cornerstone of the traditional relationship of the indigenous people with their environment. Residents of the five planning areas rely on subsistence harvests of plant and animal resources both for nutrition and for their cultural, economic, and social wellbeing. Activities associated with subsistence—processing, sharing, redistribution networks, cooperative and individual hunting, fishing, and gathering, and

¹³ Because of the length of the tables in Section 3.14, they are provided at the end of this section in Section 3.14.5.

ceremonial activities—strengthen community and family social ties, reinforce community and individual cultural identity, and provide a link between contemporary Natives and their ancestors. These activities are guided by local and Indigenous Knowledge, based on a long-standing relationship with the environment. In its *Proclamation to Achieve Subsistence Rights and Protection of Native Cultures*, the Alaska Federation of Natives (2012:1) describes Native subsistence uses as follows:

We are the People of the Land. The essence of our being and our way of life---from the whale hunters of the Arctic to the fishers along the coasts and rivers of our state---is derived from our land and the sea. We are dependent on our hunting, fishing and gathering values and practices. Our ancestors developed distinctive cultures around our subsistence economies that have sustained Alaska Natives for thousands of years. It is a way of life and set of values that we are determined to maintain for our future generations. In the face of changes brought to our world throughout the last century, with and without our consent, Alaska Natives have remained committed to our traditions.

The subsistence information provided in this section and in EIS Appendix G, Subsistence Technical Appendix, is derived from existing subsistence studies that are based primarily on direct interviews and surveys with subsistence users and households in the analysis communities over multiple study years. The identification, analysis, and discussion of potential impacts are informed by Indigenous Knowledge from public scoping meetings; government-to-government consultation with affected communities; and ethnographic research, including research on subsistence impacts in rural Alaskan communities.

3.14.1 How would revocation of 17(d)(1) withdrawals affect subsistence user access?

Impacts to access, particularly related to changes in subsistence management on 17(d)(1) withdrawals, are expected to occur under the action alternatives and are analyzed in detail below. The analysis area for subsistence user access is the subsistence use areas for the analysis communities (see EIS Appendix G). Subsistence use area data are not available for all 223 analysis communities.¹⁴ Impacts to subsistence user access may occur in any area where subsistence activities occur and where revocation of withdrawals either results in a change in subsistence management or in development activities previously not allowed.

The temporal scale for impacts to subsistence would be long term, as defined in Section 3.1, Introduction and Methodology.

Quantitative indicators that provide information on subsistence user access include the following:

- Subsistence use that overlaps with 17(d)(1) withdrawals
- Percentage of total subsistence use areas that overlap 17(d)(1) withdrawals

Qualitative indicators are impacts to seasonal round,¹⁵ Indigenous Knowledge regarding impacts to subsistence user access, and subsistence monitoring studies that document impacts to subsistence user access.

¹⁴ It would be financially and logistically unreasonable to survey all communities to determine their subsistence use areas. Therefore, these communities were assumed to have a 50-mile subsistence use area (40 CFR 1502.21); see also EIS Appendix I, Incomplete or Unavailable Data.

¹⁵ *Seasonal rounds* are a representation of the timing of traditional activities, including the timing of subsistence resource harvests and other activities such as the processing and distribution (e.g., feasts) of wild foods. Rural communities generally have a well-established seasonal round based on when resources are present and accessible in their region, and the seasonal round is based on a longstanding relationship of rural residents with their environment.

3.14.1.1 Affected Environment

The affected environment for subsistence user access includes current subsistence management within the five planning areas, subsistence use areas, and seasonal round (i.e., timing of subsistence activities) for the potentially affected communities.

3.14.1.1.1 SUBSISTENCE MANAGEMENT

A key consideration in this EIS is how lands are managed for subsistence uses and how they would be managed under the different alternatives. Therefore, this section provides an overview of current subsistence management on the lands subject to 17(d)(1) withdrawals.

The 17(d)(1) withdrawals are entirely on Federal lands managed by the BLM, whereas the five planning areas include Federal government, State government, local government, and private (e.g., ANCs, Native allotments, other private owner) lands. Within the 17(d)(1) withdrawals, lands that are currently selected by ANCs and the State (effective, not top filings) are not included within the definition of public lands on which Federal subsistence priority applies (ANILCA 102(3) and 804). In Alaska, subsistence hunting and fishing are regulated under a dual management system by the State of Alaska and the Federal government. Subsistence activities on all lands in Alaska, including private lands, are subject to either State or Federal subsistence regulations, with fish and wildlife harvesting on corporation-owned land being managed by the State.

The Federal Subsistence Board oversees management of subsistence hunting, fishing, and trapping on Federal public lands under the terms of ANILCA Title VIII. The Federal Subsistence Management Program divides the state into 10 regions, and each region is represented by a Subsistence Regional Advisory Council. From the Federal management perspective, residents of rural areas (i.e., outside Federally designated non-rural areas) qualify as subsistence users. Priority is given to subsistence uses by rural residents, as opposed to other uses (e.g., non-rural and sport hunting). In some cases, the Federal Subsistence Board identifies communities with customary and traditional (C&T) uses of certain species (e.g., the Western Arctic caribou herd). Where there is such a determination for a community, only those communities have a Federal subsistence priority in the relevant area or game management unit for that resource (GMU). Communities with C&T use determinations may also harvest resources outside of regulated seasons and bag limits for traditional or religious ceremonies such as memorial potlatches (Federal Subsistence Management Program 2020). The Federal government guarantees reasonable subsistence access on Federal lands.

Although the Federal government manages subsistence hunting, fishing, and trapping on Federal public lands, these activities on Federal lands are often subject to State regulations unless specifically superseded by Federal subsistence regulations. All non-rural residents hunting on Federal lands are subject to State (ADFG) hunting regulations. State- and ANCSA-selected lands (i.e., lands that have been effectively selected but not conveyed) are not within the jurisdiction of the Federal Subsistence Management Program, except when those lands fall within Federal conservation system units, such as parks, refuges, and forests (BLM 2006). The 17(d)(1) withdrawals include both selected and unselected lands in all five planning areas.

The State manages subsistence differently than the Federal Subsistence Management Program. Under State management, all Alaska residents, regardless of rural or non-rural status, qualify as subsistence users, and there is no subsistence priority for rural residents. Although the State does not guarantee subsistence access, it provides for generally allowed uses that can occur without a permit on most lands. The State distinguishes subsistence harvests from nonsubsistence (e.g., personal use, sport, or commercial) harvests based on where the harvest occurs, not where the subsistence user resides. More

specifically, State law provides for subsistence hunting and fishing regulations in areas outside the boundaries of “nonsubsistence areas,” as defined in State regulations (5 Alaska Administrative Code 99.015). According to these regulations, a *nonsubsistence area* is “an area or community where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community” (5 Alaska Administrative Code 99.015). Nonsubsistence areas in Alaska include the areas around Anchorage, Matanuska-Susitna Valley, Kenai, Fairbanks, Juneau, Ketchikan, and Valdez (Wolfe 2000). Although the State does not recognize subsistence priority for rural residents, Tier II hunts may be implemented in areas where it is anticipated that there may not be a reasonable opportunity for all eligible residents to engage in a subsistence activity.

While all private lands, including ANC lands, are subject to State or Federal hunting and fishing regulations, ANC lands are specifically managed for the benefit of their shareholders. ANC mission statements often stress the need to promote economic growth in a way that aligns with Native values and protects cultural, social, and subsistence traditions (Doyon Limited 2024; NANA 2024).

In summary, residents of the five planning areas hunt and harvest on State, private, and Federal lands, and, depending on their location, their subsistence activities are subject to State and/ or Federal regulations. On some Federal lands, residents have subsistence priority due to their rural status.

3.14.1.1.2 SUBSISTENCE USE AREAS

Table 3.14-3 provides baseline information for the analysis communities regarding their use areas’ overlap with 17(d)(1) withdrawals, and Table 3.14-4 provides a similar analysis (lands within 50 miles) for analysis communities with no subsistence use area data. Subsistence use areas for all five planning areas and associated subsistence analysis communities are shown on Figure 3.14-1, and individual maps for the five planning areas are shown on Figures 3.14-2 through Figure 3.14-6 and represent subsistence use area data from 138 subsistence analysis communities (for some communities that are geographically and culturally linked, the subsistence use areas are combined). Subsistence use areas are described for each planning area below.

Bay Planning Area

Use areas for Bay planning area analysis communities (see Figure 3.14-2) extend throughout nearly the entire planning area except for portions of Katmai National Park and Preserve. In addition, subsistence use areas extend offshore from the planning area into Bristol Bay and Cook Inlet, and into other planning areas, including the Ring of Fire and Bering Sea-Western Interior planning areas. As shown in Table 3.14-3, all 26 Bay planning area analysis communities (for which use area data are available) have use areas that overlap with 17(d)(1) withdrawals.

Bering Sea-Western Interior Planning Area

Use areas for Bering Sea-Western Interior planning area analysis communities (see Figure 3.14-3) extend throughout the central, northern, and eastern portions of the planning area. Use areas are centered along the Kuskokwim and Yukon river drainages and tributaries and extend north to Norton Sound and to the east of the Seward Peninsula. In addition, subsistence use areas extend offshore from the planning area into Kuskokwim Bay and the Bering Sea, and into other planning areas, including the Bay and Kobuk-Seward Peninsula planning areas. As shown in Table 3.14-3, 44 of the 46 Bering Sea-Western Interior analysis communities (for which use area data are available) have use areas that overlap with 17(d)(1) withdrawals. Lake Minchumina and Nunapitchuk subsistence use areas do not overlap with any of the 17(d)(1) withdrawals.

East Alaska Planning Area

Use areas for East Alaska planning area analysis communities (see Figure 3.14-4) extend throughout much of the planning area, with a particular focus around the Parks, Denali, Glenn, and Richardson highway system and surrounding the Copper River, Chitina, and Upper Susitna river drainages. For the Prince William Sound communities of Tatitlek and Cordova, subsistence use areas are focused along the coast and in marine waters. In addition to use areas within the East Alaska planning area, subsistence use areas extend into other planning areas, including the Ring of Fire planning area. As shown in Table 3.14-3, 34 of the 36 East Alaska planning area analysis communities (for which use area data are available) have use areas that overlap with 17(d)(1) withdrawals.

Kobuk-Seward Peninsula Planning Area

Use areas for Kobuk-Seward Peninsula planning area analysis communities (see Figure 3.14-5) extend through the central and northern portions of the planning area. In addition, subsistence use areas extend offshore from the planning area into the Bering and Chukchi seas and Kotzebue Sound, and into other planning areas, including the Bering Sea-Western Interior planning area. As shown in Table 3.14-3, 23 of the 25 Kobuk-Seward Peninsula analysis communities (for which use area data are available) have use areas that overlap with 17(d)(1) withdrawals.

Ring of Fire Planning Area

Use areas for Ring of Fire planning area analysis communities (see Figure 3.14-6) extend throughout much of the planning area, including the Southcentral, Kodiak, and Southeast subregions. In addition, subsistence use areas extend into nearshore marine waters, and into other planning areas, including East Alaska and Bay planning areas. As shown in Table 3.14-3, 61 of the 71 Ring of Fire planning area analysis communities (for which use area data are available) have use areas that overlap with 17(d)(1) withdrawals.

3.14.1.1.3 TIMING OF SUBSISTENCE ACTIVITIES

General seasonal rounds for the five planning areas are provided in EIS Appendix G. The exact timing of subsistence activities varies by community and may change annually depending on factors such as the timing of freeze-up/break-up and resource migrations. Across all regions, the winter months are typically dedicated to small game hunting/trapping; fishing through ice or in open marine waters; and in some areas, large land mammal hunting. Spring is a common season for hunting migratory birds and, in more southerly coastal areas, harvesting of marine invertebrates. Summer is a busy time for harvesting salmon and non-salmon fish and berries as well as hunting marine mammals, whereas fall is frequently a peak season for hunting large land mammals such as caribou, moose, and deer. Berry picking and fishing also extend into the fall months, depending on the region, and waterfowl may be harvested during their migration south.

User access is dependent on resources being available and accessible in traditional harvesting areas at expected times. The seasonal round of subsistence activities is based on Indigenous Knowledge passed on through generations, natural cycles of resource abundance and availability, and region-specific environmental factors, which include the timing of freeze-up and break-up, ocean and river conditions, local terrain, and temperature and weather conditions. Key to the seasonal round is being able to access resources when they are available in harvesting areas and in prime edible form (e.g., avoiding caribou during the rut).

3.14.1.1.4 EXISTING CONDITIONS

Subsistence users throughout the five planning areas currently experience impacts to access through several sources, including subsistence management (e.g., bag limits, hunting seasons, travel method restrictions [e.g., all-terrain vehicles]); competition from outside (i.e., non-local) hunters; landownership and ANC and State land selection patterns where Federal subsistence priority does not apply; development infrastructure, activities, and security restrictions; and climate change.

Subsistence management in Alaska affects subsistence user access by limiting the number of animals taken, limiting subsistence users to specific seasons (sometimes conflicting with the traditional seasonal round for a resource), or opening hunting up to larger user groups, thus increasing competition for local subsistence users. Competition is already an issue in many rural regions of Alaska, particularly in areas with high numbers of hunting guides or areas along the road system that are easily accessible from larger population hubs (e.g., Anchorage, Fairbanks). In areas where residents have Federal subsistence priority, rural subsistence users may have more generous harvest limits and different seasons than they have under State hunting regulations. Landownership directly affects subsistence access and management. On Federal public lands, rural residents typically have a subsistence priority (see Section 3.14.1.1.1, Subsistence Management) and, under ANILCA, reasonable subsistence access is guaranteed. The exception is lands that are either State or ANCSA selected. On these lands, subsistence is managed by the State and will remain managed by the State unless the selections are relinquished. Conveyance of lands out of Federal ownership results in loss of Federal subsistence priority. All State and private lands in Alaska are managed by the State and do not provide for a rural residence subsistence priority.

Access impacts related to development occur throughout the five planning areas and include mining activities (e.g., Kobuk-Seward Peninsula planning area, Red Dog Mine), oil and gas exploration (e.g., Ring of Fire planning area, Cook Inlet oil and gas program), infrastructure projects (e.g., roads, telecommunications projects), and timber production (e.g., Ring of Fire planning area, Southeast subregion). In terms of access, development projects affect user access by causing physical obstructions to travel (e.g., roads or pipelines making overland travel difficult) or by limiting access to traditional harvesting areas through security restrictions. Subsistence users sometimes avoid harvesting resources near development projects due to concerns about contamination or discomfort hunting near industry. Such user avoidance can constitute an impact on subsistence user access.

Climate change has negatively affected subsistence access through changes in the timing of freeze-up and breakup, lack of ice and snow, strength and frequency of storms and winds, reduced water levels and increased sedimentation in lakes and rivers, coastal and river erosion, and changes in resource behavior including the timing and location of resource migrations (Brubaker et al. 2014; Schmidt and Kofinas 2018). Changes in snow, ice, and river conditions can affect residents' ability to travel safely to subsistence harvesting areas at times when resources are available in those areas. Overland travel has become more dangerous because thawing permafrost creates dry lakes where hunters can get stuck, and lack of ice in the winter has increased incidences of snow machines breaking through the ice (Brubaker et al. 2014; Schmidt and Kofinas 2018). Overall, climate change has decreased the safety and predictability of access to traditional harvesting areas.

3.14.1.2 *Environmental Consequences*

3.14.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would be retained, and there would be no change from baseline conditions. Top filed parcels would not become effective selections under Alternative A, and therefore subsistence management on these lands would not change. Under Alternative A, there would be

a continuation of existing conditions, including ongoing impacts to user access through subsistence management, development activities and infrastructure, security policies, and climate change. In the Bay and Ring of Fire planning areas, all 17(d)(1) withdrawals would remain closed to mineral entry, whereas in other planning areas, a portion of lands where the 17(d)(1) withdrawals are retained would remain open to mineral entry. The Kobuk-Seward Peninsula planning area would have the greatest amount of land open to mineral entry under Alternative A, and therefore this planning area is most likely to experience ongoing impacts to user access resulting from development infrastructure, activities, and restrictions (see the Increase in Lands Open to Development section in Section 3.14.1.2.2).

3.14.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals would affect user access in two primary ways. First, on some lands, rural residents may lose Federal subsistence priority and instead be subject to State hunting regulations. Second, revocation of withdrawals would result in unselected Federal lands becoming open to mineral entry and leasing (according to the management prescriptions of existing RMPs). State top filings that become effective selections would be conveyed to the State within 10 years and become available for development and infrastructure once conveyed. The general impacts that would occur in these scenarios are discussed below.

Although impacts may occur on any lands where there is a revocation of 17(d)(1) withdrawals, the lands with the greatest potential for subsistence impacts are those where there would be a loss of Federal subsistence priority status and that are more likely to be developed. This is the subsistence focused analysis area, and the impact discussion below is focused on impacts to communities within 50 miles of or with subsistence use areas overlapping these areas. The analysis communities for environmental consequences are depicted in Tables 3.14-4, 3.14-8, and 3.14-11. As shown in these tables, 138 communities are within 50 miles of or have subsistence use areas overlapping the subsistence focused analysis area.

Unless the statute authorizing entry allows the government to include easements, the Federal government cannot guarantee access across any lands conveyed out of Federal ownership. For instance, the Alaska Statehood Act does not give the United States the ability to reserve new easements to guarantee subsistence users will have continued access to subsistence areas. If the new landowner restricts travel across its land, subsistence hunters may need to find new routes to access preferred subsistence areas. The State and private landowners do not need to comply with ANILCA 810 to review the impacts of its action on subsistence user access.

Loss of Federal Subsistence Priority

Under the action alternatives, 17(d)(1) withdrawals would be revoked across various numbers of acres, resulting in the finalization of selections and land conveyances for the State. On lands with State top filings and no other encumbrances, revocation of withdrawals would allow State top filings to become effective selections. On these lands, rural residents would lose Federal subsistence priority and instead be subject to State hunting regulations. On lands that have other encumbrances besides the 17(d)(1) withdrawal (such as an ANC selection), subsistence management would not change because those lands are already not available for Federal subsistence priority.

Once conveyed to the State, the BLM cannot guarantee continued subsistence access under ANILCA. Although the State provides for generally allowed uses, which can occur without a permit on most lands, subsistence access is not guaranteed like it is under Federal regulations. Therefore, conveyances, even to the State, can restrict subsistence access even to lands that remain under Federal management. For example, a parcel of land near the community of Slana is used by Federal subsistence permit holders from

Tok and Slana to access a fish wheel site on the Copper River. If surrounding 17(d)(1) withdrawals are revoked, access to this key subsistence area could be restricted. Alternative B maintains withdrawals of this and surrounding parcels (see Section 3.14.1.2.3).

How lands are managed for subsistence can have substantial impacts for rural residents who have a higher reliance on wild resources than non-rural Alaska residents. As discussed in Section 3.14.1.1.1, the Federal government recognizes a Federal subsistence priority for rural residents, and the Federal Subsistence Board makes decisions based on recommendations from regional advisory councils, which are made up of rural and non-rural residents. Non-rural residents on Federal lands must hunt under State hunting regulations, which may have lower bag limits, limitations based on sex and size classes, or shortened hunting seasons. In areas where rural and urban residents have equal subsistence priority (i.e., State-managed lands, with some exceptions [e.g., Tier II Hunt]), particularly in areas popular to outside (i.e., non-rural) hunters, rural residents may experience greater competition for subsistence resources. Guettabi et al. (2016) found a correlation between increased numbers of moose hunters within a GMU and decreased moose harvests for rural households within those GMUs. A loss of Federal subsistence priority within a GMU, particularly where resource populations are vulnerable, could result in increased opportunities for nonrural residents and decreased harvest success for local hunters.

Particularly in circumstances where resource populations are down (e.g., a recent decrease in the Western Arctic, Nelchina, and Mulchatna caribou herd sizes; a decline in salmon populations along the Yukon and Kuskokwim rivers), differences in subsistence management can affect subsistence user success. Although in most cases non-rural residents can hunt on Federal lands according to State regulations, in certain circumstances, Federal regulations supersede State regulations. For example, on certain Federal lands in GMU 9C, located in the Bay planning area, taking of moose is only permitted by Federally qualified subsistence users (i.e., rural residents) (ADFG 2022; Federal Subsistence Management Program 2020). In GMUs 23 and 26A, located in the Kobuk Seward Peninsula planning area, the Federal Subsistence Board recently approved a special action to temporarily close Federal lands in these units to moose and caribou hunting by non-Federally qualified users (Federal Subsistence Management Program 2022). In recent years, there have been similar closures for salmon harvesting along the Kuskokwim River. These changes were made specifically to address recent declines in these resource populations. If these lands changed from Federal to State management, this priority for rural residents would no longer exist, and local residents could see an increase in outside moose and caribou hunters and salmon subsistence users in these areas and competition from non-Federally qualified users. This could increase competition for these users and potentially result in rural residents concentrating harvests in areas where they still have Federal subsistence priority. Concentration of harvests would further increase competition among local residents.

Differences in hunting seasons for State and Federally qualified subsistence users are another way that subsistence users may benefit from Federal subsistence priority. For example, in GMU 13, which covers the Glenn Highway from Chickaloon to Glennallen and the Denali Highway, the moose hunting season for Federally qualified subsistence users on Federal lands begins on August 1. According to State regulations, the earliest moose hunt that is available only by application is on August 20, and all other seasons begin on September 1 (ADFG 2022; Federal Subsistence Management Program 2020). The earlier moose hunting season for rural residents provides an advantage to these residents so that they can begin hunting over 2 weeks before non-rural hunters. A loss of Federal subsistence priority would result in rural residents' hunting season starting at the same time as other non-rural hunters, thus removing their hunting advantage and causing increased competition during the hunting season.

Federal subsistence regulations often take cultural values and practices into consideration, providing more flexibility to rural residents to practice subsistence according to traditional methods. For example, although State regulations often limit moose harvests based on antler size, Federal subsistence regulations do not, thus allowing hunters to make their own determinations regarding the suitability of a bull for

harvest. This is consistent with traditional Alaska Native values in which an animal offers itself to the hunter. In some cases, Federal regulations allow for a community harvest limit, which allows the community to determine how to meet their overall needs. Hunting seasons on Federal lands are sometimes longer, or start earlier, than under State regulations, providing more opportunity for flexibility in the timing of the harvest. Traditional seasonal rounds are typically dependent on variations in environmental and social conditions, and longer seasons allow subsistence users to respond appropriately to these variations.

In addition to impacts on bag limits, hunting seasons, subsistence user competition, and cultural values and practices, changes in subsistence management can also create difficulties (i.e., knowing which regulations apply to which lands) for subsistence users as they navigate the complexity of the State's dual-management system (Joly 2017). Confusion regarding hunting regulations may result in hunters avoiding areas with recent management changes due to concerns about hunting out of season or under the incorrect hunting regulations.

Overall, revocation of 17(d)(1) withdrawals could result in a loss of Federal lands on which rural residents have the benefits of subsistence priority, including higher harvest limits, more advantageous hunting seasons, and the ability to hunt according to traditional customs. In some cases, the loss of lands with Federal subsistence priority could result in local residents traveling farther to access lands where Federal subsistence priority remains.

Although it is assumed that should the 17(d)(1) withdrawals be revoked, State Priority 1 and 2 top filings would eventually be conveyed to the State, which would make State management of these lands permanent, it is also assumed that the State would eventually relinquish or the BLM would reject Priority 3 and 4 lands due to overselection, and Federal subsistence priority would apply again. Therefore, on top filed Priority 3 and 4 lands, loss of Federal subsistence priority would be a temporary change. The types of impacts resulting from a loss of Federal subsistence priority would be similar whether the loss is permanent or temporary. Even a temporary loss of Federal subsistence priority (e.g., 10 years) could have long-term effects on subsistence harvesting patterns because local subsistence users may quickly alter land use patterns in response to changes in land management. On the North Slope, for example, access to industrial roads led to documentable changes in subsistence land patterns within several years of road construction (SRB&A 2023). Once lands return to Federal management, subsistence users would likely adapt once again, although some changes may remain permanent if there is a loss of knowledge regarding previously used areas. When subsistence users' opportunities to engage in subsistence activities or access certain areas are limited, then their opportunities to transmit knowledge about those activities and places, which are learned through participation, are also limited.

Increase in Lands Open to Development

Under the action alternatives, revocation of 17(d)(1) withdrawals would result in some lands immediately becoming effective selections and thus being conveyed out of Federal management. It is assumed that Priority 1 and 2 State top filings on lands not otherwise encumbered would become effective selections and be conveyed to the State within 10 years of a Secretarial revocation decision. Though some withdrawals are already open to mineral entry, leases, and/or sales, the analysis assumes that the potential for ROWs, mineral exploration/development, and other development projects would increase once the lands are conveyed to the State, especially in areas identified as more likely to be developed. While the analysis focuses on rural subsistence users, development could affect both rural and nonrural users of the 17(d)(1) withdrawals in similar ways. While harvests by nonrural residents are substantially lower than harvests by rural residents, many nonrural residents, including individuals with cultural and familial ties to rural communities, engage in hunting and fishing activities on 17(d)(1) withdrawals and consider these

activities to be part of a subsistence lifestyle. These individuals would not experience impacts related to a loss of Federal subsistence priority.

Development would affect user access by introducing infrastructure and human activity into previously undeveloped areas, and by imposing security and land use restrictions on local residents. Legal or regulatory barriers would reduce user access to traditional use areas. For example, hunters would be subject to restrictions regarding discharging firearms near pipelines, roads, buildings, and other facilities. Depending on the restricted distance at which a firearm can be discharged, subsistence users could have difficulty hunting in certain areas, particularly where pipelines or roads parallel the coastal or riverine areas. Miscommunication surrounding rules and restrictions around development and unpleasant interactions with industry workers may dissuade residents from accessing development areas.

Infrastructure associated with mineral (including oil and gas) exploration, development, and production, in addition to other non-oil and gas infrastructure projects, could include future gravel, pipelines, gravel pads, bridges, gravel mines, and runways. Infrastructure could cause direct loss of subsistence use areas for analysis communities in the five planning areas. Loss of subsistence use areas could result in residents having to travel farther to access more suitable hunting areas and in the loss of opportunities to pass on knowledge regarding particular hunting and harvesting areas to the next generation.

Development of roads, pipelines, and other linear infrastructures can present barriers (either perceived or actual) for subsistence users. Infrastructure such as roads, bridges, and pipelines can act as physical obstructions to subsistence users, particularly if they are not designed to account for overland travel by snowmachine or four-wheelers, or if bridges and causeways obstruct boat travel along rivers or coastlines. For example, hunters traveling overland by snowmachine may not be able to cross over high roads, particularly when pulling a heavy load. In addition, hunters may have to divert around infrastructure (e.g., construction material sites) or mine pits for safety reasons. Roads and pipelines may also intersect community trail systems, which are integral to accessing subsistence hunting and harvesting areas. Trails and travel routes are typically routed to provide the quickest and safest access to harvesting areas; having to reroute existing trails may increase safety risks to local subsistence users. Bridges can affect boat travel along smaller waterways or in unusually high water conditions. In most regions, subsistence users may travel along coastal areas or rivers by boat to hunt caribou, moose, and other resources. The existence of infrastructure in these areas may affect these hunting activities if hunters are not able to shoot inland due to the presence of roads and pipelines and concerns about safety. Similarly, in areas where residents use roads to access hunting areas, pipelines and other infrastructure placed along roadways can obstruct offroad travel and hunting.

In some cases, roads that are built in support of development projects may be open to local residents to use, and in these cases, roads can provide a benefit to subsistence users by increasing access to new or traditional use areas. Roads can be particularly beneficial to residents with no boats, snowmachines, or four-wheelers. In addition, roads can facilitate access into traditional harvesting areas at times when access is difficult, such as during spring breakup when rivers are not yet navigable and when snow conditions are poor. Potential negative effects on user access associated with increased road use include increased competition within and between rural communities, and a shift in use toward road-accessible areas and away from other traditional hunting and harvesting areas. Roads connecting rural communities to one another can increase competition between communities by concentrating hunters along corridors and affecting community use area patterns. In addition, reduced use of traditional areas due to a shift toward road-based hunting can limit opportunities to pass on knowledge to younger generations regarding traditional places and their associated uses.

If roads are constructed but are closed to local access for security or other reasons, then they would have larger direct effects on subsistence user access. If residents are unable to cross over roads or under

pipelines, they may have to travel farther to bypass these areas. In addition, the State of Alaska prohibits discharge of firearms on, from, or across a road, and in some areas, discharge of firearms is prohibited at certain distances from the road system. This would further reduce the area in which residents can hunt. Although road access for local subsistence users may be restricted, it is possible that both residents and nonlocal hunters would use cleared ROWs as travel corridors to access hunting areas, thus increasing local competition along the corridor.

Roads built from the main transportation system into previously roadless areas would have the greatest impact on local communities, subsistence economies, and culture. Local communities and subsistence users would experience both an increase in access in addition to increased competition from outside residents. Studies comparing road-connected to non-road-connected communities show that road-connected communities have substantially lower subsistence harvests than non-road-connected communities (Guettabi et al. 2016; Magdanz et al. 2016).

Although actual infrastructure would likely be limited to a small proportion of communities' overall subsistence use areas, areas excluded from subsistence use would likely be greater than the actual footprint of a development project, either due to avoidance or security and firearm restrictions. Regardless of regulatory and physical barriers in the analysis area, subsistence users may choose not to access nearby subsistence use areas any longer because construction-related sites, smells, lights, noises, and activities could disturb resources, reduce the potential for a successful harvest, and impact the subsistence user's experience. Residents may avoid hunting near the road due to concerns about shooting near infrastructure and human activity, lack of knowledge regarding security protocols, contamination concerns, and general discomfort with conducting traditional subsistence activities near non-local workers and industrial activity. Frequent small contamination events or large-scale contamination events (though unlikely) may affect user access by contributing to the perception that resources that use development areas are unsafe to eat. This may cause avoidance of subsistence resources harvested along certain waterways or near development infrastructure, or which migrate through development areas and are later harvested elsewhere. Hunter avoidance of industry has been documented in Alaska. In the North Slope community of Nuiqsut, which is located near several oil and gas developments, an average of 41 percent of subsistence users have reported avoiding development activities or infrastructure annually, from 2013 to 2021 (SRB&A 2023). Over time, subsistence user avoidance can result in larger shifts in subsistence use areas for a community.

3.14.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filings would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. All other 17(d)(1) withdrawals would be retained. It is likely that subsistence activities do occur on lands where withdrawals would be revoked, and therefore impacts would be lessened but not removed. Under Alternative B, primary impacts on subsistence user access would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development.

Under Alternative B, 433,000 acres of 17(d)(1) withdrawals would be revoked in part, allowing State top filings to fall into place and become effective selections on lands where there are no other encumbrances. As discussed above (see the Loss of Federal Subsistence Priority section in Section 3.14.1.2.2), a loss of Federal subsistence priority would only occur on revoked 17(d)(1) withdrawals that are top filed and have no other encumbrances; this is because acres subject to effective selections do not have Federal subsistence priority to begin with. On a community level, 44 communities have use areas that overlap with 17(d)(1) withdrawals that would lose Federal subsistence priority under Alternative B (see Table

3.14-5). The East Alaska planning area has the most communities with a potential loss of Federal subsistence priority (21 communities), followed by the Ring of Fire (13 communities), Bay, (6 communities), and Kobuk-Seward Peninsula (4 communities) planning areas. The communities with the greatest acreage of use areas where there would be a loss of Federal subsistence priority (over 2,000 acres) are in the East Alaska and Kobuk-Seward Peninsula planning areas and include Ferry, Ambler, Kiana, Kotzebue, and Noorvik (see Table 3.14-5). For the remaining communities, a loss of Federal subsistence priority under Alternative B would occur on less than 200 acres per community. For seven communities in the Ring of Fire planning area, it is assumed that their use areas overlap with lands where there would be a loss of Federal subsistence priority; however, due to a lack of subsistence use area data for those communities, the extent of that direct overlap is unknown (see Table 3.14-4). Table 3.14-6 provides the number of acres losing Federal subsistence priority within 50 miles of the 42 analysis communities with no available subsistence use area data. Although these data do not provide information on direct effects, they help characterize the relative magnitude of either direct or indirect effects for these communities. None of the communities in the Kobuk-Seward Peninsula, Bering Sea-Western Interior, Bay, or East Alaska planning areas would experience a loss of Federal subsistence priority within 50 miles of their community. In the Ring of Fire planning area, nine communities would be within 50 miles of some acres losing Federal subsistence priority, and in five communities, there would be a loss of 422 acres of Federal subsistence priority within 50 miles. For maps showing the location of 17(d)(1) withdrawals in relation with each community's subsistence use area, see EIS Appendix G, Maps 1 through 132.

Subsistence use area overlap with lands that currently have Federal subsistence priority, and the percent lost under each alternative, is provided in Table 3.14-7. Based on available data, one community—Ferry—would lose Federal subsistence priority on more than 1 percent of current lands subject to Federal subsistence priority under Alternative B. Ferry would lose subsistence priority on 2,962 acres, or 21 percent of its documented subsistence use areas that currently have Federal subsistence priority. Communities and regions with fewer Federal lands within their subsistence use area, such as Ferry, could be more vulnerable to a loss of Federal subsistence priority. Other communities with a low number of lands with Federal subsistence priority include Dry Creek, Tetlin, and Dot Lake in the East Alaska planning area; Lake Minchumina and Telida in the Bering Sea-Western Interior planning area; and Chickaloon, Susitna, Beluga, and Tyonek in the Ring of Fire planning area (see Table 3.14-7).

Under Alternative B, three communities would lose Federal subsistence priority in some areas adjacent to (i.e., within 5 miles of) their community: Slana in the East Alaska planning area, King Salmon in the Bay planning area, and Lake Minchumina in the Bering Sea-Western Interior planning area (Table 3.14-8). In addition, 11 communities would lose Federal subsistence priority in some lands central to their subsistence use areas (i.e., within 25 miles of the community), primarily in the Ring of Fire planning area but also in the East Alaska and Bay planning areas (see Table 3.14-8).

Overall, the East Alaska planning area would see the greatest number of communities and lands affected by a loss of Federal subsistence priority. Table 3.14-9 shows the percentage of acres with Federal subsistence priority that would lose that Federal subsistence priority in each GMU, by alternative. Under Alternative B, GMU 19 in the Bering Sea-Western Interior planning area would lose the greatest amount and percentage of lands with Federal subsistence priority, followed by GMUs 20 (East Alaska) and 23 (Kobuk-Seward Peninsula). The loss of Federal subsistence priority in GMU 19 would occur in the northeastern section of that GMU west of Lake Minchumina. The potential impacts of a loss of Federal subsistence priority to subsistence user access are discussed in Section 3.14.1.2.2.

In addition to changes in subsistence management, under Alternative B, revocation of 17(d)(1) withdrawals could result in lands becoming effectively selected and thus being conveyed to the State, which would also open them to multiple uses and further impair subsistence use and access. Of these

areas, the greatest impact is expected in the lands determined to be more likely to be developed. Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would be developed under Alternative B only where they are conveyed to the State (priority conveyances). This is because under Alternative B, the 17(d)(1) withdrawals would be *partially* revoked only to allow State selection, and if those lands are selected by and conveyed to the State, they could be developed under State law. However, lands not conveyed to the State (i.e., lands remaining in Federal ownership) would remain closed to the Federal mining and mineral leasing laws, and no development under those laws could occur. The Subsistence sections of this EIS report the acres more likely to be developed for Alternative B only where those acres overlap with lands more likely to be conveyed. On a community level, 27 communities have use areas that overlap with 17(d)(1) withdrawals that are more likely to be revoked and developed under Alternative B (see Table 3.14-5). Eighteen of these communities would have use areas overlapping fewer than 20 acres of lands that are more likely to be developed, and seven communities' direct overlap is unknown due to a lack of subsistence use area data. Two communities in the East Alaska planning area (Copper Center and Glennallen) have over 100 acres of subsistence use areas overlapping areas more likely to be developed should the 17(d)(1) withdrawals be revoked. No communities in the Kobuk-Seward Peninsula, Bering Sea-Western Interior, or Bay planning areas have over 1 acre of use areas overlapping revoked lands that are also more likely to be developed under Alternative B. In the Ring of Fire planning area, 5 or fewer use area acres for any one community would overlap revoked lands more likely to be developed.

Table 3.14-6 provides the number of acres more likely to be developed within 50 miles of the 42 analysis communities with no available subsistence use area data. No communities in the Kobuk-Seward Peninsula or Bering Sea-Western Interior planning areas would see 17(d)(1) withdrawals revoked on lands more likely to be developed within 50 miles. No community would have over 5 acres of revoked withdrawals more likely to be developed within 50 miles of their community. In total, 7 communities would have some acres of revoked withdrawals more likely to be developed within 50 miles.

Under Alternative B, some areas more likely to be developed should the 17(d)(1) withdrawals be revoked are adjacent to (i.e., within 5 miles of) the community of Slana in the East Alaska planning area (see Table 3.14-8). Some 17(d)(1) revocations more likely to be developed are central to (i.e., within 25 miles) five communities, primarily in the East Alaska (4 communities) planning area, followed by the Ring of Fire (1 community) planning areas.

In summary, under Alternative B, impacts to user access from development would be lessened compared to the other alternatives. The impacts of development activities and infrastructure on user access are discussed in the Increase in Lands Open to Development section in Section 3.14.1.2.2.

3.14.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

Under Alternative C, 17(d)(1) withdrawals would be revoked in full on parcels that have high mineral potential, including the State of Alaska's top filed lands. Alternative C would also revoke in part withdrawals on Priority 1 and 2 top filed lands that do not have high mineral potential, for the purposes of opening these lands to selection. All other lands would remain withdrawn. Similar to Alternative B, primary impacts on subsistence user access under Alternative C would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development. Because Alternative C would revoke withdrawals on State top filed lands that have been identified as having conflicts with subsistence, in addition to revoking withdrawals on additional lands with high mineral potential, this alternative would increase the potential for direct impacts to subsistence access.

On a community level, 100 communities have use areas that overlap with 17(d)(1) withdrawals that would lose Federal subsistence priority under Alternative C (see Table 3.14-10). The East Alaska planning area has the most communities with a potential loss of Federal subsistence priority (29 communities), followed by the Bay (23 communities), Bering Sea-Western Interior (21 communities), Ring of Fire (20 communities), and Kobuk-Seward Peninsula (7 communities) planning areas. The communities with the greatest acreage of use areas where there would be a loss of Federal subsistence priority include Healy (139,159 acres), Cantwell (138,519 acres), and Trapper Creek (107,875 acres). Twenty-four communities, comprising 17 in the East Alaska planning area, three in the Ring of Fire planning area, two in the Bering Sea-Western Interior planning area, and two in the Kobuk-Seward Peninsula planning area, would lose Federal subsistence priority on at least 10,000 acres of documented subsistence use areas (see Table 3.14-10). Although subsistence use area data are not available to measure direct impacts, nine additional communities would see a loss of Federal subsistence priority on at least 10,000 acres within 50 miles of their community, comprising six communities in the Bering Sea-Western Interior planning area, one community in the Kobuk-Seward Peninsula planning area, and one community in the East Alaska planning area (see Table 3.14-6). For maps showing the location of 17(d)(1) withdrawals in relation to each community's subsistence use area, see EIS Appendix G, Maps 1 through 132.

Subsistence use area overlap with lands that currently have Federal subsistence priority, and the percent of lands with Federal subsistence priority losing that priority under each alternative, is provided in Table 3.14-7. This analysis comprises lands where there would be a permanent loss of Federal subsistence priority, in addition to lands where there would be a temporary loss of Federal subsistence priority (i.e., State Priority 3 and 4 top filed lands that are eventually relinquished or rejected). Even a temporary loss of Federal subsistence priority (e.g., 10 years) could have long-term effects on subsistence harvesting patterns because local subsistence users may quickly alter land use patterns in response to changes in land management. Based on available data, 27 communities would lose Federal subsistence priority on more than 1 percent of current lands subject to Federal subsistence priority under Alternative C. Communities with the highest percentage of Federal subsistence lands losing Federal subsistence priority include Ferry (95 percent), Trapper Creek (88 percent), Denali Park (36 percent), Dot Lake (33 percent), Cantwell (33 percent), Healy (19 percent), Tolsona (13 percent), and Paxson (10 percent).

Under Alternative C, eight communities would lose Federal subsistence priority in some areas adjacent to (i.e., within 5 miles of) their community: Glennallen, Mentasta Lake, Paxson, and Slana in the East Alaska planning area; King Salmon and Pope-Vannoy Landing in the Bay planning area; and Aniak and Lake Minchumina in the Bering Sea-Western Interior planning area (Table 3.14-8). In addition, 40 communities would lose Federal subsistence priority in some lands central to their subsistence use areas (i.e., within 25 miles of the community), primarily in the East Alaska (15 communities) planning area, Bering Sea-Western Interior (9 communities), Bay (9 communities), and Ring of Fire (7 communities) planning areas.

As shown in Table 3.14-9, GMU 13 in the East Alaska planning area would lose Federal subsistence priority on the greatest percentage of Federal lands under Alternative C (10.87%), followed by GMU 22 in the Kobuk-Seward Peninsula planning area. The East Alaska planning area could be particularly vulnerable to a loss of Federal subsistence priority because much of the planning area is road-connected to larger urban hubs (Anchorage and Fairbanks), the area is more densely populated, and competition among rural users and between rural and non-rural users is high. Impacts could be compounded by recent hunting closures for the Nelchina herd. Federal subsistence permit data provide another source of information regarding subsistence uses within the East Alaska planning area. As an example of the high use of the area, the Glennallen Field Office, located in the East Alaska planning area, issues approximately 65 percent of all Federal subsistence permits in Alaska, and the Wrangell-St. Elias National Park and Preserve, located in the same planning area, issues an additional 12 percent of all

Federal subsistence permits. Other planning areas are less likely to require Federal subsistence permits because they have fewer users overall; however, increased access into these planning areas resulting from development projects (see below) could increase non-local hunting in the future, creating a need for Federal subsistence permit hunts within those areas.

Table 3.14-11 shows moose and caribou subsistence permit harvest data for GMU 13 from 2010 to 2022. This table shows the community of Delta Junction having the highest average number of caribou and moose permits issued within GMU 13 during that time period, and the highest harvest of caribou and moose, followed by Copper Center, Glennallen, Kenny Lake, Gakona, Tazlina, Slana, Cantwell, and Chickaloon. These and the other communities that hunt caribou and moose in GMU 13 (Table 3.14-11) would likely experience impacts on user access from a loss of Federal subsistence priority. Table 3.14-12 shows communities with C&T use determinations for caribou and moose within GMU 33, and the percentage of Federal subsistence priority lost within their respective units or subunits. As a whole, GMU 13 would lose over 200,000 acres—nearly 11 percent—of Federal subsistence priority lands within that unit. Within individual subunits, GMU 13C would lose nearly all (97 percent) acres of Federal subsistence priority, followed by GMU 13E (13 percent), and GMU 13B (6 percent). Within GMU 13, Healy Lake and MCarthy only have C&T use determinations in GMU 13C, and therefore would be particularly affected because they would not have the option to hunt in other portions of GMU 13 under Federal subsistence regulations.

In addition to changes in subsistence management, under Alternative C, revocation of withdrawals would open high mineral potential lands to multiple use management (such as mineral development), including much that would be conveyed to the State and managed under its authority. On a community level, 100 communities have use areas that overlap with 17(d)(1) withdrawals that are more likely to be developed (see Table 3.14-10). The East Alaska planning area has the most communities with subsistence uses on revocations more likely to be developed (31 communities), followed by the Ring of Fire (24 communities), Bay (20 communities), Kobuk-Seward Peninsula (16 communities), and Bering Sea-Western Interior (9 communities) planning areas. The communities with the greatest acreage of use areas on lands more likely to be developed (over 20,000 acres) are Copper Center, Tonsina, Glennallen, Gulkana, Mendeltna, Nelchina, Mentasta Lake, Nome, Tok, and Gakona (see Table 3.14-9). In total, 17 communities have at least 10,000 acres of subsistence use areas overlapping revoked areas more likely to be developed, primarily in the East Alaska planning area but also in the Kobuk-Seward Peninsula (2 communities) planning area. Although subsistence use area data are not available to measure direct impacts, three additional communities would have at least 10,000 acres of withdrawals revoked and be more likely to be developed within 50 miles of their community, comprising Silver Springs and Eureka Roadhouse in the East Alaska planning area and Teller in the Kobuk-Seward Peninsula planning area (see Table 3.14-5). For maps showing the location of 17(d)(1) withdrawals in relation to each community's subsistence use area, see EIS Appendix G, Maps 1 through 132.

Under Alternative C, some areas more likely to be developed should the 17(d)(1) withdrawals be revoked are adjacent to (i.e., within 5 miles of) 13 communities: six communities in the East Alaska planning area, four communities in the Ring of Fire planning area, two communities in the Bay planning area, and one community in the Bering Sea-Western Interior planning area (see Table 3.14-8). Fifty communities are central to (i.e., within 25 miles of) 17(d)(1) revocations more likely to be developed in the five planning areas, comprising 18 in the East Alaska planning area, 11 in the Bay planning area, 10 in the Ring of Fire planning area, seven in the Kobuk-Seward Peninsula planning area, and four in the Bering Sea-Western Interior planning area. The impacts of development activities and infrastructure on user access are discussed in the Increase in Lands Open to Development section in Section 3.14.1.2.2.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the

number of requirements for avoidance and minimization of impacts to subsistence user access. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.14.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals would be revoked. No lands would remain withdrawn. Similar to Alternatives B and C, primary impacts on subsistence user access under Alternative D would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development. Because of the larger number of acres where the withdrawals would be revoked, Alternative D would have the greatest potential for changes in management and therefore the greatest potential for direct impacts on subsistence user access.

On a community level, 117 communities have use areas that overlap with 17(d)(1) withdrawals that would lose Federal subsistence priority under Alternative D (see Table 3.14-13). The East Alaska planning area has the most communities with a potential loss of Federal subsistence priority (31 communities), followed by the Ring of Fire (19 communities), Bering Sea-Western Interior (25 communities), Bay (24 communities), and Kobuk-Seward Peninsula (18 communities) planning areas. Similar to Alternative C, the communities with the greatest acreage of use areas where there would be a loss of Federal subsistence priority include Healy (139,159 acres), Cantwell (138,519 acres), and Trapper Creek (107,875 acres). Twenty-five communities, comprising 17 in the East Alaska planning area, three in the Ring of Fire planning area, two in the Kobuk-Seward Peninsula planning area, and three in the Bering Sea-Western Interior planning area, would lose Federal subsistence priority on at least 10,000 acres of documented subsistence use areas (see Table 3.14-13). Although subsistence use area data are not available to measure direct impacts, 13 additional communities would have at least 10,000 acres of withdrawals revoked and lose Federal subsistence priority within 50 miles of their community, comprising 10 in the Bering Sea-Western Interior planning area, one in the Kobuk-Seward Peninsula planning area, and one in the East Alaska planning area (see Table 3.14-6). For maps showing the location of 17(d)(1) withdrawals in relation to each community's subsistence use area, see EIS Appendix G, Maps 1 through 132.

Subsistence use area overlap with lands that currently have Federal subsistence priority, and the percent lost under each alternative, is provided in Table 3.14-7. This analysis comprises lands where there would be a permanent loss of Federal subsistence priority, in addition to lands where there would be a temporary loss of Federal subsistence priority (i.e., State Priority 3 and 4 top filed lands that are eventually relinquished). Even a temporary loss of Federal subsistence priority (e.g., 10 years) could have long-term effects on subsistence harvesting patterns because local subsistence users may quickly alter land use patterns in response to changes in land management. Based on available data, 38 communities would lose Federal subsistence priority on more than 1 percent of current lands subject to Federal subsistence priority under Alternative D. Communities with the highest percentage of Federal subsistence lands losing Federal subsistence priority are Chickaloon, Ferry, Trapper Creek, Denali Park, Dot Lake, and Cantwell.

Ten communities are located within 5 miles ("adjacent"; see Table 3.14-8) of lands losing Federal subsistence priority under Alternative D. The East Alaska planning area would have the greatest number of communities affected (4 communities), followed by the Bering Sea-Western Interior planning area (3 communities), the Bay planning area (two communities), and the Kobuk-Seward Peninsula planning area (one community). In addition, 52 communities in all five planning areas would lose Federal subsistence priority in some lands central to their subsistence use areas (i.e., within 25 miles of the community), with the East Alaska planning area having the most communities affected (18 communities), followed by the

Bay (13 communities), Bering Sea-Western Interior (10 communities), Ring of Fire (7 communities), and Kobuk-Seward Peninsula (4 communities). The potential impacts of these changes are discussed in the Loss of Federal Subsistence Priority section in Section 3.14.1.2.2. The analysis assumes that top filed Priority 1 and 2 lands would immediately become effective selections should the 17(d)(1) withdrawals be revoked and therefore could be conveyed; therefore, the loss of Federal subsistence priority would be permanent. The analysis assumes that top filed Priority 3 and 4 lands would be eventually relinquished or rejected and would return to Federal management, and therefore the loss of Federal subsistence priority would not be limited to a maximum of 10 years.

As discussed under Alternative C, the East Alaska planning area may be particularly vulnerable to a loss of Federal subsistence priority because of its accessibility along the road system from larger urban hubs (Anchorage and Fairbanks) and its relatively dense population compared to other rural areas. Under Alternative D, GMU 13 in the East Alaska planning area would lose the greatest percentage of lands with Federal subsistence priority (nearly 11 percent), followed by GMU 22 in the Kobuk-Seward Peninsula planning area (Table 3.14-9). Users of GMUs 13C and 13E would be particularly impacted, losing Federal subsistence priority on 97 percent and 40 percent of lands, respectively (Table 3.14-12).

In terms of impacts from increased development, on a community level, 104 communities have use areas that overlap with 17(d)(1) withdrawals that are more likely to be developed after revocation under Alternative D (see Table 3.14-13). The East Alaska planning area has the most communities with subsistence uses on areas more likely to be developed should the 17(d)(1) withdrawals be revoked (31 communities), followed by the Ring of Fire (24 communities), Bay (21 communities), Kobuk-Seward Peninsula (19 communities), and Bering Sea-Western Interior (9 communities) planning areas. Similar to Alternative C, the communities with the greatest acreage of use areas on lands more likely to be developed should the 17(d)(1) withdrawals be revoked (over 20,000 acres) are Copper Center, Tonsina, Glennallen, Gulkana, Mendeltna, Nelchina, Nome, Mentasta Lake, Tok, Gakona, and Brevig Mission (see Table 3.14-13). In total, 20 communities in the five planning areas have at least 10,000 acres of subsistence use areas overlapping areas more likely to be developed should the 17(d)(1) withdrawals be revoked, primarily in the East Alaska planning area (14 communities) but also in the Kobuk-Seward Peninsula (5 communities) and Ring of Fire (1 community) planning areas. Although subsistence use area data are not available to measure direct impacts, three additional communities would have at least 10,000 acres of withdrawals revoked and be more likely to be developed within 50 miles of their community, comprising Silver Springs and Eureka Roadhouse in the East Alaska planning area and Teller in the Kobuk-Seward Peninsula planning area (see Table 3.14-6). For maps showing the location of 17(d)(1) withdrawals in relation to each community's subsistence use area, see EIS Appendix G, Maps 1 through 132.

Under Alternative D, some areas more likely to be developed should the 17(d)(1) withdrawals be revoked are adjacent to (i.e., within 5 miles of) 15 communities: six communities in the East Alaska planning area, four communities in the Ring of Fire planning area, three communities in the Bay planning area, and one community each in the Bering Sea-Western Interior and Kobuk-Seward Peninsula planning areas. Some areas more likely to be developed should the 17(d)(1) withdrawals be revoked are central to (i.e., within 25 miles of) 48 communities in all five planning areas (see Table 3.14.8). The larger number of acres where the 17(d)(1) withdrawals would be revoked under Alternative D would increase the overall likelihood and amount of development occurring in the State, increasing likelihood for individual community impacts. The impacts of development activities and infrastructure on user access are discussed in the Increase in Lands Open to Development section in Section 3.14.1.2.2.

Alternative D would open the whole decision area to the operation of the public land laws. Any conveyances occurring due to this opening would cause that land to lose Federal subsistence priority and could impede access for subsistence users to preferred subsistence areas if the landowner restricts access

across the parcel. How these effects would affect individual communities is speculative as future public land laws are unknown.

3.14.1.2.6 COMPARISON OF ALTERNATIVES

Impacts to user access would be greatest under alternatives with greater acreage where the 17(d)(1) withdrawals would be revoked because these alternatives would be most likely to result in landownership changes that would remove Federal subsistence priority on certain lands and open areas to mineral entry that were previously closed to mineral entry. Therefore, Alternative D would have the greatest potential impacts to subsistence access, followed by Alternative C. Alternative B would revoke the fewest acres of 17(d)(1) withdrawals and would therefore be the least likely to affect subsistence access, particularly those resulting from development.

Table 3.14-1 provides a comparison of alternatives by number of communities impacted. A comparison of the magnitude of effects for the communities affected is provided in Tables 3.14-5 and 3.14-6.

Table 3.14-1. Comparison of Alternatives for Subsistence User Access, Resource Availability, and Resource Abundance

Alternative	Number of Communities with a Loss of Federal Subsistence Priority	Number of Communities with Adjacent Lands with Loss in Federal Subsistence Priority	Number of Communities with Subsistence Use Areas that Overlap Lands More Likely to be Developed	Number of Communities with Adjacent Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	44	3	27*	1*
Alternative C	100	8	100	13
Alternative D	117	10	104	15

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management.

As shown in Table 3.14-1, under Alternative D, 117 communities have subsistence use areas overlapping 17(d)(1) withdrawals that would be revoked and that would lose Federal subsistence priority compared to 100 communities under Alternative C and 44 communities under Alternative B. Under Alternatives C and D, the greatest loss of Federal subsistence priority for an individual community would be 139,159 acres (Healy) compared to 2,962 acres (Ferry) under Alternative B. Under Alternative D, 10 communities would lose Federal subsistence priority in lands adjacent to their community compared to eight communities under Alternative C and three communities under Alternative B. Overall, the East Alaska planning area would see the greatest number of communities and the greatest amount of land impacted. This region could be particularly vulnerable to a loss of Federal subsistence priority due to the accessibility of the area to non-rural residents and higher levels of competition between hunters, combined with recent declines in the Nelchina herd population. Based on Federal subsistence permit data, communities with the highest numbers of moose and caribou permits in GMU 13, the primary GMU where there would be a loss of Federal subsistence priority, include Delta Junction, Copper Center, Glennallen, Kenny Lake, Gakona, Tazlina, Slana, Cantwell, and Chickaloon. In addition, under Alternatives C and D, Healy Lake and McCarthy would lose nearly all acres of Federal subsistence priority in GMU 13.

Under Alternatives C and D, the loss of Federal subsistence priority on State Priority 3 and 4 top filings would be temporary because the analysis assumes that the State would eventually relinquish or that the BLM would reject Priority 3 and 4 lands and they would return to Federal management. However, even a temporary loss of Federal subsistence priority could have longer term effects on subsistence user access. Local subsistence users may quickly alter land use patterns in response to changes in land management. On the North Slope, for example, access to industrial roads led to documentable changes in subsistence land patterns within several years of road construction (SRB&A 2023). Impacts of Priority 3 and 4 lands returning to Federal management are discussed under Section 3.14.1.2.7, Cumulative Impacts.

In addition to a loss of Federal subsistence priority, 104 communities have subsistence use areas that overlap areas more likely to be developed should the 17(d)(1) withdrawals be revoked under Alternative D compared to 100 under Alternative C and 34 under Alternative B. Under Alternative D, the greatest increase in lands more likely to be developed for an individual community would be 62,530 acres (Copper Center) compared to 62,439 acres (Copper Center) under Alternative C and 1,696 acres (also Copper Center) under Alternative B. Under Alternative D, areas more likely to be developed should the 17(d)(1) withdrawals be revoked are adjacent to (i.e., within 5 miles of) 15 communities compared to 13 under Alternative C and three under Alternative B. Under all alternatives, the East Alaska planning area would see the greatest increase in lands open to development.

3.14.1.2.7 CUMULATIVE IMPACTS

This section provides an analysis of cumulative impacts for all three subsistence issues (i.e., those regarding access, abundance, and availability). Past, present, and reasonably foreseeable trends and planned actions, in combination with revocation of 17(d)(1) withdrawals, would increase the potential for impacts on subsistence user access, resource abundance, and resource availability. Existing impacts on subsistence from past actions are discussed above in Sections 3.14.1.1.4, 3.14.2.1.2, and 3.14.3.1.1. Reasonably foreseeable trends and planned actions in the five planning areas include conveyance of existing effective selections (ANC selections, State Priority 1 and 2 selections, and Alaska Native veterans allotments under the Dingell Act); infrastructure, power, and transportation projects; mining and oil and gas development; recreation; and changes to land and resource management.

Revocation of 17(d)(1) withdrawals and associated changes in land management and development opportunities would likely result in impacts to resource abundance, resource availability, and subsistence user access for communities who use 17(d)(1) withdrawals or who harvest resources that migrate through 17(d)(1) withdrawals. Revocation of withdrawals could result in more lands becoming available for development infrastructure and activities. In general, future development of the planning areas would further expand the total developed area, increasing the frequency and likelihood of impacts to subsistence uses.

There are reasonably foreseeable or planned mining projects in all five planning areas, with the Kobuk-Seward Peninsula planning area having the greatest potential for future mining projects. Reasonably foreseeable new or future mining developments include the Donlin Gold Project (Bay, Bering Sea-Western Interior), Manh Cho Mine (East Alaska), Graphite One Mine (Kobuk-Seward Peninsula), Pebble Mine (Bay), and continued exploration and potential development of the Ambler and Valdez Creek mining districts. Continued development and expansion of existing mines such as the Red Dog Mine and Constantine Mine are also planned or reasonably foreseeable, as are cleanup activities at several closed mines.

Two projects in particular—the Donlin Gold Mine and the Ambler Mining District—would be supported by potentially new infrastructure crossing large portions of the state. In the case of the Donlin Gold Mine, development of this open pit gold mine would include a road and barges for transport of ore and a 315-

mile-long buried natural gas pipeline that would extend from the mine site to near Cook Inlet. The Ambler Mining District would be supported by the Ambler Road, an over-200-mile road extending from the Dalton Highway to the Ambler Mining District. Large-scale mining projects such as these, with mine pits, roads, pipelines, and associated buildings, would contribute to habitat fragmentation, loss of subsistence use areas, and changes in subsistence user access for rural communities. Traffic associated with transport of mine ore and mine workers, including ground and air traffic, would contribute to disturbances of subsistence resource and subsistence hunters, potentially reducing the availability of resources such as caribou and moose to local hunters. Restrictions on firearm discharge around mine facilities as well as security restrictions around development areas would contribute to impacts to subsistence user access. Large-scale mines also have the potential to cause contamination of waterways and vegetation (through fugitive dust) and could result in reduced abundance of fish and other resources, or avoidance behaviors by subsistence users. If revocation of 17(d)(1) withdrawals results in the opening of more lands to mining development, then there would be greater cumulative impacts to subsistence users resulting from development activities and infrastructure.

Although less common within the five planning areas, oil and gas development would similarly contribute to impacts related to infrastructure, noise and traffic, human activity, and security restrictions. Reasonably foreseeable or planned oil and gas activities are most common in the Ring of Fire and East Alaska planning areas and include the Beluga River Unit Gas Well (Ring of Fire), Donlin Mine Gas Pipeline (Ring of Fire and Bering Sea-Western Interior), Alaska LNG pipeline (East Alaska, Ring of Fire), and continued maintenance of the Trans-Alaska Pipeline System (East Alaska). Noise, traffic, and human activity from reasonably foreseeable or planned mining and oil and gas development projects could affect resource availability by diverting resources from their expected migratory routes or causing a shift in resource distribution. Infrastructure such as roads and pipelines could also deflect or delay resource movements, or cause shifts in habitat use. These changes could make certain resources less available to subsistence users in traditional places at traditional times. Development can also contribute to impacts on subsistence user access by causing physical obstructions to overland travel or by introducing restrictions on subsistence uses near development infrastructure.

Communication infrastructure, ROW access, power, and transportation projects in four of the five planning areas (Kobuk-Seward Peninsula, Bering Sea-Western Interior, Bay, and East Alaska) would contribute to increased development in the planning areas through an increase in construction noise, traffic, and human activity during infrastructure installation, and creation of ROWs, which could increase access by non-local hunters into previously difficult to access areas. Increased roads and associated traffic would also contribute to changes in resource availability and abundance. ROWs associated with development of the planning areas, in combination with loss of Federal subsistence priority following revocation of 17(d)(1) withdrawals, could increase competition and decrease hunting success for rural subsistence users. Changes to waterways resulting from road, bridge, and culvert construction as well as increased sedimentation could contribute to impacts on fish availability. In the East Alaska planning area, the Susitna Watana Dam could contribute to changes in fish availability through impacts on access to spawning grounds. Reasonably foreseeable or planned transportation projects are most common in the Kobuk-Seward Peninsula planning area and include the Ambler Road, which would facilitate mining access in the planning area, affect subsistence user access, and potential increase outsider access into the planning area through the creation of ROWs. In the Ring of Fire planning area, the West Susitna Access Road would connect the highway system to State recreation lands west of the Susitna River via a 100-mile road, and the project would involve the construction of a boat launch facility on the Susitna River. Rural residents in this area would likely see a dramatic increase in nonlocal hunters and fishers and resulting competition.

Construction of additional roads and infrastructure in the future would contribute to fragmentation of habitat for such resources as caribou, moose, furbearers, and waterfowl. Infrastructure would remove

usable habitat for these resources and, in the case of caribou, could cause substantial changes in range distribution. Impacts on migrating caribou increase with density of roads and infrastructure; therefore, increased development of the planning areas resulting from planned or RFD activities and revocation of 17(d)(1) withdrawals would contribute to changes in caribou migration, distribution, and abundance, with resulting impacts on subsistence resource availability to communities that use these resources.

If mining, oil and gas, infrastructure, and transportation projects reduce resource availability for subsistence analysis communities or if they decrease access to traditional use areas, then residents may have to spend greater amounts of time, effort, and money to locate and procure these resources. Impacts to the abundance and availability of resources such as caribou, moose, waterfowl, and fish resulting from development infrastructure and activities would be compounded by ongoing impacts from climate change, including shifts in the timing and location of resource migrations, changes in the availability of suitable habitat and resulting changes in resource distribution, and increasing instances of extreme weather events (Herman-Mercer et al. 2019; Moerlein and Carothers 2012). Cumulative impacts would be particularly likely for vulnerable resource populations, such as the Western Arctic, Nelchina, and Mulchatna caribou herds and the Chinook and chum salmon populations on the Yukon and Kuskokwim rivers, and the communities that rely on those resources. Residents may also have to travel farther to less-familiar areas to find resources, with greater risks to health and safety, which may be compounded by similar impacts related to climate change (Brinkman et al. 2016). Although some hunters respond to changes in resource availability or subsistence user access by taking more trips and increasing costs to harvest what they need, others may choose to take fewer trips because of lack of funds or reduced success.

Changes in subsistence harvesting patterns due to development or a loss of Federal subsistence priority could also affect uses of surrounding lands. For example, many subsistence analysis communities are also NPS resident zone communities, including for Denali National Park and Preserve, Lake Clark National Park and Preserve, and Western Arctic parks (e.g., Cape Krusenstern National Monument and Bering Land Bridge National Park and Preserve). Revocation of withdrawals on BLM-managed lands within the subsistence use area of these communities could increase pressure on NPS lands. Likewise, once land is conveyed out of Federal ownership, access across these lands to the subsistence use area on the NPS lands cannot be guaranteed.

The overall area available for subsistence use would likely shrink over time due to the increasing presence of infrastructure and human activity in traditional use areas. Although planning area subsistence users would adapt, to varying extents, to the changes occurring around them and may continue to harvest resources at adequate levels, their connection to certain traditional areas may decrease over time. Such changes have been documented on the North Slope of Alaska as a result of oil and gas development, particularly for the community of Nuiqsut, which has experienced a gradual shift in subsistence use areas away from the Prudhoe Bay area (SRB&A 2018). An increase in road corridors in traditional use areas could also shift how residents access subsistence harvesting areas, such as via roads, but could also affect resource availability, particularly for those who choose not to use roads. Such changes, including increased use of roads, combined with changes in harvesting patterns and resource availability, have been documented in Alaska (SRB&A 2007, 2023). Roads, if available for use by local subsistence users, could have a positive impact of increased access for residents into areas previously inaccessible during certain times of year. If roads are closed to use by local residents, then the impacts of the roads on resource availability and subsistence user access would be greater.

The above reasonably foreseeable or planned mining, oil and gas, transportation, and infrastructure projects could contribute to contamination of waterways, air, and foraging habitat through oil spills, mine tailings, fugitive dust from roads and construction, and emissions from equipment. In combination with an increase in lands open to development following revocation of 17(d)(1) withdrawals, cumulative spills

could reduce the abundance of certain subsistence resources, including salmon, non-salmon fish, waterfowl, and vegetation.

Increased recreation throughout the five planning areas, including increased opportunities for commercial big game hunting and other recreational activities, could contribute to increased competition for rural users resulting from changes in land management and a loss of Federal subsistence priority. Increased competition and decreased resource availability may result in residents having to travel farther and spend more time, money, and effort to harvest such resources as moose and caribou. Climate change could compound these impacts by reducing access to harvesting areas at certain times of the year or by increasing safety risks as hunters travel farther to access subsistence resources.

Alternatives that revoke 17(d)(1) withdrawals across the greatest acreage have the greatest potential contribution to cumulative impacts on subsistence uses and resources. This is because they would cause the greatest immediate loss of Federal subsistence priority for rural residents, and because they would be more likely to open new lands to development. Therefore, Alternative D would have the largest potential contribution to cumulative impacts on subsistence uses and resources followed by Alternative C and Alternative B because the greatest amount of land would lose the application of Federal subsistence priority and become open to potential development. However, following a temporary loss of Federal subsistence priority on some subsistence lands, the State may relinquish or the BLM may reject Priority 3 and 4 lands, including both effective selections and top filings that become effective and that would return to Federal subsistence priority status. This would happen, eventually, under all alternatives. Table 3.14-15 provides the total acres of Priority 3 and 4 lands that would likely return to Federal subsistence management (i.e., they are or would become effective selections under the alternative and later would likely be relinquished or rejected due to overselection). Table 3.14-15 also summarizes the net gain or loss of lands with Federal subsistence priority under each alternative. As shown in Table 3.14-15, under Alternative B, three communities (Dot Lake, Nabesna, and Northway) would have a net loss in Federal subsistence priority once Priority 3 and 4 lands return to Federal ownership. Under Alternatives C and D, 18 and 21 communities, respectively, would have a net loss in Federal subsistence priority lands once Priority 3 and 4 lands are relinquished by the State, primarily those in the East Alaska region but also in the Ring of Fire planning area. Communities experiencing the greatest net loss of Federal subsistence priority under Alternatives C and D are Trapper Creek, Mentasta Lake, Tok, Slana, Nabesna, Glennallen, Gulkana, Skwentna, Paxson, Mendeltna, Nelchina Tazlina, and Tolsona (see Table 3.14-15). The majority of subsistence analysis communities would experience a net gain in the overall number of lands subject to Federal subsistence priority. Despite the eventual return of many lands to Federal management, the short-term loss of Federal subsistence priority could still have long-term impacts on user access, resource abundance, and resource availability. A loss of Federal subsistence priority on a portion of a community's subsistence use area, even for a period of 10 years, could result in a permanent shift in that community's harvesting patterns, reduce opportunities to pass on knowledge about those lands, and ultimately affect a community's connection to traditional lands.

In addition to the 17(d)(1) withdrawals being considered in this EIS, revocation of withdrawals in the Central Yukon planning area would contribute to impacts on subsistence users. As shown in Table 3.14-16, 28 communities in four of the five planning areas (Ring of Fire, East Alaska, Kobuk-Seward Peninsula, and Bering Sea-Western Interior) would further lose areas of Federal subsistence priority upon revocation of 17(d)(1) withdrawals in the Central Yukon planning area.¹⁶ Talkeetna, in the Ring of Fire planning area, would experience the greatest loss of Federal subsistence priority in terms of acreage (239,696 acres) followed by three communities in the East Alaska planning area (Anderson, Tok, and

¹⁶ Revocation or retention of withdrawals in the Central Yukon planning area would occur under a different Secretarial decision than may be issued from this EIS. For the purposes of this analysis, the EIS assumes all 17(d)(1) withdrawals in the Central Yukon planning area would be revoked so that this EIS analyzes the largest potential amount of change. However, withdrawal decisions are reserved for the Secretary and not the BLM.

Healy), four communities in the Kobuk-Seward Peninsula planning area (Selawik, Ambler, Shungnak, and Kobuk), and two communities in the Bering Sea-Western Interior planning area (Huslia and Galena). Ten communities would lose Federal subsistence priority on over 10,000 acres.

Ultimately, cumulative impacts on subsistence could alter subsistence user access, resource abundance, and resource availability for subsistence users, leading to impacts on cultural identity and traditions; social and kinship ties; and physical, spiritual, and mental health. When subsistence users' opportunities to engage in subsistence activities are limited, then their opportunities to transmit knowledge about those activities, which are learned through participation, are also limited. If residents stop using portions of the planning area for subsistence purposes, either due to avoidance of development activities or reduced availability of subsistence resources, the opportunity to transmit local and traditional knowledge to younger generations about those traditional use areas would be diminished. Although communities would likely maintain a cultural connection to these areas and acknowledge them as part of their traditional land use area, the loss of direct use of the land could lead to reduced knowledge for the younger generation of place names, stories, and Indigenous and local knowledge associated with those areas. There would also be fewer opportunities for residents to participate in the distribution and consumption of subsistence resources, ultimately affecting the social cohesion of the community. Decreased harvests among analysis communities could have wide-ranging effects due to the potential disruptions to sharing networks both within planning areas and extending outside planning areas to other regions of Alaska (Kofinas et al. 2016). Sharing is a key value across rural Alaska, which is central to subsistence and which strengthens social and kinship ties across communities and regions.

Any changes to residents' ability to participate in subsistence activities, to harvest subsistence resources in traditional places at the appropriate times, and to consume subsistence foods could have long-term or permanent effects on the spiritual, cultural, economic, and physical wellbeing of the analysis communities. This would come about by diminishing social ties that are strengthened through harvesting, processing, and distributing subsistence resources and by weakening overall community wellbeing. Disruptions to residents' ability to hunt, harvest, distribute, and consume subsistence resources can cause psychological stress and increased rates of depression, anxiety, and substance use disorders (Palinkas et al. 1993). These types of impacts have been documented both in response to large-scale disasters (e.g., Exxon Valdez oil spill; Palinkas et al. 1993) and to impacts brought about by climate change that can cause reduced resource availability and dangerous travel and hunting conditions (Mason and Craver 2023). Reduced harvests would also have economic impacts on residents who rely on subsistence harvests to offset the high cost of living (including groceries and heating oil) in rural communities.

Thus far, rural communities in Alaska have adapted to the changes around them and have maintained a strong subsistence identity; however, this is not to say they have not experienced impacts on subsistence hunting activities, loss of subsistence use areas, and social effects, and there could be a point where residents are no longer be able to adapt to such changes. Current subsistence use patterns, as described in Section 3.14.1.1, Affected Environment, and EIS Appendix G, Subsistence Technical Appendix, are a result of the adaptation of communities to various changes over time. A number of studies have documented the resilience of subsistence communities in the face of change (Kofinas et al. 2016; Martin 2015; Ready 2019). Communities and households often respond to scarcity of one resource (caribou) by increasing their harvests of another, or by increasing income sources when subsistence foods are less available (Martin 2015). Resilience allows communities and households to adjust to changes while maintaining access to key cultural resources and activities. However, the ability of households to be resilient in the face of change does not negate the existence of impacts, nor does it imply that households can simply adapt to all changes. In addition, communities and households are not homogenous in their capacity to adapt to sudden change (BurnSilver et al. 2019). Larger disruptions to subsistence harvests, particularly in combination with changes in subsistence management and ongoing impacts of climate change, could affect the social, cultural, and economic wellbeing of the analysis communities, especially

to the more vulnerable low income, unconnected, and low-harvest households who rely on strong sharing networks for their food security (Kofinas et al. 2016). The continued maintenance of subsistence traditions would depend on the continued availability of subsistence resources and the continued ability of subsistence users to access traditional lands and resources, particularly if there are changes in resource abundance, distribution, or migration.

3.14.2 How would revocation of 17(d)(1) withdrawals affect resource abundance?

Impacts to resource abundance may occur under the action alternatives and are analyzed in detail below. The analysis area for resource abundance comprises the analysis communities in Table 3.14-2. Impacts to resource abundance may occur for any community near parcels where revocation of withdrawals either results in a loss of subsistence priority or development activities previously not permitted.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

Quantitative indicators that provide information relevant to resource abundance are as follows:

- Harvest data
 - Resource contribution toward total harvest
 - Top species harvested
 - Percentage of households attempting to harvest subsistence resources
 - Percentage of households receiving subsistence resources

Tables and figures providing these data are provided in EIS Appendix G.

Additional qualitative indicators include a qualitative discussion of impacts to resource abundance based on results and conclusions of the biological resources sections, as well as Indigenous Knowledge regarding sources of impacts to resource abundance.

3.14.2.1 Affected Environment

3.14.2.1.1 SUBSISTENCE HARVESTS AND PARTICIPATION

The analysis communities all rely on harvests of subsistence resources, including large land mammals, marine mammals, salmon, non-salmon fish, furbearers and small land mammals, birds, upland game birds, marine invertebrates, and vegetation. Levels of resource use, in addition to resource focus, vary by community and region and depend on community location, cultural preferences, and the availability of different resources within a community's subsistence use area. As discussed earlier in Section 3.14, subsistence is not just a source of food to rural communities, but contributes to the nutritional, cultural, economic, and social wellbeing. Uses of harvested subsistence resources extend beyond consumption to the use of the resource in ceremonies (e.g., potlatches, feasts) and the use of various plant and animal parts in the making of clothing, tools, ceremonial items, and art (masks, baskets, carvings, etc.). Participation in subsistence activities does not just include the hunting and harvesting of a resource but includes activities associated with butchering, processing, cooking, sharing, and feasts and ceremonies. These activities strengthen community and family social ties, reinforce community and individual cultural identity, and provide a link between contemporary Natives and their ancestors.

EIS Appendix G, Figures 1 through 15 and Tables 1 through 5, provide subsistence harvest and use data for each planning area and subregion. In terms of contribution toward the total subsistence harvest, large

land mammals, non-salmon fish, and fish are typically among the top harvested resource categories across all planning areas. In some planning areas, such as the Kobuk-Seward Peninsula and the Bering Sea-Wester Interior planning areas, marine mammals contribute a greater proportion toward the total harvest. The top species in each region are provided in Table 3.14-14. In terms of large land mammals, primary species include caribou (all planning areas), moose (all planning areas), and deer. In some regions and communities, other large land mammals such as Dall sheep, bear (black and brown), mountain goat, elk, and muskox are important. In general, all five species of salmon are harvested throughout the five planning areas, with some species harvested more intensively depending on the region. Top non-salmon fish species include whitefish species (e.g., broad whitefish, humpback whitefish, sheefish), Dolly Varden, and smelt. Halibut are commonly harvested in the Ring of Fire and East Alaska planning areas. Top marine mammal species include bowhead whale, beluga, walrus, Steller sea lion, and various species of seal (all planning areas). Harvests of marine mammals generally occur outside the 17(d)(1) withdrawal area.

Household participation in subsistence activities is high across all planning areas, with over half of households in all planning areas participating in subsistence harvesting of non-salmon fish, large land mammals, and vegetation (see EIS Appendix G). The high participation in harvesting activities across all planning areas reflects the importance of subsistence harvesting to rural communities in Alaska and the vulnerability to changes in the abundance of subsistence resources.

3.14.2.1.2 EXISTING CONDITIONS

Subsistence users throughout the five planning areas experience impacts to resource abundance through a number of sources, including subsistence management (e.g., bag limits); competition with non-local users; natural variations in resource abundance; development infrastructure, activities, and security restrictions; and climate change.

Subsistence management in Alaska affects resource abundance by setting limits on how many animals can be taken and by whom. Compared to State lands, on Federal lands, subsistence users, through their representation on Subsistence Regional Advisory Councils, have more input into protecting resource numbers through setting limits on uses by non-rural subsistence users. Management of commercial fisheries also has impacts on subsistence users. In areas that have experienced declines in salmon runs (e.g., Yukon River), many subsistence users believe that the decline is a result of trawling and other commercial fishing activities in offshore waters. In areas with high amounts of hunting pressure from non-local users (e.g., sport hunters, guided hunts), subsistence users may also experience decreased harvest success as a result of impacts on local or regional abundance. Subsistence users are accustomed to certain levels of natural variation in the abundance of subsistence resources, and adapt to temporary decreases in the abundance of one resource by increasing their harvests of other resources. Resources frequently subject to natural population fluctuations include caribou herds, and small game such as rabbit, fox, ptarmigan, and lynx.

Resource abundance impacts related to development occur throughout the five planning areas and may include mining activities (e.g., Kobuk-Seward Peninsula planning area, Red Dog Mine), oil and gas exploration (e.g., Ring of Fire planning area, Cook Inlet oil and gas program), infrastructure projects (e.g., roads, telecommunications projects), and timber production (e.g., Ring of Fire planning area, Southeast subregion). Development projects may affect resource abundance by causing habitat fragmentation and degradation, in addition to contamination of waterways. Climate change has affected subsistence resource abundance by affecting the health and abundance of subsistence resources. See individual wildlife sections for more information on impacts to resource abundance (Section 3.15, Terrestrial Mammals; Section 3.2; Birds and Special Status Bird Species; and Section 3.7, Fish and Aquatic Species).

3.14.2.2 Environmental Consequences

3.14.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would be retained, and there would be no change from baseline conditions. Selected or top filed parcels would remain so under Alternative A; therefore, subsistence management on these lands would not change. Although no new areas would be opened to development resulting from revocation of withdrawals, the Secretary may open certain lands to mineral entry under future PLOs. In the Bay and Ring of Fire planning areas, all 17(d)(1) withdrawals would remain closed to mineral entry, whereas in other planning areas, a portion of retained lands would remain open to mineral entry under their respective PLOs. The Kobuk-Seward Peninsula planning area would have the greatest acreage of lands open to mineral entry under Alternative A. Under Alternative A, there would be a continuation of existing conditions, including ongoing impacts to resource abundance through subsistence management, development infrastructure and activities, and climate change.

3.14.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals could affect resource abundance in two primary ways. First, on lands that lose Federal subsistence priority, hunting pressure on certain resources in certain areas may increase, thus reducing the abundance of those resources. Second, revocation opens more lands to development activities and infrastructure. Third, it would lead to conveyance of lands to the State where approvals for development activities would not be subject to review under ANILCA 810 to mitigate impacts to subsistence. The general impacts that may occur in these scenarios are discussed below.

Loss of Federal Subsistence Priority

Under the action alternatives, revocation of 17(d)(1) withdrawals would result in a loss of Federal subsistence priority on lands that are top filed and not otherwise encumbered because these lands would become effective selections and therefore lose their status as public land on which Federal subsistence priority applies. Subsistence users would then be subject to State hunting regulations on those lands. This loss of Federal subsistence priority could result in an increase in the number of hunters taking resources. This would occur primarily in areas where resource populations are already vulnerable and where Federal regulations prohibit hunting by non-rural residents. For example, in GMUs 23 and 26A, the Federal Subsistence Board recently approved a special action to temporarily close Federal lands in these units to moose and caribou hunting by non-Federally qualified users (Federal Subsistence Management Program 2023). Similar actions have been taken along the Kuskokwim River for salmon populations. These changes have been made specifically to address recent declines in these resource populations and competition from non-Federally qualified users. If these lands changed from Federal to State management, priorities such as the one mentioned above would no longer be available for rural residents, and local residents would likely see an increase in outside subsistence users in these areas, thus increasing pressure on caribou, moose, and salmon populations and decreasing the portion of takes that would provide food for the local community. Increased competition and decreased resource abundance could also result in reduced bag limits, limited seasons, permitted hunts, or hunting closures (see Section 3.14.3.2.2). Competition with nonlocal hunters is already viewed as a major issue for subsistence users in many rural regions of Alaska. For example, GMU 23 in the Kobuk-Seward Peninsula planning area is an increasingly popular destination for nonlocal hunters who pay hunting guides to fly them to remote areas. Local Iñupiat believe that the increased plane traffic and human activity associated with hunting guides, in addition to increased harvests of resources that often go to waste as sport hunters often target antlers, have contributed to declining harvest success for local residents (Steinacher 2006).

For some herds, hunting closures apply to rural and non-rural residents alike. In these areas, hunting closures for one species (e.g., caribou) could result in increased pressure on other resources (e.g., moose or bear) in that GMU, and loss of Federal subsistence priority on lands in that GMU could compound the impacts on rural subsistence users. Currently, there are full hunting closures on the Nelchina (GMUs 11, 12, and 13) and Mulchatna (GMUs 9, 17, 18, and 19) herds. GMU 13 may be particularly vulnerable to impacts from a loss of Federal subsistence priority, given the recent substantial decline of the Nelchina Caribou herd, the high number of lands that could lose Federal subsistence priority in the GMU, and the high levels of competition within GMU 13 due to its road connectedness. As discussed in Section 3.14.1.2.3, Alternative B, the Glennallen Field Office, located in GMU 13 in the East Alaska planning area, issues approximately 65 percent of all Federal subsistence permits in Alaska. In 2023, the Federal Subsistence Board approved Temporary Wildlife Special Action WSA23-04 to close Federal lands to caribou hunting by all users in GMUs 11, 12, and 13 for the 2023–2024 season, with exceptions for traditional religious ceremonies and cultural or educational programs. The ADFG also closed the Nelchina caribou hunt for the 2023–2024 state hunting seasons. The reduced opportunity for caribou hunting may increase pressure on moose within GMU 13, thus reducing their abundance, and a loss of Federal subsistence priority would compound these changes by reducing local residents' hunting opportunities in those areas. In addition to declining caribou populations and subsequent hunting closures shifting hunting pressure on moose within GMU 13, a decline in caribou could result in changes in predator-prey dynamics. This could result in higher predation on moose in the short-term as wolves and bears shift to moose, but could also result in a decline in predator populations as described in final EIS Section 3.15.2.1, Terrestrial Mammals, Affected Environment, which could benefit caribou.

As discussed above in Section 3.14.1.2.2, it is assumed that a loss of Federal subsistence priority as a result of a Secretarial decision to revoke 17(d)(1) withdrawals would be permanent on State Priority 1 and 2 top filings and temporary on State Priority 3 and 4 top filings. Though effective selections would not be impacted by such a Secretarial decision, State-selected Priority 3 and 4 lands currently do not have Federal subsistence priority, and the analysis assumes they would also eventually gain Federal subsistence priority once the low-priority selections are relinquished by the State or rejected by the BLM (see Section 3.14.1.2.7, Cumulative Impacts).

Increase in Lands Open to Development

Under the action alternatives, revocation of 17(d)(1) withdrawals would result in State top filings on acres that are not otherwise encumbered immediately becoming effective selections. The analysis assumes that Priority 1 and 2 lands would be conveyed to the State and thus would change from Federal to State management and be available for development. In addition, once revocations of the 17(d)(1) withdrawals open land currently closed to mineral activity or allow State conveyances to occur, more lands would be available for development activities and infrastructure. Development on lands where withdrawals have been revoked could have impacts on the abundance of subsistence resources. As discussed in Section 3.15, Terrestrial Mammals; Section 3.7, Fish and Aquatic Species; and Section 3.2, Birds and Special Status Bird Species, mineral and other development where withdrawals have been revoked under Alternative B could affect habitat and potentially cause population-level effects for caribou, moose, fish, and birds. Impacts on resource abundance to resources such as marine mammals and marine invertebrates are unlikely because all 17(d)(1) withdrawals in the decision area are on land, and therefore impacts to marine mammals are not addressed in this EIS. As discussed in Section 3.14.1.2.2, Increase in Lands Open to Development, nonrural residents who hunt and fish on 17(d)(1) withdrawals would also experience similar resource abundance impacts resulting from development. However, the magnitude of such impacts would likely be less due to the lower rates of harvests and participation in these communities (Fall and Kostick 2018).

Development or infrastructure (e.g., mines, drill sites, roads, ROWs, pipelines, and buildings) activities would result in the removal, disturbance, or degradation of habitat for resources such as terrestrial mammals (caribou, moose), waterfowl, and fish, in addition to causing direct mortality. Construction activities that could affect resource abundance through removal or disturbance of habitat include blasting/mining, operation of construction equipment, excavation, placement of gravel, construction noise, human presence, water withdrawal, installation of bridges and culverts, and air and ground traffic. Operation activities that could affect resource abundance would include transport of materials, accidental release of contaminants, vehicle and aircraft collisions with wildlife, and ongoing loss of habitat due to the presence of infrastructure and human activity.

Habitat loss and disturbance can reduce calving rates and survival for terrestrial mammals, thus reducing their overall abundance. Caribou can be particularly sensitive to disturbances to calving grounds. ANCSA 17(d)(1) withdrawals overlap the range of 13 of 31 caribou herds that occur in Alaska, the largest of which are the Western Arctic herd (Kobuk-Seward Peninsula, Bering Sea-Western Interior), Mulchatna herd (Bay), and Nelchina herd (East Alaska). In recent years, several herds within the five planning areas have experienced dramatic declines in herd size; these include the Western Arctic herd, Mulchatna herd, and Nelchina herd (see Section 3.15, Terrestrial Mammals). The 17(d)(1) withdrawals south of Point Lay are within the calving, post-calving, and wintering range of the Western Arctic herd, and parcels in the eastern range of the Mulchatna herd have been used for calving and are frequently used in summer (see the caribou discussion in Section 3.15.1, Caribou).

Decrease in forage could affect caribou herd survival rates, particularly during winter when access to foraging grounds is more difficult. Dall sheep would also be vulnerable to habitat loss and fragmentation as they have already experienced habitat fragmentation and impacts from climate change and in some regions have experienced dramatic declines in population (see Section 3.15.4, Other Terrestrial Mammals). As discussed in Section 3.15.1.1, Terrestrial Mammals, Affected Environment, although caribou herd populations are cyclical, there are concerns that recent declines are the result of climate change and development. Moose are relatively widespread across the planning areas.

Mining could result in accidental discharges of chemicals and heavy metals, as well as dust deposition, which could affect terrestrial mammal (e.g., caribou, moose) health (and the health of humans who consume these resources) and displace these animals from foraging habitat (Section 3.15, Terrestrial Mammals). A reduction in foraging grounds resulting from infrastructure is more likely to affect resource availability (see below, Section 3.14.3). Increased exposure to aircraft disturbance may affect body condition through increased energy expenditures (e.g., more time fleeing versus feeding or resting) (Sullender 2017). Furthermore, increased energy expenditures may result in reduced foraging rates and, ultimately, decreased mating success/pregnancy rates.

Certain activities such as pile driving, construction sedimentation, and stream diversions may alter or degrade fish habitat, thereby reducing egg survival downstream. The presence of roads and ROWs in addition to buildings, culverts, bridges, and gravel infrastructure could increase erosion and sedimentation, and alter and degrade fish habitat both upstream and downstream from development projects, which could affect fish abundance for subsistence users in certain waterways. The introduction of invasive species and changes in aquatic biodiversity may also affect the adaptability of fish populations to environmental changes. Mining may result in the removal of aquatic habitat due to the placement of fill for tailings, and contamination and degradation resulting from accidental discharges of chemicals and heavy metals, increased sedimentation from soil disturbances, and fugitive dust. Placer mining in particular can have significant and long-term impacts to aquatic habitat.

Waterfowl nesting and feeding near development infrastructure or mine and gravel sites may also experience direct habitat loss or may ingest chemicals associated with construction activities and dust deposition.

In addition to impacts associated with habitat disturbance, fragmentation, and degradation, development projects may also result in direct mortality to individual animals. Terrestrial mammals such as caribou and moose may experience direct mortality through vehicle strikes, particularly if they use roadways or ROWs as movement corridors or for insect relief (see Section 3.15.2.2.2, Terrestrial Mammals, Impacts Common to All Action Alternatives). Individual animals may become ill through ingestion of chemicals used during development construction or operation. Clearing and grading along roads and ROWs could cause an increase in wildlife mortality (e.g., destruction of dens, clearing of habitat), particularly for resources such as small land mammals. If development activities occur within key habitat areas, such as calving grounds, then they would be more likely to affect herd survival (see Section 3.15, Terrestrial Mammals).

Fish could experience direct mortality through construction activities (e.g., driving of bridge pile), water withdrawals (e.g., for use as water source), or accidental release of contaminants (e.g., oil spills). Water withdrawals may kill individual fish but would likely not have population-level effects. Mining could result in degradation of water quality through release of chemicals, heavy metals, and fugitive dust; increased sedimentation and changes in water quality could affect fish spawning grounds and egg survival (see Section 3.7, Fish and Aquatic Species). Impacts from large-scale developments would likely affect fish abundance beyond the revoked withdrawals. Waterfowl could experience direct mortality through aircraft collisions or collisions with buildings. Accidental discharges of chemicals and heavy metals, in addition to fugitive dust, could result in habitat loss and degradation for waterfowl (see Section 3.2, Birds and Special Status Bird Species). 17(d)(1) withdrawals overlap with high-value bird habitat in all five planning areas, with the highest acreage occurring in the Bering Sea-Western Interior and Kobuk-Seward Peninsula planning areas. Although unlikely, large spills on land or in waterways could kill large numbers of waterfowl and fish. Finally, direct loss of vegetation resulting from gravel mining, gravel placement, infrastructure placement (e.g., roads, ice pads), accidental spills or discharges, and fugitive dust from roadways would cause decreased local abundance of vegetation (e.g., berries, wild greens) (see Section 3.16, Vegetation, Wetlands, and Special Status Plants), a key subsistence resource for many communities, in the vicinity of development projects.

Impacts to resource abundance would be more likely for already vulnerable resource populations. In the case of caribou, vulnerable populations include the Western Arctic herd, Nelchina herd, and Mulchatna herd. Western Alaska salmon stocks have also been on the decline in recent years, particularly in the Yukon and Kuskokwim rivers (see Section 3.7.2, Fish and Aquatic Invertebrate Populations). In public comments on the draft EIS, the Chilkat Indian Village (Klukwan) Tribal Council noted the importance of 17(d)(1) withdrawals in the Chilkat Valley for protecting subsistence, specifically citing concerns about impacts of potential development on salmon populations that rely on the Chilkat River watershed.

3.14.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Statehood Act selections and State of Alaska Priority 1 and 2 top filings on 17(d)(1) withdrawals would be revoked in parcels only where conflicts with natural, cultural, subsistence, recreational resources, or proposed or existing ACECs would be minimized. All other 17(d)(1) withdrawals would be retained.

As discussed above in Section 3.14.2.2.2, Impacts Common to All Action Alternatives, the primary impact on subsistence resource abundance resulting from revocation of withdrawals would be an increase in the potential for development. To a lesser extent, a loss of Federal subsistence priority could also affect

resource abundance; this would be more likely to affect user access (see Section 3.14.1) and resource availability (see Section 3.14.3). Community-specific data of the magnitude of impacts are shown in Tables 3.14-4 through 3.14-6 and discussed in Section 3.14.1.2.3. Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because under Alternative B, the 17(d)(1) withdrawals would be *partially* revoked only to allow State selection, and if those lands are selected by and conveyed to the State, they could be developed under State law. However, lands not conveyed to the State (i.e., lands remaining in Federal ownership) would remain closed to the Federal mining and mineral leasing laws, and no development under those laws could occur. Thus, the Subsistence sections of this EIS report the acres more likely to be developed for Alternative B only where those acres overlap with lands more likely to be conveyed.

Under Alternative B, revocation of 17(d)(1) withdrawals would immediately convert State top filings not otherwise encumbered to effective selections, which could then be conveyed to the State and be open to multiple uses, including mineral development. Development could affect resource abundance in a number of ways (see the Increase in Lands Open to Development section in Section 3.14.2.2.2). Although resource abundance impacts are most likely to occur for communities closest to parcels that would be opened to potential development (see Section 3.14.1.2.3), abundance impacts could extend outside the immediate area of development, especially impacts to key habitat (e.g., calving grounds, spawning grounds) or contamination of waterways, which could result in downstream effects. Alternative B revokes large areas that overlap the range of the Nelchina, Western Arctic, and Denali caribou herds, including the migratory and winter range of the Western Arctic herd. Alternative B would retain 17(d)(1) withdrawals in high-value watersheds for fisheries and water quality, thus reducing the likelihood of population-level impacts to fish. Specific impacts to resource abundance resulting from development are discussed under the Increase in Lands Open to Development section in Section 3.14.2.2.2.

As noted in Section 3.14.1.2.3, under Alternative B, a loss of Federal subsistence priority would occur on a smaller number of lands and affect a smaller number of communities than under the other action alternatives. Specific impacts to resource abundance resulting from a loss of Federal subsistence priority are discussed under the Loss of Federal Subsistence Priority section in Section 3.14.2.2.2.

3.14.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

As discussed under Alternative B, the primary impact on subsistence resource abundance resulting from revocation of withdrawals under Alternative C would be an increase in the potential for development. To a lesser extent, a change in subsistence management could also affect resource abundance; this would be more likely to affect user access (see Section 3.14.1) and resource availability (see Section 3.14.3). In addition, once revocations of the 17(d)(1) withdrawals open land currently closed to mineral activity or allow State conveyances to occur, more lands would be available for development activities and infrastructure. Because Alternative C may revoke withdrawals on State top filed lands that have been identified as having conflicts with natural, cultural, or subsistence resources, in addition to revoking withdrawals on additional lands with high mineral potential, this alternative would increase the potential for impacts to subsistence resource abundance. Community-specific data of the magnitude of impacts are shown in Tables 3.14-5, 3.14-6, and 3.14-8 and discussed in Section 3.14.1.2.4.

Although resource abundance impacts are most likely to occur for communities closest to parcels that would be opened to potential development (see Section 3.14.1.2.4), abundance impacts could extend outside the immediate area of development, especially impacts to key habitat (e.g., calving grounds, spawning grounds) or contamination of waterways, which could result in downstream effects. As discussed in Sections 3.16, 3.2, and 3.7, Alternative C would revoke withdrawals on a greater number of

lands, including key habitat areas for a number of terrestrial mammal (e.g., Western Arctic herd range), bird, and fish species. Impacts to the abundance of these resources would affect not just communities near the 17(d)(1) withdrawals but communities within the range of the affected species. Specific impacts to resource abundance resulting from development are discussed in the Increase in Lands Open to Development section in Section 3.14.2.2.2.

Impacts on resource abundance resulting from a permanent or temporary loss of Federal subsistence priority under Alternative C would be more likely than under Alternative B in the short term due to the greater number of top filed lands being revoked. Specific impacts to resource abundance resulting from a loss of Federal subsistence priority are discussed in the Loss of Federal Subsistence Priority section in Section 3.14.2.2.2.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to subsistence resource abundance. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.14.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

As with Alternatives B and C, the primary impacts on subsistence resource abundance under Alternative D would be an increase in the potential for development and a change in subsistence management that results in a loss of Federal subsistence priority. A change in subsistence management is more likely to affect user access (see Section 3.14.1) and resource availability (see Section 3.14.3); however, in areas with vulnerable resource populations, resource abundance impacts could occur. Because Alternative D revokes withdrawals on the greatest number of lands, including lands that would be more likely to be developed, this alternative would likely have the greatest potential for impacts on subsistence resource abundance. Community-specific data of the magnitude of impacts are shown in Tables 3.14-5, 3.14-6, and 3.14-11 and discussed in Section 3.14.1.2.5.

As discussed in Section 3.2, Birds and Special Status Bird Species; Section 3.15, Terrestrial Mammals; and Section 3.16, Vegetation, Wetlands, and Special Status Plants, mineral and other development on revocations under Alternative D could affect habitat and potentially cause population-level effects for caribou, moose, fish, and birds. These are all resources of importance to analysis communities in the planning areas (see Section 3.14.2.1.1). Impacts on resource abundance to resources such as marine mammals and marine invertebrates are unlikely because 17(d)(1) withdrawals evaluated in the EIS are on land, and therefore impacts to marine mammals are not addressed in this EIS.

Although resource abundance impacts are most likely to occur for communities closest to parcels that would be opened to potential development (see Section 3.14.1.2.4), abundance impacts could extend outside the immediate area of development, especially impacts to key habitat (e.g., calving grounds, spawning grounds) or contamination of waterways, which could result in downstream effects. As discussed in Sections 3.16, 3.2, and 3.7, Alternative D would revoke withdrawals on a greater number of lands, including key habitat areas for a number of terrestrial mammal (e.g., Western Arctic herd range), bird, and fish species. The revocation of 17(d)(1) withdrawals across a greater acreage under Alternative D could increase the overall likelihood and amount of development occurring in the State, which would increase the likelihood for individual community impacts as well as broader indirect impacts to users of affected resource populations. Population-level impacts would affect not just communities near the 17(d)(1) withdrawals but communities within the range of the affected species, such as users of the

Western Arctic herd and Nelchina herd, and salmon harvesters on the Yukon and Kuskokwim rivers. Specific impacts to resource abundance resulting from development are discussed the Increase in Lands Open to Development section in Section 3.14.2.2.2.

Impacts on resource abundance resulting from a permanent or temporary loss of Federal subsistence priority under Alternative D would be most likely in the short term due to the greater number of top filed lands being revoked. Specific impacts to resource abundance resulting from a loss of Federal subsistence priority are discussed in the Loss of Federal Subsistence Priority section in Section 3.14.2.2.2.

3.14.2.2.6 COMPARISON OF ALTERNATIVES

The differences among the alternatives are similar to those discussed in Section 3.14.1.2.6 and in Table 3.14-1. Impacts to resource abundance would be greatest under alternatives where the 17(d)(1) withdrawals are revoked across more acres because these alternatives would be most likely to result in landownership changes as well as open the most area to mineral entry in areas that were previously closed to mineral entry (see Tables 1.2-1, 3.8-5, 3.8-10, and 3.8-15). Therefore, Alternative D would have the greatest potential impacts to resource abundance followed by Alternative C. Alternative B would revoke the fewest acres of 17(d)(1) withdrawals and would therefore be the least likely to affect subsistence resource abundance.

As shown in Table 3.14-1, under Alternative D, 117 communities have subsistence use areas overlapping 17(d)(1) withdrawals that, if revoked, would lose Federal subsistence priority, compared to 100 communities under Alternative C and 44 communities under Alternative B. Under Alternatives C and D, the greatest loss of Federal subsistence priority for an individual community would be 139,159 acres (Healy) compared to 2,962 acres (Ferry) under Alternative B. Under Alternative D, 10 communities would lose Federal subsistence priority in some lands adjacent to their community compared to eight communities under Alternative C and three communities under Alternative B. Overall, the East Alaska planning area would see the greatest number of communities and the greatest amount of land impacted, and the greatest loss (in terms of percentage) of current lands with Federal subsistence priority. However, the Bering Sea-Western Interior planning area would also see a large number of lands losing Federal subsistence priority within 50 miles of individual analysis communities (this planning area has a large number of communities with no subsistence use area data available) (see Table 3.14-6).

GMU 13 in the East Alaska planning area would see the greatest percentage loss of Federal subsistence priority under Alternatives C and D, which could particularly affect resource abundance for communities that have a high reliance on GMU 13 for harvests of caribou and moose (e.g., Delta Junction, Copper Center, Glennallen, Kenny Lake, and Gakona). Under Alternatives C and D, the loss of Federal subsistence priority on State Priority 3 and 4 top filings would be temporary because the analysis assumes that the State would eventually relinquish or that the BLM would reject Priority 3 and 4 lands and they would return to Federal management. Even a temporary loss of Federal subsistence priority could have longer term effects on resource abundance if hunting pressure increases for vulnerable populations.

In terms of mineral development, 104 communities have subsistence use areas that overlap with 17(d)(1) withdrawals more likely to be developed if revoked under Alternative D compared to 100 communities under Alternative C and 27 communities under Alternative B. Under Alternative D, some lands where the 17(d)(1) withdrawals are revoked and are more likely to be developed are adjacent to (i.e., within 5 miles of) 15 communities compared to 13 under Alternative C and 1 under Alternative B. Alternative D would likely result in a greater amount of development, thus increasing the likelihood of resource abundance impacts related to development due to the larger potential geographic scale across which development projects could occur. Overall, the East Alaska planning area would see the greatest number of

communities and the greatest number of lands impacted due to an increase in lands open to development, followed by the Ring of Fire and Bay planning areas.

3.14.2.2.7 CUMULATIVE IMPACTS

The cumulative impacts for resource abundance are discussed in Section 3.14.1.2.7, Cumulative Impacts.

3.14.3 How would revocation of 17(d)(1) withdrawals affect resource availability?

Impacts to resource availability may occur under the action alternatives and are analyzed in detail below. The analysis area for resource availability comprises the analysis communities in Table 3.14-2. Impacts to resource availability may occur for any community near parcels where revocation of withdrawals either results in a change in subsistence management or in development activities previously not permitted.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

Quantitative indicators that provide information relevant to resource availability are the same as for resource abundance (see Section 3.14.2) as follows:

- Harvest data
 - Resource contribution toward total harvest
 - Top species harvested
 - Percentage of households attempting to harvest subsistence resources
 - Percentage of households receiving subsistence resources

Additional qualitative indicators include a qualitative discussion of impacts to resource availability based on results and conclusions of the biological resources sections, as well as Indigenous Knowledge regarding sources of impacts to resource distribution/migration and health.

3.14.3.1 Affected Environment

The affected environment for impacts to resource availability to rural subsistence users is the same as that described in Section 3.14.2.1, Affected Environment.

3.14.3.1.1 EXISTING CONDITIONS

Subsistence users throughout the five planning areas experience impacts to resource availability through a number of sources, including subsistence management, development infrastructure and activities, and climate change. Subsistence management in Alaska affects resource availability by determining who can hunt for subsistence resources and how many animals they can take. In areas closer to larger population centers and without Federal subsistence priority, subsistence users experience greater impacts to resource availability through competition with non-rural users. On lands with Federal subsistence priority, regulations sometimes respond to declines in resource abundance by limiting hunting by non-rural residents to ensure the resource remains available to rural subsistence users. Some communities may have more access to lands subject to Federal subsistence priority, while others may have limited access to these lands. Prior conveyances have also led to some communities losing Federal subsistence priority on lands used for subsistence harvesting.

Resource availability impacts related to development occur throughout the five planning areas and may include mining activities (e.g., Kobuk-Seward Peninsula planning area, Red Dog Mine), oil and gas exploration (e.g., Ring of Fire planning area, Cook Inlet oil and gas program), infrastructure projects (e.g., roads, telecommunications projects), and timber production (e.g., Ring of Fire planning area, Southeast subregion). Existing impacts to resource availability result from development-related noise and air, vessel, and ground traffic; changes in resource distribution resulting from development infrastructure; and real and perceived contamination of subsistence foods resulting from spills and emissions.

Climate change has affected subsistence resource availability through changes in the timing of and location of resource migrations, and changes in travel conditions which affect residents' ability to access resources when they are available in traditional areas.

3.14.3.2 Environmental Consequences

3.14.3.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would be retained, and there would be no change from baseline conditions. Under Alternative A, there would be a continuation of existing conditions, including ongoing impacts to resource availability through subsistence management, development infrastructure and activities, and climate change.

3.14.3.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Revocation of 17(d)(1) withdrawals could affect resource availability to rural subsistence users in two primary ways. First, on lands that lose Federal subsistence priority, hunting competition in certain areas may increase, thus reducing the availability of those resources to local subsistence users. Second, once revocations of 17(d)(1) withdrawals open land currently closed to mineral activity or allow State conveyances to occur, more lands would be available for development activities and infrastructure. The general impacts that may occur in these scenarios are discussed below.

Loss of Federal Subsistence Priority

Similar to the impacts discussed above under the resource abundance issues statement (see Section 3.14.2), on certain lands, a loss of Federal subsistence priority could result in an increase in the number of hunters taking resources and an increase in subsistence user competition, thus reducing the availability of these resources to local subsistence users. This would occur primarily in areas where resource populations are vulnerable and where Federal regulations prohibit hunting of certain resources by non-rural residents, such as in GMUs 9, 13, 17, 18, 19, 23, and 26A. If these lands change from Federal to State management, priority for rural residents would no longer exist, and local residents would likely see an increase in outside hunters and competition on these lands and a resulting decrease in availability for rural subsistence users. These impacts would be greater in areas where competition for resources is already high, such as in GMU 13, which is road-connected, and where the Federal government requires and issues a majority of Federal subsistence permits in the state, and has recently closed hunting of the Nelchina herd due to population declines (see Section 3.14.2.2.2, Loss of Federal Subsistence Priority). As discussed in Section 3.14.1.2.2, it is assumed that loss of Federal subsistence priority would be permanent on State Priority 1 and 2 lands and temporary on State Priority 3 and 4 lands.

Increase in Lands Open to Development

Potential impacts on resource availability resulting from development include the displacement of resources from areas of development activity, diversion of resources from their usual migratory routes

(e.g., caribou), contamination, and skittish behavior, all of which result in reduced harvest opportunities (SRB&A 2018). This general disturbance of wildlife could result in subsistence resources being unavailable at the times and places that subsistence users are accustomed to finding them. As discussed in the Increase in Lands Open to Development section in Section 3.14.1.2.2, nonrural residents (e.g., from Valdez, Homer, Anchorage, Ketchikan, Palmer, and Fairbanks) who hunt and fish on 17(d)(1) withdrawals would also experience similar resource availability impacts resulting from development. However, the magnitude of such impacts would likely be less due to the lower rates of harvests and participation in these communities (Fall and Kostick 2018).

Activities associated with development that may affect resource availability for subsistence users include excavation, blasting, mining, ROW clearing, gravel placement, bridge pile driving, operation of construction equipment, general construction noise, human activity, vehicle and air traffic, sedimentation from construction activity, and fuel or other contaminant spills. Noise and human activity can displace or disturb subsistence resources, causing them to temporarily divert around the source of the disturbance or to act skittish. Changes in resource distribution and behavior affect subsistence user success.

Infrastructure such as roads, pipelines, buildings, material sites, culverts, and bridges may also pose physical obstructions for wildlife. Habitat alteration can affect resource distribution, thereby reducing the availability of those resources to subsistence users in traditional hunting or harvesting areas. Infrastructure could also affect the availability of certain resources through changes in resource abundance, migration/distribution, and behavior. Infrastructure would be most likely to affect migratory terrestrial resources, such as caribou, but could also affect other resources such as moose, furbearers, waterfowl, and fish.

Potential effects of development activities on resource availability also include contamination resulting from fuel and other chemical spills, dust deposition, sedimentation due to erosion along river and stream banks, and increased emissions. Development activity may lead to concerns by local residents about contamination of subsistence resources, particularly fish, which may be harvested in waters perceived to be contaminated), and plants and berries, which could be affected by fugitive dust along road corridors. Fuel spills and erosion may result in contamination of waterways, affecting fish and other animals who ingest contaminated water. Contamination or perceived contamination can have indirect effects on subsistence, as subsistence users may reduce their consumption of a resource if there is a fear of contamination; thus, resources perceived as unhealthy or contaminated are considered unavailable to local residents.

Below are resource-specific discussions of potential development-related impacts to resource availability.

Terrestrial Mammals

Across all five planning areas, terrestrial mammals are among the top harvested species (see Section 3.14.2.1.1) by community. Terrestrial mammal species targeted may vary by community and region. Moose is among the top species harvested in all planning areas. Caribou is among the top species harvested in all regions except the Bering Sea-Western Interior planning area. Deer is targeted more in the Ring of Fire and East Alaska (Prince William Sound subregion) planning areas.

Impacts of development differ by species. Because of their migratory nature, caribou-related impacts have a greater potential to extend outside the immediate area of a development project. ANCSA 17(d)(1) withdrawals overlap the range of 13 of 31 caribou herds that occur in Alaska, the largest of which are the Western Arctic herd (Kobuk-Seward Peninsula, Bering Sea-Western Interior), Mulchatna herd (Bay), and Nelchina herd (East Alaska). These 13 herds' ranges are in areas of relatively low development, although the Nelchina and Mentasta herds have multiple roads within their range. The Red Dog Mine in the

Kobuk-Seward Peninsula planning area overlaps with the range of the Western Arctic herd (see Section 3.15, Terrestrial Mammals).

Impacts on the resource availability of caribou may result from changes in caribou migration, distribution, behavior, and health. Air traffic has been a commonly reported and observed impact on caribou on the North Slope and in Northwest Alaska (Georgette and Loon 1988; SRB&A 2009, 2023; Sullender 2017). Air traffic is observed to cause behavioral changes, skittish behavior, and delayed or diverted crossing behavior, which in turn have impacts on caribou hunting success for local hunters. These types of behaviors are most commonly observed in response to helicopter traffic, although fixed-wing aircraft has also been observed to elicit similar responses. Subsistence users report that air traffic can cause skittish behavior in caribou in addition to moose, causing them to stay inland from riversides or diverting them from crossing routes. Mountain goat and Dall sheep are also likely to exhibit displacement from development infrastructure and activities (see Section 3.15, Terrestrial Mammals).

Linear features such as roads and pipelines can alter caribou movement (see Section 3.15, Terrestrial Mammals). Roads and associated road traffic are believed to cause behavioral and migratory changes in caribou, which can affect local availability of this crucial subsistence resource. Deflections or delays of caribou movement from roads and associated ground traffic and human activity have been documented in the Indigenous Knowledge of subsistence users (SRB&A 2009, 2014, 2023) and during behavioral studies on caribou, particularly for maternal caribou (ABR and SRB&A 2014; see Section 3.15, Terrestrial Mammals). Impacts from roads are particularly high during times of high ground traffic. In recent years, reports of ground traffic-related impacts on the North Slope caribou hunting, particularly in the vicinity of Nuiqsut, have increased with the construction of gravel roads in the area (SRB&A 2023). Impacts of roads have also been observed by Noatak and Kivalina caribou hunters in regard to the Red Dog Delong Mountain Transportation System (DTMS) (SRB&A 2014), located in the Kobuk-Seward Peninsula planning area and within the range of the Western Arctic herd. Residents have observed that some caribou will stop once they reach the DMTS, sometimes traveling alongside the road before crossing, and other times bypassing the road altogether. Such behavior has also been documented through radio collar observation. A study conducted by Wilson et al. (2016) found that the DMTS influenced the movements of approximately 30 percent of radio-collared Western Arctic caribou herd, and of those individuals, the average delay in crossing was 33 days. Caribou from the Teshekpuk herd were not similarly affected, which could be due to greater exposure of the Teshekpuk herd to industrial development in the eastern portion of its range. In general, observed caribou behavior in response to the DMTS is variable: in some cases, caribou cross seemingly without delay, whereas in other cases, herds scatter and migration is delayed for multiple days (ABR and SRB&A 2014; Wilson et al. 2016). Responses to roads also seem to vary from year to year based on the context in which roads are encountered. Over time, local caribou distribution may be altered to the extent that residents no longer find caribou within their usual hunting areas or experience reduced hunting success in those areas.

Impacts to moose and deer availability would generally be on a smaller geographic scale than for caribou because these resources have smaller ranges and residents do not rely on seasonal migratory movements when hunting them. Therefore, impacts to hunting would occur primarily in the vicinity of roads and other development areas where these resources could exhibit avoidance, skittishness, or other behavioral changes. Although moose may initially exhibit avoidance of road corridors and development areas, they also tend to habituate relatively quickly to human activity (see Section 3.15, Terrestrial Mammals). Moose and deer may also be attracted to ROWs as movement corridors or because of the availability of new vegetation in maintained areas, which could lead to a two-fold effect on resource availability. First, if the cleared area draws large land mammals to the corridor, there could be a corresponding decline in large land mammals in areas they were previously found. Moose are often attracted to ROWs due to the availability of vegetation for foraging (see Section 3.15, Terrestrial Mammals). Second, a cleared area within ROWs with a high concentration of large land mammals could be a draw for local hunters and

outside hunters traveling overland in the winter by snowmachine or by off-road vehicle during other times of the year.

Although not a top harvested resource in terms of pounds edible food, furbearer trapping and hunting are important subsistence activities in many communities across the planning areas. Residents in development areas have reported that furbearers such as wolves and wolverine can be particularly sensitive to noise and human activity and tend to avoid developed areas (SRB&A 2009). This could affect availability of these resources to furbearer subsistence users, particularly if development occurs near existing traplines.

Overall, ROWs would have the largest impacts to terrestrial mammal availability because they extend across large areas and can result in changes to resource migrations and availability (see Section 3.15, Terrestrial Mammals).

Waterfowl

Communities in all planning areas hunt waterfowl. Although waterfowl harvests typically do not contribute more than 1 or 2 percent of the total subsistence harvest, waterfowl hunting is an important activity that often signals the arrival of spring. Impacts to resource availability of waterfowl may include changes in distribution due to removal of habitat and disturbance from development-related noise, traffic, and human activity (see Section 3.2, Birds and Special Status Bird Species). Placement of gravel for roads and other infrastructure would remove waterfowl habitat, and dust deposition from gravel roads could alter or reduce the quality of bird habitat. Waterfowl hunters often hunt in small, specific locations and at hunting camps. Therefore, although overall disturbance of waterfowl habitat may be low, in certain areas there may be larger impacts to waterfowl hunters if displacement from traditional hunting areas occurs. Noise; human presence; and ground, vessel, and air traffic during construction and operations of development projects may also cause temporary disturbances to or displacement of waterfowl, causing temporary changes to subsistence user success, particularly if these activities occur during the spring or fall waterfowl hunting season.

Fish

Fish species are among the top species harvested in all five planning areas, with both salmon and non-salmon fish typically making up a substantial portion of communities' annual harvest. Fish are harvested in marine waters, along rivers, and in lakes. Commonly harvested anadromous fish species in the planning areas include salmon, whitefish, smelt, and Dolly Varden. Common marine fish species include halibut, herring, cod, and rockfish. Lake and riverine species include northern pike, grayling, and lake trout.

Construction activities that may affect fish availability to subsistence communities include installation of bridges and culverts, related pile installation, stream diversions, stream excavation, water withdrawal, blasting at material sites, and contamination. Although impacts to fish resulting from construction activities are expected to be localized, subsistence users often harvest fish in specific locations along rivers; therefore, localized changes in fish distribution could have impacts on resource availability for individual subsistence users. Construction activities in waterways could also increase stream turbidity that could affect downstream harvesting areas or make these areas less desirable for fishing in the short term. Changes in the availability of fish species could affect subsistence users throughout the analysis area and downstream, particularly if projects result in changes in fish distribution or the timing of fish migrations. Subsistence users often harvest different fish species at specific times and places, and if these patterns are disrupted, they may experience declines in harvest success or have difficulty accessing traditional use areas when resources become available in those areas (e.g., if the fish arrive late and subsistence users cannot use boats to access them).

Streambeds and riverbeds may experience increased sedimentation or alteration over time due to the presence of culverts and bridge piers. If culverts and bridges are not properly maintained or if erosion control measures are not taken, fish migrations could be temporarily disrupted or blocked, which could reduce fish availability for subsistence users (Section 3.7, Fish and Aquatic Species). The risk of contamination from dust deposition, discharge of chemicals or heavy metals, and fuel or contaminant spills would continue through the life of any project; depending on the magnitude, spills could have far-reaching impacts on upstream and downstream subsistence users. Avoidance of fish and contamination concerns may be particularly likely for subsistence users in drainages that are downstream from mining activities.

The introduction of invasive species (both fish and/or aquatic plants) could also impact fish habitat and/or productivity and impact fish availability to subsistence users. The introduction of invasive species could become a long-term impact if their spread is uncontrolled, reducing fish availability for subsistence users in the planning areas. If fuel or other contaminant spills occur near fish bearing streams, subsistence users may avoid harvesting fish if they are perceived (or confirmed) to be contaminated or unhealthy. In the case of larger spills, contamination concerns and avoidance may extend to communities located downstream from project footprints.

Vegetation

Harvesting of vegetation is a key subsistence activity across all planning areas, particularly in terms of community participation. Although harvest of berries and other wild plants may not account for a large portion of the annual subsistence harvest, berry and plant harvesting is an activity that residents of all ages and abilities can participate in. Across the five planning areas, an average of between 63 and 90 percent of households participate in vegetation harvesting annually.

Development activities that may affect the availability of vegetation may include clearing of ROWs and other lands for infrastructure, fugitive dust from roadways, and contamination from fuel spills. Infrastructure development would result in the removal of vegetation and could directly affect berry and plant harvesting areas for local communities. Residents often pick berries in small, discrete areas, sometimes with only one harvesting spot for a less commonly found species. Therefore, removal of those areas could have impacts individual subsistence users or, in the case of community-wide berry patches, could extend to a community-wide impact. Loss of vegetation harvesting areas may be larger than the footprint of development, particularly along roads due to dust deposition and subsistence user avoidance. Residents would likely avoid harvesting berries that are perceived to be contaminated or if they are too close to dusty areas, or areas where spills have occurred. Introduction of invasive plants along roadways could also affect native plant and berry species.

3.14.3.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. All other 17(d)(1) withdrawals would be retained.

As discussed above (Section 3.14.3.2.2, Impacts Common to All Action Alternatives), primary impacts on subsistence resource availability resulting from revocation of withdrawals would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development. Development activities are more likely to directly affect subsistence resource availability. Community-specific data on the magnitude of impacts are shown in Tables 3.14-4 through 3.14-6 and discussed in Section 3.14.1.2.3.

Under Alternative B, revocation of the 17(d)(1) withdrawals on top filed lands not otherwise encumbered would result in those lands immediately becoming effective State selections. This would in turn result in the loss of Federal subsistence priority, and the opening of the land to multiple uses, including mineral development, under State law. Development activities could affect resource availability by causing deflection, displacement, and changes in resource behavior (including migratory behavior), and through the accidental introduction of contaminants that could cause subsistence user avoidance of certain resources (see Increase in Lands Open to Development section in Section 3.14.3.2.2).

As discussed in Section 3.2, Birds and Special Status Bird Species; Section 3.7, Fish and Aquatic Species; and Section 3.15, Terrestrial Mammals, Alternative B could affect resource availability for caribou, moose, birds, and fish. These are all resources of importance to communities in the planning areas (see Section 3.14.2.1.1). Impacts on availability of resources such as marine mammals and marine invertebrates are unlikely because 17(d)(1) withdrawals considered in this EIS are all on land.

Impacts to resource availability under Alternative B would be most likely to occur for communities near to or with use areas overlapping the areas with more potential for development. However, if development results in large-scale deflection of resources or changes in migration, then additional communities could be affected. For example, development within the range of the Western Arctic herd could affect the migration and distribution of that herd. Depending on the extent and magnitude of those changes, any community that uses the Western Arctic herd (e.g., the more than 40 communities that are members of the Western Arctic Caribou Herd Working Group) could experience effects on subsistence harvests of caribou. Furthermore, contamination of waterways resulting from development such as mining could affect additional communities downstream from the 17(d)(1) withdrawals. Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because under Alternative B, the 17(d)(1) withdrawals would be *partially* revoked only to allow State selection, and if those lands are selected by and conveyed to the State, they could be developed under State law. However, lands not conveyed to the State (i.e., lands remaining in Federal ownership) would remain closed to the Federal mining and mineral leasing laws, and no development under those laws could occur. Thus, the Subsistence sections of this EIS report the acres more likely to be developed for Alternative B only where those acres overlap with lands more likely to be conveyed.

As discussed in Section 3.14.1.2.3, under Alternative B, communities with the highest percentage of acres overlapping 17(d)(1) withdrawals that might be revoked and more likely to be developed are Copper Center and Glennallen (see Table 3.14-5). In all cases, the percentage of overlap is less than 0.1 percent of total use areas. In total, two communities in the East Alaska planning area have over 100 acres of subsistence use areas overlapping 17(d)(1) withdrawals that might be revoked and more likely to be developed. One community would be adjacent to some 17(d)(1) withdrawals that might be revoked and more likely to be developed (see Section 3.14.1 and Table 3.14-8). Impacts to resource availability could occur in these planning areas but would depend on the types and magnitude of development that may occur in those areas.

Although resource availability impacts are most likely to occur for these communities closest to parcels that would be opened to potential development (see Section 3.14.1.2.3), impacts could extend outside the immediate area of development. This would be particularly likely in cases where development involves infrastructure (roads, pipelines, bridges/culverts) and activities (air and ground traffic, construction and human activity) that could affect resource movement. Specific impacts to resource availability resulting from development are discussed in the Increase in Lands Open to Development section in Section 3.14.3.2.2.

As noted in Section 3.14.1.2.3, under Alternative B, a loss of Federal subsistence priority would occur on a smaller number of lands. Specific impacts to resource availability resulting from development are discussed in the Loss of Federal Subsistence Priority section in Section 3.14.2.2.2.

3.14.3.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

As discussed under Alternative B, primary impacts on subsistence resource availability resulting from revocation of withdrawals would be a change in subsistence management that results in a loss of Federal subsistence priority or an increase in the potential for development. Because Alternative C may revoke withdrawals on State top filed lands that have been identified as having conflicts with natural, cultural, or subsistence resources, in addition to revoking withdrawals on additional lands with high mineral potential, this alternative would increase the potential for impacts to subsistence resource availability.

Impacts to resource availability under Alternative C would be most likely to occur for communities near to or with use areas overlapping areas with the most potential for development or areas where there would be a loss of Federal subsistence priority. Development activities are more likely to directly affect subsistence resource availability. Community-specific data of the magnitude of impacts are shown in Tables 3.14-5, 3.14-6, and 3.14-8 and discussed in Section 3.14.1.2.4. As discussed in Section 3.14.3.2.3, additional communities could be affected if development results in larger-scale changes in distribution and migration. Although resource availability impacts are most likely to occur for communities closest to parcels that would be opened to potential development (see Section 3.14.1.2.3), impacts could extend outside the immediate area of development. This would be particularly likely in cases where development involves infrastructure (roads, pipelines, bridges/culverts) and activities (air and ground traffic, construction and human activity) that could affect resource movement. As discussed in Sections 3.16, 3.2, and 3.7, Alternative C would have more acres where the 17(d)(1) withdrawals would be revoked, including key habitat areas for a number of terrestrial mammal (e.g., Western Arctic herd range), bird, and fish species. Specific impacts to resource availability resulting from development are discussed in the Increase in Lands Open to Development section in Section 3.14.3.2.2.

Specific impacts to resource availability resulting from a loss of Federal subsistence priority are discussed in the Loss of Federal Subsistence Priority section in Section 3.14.2.2.2.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to subsistence resource availability. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.14.3.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

As with Alternatives B and C, the primary impacts on subsistence resource abundance under Alternative D would be an increase in the potential for development and a change in subsistence management that results in a loss of Federal subsistence priority. Alternative D has the greatest potential to impact resource availability due to the high number of acres that could experience changes in subsistence management and development, and the larger number of potentially affected communities. Development activities are the more likely to directly affect subsistence resource availability. Community-specific data of the magnitude of impacts are shown in Tables 3.14-5, 3.14-6, and 3.14-11 and discussed in Section 3.14.1.2.5.

Although resource availability impacts are most likely to occur for communities closest to parcels that would be opened to potential development following revocation of 17(d)(1) withdrawals (see Section 3.14.1.2.4), resource availability impacts could extend outside the immediate area of development. This would be particularly likely in cases where development involves infrastructure (roads, pipelines, bridges/culverts) and activities (air and ground traffic, construction and human activity) that could affect resource movement. Impacts to communities outside the vicinity of the 17(d)(1) withdrawals would be most likely for migratory resources such as caribou (e.g., users of the Nelchina, Mulchatna, and Western Arctic Herd) and fish (e.g., users downstream from development on the Ambler or Kuskokwim rivers). As discussed in Sections 3.16, 3.2, and 3.7, Alternative D would revoke the most acres of withdrawals, including key habitat areas for a number of terrestrial mammal (e.g., Western Arctic herd range), bird, and fish species. Where the 17(d)(1) withdrawals are revoked across the most acres under Alternative D, the overall likelihood and amount of development occurring in the state would increase, increasing likelihood for individual community impacts. Specific impacts to resource availability resulting from development are discussed in Increase in Lands Open to Development section in Section 3.14.3.2.2.

3.14.3.2.6 COMPARISON OF ALTERNATIVES

The differences among the alternatives are similar to those discussed in Section 3.14.1.2.7 and in Table 3.14-1.

As shown in Table 3.14-1, under Alternatives C and D, 100 and 117 communities, respectively, have subsistence use areas overlapping lands where there would be a loss of subsistence priority following revocation of the 17(d)(1) withdrawals compared to 44 communities under Alternative B. Because the analysis comprises lands with both a permanent (Priority 1 and 2 top filed) and temporary (Priority 3 and 4 top filed) loss of priority, and all Priority 1 and 2 lands are revoked under Alternatives C and D, the additional 17 communities affected under Alternative D would experience a temporary loss of subsistence priority. Under Alternative D, 10 communities would lose Federal subsistence priority in some lands adjacent to their community compared to eight communities under Alternative C and three communities under Alternative B. Overall, the East Alaska planning area would see the greatest number of communities, the greatest number of acres impacted, and the greatest loss (in terms of percentage) of current lands with Federal subsistence priority. However, the Bering Sea-Western Interior planning area would also see a large number of lands losing Federal subsistence priority within 50 miles of individual analysis communities (this planning area has a large number of communities with no subsistence use area data available) (see Table 3.14-6).

GMU 13 in the East Alaska planning area would see the greatest percentage loss of Federal subsistence priority under Alternatives C and D, which could particularly affect resource availability for communities that have a high reliance on GMU 13 for harvests of caribou and moose (e.g., Delta Junction, Copper Center, Glennallen, Kenny Lake, and Gakona). Although Alternatives C and D may result in fewer lands having Federal subsistence priority in the short term, in the long run under all action alternatives, the Priority 3 and 4 top filings would be relinquished or rejected and therefore return to Federal subsistence priority management. In the long term, the conveyance of the top filings not otherwise encumbered would result in a change in location where Federal subsistence priority management applies, but not in an increase in acreage.

In terms of mineral development, 100 and 104 communities have subsistence use areas that overlap 17(d)(1) withdrawals that would be revoked and that are more likely to be developed and more likely to be conveyed under Alternative C and D, respectively, compared to 27 communities under Alternative B. Under Alternatives C and D, some acres under 17(d)(1) withdrawals that would be revoked and more likely to be developed are adjacent to (i.e., within 5 miles of) 15 and 13 communities, respectively, compared to one under Alternative B.

3.14.3.2.7 CUMULATIVE IMPACTS

The cumulative impacts for resource availability are discussed in Section 3.14.1.2.7, Cumulative Impacts.

3.14.4 Summary of Comparison of Alternatives

Table 3.14-1 provides a comparison of alternatives by the number of communities impacted for the three issues analyzed in this section. A comparison of the magnitude of effects for the communities affected is provided in Tables 3.14-5 and 3.14-6.

3.14.5 Supporting Tables

Table 3.14-2. ANCSA 17(d)(1) Withdrawals EIS Subsistence Analysis Communities by Planning Area and Subregion

Analysis Community	Planning Area	Subregion
Ambler	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Brevig Mission	Kobuk-Seward Peninsula	Seward Peninsula
Buckland	Kobuk-Seward Peninsula	Seward Peninsula
Deering	Kobuk-Seward Peninsula	Seward Peninsula
Diomedede	Kobuk-Seward Peninsula	Seward Peninsula
Elim	Kobuk-Seward Peninsula	Seward Peninsula
Golovin	Kobuk-Seward Peninsula	Seward Peninsula
Hughes	Kobuk-Seward Peninsula	Upper Koyukuk
Kiana	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Kivalina	Kobuk-Seward Peninsula	Northwest
Kobuk	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Kotzebue	Kobuk-Seward Peninsula	Northwest
Koyuk	Kobuk-Seward Peninsula	Seward Peninsula
Noatak	Kobuk-Seward Peninsula	Northwest
Nome	Kobuk-Seward Peninsula	Seward Peninsula
Noorvik	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Point Hope	Kobuk-Seward Peninsula	North Slope
Point Lay	Kobuk-Seward Peninsula	North Slope
Red Dog Mine	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Selawik	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Shaktoolik	Kobuk-Seward Peninsula	Northern Norton Sound
Shishmaref	Kobuk-Seward Peninsula	Seward Peninsula
Shungnak	Kobuk-Seward Peninsula	Upper Kobuk/Seward
Teller	Kobuk-Seward Peninsula	Seward Peninsula
Wales	Kobuk-Seward Peninsula	Seward Peninsula
White Mountain	Kobuk-Seward Peninsula	Seward Peninsula
Akiachak	Bering Sea-Western Interior	Kuskokwim River Drainage
Akiak	Bering Sea-Western Interior	Kuskokwim River Drainage

Analysis Community	Planning Area	Subregion
Aniak	Bering Sea-Western Interior	Kuskokwim River Drainage
Anvik	Bering Sea-Western Interior	Yukon River Drainage
Atmautluak	Bering Sea-Western Interior	Kuskokwim River Drainage
Bethel	Bering Sea-Western Interior	Kuskokwim River Drainage
Chuathbaluk	Bering Sea-Western Interior	Kuskokwim River Drainage
Crooked Creek	Bering Sea-Western Interior	Kuskokwim River Drainage
Eek	Bering Sea-Western Interior	Kuskokwim River Drainage
Galena	Bering Sea-Western Interior	Yukon River Drainage
Georgetown	Bering Sea-Western Interior	Kuskokwim River Drainage
Grayling	Bering Sea-Western Interior	Yukon River Drainage
Holy Cross	Bering Sea-Western Interior	Yukon River Drainage
Huslia	Bering Sea-Western Interior	Upper Koyukuk
Kaltag	Bering Sea-Western Interior	Yukon River Drainage
Kasigluk	Bering Sea-Western Interior	Kuskokwim River Drainage
Koyukuk	Bering Sea-Western Interior	Yukon River Drainage
Kwethluk	Bering Sea-Western Interior	Kuskokwim River Drainage
Lake Minchumina	Bering Sea-Western Interior	Kuskokwim River Drainage
Lime Village	Bering Sea-Western Interior	Kuskokwim River Drainage
Lower Kalskag	Bering Sea-Western Interior	Kuskokwim River Drainage
Marshall	Bering Sea-Western Interior	Yukon River Drainage
McGrath	Bering Sea-Western Interior	Kuskokwim River Drainage
Napaimute	Bering Sea-Western Interior	Kuskokwim River Drainage
Napakiak	Bering Sea-Western Interior	Kuskokwim River Drainage
Napaskiak	Bering Sea-Western Interior	Kuskokwim River Drainage
Nikolai	Bering Sea-Western Interior	Kuskokwim River Drainage
Nulato	Bering Sea-Western Interior	Yukon River Drainage
Nunapitchuk	Bering Sea-Western Interior	Kuskokwim River Drainage
Oscarville	Bering Sea-Western Interior	Kuskokwim River Drainage
Pilot Station	Bering Sea-Western Interior	Yukon River Drainage
Pitkas Point	Bering Sea-Western Interior	Yukon River Drainage
Red Devil	Bering Sea-Western Interior	Kuskokwim River Drainage
Russian Mission	Bering Sea-Western Interior	Yukon River Drainage
Saint Mary's	Bering Sea-Western Interior	Yukon River Drainage
Saint Michael	Bering Sea-Western Interior	Southern Norton Sound
Shageluk	Bering Sea-Western Interior	Yukon River Drainage
Sleetmute	Bering Sea-Western Interior	Kuskokwim River Drainage
St. Mary's – Andreafsky	Bering Sea-Western Interior	Yukon River Drainage
Stebbins	Bering Sea-Western Interior	Southern Norton Sound
Stony River	Bering Sea-Western Interior	Kuskokwim River Drainage
Takotna	Bering Sea-Western Interior	Kuskokwim River Drainage

Analysis Community	Planning Area	Subregion
Telida	Bering Sea-Western Interior	Kuskokwim River Drainage
Tuluksak	Bering Sea-Western Interior	Kuskokwim River Drainage
Tuntutuliak	Bering Sea-Western Interior	Kuskokwim River Drainage
Unalakleet	Bering Sea-Western Interior	Southern Norton Sound
Upper Kalskag	Bering Sea-Western Interior	Kuskokwim River Drainage
Aleknagik	Bay	Nushagak Bay
Clark's Point	Bay	Nushagak Bay
Dillingham	Bay	Nushagak Bay
Ekuk	Bay	Nushagak Bay
Ekwok	Bay	Nushagak River
Goodnews Bay	Bay	Kuskokwim Bay
Igiugig	Bay	Iliamna Lake
Iliamna	Bay	Iliamna Lake
King Salmon	Bay	Kvichak Bay
Kokhanok	Bay	Iliamna Lake
Koliganek	Bay	Nushagak River
Levelock	Bay	Iliamna Lake
Manokotak	Bay	Togiak Bay
Naknek	Bay	Kvichak Bay
New Stuyahok	Bay	Nushagak River
Newhalen	Bay	Iliamna Lake
Nondalton	Bay	Iliamna Lake
Pedro Bay	Bay	Iliamna Lake
Platinum	Bay	Kuskokwim Bay
Pope-Vannoy Landing	Bay	Iliamna Lake
Port Alsworth	Bay	Iliamna Lake
Portage Creek	Bay	Nushagak River
Quinhagak	Bay	Kuskokwim Bay
South Naknek	Bay	Kvichak Bay
Togiak	Bay	Togiak Bay
Twin Hills	Bay	Togiak Bay
Akhiok	Ring of Fire	Kodiak
Aleneva	Ring of Fire	Kodiak
Angoon	Ring of Fire	Southeast
Beluga	Ring of Fire	Southcentral
Chase	Ring of Fire	Southcentral
Chickaloon	Ring of Fire	Southcentral
Chignik	Ring of Fire	AK Peninsula/Aleutian Chain
Chignik Lagoon	Ring of Fire	AK Peninsula/Aleutian Chain
Chiniak	Ring of Fire	Kodiak

Analysis Community	Planning Area	Subregion
Coffman Cove	Ring of Fire	Southeast
Cold Bay	Ring of Fire	AK Peninsula/Aleutian Chain
Cooper Landing	Ring of Fire	Southcentral
Craig	Ring of Fire	Southeast
Crown Point	Ring of Fire	Southcentral
Edna Bay	Ring of Fire	Southeast
Egegik	Ring of Fire	AK Peninsula/Aleutian Chain
Excursion Inlet	Ring of Fire	Southeast
Fox River	Ring of Fire	Southcentral
Gustavus	Ring of Fire	Southeast
Haines – Covenant Life	Ring of Fire	Southeast
Haines – Lutak	Ring of Fire	Southeast
Haines – Mosquito Lake	Ring of Fire	Southeast
Haines – Mud Bay	Ring of Fire	Southeast
Haines Census Designated Place	Ring of Fire	Southeast
Halibut Cove	Ring of Fire	Southcentral
Happy Valley	Ring of Fire	Southcentral
Hobart Bay	Ring of Fire	Southeast
Hollis	Ring of Fire	Southeast
Hope	Ring of Fire	Southcentral
Hydaburg	Ring of Fire	Southeast
Hyder	Ring of Fire	Southeast
Ivanof Bay	Ring of Fire	AK Peninsula/Aleutian Chain
Kake	Ring of Fire	Southeast
Karluk	Ring of Fire	Kodiak
Kasaan	Ring of Fire	Southeast
King Cove	Ring of Fire	AK Peninsula/Aleutian Chain
Klawock	Ring of Fire	Southeast
Klawock – Big Salt	Ring of Fire	Southeast
Klawock – Klawock Lake	Ring of Fire	Southeast
Klukwan	Ring of Fire	Southeast
Kodiak	Ring of Fire	Kodiak
Kodiak Station	Ring of Fire	Kodiak
Kupreanof	Ring of Fire	Southeast
Larsen Bay	Ring of Fire	Kodiak
Loring	Ring of Fire	Southeast
Metlakatla	Ring of Fire	Southeast
Moose Pass	Ring of Fire	Southcentral
Nanwalek	Ring of Fire	Southcentral
Naukati Bay	Ring of Fire	Southeast

Analysis Community	Planning Area	Subregion
Nelson Lagoon	Ring of Fire	AK Peninsula/Aleutian Chain
Nikolaevsk	Ring of Fire	Southcentral
Ninilchik	Ring of Fire	Southcentral
Old Harbor	Ring of Fire	Kodiak
Ouzinkie	Ring of Fire	Kodiak
Petersville	Ring of Fire	Southcentral
Point Baker	Ring of Fire	Southeast
Point MacKenzie	Ring of Fire	Southcentral
Point Possession	Ring of Fire	Southcentral
Port Alexander	Ring of Fire	Southeast
Port Graham	Ring of Fire	Southcentral
Port Heiden	Ring of Fire	AK Peninsula/Aleutian Chain
Port Lions	Ring of Fire	Kodiak
Port Protection	Ring of Fire	Southeast
Sand Point	Ring of Fire	AK Peninsula/Aleutian Chain
Seldovia	Ring of Fire	Southcentral
Seldovia – Seldovia Village	Ring of Fire	Southcentral
Skwentna	Ring of Fire	Southcentral
Sunrise	Ring of Fire	Southcentral
Susitna	Ring of Fire	Southcentral
Susitna North	Ring of Fire	Southcentral
Talkeetna	Ring of Fire	Southcentral
Tenakee Springs	Ring of Fire	Southeast
Thorne Bay	Ring of Fire	Southeast
Trapper Creek	Ring of Fire	Southcentral
Tyonek	Ring of Fire	Southcentral
Whale Pass	Ring of Fire	Southeast
Whittier	Ring of Fire	Southcentral
Willow	Ring of Fire	Southcentral
Womens Bay	Ring of Fire	Kodiak
Anderson	East Alaska	Upper Tanana
Cantwell	East Alaska	Upper Tanana
Chisana	East Alaska	Copper River
Chistochina	East Alaska	Copper River
Chitina	East Alaska	Copper River
Copper Center	East Alaska	Copper River
Cordova	East Alaska	Prince William Sound
Cordova – Eyak	East Alaska	Prince William Sound
Delta Junction – Big Delta	East Alaska	Upper Tanana
Delta Junction – Deltana	East Alaska	Upper Tanana

Analysis Community	Planning Area	Subregion
Delta Junction – Fort Greely	East Alaska	Upper Tanana
Delta Junction – Gold Sand Acres	East Alaska	Upper Tanana
Delta Junction – Whitestone	East Alaska	Upper Tanana
Delta Junction	East Alaska	Upper Tanana
Denali Park	East Alaska	Upper Tanana
Dot Lake – Dot Lake Village	East Alaska	Upper Tanana
Dot Lake	East Alaska	Upper Tanana
Dry Creek	East Alaska	Upper Tanana
Eureka Roadhouse	East Alaska	Copper River
Ferry	East Alaska	Upper Tanana
Gakona	East Alaska	Copper River
Glacier View	East Alaska	Copper River
Glennallen	East Alaska	Copper River
Gulkana	East Alaska	Copper River
Healy	East Alaska	Upper Tanana
Kenny Lake	East Alaska	Copper River
Lake Louise	East Alaska	Copper River
Mendeltna	East Alaska	Copper River
Mentasta Lake	East Alaska	Copper River
Nabesna	East Alaska	Copper River
Nelchina	East Alaska	Copper River
Northway – Northway Junction	East Alaska	Upper Tanana
Northway – Northway Village	East Alaska	Upper Tanana
Northway	East Alaska	Upper Tanana
Paxson	East Alaska	Copper River
Silver Springs	East Alaska	Copper River
Slana	East Alaska	Copper River
Tanacross	East Alaska	Upper Tanana
Tatitlek	East Alaska	Prince William Sound
Tazlina	East Alaska	Copper River
Tetlin	East Alaska	Upper Tanana
Tok	East Alaska	Upper Tanana
Tolsona	East Alaska	Copper River
Tonsina	East Alaska	Copper River
Willow Creek	East Alaska	Copper River

Table 3.14-3. Subsistence Use Area Overlaps with 17(d)(1) Withdrawals, by Subsistence Analysis Community

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Ambler	Kobuk-Seward Peninsula	3,548,506
Brevig Mission	Kobuk-Seward Peninsula	532,657
Buckland	Kobuk-Seward Peninsula	2,274,167
Deering	Kobuk-Seward Peninsula	1,135,969
Diomedede	Kobuk-Seward Peninsula	0
Elim	Kobuk-Seward Peninsula	Yes*
Golovin	Kobuk-Seward Peninsula	184,475
Hughes	Kobuk-Seward Peninsula	0
Kiana	Kobuk-Seward Peninsula	1,693,976
Kivalina	Kobuk-Seward Peninsula	1,392,301
Kobuk	Kobuk-Seward Peninsula	1,562,462
Kotzebue	Kobuk-Seward Peninsula	1,641,627
Koyuk	Kobuk-Seward Peninsula	Yes*
Noatak	Kobuk-Seward Peninsula	1,717,298
Nome	Kobuk-Seward Peninsula	1,354,872
Noorvik	Kobuk-Seward Peninsula	2,260,190
Point Hope	Kobuk-Seward Peninsula	295,576
Point Lay	Kobuk-Seward Peninsula	240,056
Selawik	Kobuk-Seward Peninsula	2,340,879
Shaktolik	Kobuk-Seward Peninsula	Yes*
Shishmaref	Kobuk-Seward Peninsula	153,382
Shungnak	Kobuk-Seward Peninsula	2,062,889
Teller	Kobuk-Seward Peninsula	Yes*
Wales	Kobuk-Seward Peninsula	16,674
White Mountain	Kobuk-Seward Peninsula	Yes*
Akiachak	Bering Sea-Western Interior	283,862
Akiak	Bering Sea-Western Interior	Yes*
Aniak	Bering Sea-Western Interior	1,529,403
Anvik	Bering Sea-Western Interior	Yes*
Atmautluak	Bering Sea-Western Interior	Yes*
Bethel	Bering Sea-Western Interior	Yes*
Chuathbaluk	Bering Sea-Western Interior	Yes*
Crooked Creek	Bering Sea-Western Interior	Yes*
Eek	Bering Sea-Western Interior	Yes*
Galena	Bering Sea-Western Interior	1,488,952
Georgetown	Bering Sea-Western Interior	Yes*
Grayling	Bering Sea-Western Interior	Yes*

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Holy Cross	Bering Sea-Western Interior	Yes*
Huslia	Bering Sea-Western Interior	1,353,892
Kaltag	Bering Sea-Western Interior	Yes*
Kasigluk	Bering Sea-Western Interior	Yes*
Koyukuk	Bering Sea-Western Interior	Yes*
Kwethluk	Bering Sea-Western Interior	26,594
Lake Minchumina	Bering Sea-Western Interior	0
Lime Village	Bering Sea-Western Interior	804,448
Lower Kalskag	Bering Sea-Western Interior	Yes*
Marshall	Bering Sea-Western Interior	579,451
McGrath	Bering Sea-Western Interior	Yes*
Napaimute	Bering Sea-Western Interior	Yes*
Napakiak	Bering Sea-Western Interior	Yes*
Napaskiak	Bering Sea-Western Interior	Yes*
Nikolai	Bering Sea-Western Interior	489,506
Nulato	Bering Sea-Western Interior	Yes*
Nunapitchuk	Bering Sea-Western Interior	0
Oscarville	Bering Sea-Western Interior	Yes*
Pilot Station	Bering Sea-Western Interior	Yes*
Pitkas Point	Bering Sea-Western Interior	Yes*
Red Devil	Bering Sea-Western Interior	Yes*
Russian Mission	Bering Sea-Western Interior	1,281,644
Saint Mary's	Bering Sea-Western Interior	Yes*
Saint Michael	Bering Sea-Western Interior	Yes*
Shageluk	Bering Sea-Western Interior	Yes*
Sleetmute	Bering Sea-Western Interior	Yes*
Stebbins	Bering Sea-Western Interior	Yes*
Stony River	Bering Sea-Western Interior	Yes*
Takotna	Bering Sea-Western Interior	Yes*
Telida	Bering Sea-Western Interior	15,711
Tuluksak	Bering Sea-Western Interior	294,539
Tuntutuliak	Bering Sea-Western Interior	Yes*
Unalakleet	Bering Sea-Western Interior	1,590,487
Upper Kalskag	Bering Sea-Western Interior	Yes*
Aleknagik	Bay	877,733
Clark's Point	Bay	891,544
Dillingham	Bay	1,001,240
Ekuk	Bay	Yes*
Ekwok	Bay	676,739

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Goodnews Bay	Bay	Yes*
Igiugig	Bay	420,259
Iliamna	Bay	1,318,979
King Salmon	Bay	962,193
Kokhanok	Bay	399,918
Koliganek	Bay	351,623
Levelock	Bay	930,859
Manokotak	Bay	369,447
Naknek	Bay	968,039
New Stuyahok	Bay	839,654
Newhalen	Bay	151,684
Nondalton	Bay	134,627
Pedro Bay	Bay	59,271
Platinum	Bay	212,369
Pope-Vannoy Landing	Bay	Yes*
Port Alsworth	Bay	1,074,616
Portage Creek	Bay	747,160
Quinhagak	Bay	No*
South Naknek	Bay	165,239
Togiak	Bay	712,232
Twin Hills	Bay	46,916
Akhiok	Ring of Fire	Yes*
Aleneva	Ring of Fire	Yes*
Angoon	Ring of Fire	482
Beluga	Ring of Fire	1,639
Chase	Ring of Fire	330,635
Chickaloon	Ring of Fire	21,036
Chignik	Ring of Fire	0
Chignik Lagoon	Ring of Fire	0
Chiniak	Ring of Fire	Yes*
Coffman Cove	Ring of Fire	9
Cold Bay	Ring of Fire	Yes*
Cooper Landing	Ring of Fire	1,093
Craig	Ring of Fire	8
Crown Point	Ring of Fire	Yes*
Edna Bay	Ring of Fire	14
Egegik	Ring of Fire	0
Excursion Inlet	Ring of Fire	Yes*
Fox River	Ring of Fire	Yes*

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Gustavus	Ring of Fire	0
Haines	Ring of Fire	3
Halibut Cove	Ring of Fire	Yes*
Happy Valley	Ring of Fire	Yes*
Hobart Bay	Ring of Fire	Yes*
Hollis	Ring of Fire	0
Hope	Ring of Fire	83
Hydaburg	Ring of Fire	51
Hyder	Ring of Fire	18
Ivanof Bay	Ring of Fire	0
Kake	Ring of Fire	470
Karluk	Ring of Fire	Yes*
Kasaan	Ring of Fire	0
King Cove	Ring of Fire	Yes*
Klawock	Ring of Fire	10
Klukwan	Ring of Fire	1,772
Kodiak	Ring of Fire	27
Kupreanof	Ring of Fire	Yes*
Larsen Bay	Ring of Fire	Yes*
Loring	Ring of Fire	Yes*
Metlakatla	Ring of Fire	0
Moose Pass	Ring of Fire	Yes*
Nanwalek	Ring of Fire	485
Naukati Bay	Ring of Fire	3
Nelson Lagoon	Ring of Fire	4,754
Nikolaevsk	Ring of Fire	45
Ninilchik	Ring of Fire	502
Old Harbor	Ring of Fire	Yes*
Ouzinkie	Ring of Fire	Yes*
Petersville	Ring of Fire	Yes*
Point Baker	Ring of Fire	5
Point MacKenzie	Ring of Fire	Yes*
Point Possession	Ring of Fire	Yes*
Port Alexander	Ring of Fire	0
Port Graham	Ring of Fire	30
Port Heiden	Ring of Fire	533
Port Lions	Ring of Fire	Yes*
Port Protection	Ring of Fire	5
Sand Point	Ring of Fire	Yes*

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Seldovia	Ring of Fire	51,308
Skwentna	Ring of Fire	237,652
Sunrise	Ring of Fire	Yes*
Susitna	Ring of Fire	271
Susitna North	Ring of Fire	Yes*
Talkeetna	Ring of Fire	597,993
Tenakee Springs	Ring of Fire	265
Thorne Bay	Ring of Fire	6
Trapper Creek	Ring of Fire	306,245
Tyonek	Ring of Fire	1,939
Whale Pass	Ring of Fire	0
Whittier	Ring of Fire	34,987
Willow	Ring of Fire	Yes*
Womens Bay	Ring of Fire	Yes*
Anderson	East Alaska	183,149
Cantwell	East Alaska	1,189,401
Chisana	East Alaska	20
Chistochina	East Alaska	74,285
Chitina	East Alaska	65,198
Copper Center	East Alaska	675,503
Cordova	East Alaska	Yes*
Delta Junction	East Alaska	Yes*
Denali Park	East Alaska	287,089
Dot Lake	East Alaska	1,325
Dry Creek	East Alaska	0
Eureka Roadhouse	East Alaska	Yes*
Ferry	East Alaska	107,522
Gakona	East Alaska	411,962
Glacier View	East Alaska	40,047
Glennallen	East Alaska	412,099
Gulkana	East Alaska	238,007
Healy	East Alaska	849,681
Kenny Lake	East Alaska	142,274
Lake Louise	East Alaska	49,436
Mendeltna	East Alaska	196,614
Mentasta Lake	East Alaska	272,810
Nabesna	East Alaska	90,723
Nelchina	East Alaska	211,924
Northway	East Alaska	5,737

Analysis Community	Planning Area	Acres of Use Areas Overlapping 17(d)(1) Withdrawals
Paxson	East Alaska	333,713
Silver Springs	East Alaska	Yes*
Slana	East Alaska	193,606
Tanacross	East Alaska	24,073
Tatitlek	East Alaska	968
Tazlina	East Alaska	115,429
Tetlin	East Alaska	0
Tok	East Alaska	173,805
Tolsona	East Alaska	36,124
Tonsina	East Alaska	153,608
Willow Creek	East Alaska	5,127

Notes: For communities with no subsistence use area data, see Table 3.14-4 for an analysis of 17(d)(1) withdrawals within 50 miles of communities with no subsistence use area data.

* Grey-shaded yes/no entries reflect the assumed presence or absence of overlaps within 50 miles for communities with no subsistence use area. Subsistence use area data are not available for these communities to calculate the acreage of the overlap.

Table 3.14-4. Acres of 17(d)(1) Withdrawals within 50 Miles of Communities with No Subsistence Use Area Data

Analysis Community	Planning Area	Acres of 17(d)(1) Withdrawals in the Decision Area within 50 Miles of Community
Elim	Kobuk-Seward Peninsula	1,181,700
Koyuk	Kobuk-Seward Peninsula	2,478,823
Shaktolik	Kobuk-Seward Peninsula	1,856,267
Teller	Kobuk-Seward Peninsula	798,082
White Mountain	Kobuk-Seward Peninsula	1,058,183
Akiak	Bering Sea-Western Interior	107,854
Anvik	Bering Sea-Western Interior	2,790,941
Atmautluak	Bering Sea-Western Interior	2
Bethel	Bering Sea-Western Interior	2
Chuathbaluk	Bering Sea-Western Interior	1,390,054
Crooked Creek	Bering Sea-Western Interior	2,290,581
Eek	Bering Sea-Western Interior	2
Georgetown	Bering Sea-Western Interior	2,184,329
Grayling	Bering Sea-Western Interior	2,701,263
Holy Cross	Bering Sea-Western Interior	2,788,101
Kaltag	Bering Sea-Western Interior	2,015,771
Kasigluk	Bering Sea-Western Interior	2
Koyukuk	Bering Sea-Western Interior	1,302,928
Lower Kalskag	Bering Sea-Western Interior	1,151,601
McGrath	Bering Sea-Western Interior	1,042,812

Analysis Community	Planning Area	Acres of 17(d)(1) Withdrawals in the Decision Area within 50 Miles of Community
Napaimute	Bering Sea-Western Interior	1,517,223
Napakiak	Bering Sea-Western Interior	2
Napaskiak	Bering Sea-Western Interior	2
Nulato	Bering Sea-Western Interior	1,681,093
Oscarville	Bering Sea-Western Interior	2
Pilot Station	Bering Sea-Western Interior	220,542
Pitkas Point	Bering Sea-Western Interior	8,854
Red Devil	Bering Sea-Western Interior	1,822,007
Saint Mary's	Bering Sea-Western Interior	39,645
Saint Michael	Bering Sea-Western Interior	854,121
Sleetmute	Bering Sea-Western Interior	1,662,680
Stebbins	Bering Sea-Western Interior	537,033
Stony River	Bering Sea-Western Interior	2,089,572
Takotna	Bering Sea-Western Interior	549,089
Tuntutuliak	Bering Sea-Western Interior	2
Upper Kalskag	Bering Sea-Western Interior	1,222,867
Shageluk	Bering Sea-Western Interior	2,290,893
Ekuk	Bay	207,585
Goodnews Bay	Bay	33
Pope-Vannoy Landing	Bay	123,413
Quinhagak	Bay	0
Akhiok	Ring of Fire	629
Aleneva	Ring of Fire	656
Chiniak	Ring of Fire	656
Cold Bay	Ring of Fire	4,953
Crown Point	Ring of Fire	191
Excursion Inlet	Ring of Fire	32,365
Fox River	Ring of Fire	1,023
Halibut Cove	Ring of Fire	354
Happy Valley	Ring of Fire	23,381
Hobart Bay	Ring of Fire	487
Karluk	Ring of Fire	629
King Cove	Ring of Fire	4,953
Kupreanof	Ring of Fire	7
Larsen Bay	Ring of Fire	629
Loring	Ring of Fire	56
Moose Pass	Ring of Fire	6,135
Old Harbor	Ring of Fire	629
Ouzinkie	Ring of Fire	656

Analysis Community	Planning Area	Acres of 17(d)(1) Withdrawals in the Decision Area within 50 Miles of Community
Petersville	Ring of Fire	54,276
Point MacKenzie	Ring of Fire	60,919
Point Possession	Ring of Fire	28,408
Port Lions	Ring of Fire	656
Sand Point	Ring of Fire	276
Sunrise	Ring of Fire	85,450
Susitna North	Ring of Fire	74,457
Willow	Ring of Fire	63,117
Womens Bay	Ring of Fire	656
Cordova	East Alaska	116,058
Delta Junction	East Alaska	179,332
Eureka Roadhouse	East Alaska	206,393
Silver Springs	East Alaska	269,215

Table 3.14-5. Percentage of Use Areas Overlapping Lands Where 17(d)(1) Withdrawals would be Revoked in Areas More Likely to Be Developed or Losing Federal Subsistence Priority, Alternative B

Analysis Community	Planning Area	Acres of Use Areas Where 17(d) Withdrawals Would be Revoked and where Federal Subsistence Priority Would be Lost [†]		Acres of Use Areas Where 17(d)(1) Withdrawals Would be Revoked in Areas More Likely to be Developed*	
		No.	%	No.	%
Ambler	Kobuk-Seward Peninsula	2,865	0.01%	0	0.00%
Brevig Mission	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Buckland	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Deering	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Elim	Kobuk-Seward Peninsula	No	No	No	No
Golovin	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Kiana	Kobuk-Seward Peninsula	2,865	0.02%	0	0.00%
Kivalina	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Kobuk	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Kotzebue	Kobuk-Seward Peninsula	2,865	0.02%	0	0.00%
Koyuk	Kobuk-Seward Peninsula	No	No	No	No
Noatak	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Nome	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Noorvik	Kobuk-Seward Peninsula	2,865	0.02%	0	0.00%
Selawik	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Shaktolik	Kobuk-Seward Peninsula	No	No	No	No
Shungnak	Kobuk-Seward Peninsula	0	0.00%	0	0.00%

Analysis Community	Planning Area	Acres of Use Areas Where 17(d) Withdrawals Would be Revoked and where Federal Subsistence Priority Would be Lost [†]		Acres of Use Areas Where 17(d)(1) Withdrawals Would be Revoked in Areas More Likely to be Developed*	
		No.	%	No.	%
Teller	Kobuk-Seward Peninsula	No	No	No	No
White Mountain	Kobuk-Seward Peninsula	No	No	No	No
Akiachak	Bering Sea-Western Interior	0	0.00%	0	0.00%
Akiak	Bering Sea-Western Interior	N/A	N/A	No	No
Aniak	Bering Sea-Western Interior	0	0.00%	0	0.00%
Anvik	Bering Sea-Western Interior	No	No	N/A	N/A
Chuathbaluk	Bering Sea-Western Interior	No	No	N/A	N/A
Crooked Creek	Bering Sea-Western Interior	No	No	No	No
Galena	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Georgetown	Bering Sea-Western Interior	No	No	No	No
Grayling	Bering Sea-Western Interior	No	No	N/A	N/A
Holy Cross	Bering Sea-Western Interior	No	No	N/A	N/A
Huslia	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Lake Minchumina	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Lower Kalskag	Bering Sea-Western Interior	No	No	N/A	N/A
Marshall	Bering Sea-Western Interior	0	0.00%	N/A	N/A
McGrath	Bering Sea-Western Interior	No	No	N/A	N/A
Napaimute	Bering Sea-Western Interior	No	No	No	No
Nikolai	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Pilot Station	Bering Sea-Western Interior	No	No	N/A	N/A
Pitka's Point	Bering Sea-Western Interior	No	No	N/A	N/A
Red Devil	Bering Sea-Western Interior	No	No	No	No
Russian Mission	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Saint Mary's	Bering Sea-Western Interior	No	No	N/A	N/A
Saint Michael	Bering Sea-Western Interior	No	No	N/A	N/A
Sleetmute	Bering Sea-Western Interior	N/A	N/A	No	No
Stebbins	Bering Sea-Western Interior	No	No	N/A	N/A
Stony River	Bering Sea-Western Interior	N/A	N/A	No	No
Takotna	Bering Sea-Western Interior	No	No	No	No
Telida	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Tuluksak	Bering Sea-Western Interior	0	0.00%	0	0.00%
Unalakleet	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Upper Kalskag	Bering Sea-Western Interior	No	No	N/A	N/A
Aleknagik	Bay	0	0.00%	0	0.00%
Clark's Point	Bay	0	0.00%	0	0.00%
Dillingham	Bay	1	0.00%	0	0.00%

Analysis Community	Planning Area	Acres of Use Areas Where 17(d) Withdrawals Would be Revoked and where Federal Subsistence Priority Would be Lost [†]		Acres of Use Areas Where 17(d)(1) Withdrawals Would be Revoked in Areas More Likely to be Developed*	
		No.	%	No.	%
Ekuak	Bay	No	No	No	No
Ekwok	Bay	18	0.00%	0	0.00%
Igiugig	Bay	0	0.00%	N/A	N/A
Iliamna	Bay	12	0.00%	0	0.00%
King Salmon	Bay	18	0.00%	0	0.00%
Kokhanok	Bay	0	0.00%	0	0.00%
Koliganek	Bay	0	0.00%	N/A	N/A
Levelock	Bay	0	0.00%	0	0.00%
Manokotak	Bay	0	0.00%	0	0.00%
Naknek	Bay	18	0.00%	0	0.00%
New Stuyahok	Bay	0	0.00%	0	0.00%
Newhalen	Bay	0	0.00%	0	0.00%
Nondalton	Bay	0	0.00%	0	0.00%
Pedro Bay	Bay	0	0.00%	0	0.00%
Platinum	Bay	0	0.00%	0	0.00%
Pope-Vannoy Landing	Bay	No	No	No	No
Port Alsworth	Bay	0	0.00%	0	0.00%
Portage Creek	Bay	0	0.00%	0	0.00%
South Naknek	Bay	18	0.00%	0	0.00%
Togiak	Bay	0	0.00%	0	0.00%
Twin Hills	Bay	0	0.00%	0	0.00%
Beluga	Ring of Fire	0	0.00%	0	0.00%
Chase	Ring of Fire	0	0.00%	0	0.00%
Chickaloon	Ring of Fire	0	0.00%	0	0.00%
Cooper Landing	Ring of Fire	5	0.00%	5	0.00%
Crown Point	Ring of Fire	Yes	Yes	N/A	N/A
Egegik	Ring of Fire	0	0.00%	0	0.00%
Fox River	Ring of Fire	Yes	Yes	Yes	Yes
Haines	Ring of Fire	0	0.00%	N/A	N/A
Halibut Cove	Ring of Fire	Yes	Yes	Yes	Yes
Happy Valley	Ring of Fire	Yes	Yes	Yes	Yes
Hope	Ring of Fire	0	0.00%	0	0.00%
Klukwan	Ring of Fire	0	0.00%	N/A	N/A
Moose Pass	Ring of Fire	Yes	Yes	N/A	N/A
Nanwalek	Ring of Fire	0	0.00%	0	0.00%
Nikolaevsk	Ring of Fire	0	0.00%	0	0.00%

Analysis Community	Planning Area	Acres of Use Areas Where 17(d) Withdrawals Would be Revoked and where Federal Subsistence Priority Would be Lost ^f		Acres of Use Areas Where 17(d)(1) Withdrawals Would be Revoked in Areas More Likely to be Developed*	
		No.	%	No.	%
Ninilchik	Ring of Fire	1	0.00%	0	0.00%
Petersville	Ring of Fire	N/A	N/A	No	No
Point MacKenzie	Ring of Fire	Yes	Yes	Yes	Yes
Point Possession	Ring of Fire	Yes	Yes	Yes	Yes
Seldovia	Ring of Fire	3	0.00%	3	0.00%
Skwentna	Ring of Fire	0	0.00%	0	0.00%
Sunrise	Ring of Fire	Yes	Yes	Yes	Yes
Susitna	Ring of Fire	0	0.00%	0	0.00%
Susitna North	Ring of Fire	N/A	N/A	No	No
Talkeetna	Ring of Fire	0	0.00%	0	0.00%
Trapper Creek	Ring of Fire	125	0.00%	2	0.00%
Tyonek	Ring of Fire	0	0.00%	0	0.00%
Whittier	Ring of Fire	0	0.00%	0	0.00%
Willow	Ring of Fire	Yes	Yes	Yes	Yes
Anderson	East Alaska	0	0.00%	0	0.00%
Cantwell	East Alaska	124	0.00%	0	0.00%
Chistochina	East Alaska	9	0.00%	9	0.00%
Chitina	East Alaska	9	0.00%	9	0.00%
Copper Center	East Alaska	133	0.00%	133	0.03%
Cordova	East Alaska	No	No	No	No
Delta Junction	East Alaska	No	No	N/A	N/A
Denali Park	East Alaska	74	0.00%	0	0.00%
Dot Lake	East Alaska	9	0.00%	9	0.00%
Dry Creek	East Alaska	0	0.00%	N/A	N/A
Eureka Roadhouse	East Alaska	No	No	No	No
Ferry	East Alaska	2,962	0.21%	0	0.00%
Gakona	East Alaska	9	0.00%	9	0.00%
Glacier View	East Alaska	0	0.00%	0	0.00%
Glennallen	East Alaska	133	0.00%	133	0.00%
Gulkana	East Alaska	9	0.00%	9	0.00%
Healy	East Alaska	124	0.00%	0	0.00%
Kenny Lake	East Alaska	9	0.00%	9	0.00%
Lake Louise	East Alaska	0	0.00%	0	0.00%
Mendeltna	East Alaska	9	0.00%	9	0.00%
Mentasta Lake	East Alaska	9	0.00%	9	0.00%
Nabesna	East Alaska	9	0.00%	9	0.00%

Analysis Community	Planning Area	Acres of Use Areas Where 17(d) Withdrawals Would be Revoked and where Federal Subsistence Priority Would be Lost [†]		Acres of Use Areas Where 17(d)(1) Withdrawals Would be Revoked in Areas More Likely to be Developed*	
		No.	%	No.	%
Nelchina	East Alaska	9	0.00%	9	0.00%
Northway	East Alaska	9	0.00%	9	0.00%
Paxson	East Alaska	0	0.00%	0	0.00%
Silver Springs	East Alaska	No	No	No	No
Slana	East Alaska	9	0.00%	9	0.00%
Tanacross	East Alaska	9	0.00%	9	0.00%
Tatitlek	East Alaska	0	0.00%	0	0.00%
Tazlina	East Alaska	0	0.00%	0	0.00%
Tetlin	East Alaska	0	0.00%	0	0.00%
Tok	East Alaska	9	0.00%	9	0.00%
Tolsona	East Alaska	0	0.00%	0	0.00%
Tonsina	East Alaska	9	0.00%	9	0.00%
Willow Creek	East Alaska	0	0.00%	0	0.00%

Notes: Communities with yes/no entries do not have available subsistence use areas data. Presence/absence of overlap is based on an assumed 50-mile radius of subsistence use around the community. Subsistence use area data are not available for these communities to calculate the acreage of the overlap. For communities with no subsistence use area data, see Table 3.14-6 for an analysis of revoked lands within 50 miles of these analysis communities.

N/A = Community is not an analysis community for either the areas more likely to be developed or areas losing federal subsistence priority, because the community is not within 50 miles/use area is not overlapping the analysis area.

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of more likely to be developed (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Acres reported here are areas more likely to be conveyed and developed.

[†] Areas losing Federal subsistence use priority following any Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings that are not otherwise encumbered that would immediately become effective selections. The loss of Federal subsistence use priority includes both temporary and permanent loss because even a temporary loss can have significant effects.

Table 3.14-6. Acres of 17(d)(1) Withdrawals More Likely to Be Developed or Losing Federal Subsistence Priority Within 50 Miles of Analysis Communities with No Subsistence Use Area Data

Analysis Community	Planning Area	Acres of 17(d)(1) Withdrawals in the Decision Area within 50 Miles of Community					
		Alternative B, Areas Likely to be Developed (priority conveyances only)	Alternative B, Areas Losing Federal Subsistence Priority	Alternative C, Areas Likely to be Developed	Alternative C, Areas Losing Federal Subsistence Priority	Alternative D, Areas Likely to be Developed	Alternative D, Areas Losing Federal Subsistence Priority
Elim	Kobuk-Seward Peninsula	0	0	4,027	0	4,147	1,398
Koyuk	Kobuk-Seward Peninsula	0	0	1,275	0	1,394	1,265
Shaktoolik	Kobuk-Seward Peninsula	0	0	0	0	120	1,265
Teller	Kobuk-Seward Peninsula	0	0	22,180	42,067	28,124	53,587
White Mountain	Kobuk-Seward Peninsula	0	0	6,758	0	9,897	133
Akiak	Bering Sea-Western Interior	0	0	0	0	0	0
Anvik	Bering Sea-Western Interior	0	0	0	26,756	0	45,490
Chuathbaluk	Bering Sea-Western Interior	0	0	0	3,502	0	40,619
Crooked Creek	Bering Sea-Western Interior	0	0	1,632	1,920	3,414	14,065
Georgetown	Bering Sea-Western Interior	0	0	1,632	640	3,414	640
Grayling	Bering Sea-Western Interior	0	0	0	139,034	0	174,349
Holy Cross	Bering Sea-Western Interior	0	0	0	10,510	0	48,266
Lower Kalskag	Bering Sea-Western Interior	0	0	0	12,667	0	50,424
McGrath	Bering Sea-Western Interior	0	0	0	0	0	33
Napaimute	Bering Sea-Western Interior	0	0	1,632	3,502	3,414	40,619
Pilot Station	Bering Sea-Western Interior	0	0	0	6,690	0	8,481
Pitka's Point	Bering Sea-Western Interior	0	0	0	2,320	0	2,320
Red Devil	Bering Sea-Western Interior	0	0	1,632	111	3,414	111
Saint Mary's	Bering Sea-Western Interior	0	0	0	4,455	0	4,545
Saint Michael	Bering Sea-Western Interior	0	0	0	223,723	0	265,808
Sleetmute	Bering Sea-Western Interior	0	0	1,632	0	3,414	0
Stebbins	Bering Sea-Western Interior	0	0	0	223,723	0	263,326

Analysis Community	Planning Area	Acres of 17(d)(1) Withdrawals in the Decision Area within 50 Miles of Community					
		Alternative B, Areas Likely to be Developed (priority conveyances only)	Alternative B, Areas Losing Federal Subsistence Priority	Alternative C, Areas Likely to be Developed	Alternative C, Areas Losing Federal Subsistence Priority	Alternative D, Areas Likely to be Developed	Alternative D, Areas Losing Federal Subsistence Priority
Stony River	Bering Sea-Western Interior	0	0	994	0	2,208	0
Takotna	Bering Sea-Western Interior	0	0	0	0	0	33
Upper Kalskag	Bering Sea-Western Interior	0	0	0	12,762	0	50,518
Ekuk	Bay	0	0	189	160	211	160
Pope-Vannoy Landing	Bay	0	0	72	517	1,931	1,178
Crown Point	Ring of Fire	0	191	0	191	0	191
Fox River	Ring of Fire	5	5	581	6	581	6
Halibut Cove	Ring of Fire	< 1	1	270	1	270	1
Happy Valley	Ring of Fire	5	5	581	6	581	10,706
Moose Pass	Ring of Fire	0	422	0	444	0	444
Petersville	Ring of Fire	0	0	1,403	0	1,416	0
Point MacKenzie	Ring of Fire	2	422	3,052	1,982	3,103	1,982
Point Possession	Ring of Fire	< 1	422	392	1,982	392	1,982
Sunrise	Ring of Fire	1	422	2,526	1,982	2,565	1,982
Susitna North	Ring of Fire	0	0	1,952	0	1,964	0
Willow	Ring of Fire	3	422	4,446	1,982	4,497	1,982
Cordova	East Alaska	0	0	504	2,986	504	2,986
Delta Junction	East Alaska	0	0	0	0	0	0
Eureka Roadhouse	East Alaska	0	0	13,642	0	13,697	73
Silver Springs	East Alaska	0	0	53,554	14,651	53,589	14,651

Table 3.14-7. Acres of Federal Subsistence Priority Lost if 17(d)(1) Withdrawals are Revoked (Comparison of Alternatives)

Analysis Community	Planning Area	Acres of Use Areas Overlapping Current Areas of Federal Subsistence Priority	Acres of Federal Subsistence Priority Lost under Alternative B		Acres of Federal Subsistence Priority Lost under Alternative C		Acres of Federal Subsistence Priority Lost under Alternative D	
			No.	%	No.	%	No.	%
Healy	East Alaska	746,353	124	0%	139,159	19%	139,159	19%
Cantwell	East Alaska	426,159	124	0%	138,520	33%	138,520	33%
Trapper Creek	Ring of Fire	122,109	125	0%	107,875	88%	107,875	88%
Russian Mission	Bering Sea-Western Interior	3,755,428	0	0%	67,998	2%	103,179	3%
Mentasta Lake	East Alaska	3,515,589	9	0%	87,808	2%	87,808	2%
Tok	East Alaska	1,180,011	9	0%	76,865	7%	76,865	7%
Talkeetna	Ring of Fire	1,459,857	0	0%	74,605	5%	74,605	5%
Slana	East Alaska	1,043,126	9	0%	69,112	7%	69,112	7%
Unalakleet	Bering Sea-Western Interior	1,388,348	0	0%	59,807	4%	68,078	5%
Glennallen	East Alaska	1,400,622	133	0%	59,419	4%	59,493	4%
Nabesna	East Alaska	1,529,364	9	0%	57,314	4%	57,314	4%
Nome	Kobuk-Seward Peninsula	853,564	0	0%	42,067	5%	53,720	6%
Aniak	Bering Sea-Western Interior	2,054,260	0	0%	3,502	0%	40,619	2%
Copper Center	East Alaska	895,960	133	0%	39,075	4%	39,148	4%
Gulkana	East Alaska	531,173	9	0%	28,352	5%	28,352	5%
Brevig Mission	Kobuk-Seward Peninsula	315,333	0	0%	15,786	5%	26,973	9%
Paxson	East Alaska	281,454	0	0%	26,875	10%	26,875	10%
Mendeltna	East Alaska	1,095,304	9	0%	22,722	2%	22,795	2%
Nelchina	East Alaska	1,152,816	9	0%	22,722	2%	22,795	2%
Denali Park	East Alaska	58,873	74	0%	21,479	36%	21,479	36%
Skwentna	Ring of Fire	542,823	0	0%	19,563	4%	19,563	4%
Anderson	East Alaska	721,502	0	0%	19,175	3%	19,199	3%
Tonsina	East Alaska	2,051,950	9	0%	19,018	1%	19,018	1%
Gakona	East Alaska	882,104	9	0%	18,728	2%	18,728	2%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Current Areas of Federal Subsistence Priority	Acres of Federal Subsistence Priority Lost under Alternative B		Acres of Federal Subsistence Priority Lost under Alternative C		Acres of Federal Subsistence Priority Lost under Alternative D	
			No.	%	No.	%	No.	%
Ferry	East Alaska	14,438	2,962	21%	13,759	95%	13,759	95%
Tazlina	East Alaska	522,162	0	0%	9,600	2%	9,600	2%
Kenny Lake	East Alaska	911,252	9	0%	7,265	1%	7,265	1%
Akiachak	Bering Sea-Western Interior	3,656,271	0	0%	732	0%	6,989	0%
Iliamna	Bay	2,336,691	12	0%	4,529	0%	5,266	0%
Port Alsworth	Bay	3,296,887	0	0%	4,342	0%	5,079	0%
Kokhanok	Bay	729,385	0	0%	4,357	1%	4,357	1%
Marshall	Bering Sea-Western Interior	1,236,024	0	0%	2,210	0%	4,248	0%
Clark's Point	Bay	2,225,505	0	0%	4,000	0%	4,079	0%
Dillingham	Bay	2,164,151	1	0%	4,001	0%	4,077	0%
Aleknagik	Bay	1,829,907	0	0%	4,000	0%	4,076	0%
New Stuyahok	Bay	793,986	0	0%	3,840	0%	3,916	0%
Levelock	Bay	1,123,693	0	0%	3,840	0%	3,916	0%
King Salmon	Bay	1,387,723	18	0%	3,858	0%	3,860	0%
Naknek	Bay	2,012,463	18	0%	3,858	0%	3,860	0%
Igiugig	Bay	642,263	0	0%	3,840	1%	3,840	1%
Chistochina	East Alaska	591,167	9	0%	3,482	1%	3,482	1%
Kotzebue	Kobuk-Seward Peninsula	3,793,683	2,865	0%	2,865	0%	3,179	0%
Noorvik	Kobuk-Seward Peninsula	3,835,749	2,865	0%	2,865	0%	3,010	0%
Ambler	Kobuk-Seward Peninsula	4,997,146	2,865	0%	2,865	0%	3,010	0%
Kivalina	Kobuk-Seward Peninsula	2,033,273	0	0%	0	0%	2,983	0%
Buckland	Kobuk-Seward Peninsula	2,866,775	0	0%	0	0%	2,983	0%
Deering	Kobuk-Seward Peninsula	3,064,328	0	0%	0	0%	2,983	0%
Noatak	Kobuk-Seward Peninsula	3,087,329	0	0%	0	0%	2,983	0%
Kiana	Kobuk-Seward Peninsula	3,132,810	2,865	0%	2,865	0%	2,865	0%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Current Areas of Federal Subsistence Priority	Acres of Federal Subsistence Priority Lost under Alternative B		Acres of Federal Subsistence Priority Lost under Alternative C		Acres of Federal Subsistence Priority Lost under Alternative D	
			No.	%	No.	%	No.	%
Tolsona	East Alaska	22,024	0	0%	2,771	13%	2,771	13%
Portage Creek	Bay	690,885	0	0%	2,143	0%	2,219	0%
Chitina	East Alaska	679,335	9	0%	2,165	0%	2,165	0%
Chase	Ring of Fire	152,552	0	0%	2,164	1%	2,164	1%
Newhalen	Bay	784,208	0	0%	551	0%	1,287	0%
Nondalton	Bay	610,228	0	0%	517	0%	1,254	0%
Pedro Bay	Bay	178,953	0	0%	420	0%	1,081	1%
Seldovia	Ring of Fire	453,902	3	0%	1,004	0%	1,004	0%
Tanacross	East Alaska	94,855	9	0%	844	1%	844	1%
Tuluksak	Bering Sea-Western Interior	2,327,041	0	0%	726	0%	804	0%
Willow Creek	East Alaska	32,800	0	0%	291	1%	291	1%
Manokotak	Bay	1,483,103	0	0%	160	0%	236	0%
Twin Hills	Bay	3,113,157	0	0%	160	0%	236	0%
Platinum	Bay	4,406,034	0	0%	160	0%	236	0%
Togiak	Bay	5,404,696	0	0%	160	0%	236	0%
Dot Lake	East Alaska	582	9	1%	190	33%	190	33%
Northway	East Alaska	99,801	9	0%	190	0%	190	0%
Huslia	Bering Sea-Western Interior	2,072,241	0	0%	0	0%	145	0%
Kobuk	Kobuk-Seward Peninsula	2,941,374	0	0%	0	0%	145	0%
Shungnak	Kobuk-Seward Peninsula	3,382,568	0	0%	0	0%	145	0%
Selawik	Kobuk-Seward Peninsula	3,701,333	0	0%	0	0%	145	0%
Ekwok	Bay	700,014	18	0%	18	0%	97	0%
Koliganek	Bay	340,646	0	0%	0	0%	76	0%
Whittier	Ring of Fire	1,735,992	0	0%	1	0%	74	0%
Glacier View	East Alaska	3,606	0	0%	1	0%	74	2%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Current Areas of Federal Subsistence Priority	Acres of Federal Subsistence Priority Lost under Alternative B		Acres of Federal Subsistence Priority Lost under Alternative C		Acres of Federal Subsistence Priority Lost under Alternative D	
			No.	%	No.	%	No.	%
South Naknek	Bay	429,578	18	0%	18	0%	20	0%
Chickaloon	Ring of Fire	17	0	0%	0	0%	17	100%
Galena	Bering Sea-Western Interior	2,998,261	0	0%	0	0%	15	0%
Cooper Landing	Ring of Fire	1,982,401	5	0%	6	0%	6	0%
Ninilchik	Ring of Fire	1,086,167	1	0%	1	0%	1	0%
Nanwalek	Ring of Fire	48,141	0	0%	1	0%	1	0%
Nikolaevsk	Ring of Fire	34,330	0	0%	0	0%	0	0%
Tyonek	Ring of Fire	4,509	0	0%	0	0%	0	0%
Dry Creek	East Alaska	0	0	0%	0	0%	0	0%
Lake Minchumina	Bering Sea-Western Interior	0	0	0%	0	0%	0	0%
Tetlin	East Alaska	0	0	0%	0	0%	0	0%
Telida	Bering Sea-Western Interior	0	0	0%	0	0%	0	0%
Susitna	Ring of Fire	77	0	0%	0	0%	0	0%
Beluga	Ring of Fire	2,856	0	0%	0	0%	0	0%
Golovin	Kobuk-Seward Peninsula	74,219	0	0%	0	0%	0	0%
Klukwan	Ring of Fire	96,736	0	0%	0	0%	0	0%
Lake Louise	East Alaska	206,514	0	0%	0	0%	0	0%
Tatitlek	East Alaska	257,899	0	0%	0	0%	0	0%
Egegik	Ring of Fire	271,357	0	0%	0	0%	0	0%
Nikolai	Bering Sea-Western Interior	373,162	0	0%	0	0%	0	0%
Haines	Ring of Fire	387,154	0	0%	0	0%	0	0%
Hope	Ring of Fire	1,122,362	0	0%	0	0%	0	0%

Note: Areas losing Federal subsistence use priority following any Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings that are not otherwise encumbered that would immediately become effective selections. The loss of Federal subsistence use priority includes both temporary and permanent loss because even a temporary loss can have significant effects.

Table 3.14-8. Distance Analysis by Subsistence Analysis Community, Areas More Likely to Be Developed and Losing Federal Subsistence Priority if Overlapping 17(d)(1) Withdrawals are Revoked (Comparison of Action Alternatives)

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Ambler	Kobuk-Seward Peninsula	None	Peripheral	Central	Peripheral	Central	Peripheral
Brevig Mission	Kobuk-Seward Peninsula	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Buckland	Kobuk-Seward Peninsula	None	None	Central	None	Central	Peripheral
Deering	Kobuk-Seward Peninsula	None	None	Peripheral	None	Peripheral	Peripheral
Elim	Kobuk-Seward Peninsula	None	None	Central	None	Central	Central
Golovin	Kobuk-Seward Peninsula	None	None	Central	None	Central	Central
Kiana	Kobuk-Seward Peninsula	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Kivalina	Kobuk-Seward Peninsula	None	None	None	None	Peripheral	Peripheral
Kobuk	Kobuk-Seward Peninsula	None	None	Peripheral	None	Peripheral	Peripheral
Kotzebue	Kobuk-Seward Peninsula	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Koyuk	Kobuk-Seward Peninsula	None	None	Central	None	Adjacent	Peripheral
Noatak	Kobuk-Seward Peninsula	None	Peripheral	None	Peripheral	Peripheral	Adjacent
Nome	Kobuk-Seward Peninsula	None	None	Central	Peripheral	Central	Peripheral
Noorvik	Kobuk-Seward Peninsula	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Selawik	Kobuk-Seward Peninsula	None	None	Peripheral	None	Peripheral	Peripheral
Shaktolik	Kobuk-Seward Peninsula	None	None	None	None	Peripheral	Central
Shungnak	Kobuk-Seward Peninsula	None	None	Peripheral	None	Peripheral	Peripheral
Teller	Kobuk-Seward Peninsula	None	None	Peripheral	Peripheral	Peripheral	Peripheral
White Mountain	Kobuk-Seward Peninsula	None	None	Central	None	Central	Central
Akiachak	Bering Sea-Western Interior	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Akiak	Bering Sea-Western Interior	None	None	None	None	None	None
Aniak	Bering Sea-Western Interior	None	None	Peripheral	Adjacent	Peripheral	Adjacent
Anvik	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Chuathbaluk	Bering Sea-Western Interior	None	None	None	Central	None	Central
Crooked Creek	Bering Sea-Western Interior	None	None	Central	Peripheral	Central	Peripheral
Galena	Bering Sea-Western Interior	None	None	None	None	None	Peripheral
Georgetown	Bering Sea-Western Interior	None	None	Central	Peripheral	Central	Peripheral
Grayling	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral
Holy Cross	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral
Huslia	Bering Sea-Western Interior	None	None	None	None	None	Peripheral
Lake Minchumina	Bering Sea-Western Interior	None	Adjacent	None	Adjacent	None	Adjacent
Lower Kalskag	Bering Sea-Western Interior	None	None	None	Central	None	Central
Marshall	Bering Sea-Western Interior	None	None	None	Central	None	Central
McGrath	Bering Sea-Western Interior	None	None	None	None	None	Adjacent
Napaimute	Bering Sea-Western Interior	None	None	Peripheral	Central	Peripheral	Central
Nikolai	Bering Sea-Western Interior	None	None	None	None	None	Peripheral
Pilot Station	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral
Pitka's Point	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral
Red Devil	Bering Sea-Western Interior	None	None	Adjacent	Peripheral	Adjacent	Peripheral
Russian Mission	Bering Sea-Western Interior	None	None	None	Central	None	Central
Saint Mary's	Bering Sea-Western Interior	None	None	None	Peripheral	None	Peripheral
Saint Michael	Bering Sea-Western Interior	None	None	None	Central	None	Central
Sleetmute	Bering Sea-Western Interior	None	None	Central	None	Central	None
Stebbins	Bering Sea-Western Interior	None	None	None	Central	None	Central
Stony River	Bering Sea-Western Interior	None	None	Central	None	Central	None
Takotna	Bering Sea-Western Interior	None	None	None	None	None	Central
Telida	Bering Sea-Western Interior	None	Peripheral	None	Peripheral	None	Peripheral
Tuluksak	Bering Sea-Western Interior	None	None	Peripheral	Peripheral	Peripheral	Peripheral

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Unalakleet	Bering Sea-Western Interior	None	None	None	Central	None	Central
Upper Kalskag	Bering Sea-Western Interior	None	None	None	Central	None	Central
Aleknagik	Bay	None	None	Adjacent	Central	Adjacent	Central
Clark's Point	Bay	None	None	Central	Peripheral	Central	Peripheral
Dillingham	Bay	None	Peripheral	Central	Peripheral	Central	Peripheral
Ekuk	Bay	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Ekwok	Bay	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Igiugig	Bay	None	None	None	Central	None	Central
Iliamna	Bay	None	Peripheral	Central	Central	Central	Central
King Salmon	Bay	None	Adjacent	Adjacent	Adjacent	Adjacent	Adjacent
Kokhanok	Bay	None	None	Peripheral	Central	Peripheral	Central
Koliganek	Bay	None	None	None	Peripheral	None	Central
Levelock	Bay	None	Peripheral	Peripheral	Central	Peripheral	Central
Manokotak	Bay	None	None	Central	Peripheral	Central	Peripheral
Naknek	Bay	None	Central	Central	Central	Central	Central
New Stuyahok	Bay	None	None	Peripheral	Peripheral	Peripheral	Central
Newhalen	Bay	None	None	Central	Central	Central	Central
Nondalton	Bay	None	None	Central	Peripheral	Adjacent	Central
Pedro Bay	Bay	None	None	Central	Central	Central	Central
Platinum	Bay	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Pope-Vannoy Landing	Bay	None	None	Central	Adjacent	Central	Adjacent
Port Alsworth	Bay	None	None	Central	Peripheral	Central	Central
Portage Creek	Bay	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
South Naknek	Bay	None	Central	Central	Central	Central	Central
Togiak	Bay	None	None	Peripheral	Peripheral	Peripheral	Peripheral

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Twin Hills	Bay	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Beluga	Ring of Fire	None	None	Central	Peripheral	Central	Peripheral
Chase	Ring of Fire	None	None	Central	Peripheral	Central	Peripheral
Chickaloon	Ring of Fire	None	None	Central	Peripheral	Central	Peripheral
Cooper Landing	Ring of Fire	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Crown Point	Ring of Fire	None	Peripheral	None	Peripheral	None	Peripheral
Egegik	Ring of Fire	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Fox River	Ring of Fire	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Haines	Ring of Fire	None	Central	None	Central	None	Central
Halibut Cove	Ring of Fire	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Happy Valley	Ring of Fire	Peripheral	Central	Central	Central	Central	Central
Hope	Ring of Fire	None	Central	Peripheral	Central	Peripheral	Central
Klukwan	Ring of Fire	None	Central	None	Central	None	Central
Moose Pass	Ring of Fire	None	Peripheral	None	Peripheral	None	Peripheral
Nanwalek	Ring of Fire	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Nikolaevsk	Ring of Fire	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Ninilchik	Ring of Fire	None	Central	Central	Central	Central	Central
Petersville	Ring of Fire	None	None	Central	None	Central	None
Point MacKenzie	Ring of Fire	Peripheral	Central	Central	Central	Central	Central
Point Possession	Ring of Fire	Peripheral	Peripheral	Central	Peripheral	Central	Peripheral
Seldovia	Ring of Fire	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Skwentna	Ring of Fire	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Sunrise	Ring of Fire	Peripheral	Central	Peripheral	Central	Peripheral	Central
Susitna	Ring of Fire	None	Peripheral	Adjacent	Peripheral	Adjacent	Peripheral
Susitna North	Ring of Fire	None	None	Adjacent	None	Adjacent	None

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Talkeetna	Ring of Fire	None	None	Adjacent	Peripheral	Adjacent	Peripheral
Trapper Creek	Ring of Fire	Peripheral	Peripheral	Adjacent	Peripheral	Adjacent	Peripheral
Tyonek	Ring of Fire	None	Peripheral	Central	Peripheral	Central	Peripheral
Whittier	Ring of Fire	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Willow	Ring of Fire	Peripheral	Peripheral	Central	Peripheral	Central	Peripheral
Chistochina	East Alaska	Central	Central	Adjacent	Central	Adjacent	Central
Glennallen	East Alaska	Peripheral	Peripheral	Adjacent	Adjacent	Adjacent	Adjacent
Slana	East Alaska	Adjacent	Adjacent	Adjacent	Adjacent	Adjacent	Adjacent
Anderson	East Alaska	None	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Cantwell	East Alaska	None	Peripheral	Adjacent	Central	Adjacent	Central
Chitina	East Alaska	Peripheral	Peripheral	Central	Central	Central	Central
Copper Center	East Alaska	Peripheral	Peripheral	Central	Central	Central	Central
Cordova	East Alaska	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Delta Junction	East Alaska	None	None	None	None	None	Peripheral
Denali Park	East Alaska	None	Peripheral	Central	Central	Central	Central
Dot Lake	East Alaska	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Dry Creek	East Alaska	None	None	None	None	None	None
Eureka Roadhouse	East Alaska	None	None	Central	None	Central	Central
Ferry	East Alaska	None	None	Peripheral	Peripheral	Peripheral	Peripheral
Gakona	East Alaska	None	None	Central	Central	Central	Central
Glacier View	East Alaska	None	None	Central	Peripheral	Central	Central
Gulkana	East Alaska	Peripheral	Peripheral	Central	Central	Central	Central
Healy	East Alaska	None	Peripheral	Peripheral	Central	Peripheral	Central
Kenny Lake	East Alaska	Peripheral	Peripheral	Central	Central	Central	Central
Lake Louise	East Alaska	None	None	Central	Peripheral	Central	Peripheral

Analysis Community	Planning Area	Alternative B		Alternative C		Alternative D	
		Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority	Location of Likely Development	Location of Loss of Federal Subsistence Priority
Mendeltna	East Alaska	Peripheral	Peripheral	Adjacent	Peripheral	Adjacent	Peripheral
Mentasta Lake	East Alaska	Central	Central	Central	Adjacent	Central	Adjacent
Nabesna	East Alaska	Peripheral	Peripheral	Peripheral	Central	Peripheral	Central
Nelchina	East Alaska	Peripheral	Peripheral	Central	Peripheral	Central	Central
Northway	East Alaska	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Paxson	East Alaska	None	None	Central	Adjacent	Central	Adjacent
Silver Springs	East Alaska	None	None	Central	Central	Central	Central
Tanacross	East Alaska	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Tatitlek	East Alaska	None	None	Central	Peripheral	Central	Peripheral
Tazlina	East Alaska	None	None	Adjacent	Central	Adjacent	Central
Tetlin	East Alaska	None	None	Central	Peripheral	Central	Peripheral
Tok	East Alaska	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral	Peripheral
Tolsona	East Alaska	None	None	Central	Central	Central	Central
Tonsina	East Alaska	Peripheral	Peripheral	Central	Central	Central	Central
Willow Creek	East Alaska	None	None	Central	Central	Central	Central

Notes: Adjacent = within 5 miles of community; Central = within 25 miles of community; Peripheral = over 25 miles from the community; None = no use areas overlapping 17(d)(1) revocations more likely to be developed or losing Federal subsistence priority; or, where use area data are not available, no lands within 50 miles of community.

Areas losing Federal subsistence use priority following any Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings that are not otherwise encumbered and that would immediately become effective selections. The loss of Federal subsistence use priority includes both temporary and permanent loss because even a temporary loss can have significant effects.

Table 3.14-9. Acres of Game Management Units Losing Federal Subsistence Priority Lost, by Alternative

GMU	Acres of Federal Subsistence Priority	Acres of GMU Losing Federal Subsistence Priority Under Alternative B		Acres of GMU Losing Federal Subsistence Priority Under Alternative C		Acres of GMU Losing Federal Subsistence Priority Under Alternative D	
		No.	%	No.	%	No.	%
1	8,470,612	395	0.00%	395	0.00%	395	0.00%
2	1,823,420	0	0.00%	0	0.00%	0	0.00%
3	1,811,758	0	0.00%	0	0.00%	0	0.00%
4	3,607,557	0	0.00%	0	0.00%	0	0.00%
5	3,259,814	0	0.00%	0	0.00%	0	0.00%
6	5,091,007	0	0.00%	0	0.00%	0	0.00%
7	1,271,021	0	0.00%	0	0.00%	0	0.00%
8	1,673,634	0	0.00%	0	0.00%	0	0.00%
9	8,802,221	18	0.00%	4,375	0.05%	5,038	0.06%
10	3,217,253	0	0.00%	0	0.00%	0	0.00%
11	7,152,469	1	0.00%	7,996	0.11%	7,996	0.11%
12	3,901,147	0	0.00%	22,316	0.57%	22,316	0.57%
13	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
14	250,216	422	0.00%	1,982	0.79%	1,982	0.79%
15	1,827,286	5	0.00%	6	0.00%	6	0.00%
16	2,125,870	123	0.00%	275	0.01%	11,713	0.55%
17	3,367,553	0	0.00%	160	0.00%	236	0.01%
18	18,978,483	0	0.00%	13,922	0.07%	20,784	0.11%
19	4,605,799	22,674	0.27%	25,723	0.56%	47,216	1.03%
20	5,233,907	3,775	0.04%	20,419	0.39%	20,418	0.39%
21	13,631,127	0	0.00%	20,382	0.15%	50,254	0.37%
22	7,201,809	0	0.00%	245,637	3.41%	283,273	3.93%
23	19,278,377	2,865	0.03%	2,865	0.01%	5,993	0.03%
24	10,804,851	0	0.00%	0	0.00%	0	0.00%
25	25,270,801	0	0.00%	0	0.00%	0	0.00%
26	34,643,712	0	0.00%	0	0.00%	0	0.00%

Table 3.14-10. Percentage of Use Areas Overlapping Where 17(d)(1) Withdrawals Would be Revoked and the Areas More Likely to Be Developed or Losing Federal Subsistence Priority, Alternative C

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked in Areas More Likely to be Developed	
		No.	%	No.	%
Ambler	Kobuk-Seward Peninsula	2,865	0.01%	5,606	0.02%
Brevig Mission	Kobuk-Seward Peninsula	15,786	0.42%	14,683	0.39%
Buckland	Kobuk-Seward Peninsula	0	0.00%	3,874	0.05%
Deering	Kobuk-Seward Peninsula	0	0.00%	3,667	0.05%
Elim	Kobuk-Seward Peninsula	No	No	Yes	Yes
Golovin	Kobuk-Seward Peninsula	0	0.00%	813	0.07%
Kiana	Kobuk-Seward Peninsula	2,865	0.02%	30	0.00%
Kivalina	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Kobuk	Kobuk-Seward Peninsula	0	0.00%	1,909	0.01%
Kotzebue	Kobuk-Seward Peninsula	2,865	0.02%	3,697	0.03%
Koyuk	Kobuk-Seward Peninsula	No	No	Yes	Yes
Noatak	Kobuk-Seward Peninsula	0	0.00%	0	0.00%
Nome	Kobuk-Seward Peninsula	42,067	0.34%	27,896	0.23%
Noorvik	Kobuk-Seward Peninsula	2,865	0.02%	2,693	0.02%
Selawik	Kobuk-Seward Peninsula	0	0.00%	3,667	0.03%
Shaktolik	Kobuk-Seward Peninsula	No	No	No	No
Shungnak	Kobuk-Seward Peninsula	0	0.00%	5,576	0.02%
Teller	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
White Mountain	Kobuk-Seward Peninsula	No	No	Yes	Yes
Akiachak	Bering Sea-Western Interior	732	0.01%	994	0.01%
Akiak	Bering Sea-Western Interior	N/A	N/A	No	No
Aniak	Bering Sea-Western Interior	3,502	0.04%	994	0.01%
Anvik	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Chuathbaluk	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Crooked Creek	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Galena	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Georgetown	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Grayling	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Holy Cross	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Huslia	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Lake Minchumina	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Lower Kalskag	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Marshall	Bering Sea-Western Interior	2,210	0.10%	N/A	N/A
McGrath	Bering Sea-Western Interior	No	No	N/A	N/A

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked in Areas More Likely to be Developed	
		No.	%	No.	%
Napaimute	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Nikolai	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Pitka's Point	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Pilot Station	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Red Devil	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Russian Mission	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Saint Mary's	Bering Sea-Western Interior	67,998	1.37%	N/A	N/A
Saint Michael	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Sleetmute	Bering Sea-Western Interior	N/A	N/A	Yes	Yes
Stebbins	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Stony River	Bering Sea-Western Interior	N/A	N/A	Yes	Yes
Takotna	Bering Sea-Western Interior	No	No	No	No
Telida	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Tuluksak	Bering Sea-Western Interior	726	0.02%	994	0.02%
Unalakleet	Bering Sea-Western Interior	59,807	3.35%	N/A	N/A
Upper Kalskag	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Aleknagik	Bay	4,000	0.04%	189	0.00%
Clark's Point	Bay	4,000	0.05%	189	0.00%
Dillingham	Bay	4,001	0.03%	189	0.00%
Ekuk	Bay	Yes	Yes	Yes	Yes
Ekwok	Bay	18	0.00%	< 1	0.00%
Igiugig	Bay	3,840	0.15%	N/A	N/A
Iliamna	Bay	4,529	0.03%	178	0.00%
King Salmon	Bay	3,858	0.09%	< 1	0.00%
Kokhanok	Bay	4,357	0.11%	72	0.00%
Koliganek	Bay	0	0.00%	N/A	N/A
Levelock	Bay	3,840	0.13%	0	0.00%
Manokotak	Bay	160	0.00%	189	0.00%
Naknek	Bay	3,858	0.06%	< 1	0.00%
New Stuyahok	Bay	3,840	0.04%	0	0.00%
Newhalen	Bay	551	0.01%	1	0.00%
Nondalton	Bay	517	0.01%	1	0.00%
Pedro Bay	Bay	420	0.04%	72	0.01%
Platinum	Bay	160	0.00%	189	0.00%
Pope-Vannoy Landing	Bay	Yes	Yes	Yes	Yes
Port Alsworth	Bay	4,342	0.03%	1	0.00%
Portage Creek	Bay	2,143	0.03%	12	0.00%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked in Areas More Likely to be Developed	
		No.	%	No.	%
South Naknek	Bay	18	0.00%	< 1	0.00%
Togiak	Bay	160	0.00%	189	0.00%
Twin Hills	Bay	160	0.00%	189	0.00%
Beluga	Ring of Fire	0	0.00%	< 1	0.00%
Chase	Ring of Fire	2,164	0.09%	5,082	0.21%
Chickaloon	Ring of Fire	0	0.00%	2,328	0.32%
Cooper Landing	Ring of Fire	6	0.00%	581	0.01%
Crown Point	Ring of Fire	Yes	Yes	N/A	N/A
Egegik	Ring of Fire	0	0.00%	0	0.00%
Fox River	Ring of Fire	Yes	Yes	Yes	Yes
Haines	Ring of Fire	0	0.00%	N/A	N/A
Halibut Cove	Ring of Fire	Yes	Yes	Yes	Yes
Happy Valley	Ring of Fire	Yes	Yes	Yes	Yes
Hope	Ring of Fire	0.0	0.00%	83	0.01%
Klukwan	Ring of Fire	0	0.00%	N/A	N/A
Moose Pass	Ring of Fire	Yes	Yes	N/A	N/A
Nanwalek	Ring of Fire	1.0	0.00%	272	0.01%
Nikolaevsk	Ring of Fire	0.4	0.00%	5	0.00%
Ninilchik	Ring of Fire	1	0.00%	159	0.00%
Petersville	Ring of Fire	No	No	Yes	Yes
Point MacKenzie	Ring of Fire	Yes	Yes	Yes	Yes
Point Possession	Ring of Fire	Yes	Yes	Yes	Yes
Seldovia	Ring of Fire	1,004	0.03%	815	0.02%
Skwentna	Ring of Fire	19,563	0.44%	1	0.00%
Sunrise	Ring of Fire	Yes	Yes	Yes	Yes
Susitna	Ring of Fire	0	0.00%	1	0.00%
Susitna North	Ring of Fire	N/A	N/A	Yes	Yes
Talkeetna	Ring of Fire	74,605	0.77%	14,960	0.15%
Trapper Creek	Ring of Fire	107,875	1.86%	5,703	0.10%
Tyonek	Ring of Fire	0.04	0.00%	0.24	0.00%
Whittier	Ring of Fire	1	0.00%	4,822	0.08%
Willow	Ring of Fire	Yes	Yes	Yes	Yes
Anderson	East Alaska	19,175	0.15%	4,079	0.03%
Cantwell	East Alaska	138,520	3.21%	6,328	0.15%
Chistochina	East Alaska	3,482	0.21%	11,701	0.71%
Chitina	East Alaska	2,165	0.15%	7,032	0.47%
Copper Center	East Alaska	39,075	0.69%	62,439	1.11%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked in Areas More Likely to be Developed	
		No.	%	No.	%
Cordova	East Alaska	Yes	Yes	Yes	Yes
Delta Junction	East Alaska	No	No	N/A	N/A
Denali Park	East Alaska	21,479	0.54%	6,306	0.16%
Dot Lake	East Alaska	190	0.03%	795	0.14%
Dry Creek	East Alaska	0	0.00%	N/A	N/A
Eureka Roadhouse	East Alaska	No	No	Yes	Yes
Ferry	East Alaska	13,759	0.96%	410	0.03%
Gakona	East Alaska	18,728	0.50%	24,645	0.65%
Glacier View	East Alaska	1	0.00%	60	0.00%
Glennallen	East Alaska	59,419	1.17%	56,094	1.11%
Gulkana	East Alaska	28,352	1.34%	52,468	2.47%
Healy	East Alaska	139,159	1.41%	6,175	0.06%
Kenny Lake	East Alaska	7,265	0.26%	16,519	0.59%
Lake Louise	East Alaska	0	0.00%	13,599	1.18%
Mendeltna	East Alaska	22,722	0.45%	49,971	1.00%
Mentasta Lake	East Alaska	87,808	0.95%	30,965	0.34%
Nabesna	East Alaska	57,314	2.49%	7,627	0.33%
Nelchina	East Alaska	22,722	0.44%	49,971	0.98%
Northway	East Alaska	190	0.01%	3,798	0.15%
Paxson	East Alaska	26,875	1.33%	6,889	0.34%
Silver Springs	East Alaska	Yes	Yes	Yes	Yes
Slana	East Alaska	69,112	3.42%	14,603	0.72%
Tanacross	East Alaska	844	0.03%	13,525	0.53%
Tatitlek	East Alaska	0	0.00%	0	0.00%
Tazlina	East Alaska	9,600	0.31%	5,999	0.19%
Tetlin	East Alaska	0	0.00%	0	0.00%
Tok	East Alaska	76,865	0.79%	26,746	0.27%
Tolsona	East Alaska	2,771	0.15%	1,100	0.06%
Tonsina	East Alaska	19,018	0.45%	57,613	1.35%
Willow Creek	East Alaska	291	0.25%	54	0.05%

Notes: Communities with yes/no entries do not have available subsistence use area data. Presence/absence of overlap is based on an assumed 50-mile radius of subsistence use around the community. Subsistence use area data are not available for these communities to calculate the acreage of the overlap. For communities with no subsistence use area data, see Table 3.14-6 for an analysis of revoked lands within 50 miles of these analysis communities.

N/A = Community is not an analysis community for either the areas more likely to be developed or areas losing federal subsistence priority, because the community is not within 50 miles/use area is not overlapping the analysis area.

* Areas losing Federal subsistence use priority following any Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings that are not otherwise encumbered that would immediately become effective selections. The loss of Federal subsistence use priority includes both temporary and permanent loss because even a temporary loss can have significant effects.

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Table 3.14-11. Federal Subsistence Permit Data, Game Management Unit 13, 2010–2022

Analysis Community	Planning Area	GMU where Community Is Located	C&T Use Determinations in GMU 13 - Caribou	C&T Use Determinations in GMU 13 - Moose	Average Annual Caribou Permits Issued (FC1302)	Average Annual Caribou Harvest (FC1302)	Average Annual Moose Permits Issued (FM1301)	Average Annual Moose Harvest (FM1301)	Average Annual Caribou/Moose Permits Issued (FC1302/FM1301)	Average Annual Caribou/Moose Harvested (FC1302/FM1301)
Delta Junction	East Alaska	20D	13B	13B	1,542	173	695	24	2,237	197
Copper Center	East Alaska	13	13 ALL	13 ALL	370	53	168	17	538	70
Glennallen	East Alaska	13	13 ALL	13 ALL	264	36	115	8	378	44
Kenny Lake	East Alaska	13	13 ALL	13 ALL	165	19	71	4	236	23
Gakona	East Alaska	13	13 ALL	13 ALL	160	19	73	6	233	25
Tazlina	East Alaska	13	13 ALL	13 ALL	117	14	54	4	171	18
Slana	East Alaska	13C	13 ALL	13 ALL	85	6	33	1	117	6
Cantwell	East Alaska	13	13 ALL	13 ALL	74	4	36	3	110	7
Chickaloon	Ring of Fire	14A	13 ALL	13 ALL	55	11	17	0	72	11
Chitina	East Alaska	13	13 ALL	13 ALL	38	6	7	0	45	6
Glacier View	East Alaska	13	13 ALL	13 ALL	31	4	9	1	40	5
Nelchina	East Alaska	13	13 ALL	13 ALL	21	3	8	1	30	3
Tolsona	East Alaska	13	13 ALL	13 ALL	27	3	0	0	27	3
Gulkana	East Alaska	13	13 ALL	13 ALL	17	1	8	1	26	2
Paxson	East Alaska	13	13 ALL	13 ALL	18	3	8	1	26	4
Tonsina	East Alaska	13	13 ALL	13 ALL	20	2	0	0	20	2
Lake Louise	East Alaska	13	13 ALL	13 ALL	12	2	5	0	17	2
Silver Springs	East Alaska	13	13 ALL	13 ALL	16	2	0	0	16	2
Nabesna	East Alaska	13	13 ALL	13C	8	0	4	0	12	0
Willow Creek	East Alaska	13	13 ALL	13 ALL	7	1	3	0	11	1
Mentasta Lake	East Alaska	13	13 ALL	13 ALL	4	0	4	0	8	0
Chistochina	East Alaska	13	13 ALL	13 ALL	4	0	2	0	6	0
Eureka Roadhouse	East Alaska	13	13 ALL	13 ALL	4	0	1	0	5	1
McCarthy	East Alaska	11	13C	None	5	1	0	0	5	1
Healy Lake	East Alaska	20D	13C	13C	3	0	1	1	4	1
Tok	East Alaska	12	13 ALL	13C	4	0	0	0	4	0
Mendeltna	East Alaska	13	13 ALL	13 ALL	2	0	1	0	3	0
Chase	Ring of Fire	13E	13 ALL	13 ALL	1	0	0	0	2	0
Dot Lake	East Alaska	20D	13B	13B	1	0	0	0	1	0
Denali Park	East Alaska	13+20	13E	13E	1	0	0	0	1	0
Northway	East Alaska	12	13 ALL	13C	0	0	0	0	0	0
Dry Creek	East Alaska	20D	13B	13B	0	0	0	0	0	0
Tanacross	East Alaska	12	13 ALL	13C	0	0	0	0	0	0
Tetlin	East Alaska	12	13 ALL	13C	0	0	0	0	0	0

Source: BLM (2023).

Table 3.14-12. Loss of Federal Subsistence Priority within Game Management Unit 13 by Community and Alternative

Analysis Community	Planning Area	C&T Use - Caribou	C&T Use - Moose	Acres of Federal Subsistence Priority	Federal Acres Losing Federal Subsistence Priority Under Alternative B		Federal Acres Losing Federal Subsistence Priority Under Alternative C		Federal Acres Losing Federal Subsistence Priority Under Alternative D	
					No.	%	No.	%	No.	%
Cantwell	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Chase	Ring of Fire	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Chickaloon	Ring of Fire	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Chistochina	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Chitina	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Copper Center	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Delta Junction	East Alaska	13B	13B	454,962	124	0.00%	27,690	6.09%	27,690	6.09%
Denali Park	East Alaska	13E	13E	964,306	-	0.00%	121,535	12.60%	121,535	39.69%
Dot Lake	East Alaska	13B	13B	454,962	124	0.00%	27,690	6.09%	27,690	6.09%
Dry Creek	East Alaska	13B	13B	454,962	124	0.00%	27,690	6.09%	27,690	6.09%
Eureka Roadhouse	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Gakona	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Glacier View	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Glennallen	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Gulkana	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Healy Lake	East Alaska	13C	13C	49,919	7	0.00%	48,579	97.31%	48,579	97.32%
Kenny Lake	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Lake Louise	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
McCarthy	East Alaska	None	13C	49,919	7	0.00%	48,579	97.31%	48,579	97.32%
Mendeltna	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Mentasta Lake	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Nabesna	East Alaska	13 ALL	13C	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Nelchina	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Northway	East Alaska	None	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Paxson	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Silver Springs	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Slana	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tanacross	East Alaska	None	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tazlina	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tetlin	East Alaska	None	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tok	East Alaska	None	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tolsona	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Tonsina	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%
Willow Creek	East Alaska	13 ALL	13 ALL	1,981,876	132	0.00%	215,442	10.87%	215,515	10.87%

Table 3.14-13. Percentage of Use Areas Overlapping Where 17(d)(1) Withdrawals Would be Revoked and That Are More Likely to Be Developed or Losing Federal Subsistence Priority, Alternative D

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas More Likely to be Developed	
		No.	%	No.	%
Ambler	Kobuk-Seward Peninsula	3,010	0.01%	9,511	0.03%
Brevig Mission	Kobuk-Seward Peninsula	26,973	0.72%	20,676	0.55%
Buckland	Kobuk-Seward Peninsula	2,983	0.04%	4,593	0.06%
Deering	Kobuk-Seward Peninsula	2,983	0.04%	4,385	0.05%
Elim	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
Golovin	Kobuk-Seward Peninsula	0	0.00%	813	0.07%
Kiana	Kobuk-Seward Peninsula	2,865	0.02%	30	0.00%
Kivalina	Kobuk-Seward Peninsula	2,983	0.03%	15,666	0.14%
Kobuk	Kobuk-Seward Peninsula	145	0.00%	5,095	0.03%
Kotzebue	Kobuk-Seward Peninsula	3,179	0.03%	4,416	0.03%
Koyuk	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
Noatak	Kobuk-Seward Peninsula	2,983	0.01%	15,666	0.07%
Nome	Kobuk-Seward Peninsula	53,720	0.44%	33,841	0.28%
Noorvik	Kobuk-Seward Peninsula	3,010	0.02%	18,095	0.12%
Selawik	Kobuk-Seward Peninsula	145	0.00%	4,385	0.04%
Shaktolik	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
Shungnak	Kobuk-Seward Peninsula	145	0.00%	9,480	0.04%
Teller	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
White Mountain	Kobuk-Seward Peninsula	Yes	Yes	Yes	Yes
Akiachak	Bering Sea-Western Interior	6,989	0.08%	994	0.01%
Akiak	Bering Sea-Western Interior	N/A	N/A	No	No
Aniak	Bering Sea-Western Interior	40,619	0.51%	1,050	0.01%
Anvik	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Chuathbaluk	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Crooked Creek	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Galena	Bering Sea-Western Interior	15	0.00%	N/A	N/A
Georgetown	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Grayling	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Holy Cross	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Huslia	Bering Sea-Western Interior	145	0.00%	N/A	N/A
Lake Minchumina	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Lower Kalskag	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Marshall	Bering Sea-Western Interior	4,248	0.18%	N/A	N/A
McGrath	Bering Sea-Western Interior	Yes	Yes	N/A	N/A

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas More Likely to be Developed	
		No.	%	No.	%
Napaimute	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Nikolai	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Pilot Station	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Pitka's Point	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Red Devil	Bering Sea-Western Interior	Yes	Yes	Yes	Yes
Russian Mission	Bering Sea-Western Interior	103,179	2.08%	N/A	N/A
Saint Mary's	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Saint Michael	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Sleetmute	Bering Sea-Western Interior	N/A	N/A	Yes	Yes
Stebbins	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Stony River	Bering Sea-Western Interior	N/A	N/A	Yes	Yes
Takotna	Bering Sea-Western Interior	Yes	Yes	No	No
Telida	Bering Sea-Western Interior	0	0.00%	N/A	N/A
Tuluksak	Bering Sea-Western Interior	804	0.02%	994	0.02%
Unalakleet	Bering Sea-Western Interior	68,078	3.81%	N/A	N/A
Upper Kalskag	Bering Sea-Western Interior	Yes	Yes	N/A	N/A
Aleknagik	Bay	4,076	0.04%	1,720	0.02%
Clark's Point	Bay	4,079	0.05%	239	0.00%
Dillingham	Bay	4,077	0.03%	1,452	0.01%
Ekuk	Bay	Yes	Yes	Yes	Yes
Ekwok	Bay	97	0.00%	28	0.00%
Igiugig	Bay	3,840	0.15%	N/A	N/A
Iliamna	Bay	5,266	0.03%	2,059	0.01%
King Salmon	Bay	3,860	0.09%	28	0.00%
Kokhanok	Bay	4,357	0.11%	690	0.02%
Koliganek	Bay	76	0.00%	N/A	N/A
Levelock	Bay	3,916	0.13%	0	0.00%
Manokotak	Bay	236	0.00%	211	0.00%
Naknek	Bay	3,860	0.06%	28	0.00%
New Stuyahok	Bay	3,916	0.05%	1,866	0.02%
Newhalen	Bay	1,287	0.03%	1,860	0.05%
Nondalton	Bay	1,254	0.03%	1,860	0.04%
Pedro Bay	Bay	1,081	0.09%	72	0.01%
Platinum	Bay	236	0.00%	211	0.00%
Pope-Vannoy Landing	Bay	Yes	Yes	Yes	Yes
Port Alsworth	Bay	5,079	0.03%	1,860	0.01%
Portage Creek	Bay	2,219	0.04%	34	0.00%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas More Likely to be Developed	
		No.	%	No.	%
South Naknek	Bay	20	0.00%	28	0.00%
Togiak	Bay	236	0.00%	211	0.00%
Twin Hills	Bay	236	0.00%	211	0.00%
Beluga	Ring of Fire	0	0.00%	< 1	0.00%
Chase	Ring of Fire	2,164	0.09%	5,082	0.21%
Chickaloon	Ring of Fire	17	0.00%	2,341	0.32%
Cooper Landing	Ring of Fire	6	0.00%	581	0.01%
Crown Point	Ring of Fire	Yes	Yes	N/A	N/A
Egegik	Ring of Fire	0	0.00%	0	0.00%
Fox River	Ring of Fire	Yes	Yes	Yes	Yes
Haines	Ring of Fire	0	0.00%	N/A	N/A
Halibut Cove	Ring of Fire	Yes	Yes	Yes	Yes
Happy Valley	Ring of Fire	Yes	Yes	Yes	Yes
Hope	Ring of Fire	0	0.00%	83	0.01%
Klukwan	Ring of Fire	0	0.00%	N/A	N/A
Moose Pass	Ring of Fire	Yes	Yes	N/A	N/A
Nanwalek	Ring of Fire	1	0.00%	272	0.01%
Nikolaevsk	Ring of Fire	0	0.00%	5	0.00%
Ninilchik	Ring of Fire	1	0.00%	159	0.00%
Petersville	Ring of Fire	N/A	N/A	Yes	Yes
Point MacKenzie	Ring of Fire	Yes	Yes	Yes	Yes
Point Possession	Ring of Fire	Yes	Yes	Yes	Yes
Seldovia	Ring of Fire	1,004	0.03%	815	0.02%
Skwentna	Ring of Fire	19,563	0.44%	1	0.00%
Sunrise	Ring of Fire	Yes	Yes	Yes	Yes
Susitna	Ring of Fire	0	0.00%	1	0.00%
Susitna North	Ring of Fire	N/A	N/A	Yes	Yes
Talkeetna	Ring of Fire	74,605	0.77%	14,973	0.15%
Trapper Creek	Ring of Fire	107,875	1.86%	5,703	0.10%
Tyonek	Ring of Fire	0	0.00%	< 1	0.00%
Whittier	Ring of Fire	74	Yes	4,915	0.08%
Willow	Ring of Fire	Yes	Yes	Yes	Yes
Anderson	East Alaska	19,199	0.15%	4,103	0.03%
Cantwell	East Alaska	138,520	3.21%	6,330	0.15%
Chistochina	East Alaska	3,482	0.21%	11,737	0.71%
Chitina	East Alaska	2,165	0.15%	7,067	0.48%
Copper Center	East Alaska	39,148	0.69%	62,530	1.11%

Analysis Community	Planning Area	Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas Where Federal Subsistence Priority Would be Lost*		Acres of Use Areas Overlapping Withdrawals that Would be Revoked and Areas More Likely to be Developed	
		No.	%	No.	%
Cordova	East Alaska	Yes	Yes	Yes	Yes
Delta Junction	East Alaska	Yes	Yes	N/A	N/A
Denali Park	East Alaska	21,479	0.54%	6,306	0.16%
Dot Lake	East Alaska	190	0.03%	795	0.14%
Dry Creek	East Alaska	0	0.00%	N/A	N/A
Eureka Roadhouse	East Alaska	Yes	Yes	Yes	Yes
Ferry	East Alaska	13,759	0.96%	410	0.03%
Gakona	East Alaska	18,728	0.50%	24,681	0.65%
Glacier View	East Alaska	74	0.00%	114	0.01%
Glennallen	East Alaska	59,493	1.18%	56,185	1.11%
Gulkana	East Alaska	28,352	1.34%	52,505	2.47%
Healy	East Alaska	139,159	1.41%	6,175	0.06%
Kenny Lake	East Alaska	7,265	0.26%	16,555	0.60%
Lake Louise	East Alaska	0	0.00%	13,599	1.18%
Mendeltna	East Alaska	22,795	0.45%	50,062	1.00%
Mentasta Lake	East Alaska	87,808	0.95%	31,001	0.34%
Nabesna	East Alaska	57,314	2.49%	7,627	0.33%
Nelchina	East Alaska	22,795	0.44%	50,062	0.98%
Northway	East Alaska	190	0.01%	3,798	0.15%
Paxson	East Alaska	26,875	1.33%	6,890	0.34%
Silver Springs	East Alaska	Yes	Yes	Yes	Yes
Slana	East Alaska	69,112	3.42%	14,603	0.72%
Tanacross	East Alaska	844	0.03%	13,525	0.53%
Tatitlek	East Alaska	0	0.00%	0	0.00%
Tazlina	East Alaska	9,600	0.31%	6,036	0.19%
Tetlin	East Alaska	0	0.00%	0	0.00%
Tok	East Alaska	76,865	0.79%	26,781	0.28%
Tolsona	East Alaska	2,771	0.15%	1,101	0.06%
Tonsina	East Alaska	19,018	0.45%	57,646	1.35%
Willow Creek	East Alaska	291	0.25%	54	0.05%

Notes: Communities with yes/no entries do not have available subsistence use area data. Presence/absence of overlap is based on an assumed 50 mile radius of subsistence use around the community. Subsistence use area data are not available for these communities to calculate the acreage of the overlap. For communities with no subsistence use area data, see Table 3.14-6 for an analysis of revoked lands within 50 miles of these analysis communities.

N/A = Community is not an analysis community for either the areas more likely to be developed or areas losing federal subsistence priority, because the community is not within 50 miles/use area is not overlapping the analysis area.

*Areas losing Federal subsistence use priority following any Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings that are not otherwise encumbered that would immediately become effective selections. The loss of Federal subsistence use priority includes both temporary and permanent loss because even a temporary loss can have significant effects.

Table 3.14-14. Top Harvested Species by Planning Area

Kobuk-Seward Peninsula	Bering Sea-Western Interior	Bay	Ring of Fire	East Alaska
Bearded Seal	Bearded Seal	Beaver	Blueberry	Blueberry
Beaver	Beaver	Beluga	Butter Clams	Caribou
Beluga	Beluga	Caribou	Caribou	Chinook Salmon
Blue King Crab	Broad Whitefish	Chinook Salmon	Cattle - Feral	Chum Salmon
Blueberry	Caribou	Chum Salmon	Chinook Salmon	Coho Salmon
Bowhead	Chinook Salmon	Cloud Berry	Chum Salmon	Deer
Broad Whitefish	Chum Salmon	Coho Salmon	Cod	Grayling
Burbot	Cloud Berry	Dolly Varden	Coho Salmon	Halibut
Caribou	Coho Salmon	Harbor Seal	Crowberry	Harbor Seal
Chum Salmon	Geese	Herring	Deer	Hare
Dolly Varden	Herring	Herring Spawn on Kelp	Dolly Varden	Humpback Whitefish
Humpback Whitefish	Humpback Whitefish	Humpback Whitefish	Dungeness Crab	Lake Trout
Moose	Moose	Moose	Halibut	Low Bush Cranberry
Northern Pike	Northern Pike	Pike	Harbor Seal	Moose
Pink Salmon	Pink Salmon	Rainbow Smelt	Moose	Pike (large)
Rainbow Smelt	Sheefish	Sockeye Salmon	Pink Salmon	Sockeye Salmon
Ringed Seal	Sockeye Salmon	Spawning Sockeye	Rockfish	Steller Sea Lion
Sheefish	Walrus	Spotted Seal	Smelt	
Sockeye Salmon		Walrus	Sockeye Salmon	
Spotted Seal			Steller Sea Lion	
Walrus			Tanner Crab	

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Table 3.14-15. Subsistence Use Area Likely to Return to Federal Subsistence Priority

Analysis Community	Planning Area	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative B (all Priority 3 and 4 selected lands)	Alternative B Acres of Federal Subsistence Priority Lost	Alternative B Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of All Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative C (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative C Acres of Federal Subsistence Priority Lost	Alternative C Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative D (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative D Acres of Federal Subsistence Priority Lost	Alternative D Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands
Trapper Creek	Ring of Fire	15,314	125	15,189	17,777	107,875	-90,098	18,206	107,875	-89,669
Mentasta Lake	East Alaska	8,640	9	8,631	9,157	87,808	-78,651	13,025	87,808	-74,783
Tok	East Alaska	8,640	9	8,631	8,718	76,865	-68,147	10,761	76,865	-66,104
Slana	East Alaska	31	9	23	31	69,112	-69,081	4,040	69,112	-65,072
Nabesna	East Alaska	0	9	-9	0	57,314	-57,314	0	57,314	-57,314
Glennallen	East Alaska	12,228	133	12,095	19,220	59,419	-40,200	20,133	59,493	-39,360
Gulkana	East Alaska	2,510	9	2,501	4,096	28,352	-24,256	6,314	28,352	-22,038
Skwentna	Ring of Fire	277	0	277	277	19,563	-19,285	0	19,563	-19,563
Paxson	East Alaska	8,110	0	8,110	10,631	26,875	-16,244	10,758	26,875	-16,116
Mendeltna	East Alaska	2,972	9	2,963	9,608	22,722	-13,114	10,354	22,795	-12,441
Nelchina	East Alaska	2,972	9	2,963	9,608	22,722	-13,114	10,354	22,795	-12,441
Tazlina	East Alaska	2,546	0	2,546	3,410	9,600	-6,190	928	9,600	-8,672
Tolsona	East Alaska	951	0	951	951	2,771	-1,821	0	2,771	-2,771
Healy	East Alaska	126,704	124	126,580	145,505	139,159	6,346	138,423	139,159	-737
Chitina	East Alaska	615	9	606	1,143	2,165	-1,022	1,434	2,165	-731
Dot Lake	East Alaska	0	9	-9	0	190	-190	0	190	-190
Northway	East Alaska	5	9	-4	5	190	-185	0	190	-190
Glacier View	East Alaska	1,031	0	1,031	1,031	1	1,030	0	74	-74
Willow Creek	East Alaska	1,229	0	1,229	1,457	291	1,167	255	291	-36
Chickaloon	Ring of Fire	26	0	26	26	0	26	0	17	-17
Cooper Landing	Ring of Fire	2,911	5	2,905	2,911	6	2,905	0	6	-6
Nikolaevsk	Ring of Fire	0	0	0	0	0	0	0	0	0
Dry Creek	East Alaska	0	0	0	0	0	0	0	0	0
Egegik	Ring of Fire	0	0	0	0	0	0	0	0	0
Haines	Ring of Fire	2	0	2	2	0	2	0	0	0
Hope	Ring of Fire	725	0	725	725	0	725	0	0	0
Lake Minchumina	Bering Sea-Western Interior	0	0	0	0	0	0	0	0	0
Nikolai	Bering Sea-Western Interior	0	0	0	0	0	0	0	0	0
Susitna	Ring of Fire	125	0	125	125	0	125	0	0	0
Tatitlek	East Alaska	0	0	0	0	0	0	0	0	0
Tetlin	East Alaska	0	0	0	0	0	0	0	0	0
Ninilchik	Ring of Fire	3,226	1	3,225	3,226	1	3,225	13	1	11
Nanwalek	Ring of Fire	1,046	0	1,046	1,046	1	1,045	13	1	12

Analysis Community	Planning Area	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative B (all Priority 3 and 4 selected lands)	Alternative B Acres of Federal Subsistence Priority Lost	Alternative B Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of All Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative C (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative C Acres of Federal Subsistence Priority Lost	Alternative C Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative D (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative D Acres of Federal Subsistence Priority Lost	Alternative D Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands
Tanacross	East Alaska	15	9	6	15	844	-829	1,172	844	328
Seldovia	Ring of Fire	7,889	3	7,886	8,380	1,004	7,376	1,342	1,004	338
Chistochina	East Alaska	164	9	155	164	3,482	-3,319	4,040	3,482	558
Klukwan	Ring of Fire	1,122	0	1,122	1,122	0	1,122	875	0	875
Beluga	Ring of Fire	1,642	0	1,642	1,642	0	1,642	1,517	0	1,517
South Naknek	Bay	8,023	18	8,005	8,023	18	8,005	1,904	20	1,884
Tyonek	Ring of Fire	1,939	0	1,939	1,939	0	1,939	1,939	0	1,939
Whittier	Ring of Fire	7,864	0	7,864	9,086	1	9,084	2,418	74	2,344
Lake Louise	East Alaska	2,342	0	2,342	3,284	0	3,284	3,581	0	3,581
Kenny Lake	East Alaska	20,819	9	20,810	21,630	7,265	14,364	11,592	7,265	4,326
Denali Park	East Alaska	22,938	74	22,864	27,265	21,479	5,786	26,737	21,479	5,257
Telida	Bering Sea-Western Interior	6,457	0	6,457	6,457	0	6,457	6,457	0	6,457
Gakona	East Alaska	27,068	9	27,059	30,010	18,728	11,282	25,734	18,728	7,006
Tonsina	East Alaska	26,090	9	26,082	28,381	19,018	9,364	26,176	19,018	7,158
Anderson	East Alaska	29,371	0	29,370	36,191	19,175	17,017	30,771	19,199	11,572
Koliganek	Bay	16,444	0	16,444	18,193	0	18,193	12,164	76	12,088
Twin Hills	Bay	8,135	0	8,135	10,054	160	9,894	12,327	236	12,091
Igiugig	Bay	20,827	0	20,827	21,432	3,840	17,593	22,950	3,840	19,110
Pedro Bay	Bay	21,108	0	21,108	21,737	420	21,317	21,768	1,081	20,688
Newhalen	Bay	16,616	0	16,616	20,955	551	20,404	23,960	1,287	22,672
Nondalton	Bay	20,632	0	20,632	23,244	517	22,727	24,093	1,254	22,839
Platinum	Bay	39,128	0	39,128	40,934	160	40,774	25,734	236	25,498
Manokotak	Bay	33,827	0	33,827	35,494	160	35,334	29,549	236	29,313
Akiachak	Bering Sea-Western Interior	31,851	0	31,851	34,496	732	33,764	40,054	6,989	33,066
Kokhanok	Bay	36,506	0	36,506	37,839	4,357	33,482	37,448	4,357	33,090
Talkeetna	Ring of Fire	78,281	0	78,281	108,574	74,605	33,969	108,385	74,605	33,779
Cantwell	East Alaska	160,533	124	160,409	175,179	138,520	36,660	172,391	138,520	33,872
Ferry	East Alaska	45,686	2,962	42,725	51,354	13,759	37,594	50,650	13,759	36,891
Tuluksak	Bering Sea-Western Interior	34,937	0	34,937	38,576	726	37,850	38,041	804	37,237
Port Alsworth	Bay	46,170	0	46,170	51,138	4,342	46,796	52,172	5,079	47,093
Levelock	Bay	50,588	0	50,588	50,588	3,840	46,748	56,045	3,916	52,129
Portage Creek	Bay	40,067	0	40,067	42,023	2,143	39,880	54,382	2,219	52,163
Naknek	Bay	56,023	18	56,005	56,024	3,858	52,167	60,802	3,860	56,941
Ekwok	Bay	53,130	18	53,113	54,627	18	54,610	59,343	97	59,246
Togiak	Bay	45,690	0	45,690	49,359	160	49,199	60,429	236	60,193

Analysis Community	Planning Area	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative B (all Priority 3 and 4 selected lands)	Alternative B Acres of Federal Subsistence Priority Lost	Alternative B Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of All Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative C (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative C Acres of Federal Subsistence Priority Lost	Alternative C Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands	Acres of Use Areas Likely to Eventually Return to Federal Management, Alternative D (all Priority 3 and 4 selected lands and revoked top filed Priority 3 and 4 lands)	Alternative D Acres of Federal Subsistence Priority Lost	Alternative D Net Loss/Gain of Federal Subsistence Priority Acres After Relinquishment or Rejection of Priority 3 and 4 Lands
King Salmon	Bay	57,118	18	57,101	57,118	3,858	53,261	66,659	3,860	62,798
New Stuyahok	Bay	44,850	0	44,850	47,913	3,840	44,073	67,939	3,916	64,023
Clark's Point	Bay	45,829	0	45,829	49,498	4,000	45,498	71,798	4,079	67,719
Aleknagik	Bay	44,343	0	44,343	49,130	4,000	45,130	74,806	4,076	70,730
Iliamna	Bay	58,660	12	58,648	64,929	4,529	60,400	76,785	5,266	71,519
Dillingham	Bay	56,040	1	56,039	60,295	4,001	56,295	83,760	4,077	79,683
Golovin	Kobuk-Seward Peninsula	87,324	0	87,324	87,324	0	87,324	86,267	0	86,267
Chase	Ring of Fire	96,572	0	96,572	114,520	2,164	112,356	112,570	2,164	110,406
Copper Center	East Alaska	144,935	133	144,802	164,181	39,075	125,107	164,832	39,148	125,684
Marshall	Bering Sea-Western Interior	138,130	0	138,130	138,231	2,210	136,021	143,056	4,248	138,809
Brevig Mission	Kobuk-Seward Peninsula	157,138	0	157,138	157,316	15,786	141,530	166,222	26,973	139,249
Aniak	Bering Sea-Western Interior	139,632	0	139,632	148,553	3,502	145,051	184,293	40,619	143,674
Unalakleet	Bering Sea-Western Interior	230,786	0	230,786	230,786	59,807	170,979	236,528	68,078	168,450
Russian Mission	Bering Sea-Western Interior	258,701	0	258,701	274,770	67,998	206,772	311,896	103,179	208,718
Kivalina	Kobuk-Seward Peninsula	227,257	0	227,257	227,257	0	227,257	231,079	2,983	228,096
Huslia	Bering Sea-Western Interior	234,892	0	234,892	234,892	0	234,892	228,362	145	228,217
Galena	Bering Sea-Western Interior	244,000	0	244,000	244,000	0	244,000	244,480	15	244,465
Noatak	Kobuk-Seward Peninsula	349,847	0	349,847	349,852	0	349,852	373,088	2,983	370,105
Deering	Kobuk-Seward Peninsula	381,061	0	381,061	381,061	0	381,061	379,422	2,983	376,439
Kobuk	Kobuk-Seward Peninsula	400,614	0	400,614	400,620	0	400,620	386,015	145	385,870
Nome	Kobuk-Seward Peninsula	456,450	0	456,450	481,280	42,067	439,212	489,777	53,720	436,057
Selawik	Kobuk-Seward Peninsula	463,973	0	463,973	463,979	0	463,979	459,601	145	459,457
Kiana	Kobuk-Seward Peninsula	486,598	2,865	483,733	486,604	2,865	483,739	481,838	2,865	478,973
Buckland	Kobuk-Seward Peninsula	495,412	0	495,412	495,418	0	495,418	494,522	2,983	491,539
Shungnak	Kobuk-Seward Peninsula	514,779	0	514,779	514,784	0	514,784	509,934	145	509,790
Kotzebue	Kobuk-Seward Peninsula	573,599	2,865	570,734	573,605	2,865	570,740	563,345	3,179	560,165
Noorvik	Kobuk-Seward Peninsula	602,781	2,865	599,916	602,787	2,865	599,922	591,818	3,010	588,808
Ambler	Kobuk-Seward Peninsula	791,483	2,865	788,618	791,488	2,865	788,623	775,883	3,010	772,874

Notes: Table only includes focused analysis area analysis communities (Loss of Federal Subsistence Priority) with available subsistence use area data.

Use areas likely to return to Federal management following Secretarial revocation of 17(d)(1) withdrawals in relevant part are State top filings Priority 3 and 4 that are not otherwise encumbered that would immediately become effective selections and eventually be relinquished by the State or rejected by the BLM due to overselection. However, that eventual return of lands to Federal management requires those additional actions by the BLM and/or the State, the timeline of which is speculative and uncertain given that the BLM has never rejected a selection due to overselection and the State has very rarely relinquished one. Additionally, as discussed in Section 3.14.1.2.7 and noted in several of the tables in this section, the loss of Federal subsistence priority includes both temporary and permanent loss because even a temporary loss can have significant effects. This is because despite the eventual return of many lands to Federal management, the short-term loss of Federal subsistence priority could still have long-term impacts on user access, resource abundance, and resource availability. A loss of Federal subsistence priority on a portion of a community's subsistence use area, even for a period of 10 years, could result in a permanent shift in that community's harvesting patterns, reduce opportunities to pass on knowledge about those lands, and ultimately affect a community's connection to traditional lands.

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Table 3.14-16. Subsistence Use Area Losing Federal Subsistence Priority if 17(d)(1) Withdrawals are Revoked in the Central Yukon Planning Area

Analysis Community	Planning Area in the Decision Area of this EIS	Acres of Subsistence Use Areas Losing Federal Subsistence Priority if Overlapping 17(d)(1) Withdrawals are Revoked, Central Yukon Planning Area
Talkeetna	Ring of Fire	239,696
Anderson	East Alaska	236,222
Shungnak	Kobuk-Seward	63,562
Ambler	Kobuk-Seward Peninsula	63,562
Tok	East Alaska	62,898
Healy	East Alaska	56,908
Huslia	Bering Sea-Western Interior	53,354
Selawik	Kobuk-Seward Peninsula	52,482
Kobuk	Kobuk-Seward Peninsula	48,965
Galena	Bering Sea-Western Interior	46,262
Seldovia	Ring of Fire	28,817
Denali Park	East Alaska	11,113
Nanwalek	Ring of Fire	9,701
Copper Center	East Alaska	7,702
Paxson	East Alaska	4,758
Ferry	East Alaska	2,248
Tanacross	East Alaska	1,394
Trapper Creek	Ring of Fire	1,066
Northway	East Alaska	843
Kiana	Kobuk-Seward Peninsula	842
Gakona	East Alaska	705
Tonsina	East Alaska	406
Dot Lake	East Alaska	213
Noorvik	Kobuk-Seward Peninsula	160
Tazlina	East Alaska	38
Telida	Bering Sea-Western Interior	12
Noatak	Kobuk-Seward Peninsula	9
Delta Junction	East Alaska	Yes

Notes: Table only includes communities whose use areas overlap 17(d)(1) withdrawals in the Central Yukon planning area that would lose Federal subsistence priority upon revocation. Revocation or retention of withdrawals in the Central Yukon planning area would occur under a different Secretarial decision than may be issued from this EIS. For purposes of this analysis only and in order to capture the largest potential cumulative impacts, revocation of 17(d)(1) withdrawals in the Central Yukon area is included as reasonably foreseeable. However, withdrawal decisions are reserved for the Secretary and not the BLM.

3.15 TERRESTRIAL MAMMALS

3.15.1 How would revocation of 17(d)(1) withdrawals affect caribou abundance and distribution?

The analysis area for caribou distribution is the annual herd ranges of all caribou herds that use ANCSA 17(d)(1) withdrawals in the decision area because the impacts of development likely to follow any revocation of these withdrawals could change abundance, distribution, or suitability as a subsistence resource of an entire herd (Figure 3.15-1). This could have potential impacts to the subsistence users of that herd.

The temporal scale of the impacts is long term, as defined in Section 3.1, Introduction and Methodology.

Impacts to caribou abundance and distribution are described using acres of annual range of caribou herds in the focused analysis area.

3.15.1.1 Affected Environment

ANCSA 17(d)(1) withdrawals in the decision area overlap the range of 13 out of 31 caribou herds within the state of Alaska (Table 3.15-1). Caribou herds in Alaska are defined based on their consistent use of calving areas. These 13 herds consist of the Western Arctic herd, which is currently the second-largest herd in the state (164,000 caribou); two medium-sized herds (Mulchatna and Nelchina); four herds with populations between 1,000 and 3,000; and six herds with populations under 1,000 animals. These caribou herds, especially the larger herds, are important for subsistence and non-local hunting in Alaska. Some animals from the Teshekpuk herd winter in western Alaska with the Western Arctic herd in some years (Fullmann et al. 2021; Wilson et al. 2016), but this is infrequent, only involves a portion of the herd, and may include animals temporarily joining the Western Arctic herd (Prichard, Parrett, et al. 2020; Welch et al. 2023). Therefore, impacts to the Teshekpuk herd are not considered in this analysis.

Caribou have one of the lowest energetic costs of locomotion of any terrestrial mammal (Fancy and White 1987), and they use their ability to travel long distances to access seasonally important areas, minimize the levels of predation and insect harassment, and maximize their access to high-quality forage. The larger herds tend to be migratory with large long-distance movements between summer and winter ranges, whereas most of the small herds remain within a more constrained area throughout the year. Caribou forage on sedges, forbs, and deciduous shrubs during summer and mostly eat lichen during the winter. Deep snow can greatly increase energetic costs of movement, and dense snow or ice can greatly increase the energetic costs of accessing forage in winter. Increased energetic costs can result in decreased fecundity or survival. Caribou herds in Alaska are defined based on their use of calving grounds, but shifts in the range use of caribou herds can occur on decadal time scales (Taillon et al. 2012; Virgl et al. 2017).

The annual ranges of these 13 caribou herds generally have low levels of development and limited human access for harvest, although some herds like the Nelchina and Mentasta herds have multiple roads within their annual ranges (Hatcher 2020; Hatcher and Robbins 2021). The Red Dog Mine is located in the range of the Western Arctic herd and has caused long delays and deflections for a portion of caribou encountering the mine's access road during fall migration (Wilson et al. 2016). The range of the Denali herd is largely within Denali National Park and Preserve. The park road crosses their range, but regulations limit traffic and human activity levels within most of the herd's range.

In addition to caribou, there are multiple domestic reindeer (*Rangifer tarandus tarandus*) herds on the Seward Peninsula. These reindeer were first imported to Alaska in 1892, but the number of herds declined

in the 1990s, largely because an expanding Western Arctic herd wintered on reindeer ranges (Finstad et al. 2002). With the recent decline in the Western Arctic herd, reindeer numbers could expand. Successful reindeer husbandry requires access to seasonally important areas of the range and is limited by exposure to contaminants.

The Western Arctic herd, the Mulchatna herd, and the Nelchina herd have all declined dramatically in size in recent years. The Western Arctic herd declined from a peak of 490,000 caribou in 2003 to an estimated 152,000 caribou in 2023 (Naiden 2023; Richards 2023). The Nelchina herd declined from over 46,000 caribou in 2016 to under 9,000 caribou in 2023, likely due to high overwinter mortality during recent years (Hatcher 2022; Hatcher and Robbins 2021; La Vine 2023). The Nelchina herd is currently well below its management objective for population size (LaVine 2023) and will likely have limited or no hunting opportunities until there is a substantial population increase. Although caribou herds are typically cyclical with large changes in population, there is concern that the impacts of climate change and development are causing or exacerbating some of these declines.

The continued trend of climate change is likely to have both positive and negative effects on caribou, but overall impacts are likely to be negative. Climate change may be responsible for the recent 56 percent decline in caribou across the Arctic (Russell et al. 2019). Climate change may result in changes in plant species composition, increased frequency of wildfires with associated declines in lichen biomass (Palm et al. 2022), higher prevalence of parasites and more frequent disease outbreaks, changes in the timing of and depth of snowfall, and increases in the frequency and severity of insect harassment. Rain-on-snow events are predicted to increase in frequency and can make access to forage difficult over large areas (Bieniek et al. 2018). The phenology of forage growth will change, resulting in alterations in the protein quantity and digestibility of forage available to caribou (Johnson et al. 2021). Changes in the density of other potential prey species can alter predator populations and predator-prey dynamics for caribou. These factors have and will likely continue to impact population sizes of caribou herds across the Arctic.

Table 3.15-1. Caribou Herds with Annual Ranges that Overlap 17(d)(1) Withdrawals

Caribou Herd	Herd Population Estimate	Year Estimated	Citation	Herd Range (acres)	Acres of 17(d)(1) Withdrawals within Herd Range (analysis area)	% of Range on 17(d)(1) Withdrawals
Western Arctic	152,000	2023	Richards 2023	90,517,000	14,303,000	15.8%
Nelchina	8,823	2023	La Vine 2023	18,967,000	1,828,000	9.6%
Mulchatna	27,000	2016	Barten and Watine 2020	29,362,000	1,935,000	6.6%
Delta	2,000	2011	Hollis 2021	3,005,000	124,000	4.1%
Northern Peninsula	3,000	2016	Crowley 2019	9,709,000	7,000	0.1%
Denali	3,000	2014	NPS 2016	3,734,000	8,000	0.2%
Southern Peninsula	2,000	2016	Crowley and Peterson 2020	2,072,000	4,000	0.2%
Farewell-Big River	Unknown	–	Barton 2020	2,766,000	1,054,000	38.1%
Tonzona	Unknown, likely small	2014	Barton 2020	1,334,000	176,000	13.2%
Sunshine Mountains	1,000*	2013	Barton 2020	1,934,000	23,000	1.2%
Beaver Mountain	1,000*	2013	Barton 2020	2,056,000	360,000	17.5%

Caribou Herd	Herd Population Estimate	Year Estimated	Citation	Herd Range (acres)	Acres of 17(d)(1) Withdrawals within Herd Range (analysis area)	% of Range on 17(d)(1) Withdrawals
Mentasta	< 1,000	2017	Hatcher 2020	6,694,000	87,000	1.3%
Kenai Lowlands	< 1,000 [†]	2015	Herreman 2022a	267,000	< 1,000	0.4%

* The population estimate is for both herds combined.

[†] Minimum count.

3.15.1.2 Environmental Consequences

3.15.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.15.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities would continue to impact caribou populations.

3.15.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Development activities that are likely to increase if the Secretary revokes the 17(d)(1) withdrawals can impact caribou through direct habitat loss within the footprint of the development and indirect habitat loss if caribou avoid areas near development or if a herd is unable to cross infrastructure to access preferred seasonal ranges. Changes in seasonal herd distribution as a result of development can alter subsistence harvest. Caribou can also be impacted through direct mortality from changes in hunting pressure, changes in predation, or vehicle collisions. Energetic impacts from their response to disturbance can lower caribou body condition and lead to lower survival and productivity (National Resource Council 2003).

Mine development for locatable minerals (e.g., gold, silver, copper) could have adverse impacts on caribou through direct and indirect habitat loss, energetic impacts due to disturbance, contamination, mortality, injury due to vehicle collisions, and changes in hunter access and other levels of human activity (Boulanger et al. 2021; Eftesøl et al. 2019). Without proper mitigation measures, mining for gold and other hard-rock materials has the potential to result in accidental discharges of chemical solutions (e.g., acids) and heavy metals with associated negative impacts to caribou and potentially negative effects on humans consuming caribou. Mining activity and dust could also displace caribou from potential habitat (Boulanger et al. 2021) or result in increases in energetic expenditure or decreases in foraging rates. The impacts of these activities on caribou would depend on the size, number, and location of activities but could result in lower caribou populations as a result of direct mortality or indirect impacts to body condition, which influences both survival and productivity. Changes in caribou distribution as a result of development can change availability for subsistence harvest. Declines in caribou abundance often result in more stringent harvest regulations for subsistence hunters (Parlee et al. 2018).

Oil and gas exploration and CBNG activities may include seismic tests, exploratory drilling, land clearing, accidental discharges, gravel roads, work camps, and temporary gravel pads. These effects would generally be localized and short term. Seismic surveys may displace caribou for short distances during winter and cause increased energy expenditures. New gravel roads and pads cause small amounts of direct habitat loss, and the associated human activity can displace caribou by several miles, especially during the calving season when caribou are most sensitive to disturbance (Johnson et al. 2020; Prichard,

Lawhead, et al. 2020). However, displacement can occur during all seasons, with the displacement distance depending on various factors such as the location and type of human activity (e.g., Boulanger 2021; Plante et al. 2018; Vistnes and Nellemann 2008). Roads and pipelines can alter caribou movements and, if not properly designed, limit caribou use of preferred areas (Lawhead et al. 2006; Panzacchi et al. 2013). Caribou in northern Alaska oilfields cross roads and pipelines frequently during mid-summer (Prichard, Lawhead, et al. 2020; Severson et al. 2023); however, crossing rates may decline with higher levels of traffic, especially when there is no insect harassment driving caribou movement. There is also some evidence that caribou may use areas near high-traffic roads less frequently (Severson et al. 2023). Effects from oil and gas development would be localized (e.g., within approximately 5 kilometers) and long term. If development is paired with higher hunter access or other off-road human activities, effects could extend further than 5 kilometers. If caribou are unable to access seasonally important habitat, potential decreases in survival or reproduction rates could result in regional impacts. The Central Arctic herd increased in size despite high densities of oil development on their summer range; however, it is unknown what the herd size would have been in the absence of development. The calving range shifted to the south of oil development (Prichard, Lawhead, et al. 2020), so the population impacts of oil development may be related to the availability of alternative calving habitat. If the seasonal caribou distributions shift to areas with more predators or lower forage quality, population-level impacts are likely.

Development of non-energy leasable minerals (e.g., phosphate, sulfur, potassium) and mineral materials (e.g., stone, gravel, sand) would be similar to impacts of locatable minerals, with large areas of direct habitat loss and indirect habitat loss through displacement from human activity, especially during the calving season.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

ROWs granted to support development made possible by the proposed revocation would primarily impact caribou through changes in human access and, depending on regulations and access restrictions, the potential for increased harvest. Dust from gravel roads would be deposited on vegetation and cause a decline in lichen near roads (Chen et al. 2017). They could also impact caribou through displacement or by increasing the difficulty of accessing preferred seasonal ranges, as described above. The potential for restricted movements would depend on the traffic volume and type of human activity associated with the road (Panzacchi et al. 2013). Linear features like roads and powerlines may be used preferentially by predators and, therefore, alter predator-prey dynamics in an area (DeMars and Boutin 2018). The presence of roads could increase the predation rate on a herd by increasing the rate of travel by wolves and other predators. Caribou may avoid roads if they are associated with higher density of predators and a higher risk of predation (DeMars and Boutin 2018; James and Stuart-Smith 2000). If ROWs result in greater hunter access, the effects could extend regionally within the range of the affected herd and be long term, although the impacts could be mitigated through hunting regulations.

In general, ROWs have the largest impacts because they are linear and extend across large areas, change human access patterns, and can fragment habitat or alter migration routes. Although much of the decision area is currently undeveloped, caribou and their predators move long distances over the course of a year, and they may use specific areas preferentially for movement corridors (Figures 3.15-2 and 3.15-3). ROWs or other developments that cover large areas can fragment habitat and hinder those movements. Therefore, limitations on the movement of highly mobile species like caribou as a result of habitat fragmentation can lower the carrying capacity of the landscape and limit the ability of caribou to adapt to changing conditions by changing the herd distribution seasonally or annually. Other development types

have large impacts if they are in seasonally important areas, especially calving areas. Caribou are most prone to disturbance and displacement during the calving season.

Impacts to caribou populations as a result of higher harvest levels can be mitigated through changes in regulations; however, this could have negative impacts to subsistence users. Decreases in the amount of area open to Federal subsistence harvesters could impact caribou populations by lowering harvest in some areas and increasing hunting pressure in other areas. Increases in the amount of State land could increase the level of non-local hunting occurring in areas where Federal land is only open to Federally qualified subsistence hunters as described in Section 3.14, Subsistence.

Potential impacts to subsistence harvest can arise from changes in caribou abundance, contamination of water or forage sources, or changes in caribou distribution so that caribou are not present in traditional hunting areas or are otherwise less accessible. Increases in aircraft flights and non-local hunters can negatively impact the quality and success of subsistence hunts (Stinchcomb et al. 2020).

3.15.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals near Cantwell east of the George Parks Highway would be retained specifically to avoid conflict with the Nelchina herd calving area. Also, parcels between the Kokolik and Kukpowruk rivers would be retained specifically to avoid conflict with the Western Arctic herd's post-calving and insect relief areas (see Figure 3.15-2). The parcels between the Kokolik and Kukpowruk rivers are part of a critical post-calving corridor that caribou use to travel from their calving grounds in the Utukok Uplands to insect relief habitat in the hills near Cape Thompson (Dau 2015; Prichard, Parrett, et al. 2020). Body condition of caribou, which is important for reproduction and survival, depends on access to early-emergent high-quality vegetation during calving and minimization of insect harassment through selection for areas with higher winds and lower temperatures during mid-summer. These types of areas are critical given the current status of the Western Arctic herd, which was listed as Preservative Declining in 2021 by the Western Arctic Caribou Herd Working Group (USFWS 2022). The herd had an additional 13 percent population decline in 2022 (Richards 2023) and a 7 percent decline from 2022 to 2023. The current herd size is estimated at 152,000, down from a peak size of 490,000 (Dau 2015; Naiden 2023).

There would be no direct or indirect impacts on caribou for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.15.1.2.2, Impacts Common to All Action Alternatives.

The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3. Table 3.15-2 summarizes the total acres of 17(d)(1) withdrawals that would be revoked within the range of each caribou herd in the focused analysis area. The largest potential impacts would occur on the range of the Nelchina herd where withdrawal revocations would happen both in areas with priority conveyances, in areas that are likely to be developed, and in almost 2,000 acres where those two areas overlap. The Nelchina herd is currently undergoing a dramatic decline in population size. There are also large areas where the 17(d)(1) withdrawals would be revoked in part where priority conveyances overlap the ranges of the Denali and Western Arctic herds and < 1,000 acres

where priority conveyances overlap the ranges of the Beaver Mountains and Mulchatna herds. The 17(d)(1) withdrawals would also be revoked, and development would likely occur in areas that overlap the ranges of the Kenai Lowlands herd. The potential impacts would be limited because these areas were selected to minimize conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs, as described above. The northernmost 17(d)(1) withdrawals that would be revoked that are priority conveyances overlap the range of the Western Arctic herd in an area that is close to migratory routes and within the winter range (see Figure 3.15-2).

Withdrawals northeast of Point Hope would be partially revoked under Alternative B. These parcels are in low- or medium-density portions of the Western Arctic herd calving range and are used for movements to the coast during post-calving (see Figure 3.15-2). Although these parcels do not have high development potential, if development did occur, it could negatively impact the herd by altering the calving distribution and potentially inhibiting the post-calving movements to mosquito relief habitat. Most of the Alternative B priority conveyances or areas more likely to be developed that overlap the ranges of the other herds are either near existing infrastructure or on the periphery of the herd’s range, which would somewhat limit the potential impact of development.

Table 3.15-2. Summary of Impacts to Caribou Herd Ranges Overlapping 17(d)(1) Withdrawals that Would be Revoked Under Alternative B

Caribou Herd	Acres of Herd Range in Analysis Area	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and Priority Conveyances	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Beaver Mountains	2,056,000	< 1,000	< 1,000	0	0
Delta	3,005,000	2,000	0	0	0
Denali	3,734,000	4,000	4,000	0	0
Farewell-Big River	2,766,000	0	0	0	0
Kenai Lowlands	267,000	< 1,000	0	0	0
Mentasta	6,694,000	0	0	0	0
Mulchatna	29,362,000	7,000	< 1,000	0	0
Nelchina	18,966,000	164,000	3,000	2,000	2,000
Northern Peninsula	9,709,000	5,000	0	0	0
Southern Peninsula	2,072,000	0	0	0	0
Sunshine Mountains	1,934,000	23,000	0	0	0
Tonzona	1,334,000	0	0	0	0
Western Arctic	90,517,000	138,000	5,000	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario’s definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.15.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts to caribou for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. On these lands, impacts to caribou from the resulting development would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of caribou herd range could be affected in the focused analysis area (Table 3.15-3). The largest potential impacts would occur on the 19,000 acres of the Nelchina herd range where the 17(d)(1) withdrawals that overlap the range would be revoked in areas with priority conveyances that are more likely to be developed. Other herds with ranges that overlap Alternative C priority conveyances or areas that are more likely to be developed include the Beaver Mountains, Delta, Denali, Mentasta, Mulchatna, and Western Arctic herds (see Table 3.15-3). This includes 268,000 acres in the Nelchina herd range and 220,000 acres in the Western Arctic herd range overlapped by the 17(d)(1) withdrawals that would be revoked and have priority conveyances (see Figures 3.15-2 and 3.15-3). This alternative would include revocation of 17(d)(1) withdrawals for some parcels with higher potential for conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs that were excluded from Alternative B, and therefore, the potential for the impacts described in Section 3.15.1.2.2 would be higher. Relative to Alternative B, this alternative would also revoke more 17(d)(1) withdrawals in the focused analysis area as follows:

- In the southern portion of the range of the Western Arctic herd, including areas used for migration and winter range areas (Figure 3.15-2).
- Near the calving range of the Mentasta herd (Roffler et al. 2012).
- In an area that has been used for calving by the Delta herd (Valkenburg et al. 2002).
- In the summer and winter range of the Mulchatna herd, largely on the eastern or western periphery of the range.
- Large parcels widely dispersed throughout the range of the Nelchina herd, including some areas occasionally used for calving, summer range, migratory movements, and wintering for a portion of the herd (see Figure 3.15-3). Development of these lands could negatively influence the Nelchina herd, which recently decreased dramatically in size.

Because the Mulchatna, Nelchina, and Western Arctic herds have all recently undergone large population declines, any impacts could hinder a population recovery. Where the 17(d)(1) withdrawals are revoked in the focused analysis area within the ranges of the Beaver Mountains herd, levels of impact are likely to be lower because they only overlap the edge of the herd range near areas that were previously developed; however, development could have a larger potential for impacts because this herd is small and constrained to a small herd range.

For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection. However, although these Priority 3 and 4 top filings would eventually be relinquished or rejected, as long as they are effective elections, the lands would not be available to Federal subsistence priority. This may reduce the hunting pressure on caribou on Priority 3 and 4 top filings while potentially increasing hunting pressure on caribou on areas that are still open to Federal subsistence priority during this time.

Table 3.15-3. Summary of Impacts to Caribou Herd Ranges if 17(d)(1) Withdrawals are Revoked Under Alternative C

Caribou Herd	Acres of Herd Range in Analysis Area	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed [†]	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Beaver Mountains	2,056,000	16,000	< 1,000	0	0
Delta	3,005,000	48,000	23,000	< 1,000	0
Denali	3,734,000	8,000	0	0	0
Farewell-Big River	2,766,000	229,000	0	0	0
Kenai Lowlands	267,000	< 1,000	0	0	0
Mentasta	6,694,000	87,000	43,000	8,000	0
Mulchatna	29,362,000	610,000	4,000	< 1,000	0
Nelchina	18,966,000	1,063,000	268,000	83,000	19,000
Northern Peninsula	9,709,000	6,000	0	0	0
Southern Peninsula	2,072,000	0	0	0	0
Sunshine Mountains	1,934,000	23,000	0	0	0
Tonzona	1,334,000	66,000	0	0	0
Western Arctic	90,517,000	1,683,000	220,000	12,000	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.15.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under their respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to caribou. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the direct and indirect impacts described in Section 3.15.1.2.2. When the Priority 3 and 4 top filed lands become effective selections, these parcels would become unavailable under Federal subsistence harvest regulations for up to 10 years, although it is assumed that these selections would eventually be rejected or relinquished due to overselection, and Federal subsistence priority would apply again. This could reduce subsistence hunting pressure on caribou temporarily while State of Alaska Priority 3 and 4 parcels no longer fit the definition of public lands. In the long term, State of Alaska top filing Priority 3 and 4 lands would all be available for Federal subsistence priority again.

Most of the Alternative D priority conveyances or areas more likely to be developed would overlap the ranges of the Beaver Mountains, Delta, Mentasta, Mulchatna, Nelchina, and Western Arctic herds; smaller overlaps would also occur on the ranges of the Denali and Kenai Lowlands herds. Relative to Alternative C, Alternative D would revoke more 17(d)(1) withdrawals that overlap the ranges of the

Western Arctic, Mulchatna, and Nelchina herds. Of particular concern to caribou is the potential for development of parcels between the Kokolik and Kukpowruk rivers that could impact Western Arctic herd caribou during their post-calving movements from the calving area to insect relief areas in the Brooks Range. As described above, development of areas used for post-calving movements could delay access to important summering areas. The Alternative D focused analysis area would also overlap the wintering range of the Western Arctic herd (see Figure 3.15-2). Parcels in the focused analysis area in the eastern portion of the Mulchatna herd range are near areas that have been used for calving in the past and within frequently used areas of the summer range (Barten and Watine 2020; Lawhead and Prichard 2011).

Table 3.15-4 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to caribou as Alternative C but to a larger extent and magnitude because more acres of caribou range overlap with the 17(d)(1) withdrawals that would be revoked.

Table 3.15-4. Summary of Impacts to Caribou Herd Ranges Where 17(d)(1) Withdrawals Would be Revoked Under Alternative D

Caribou Herd	Acres of Herd Range in Analysis Area	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Beaver Mountains	2,056,000	360,000	< 1,000	0	0
Delta	3,005,000	124,000	23,000	< 1,000	0
Denali	3,734,000	8,000	4,000	0	0
Farewell-Big River	2,766,000	1,054,000	0	0	0
Kenai Lowlands	267,000	< 1,000	0	< 1,000	0
Mentasta	6,694,000	87,000	43,000	8,000	0
Mulchatna	29,362,000	1,935,000	4,000	2,000	0
Nelchina	18,966,000	1,828,000	268,000	83,000	19,000
Northern Peninsula	9,709,000	7,000	0	0	0
Southern Peninsula	2,072,000	4,000	0	0	0
Sunshine Mountains	1,934,000	23,000	0	0	0
Tonzona	1,334,000	176,000	0	0	0
Western Arctic	90,517,000	14,303,000	220,000	31,000	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.15.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact caribou, as described in Section 3.15.1.2.2. Each alternative revokes 17(d)(1) withdrawals across a different subset of land; Table 3.15-5 summarizes the difference among the alternatives for the herds most affected by revocation of the 17(d)(1) withdrawals. Some caribou herd ranges overlap (e.g., the Mentasta and Nelchina herd ranges overlap); therefore, the acres presented in Table 3.15-5 are not necessarily additive to a total.

Table 3.15-5. Acres of Caribou Herd Range Where 17(d)(1) Withdrawals Would be Revoked

Alternative	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Herd Range on Priority Conveyances	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed [†]	Acres of Herd Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Alternative A	0	0	0	0
Alternative B	Nelchina: 164,000 Western Arctic: 138,000 Sunshine Mountains: 23,000	Western Arctic: 5,000 Denali: 4,000 Nelchina: 3,000	Nelchina: 2,000 [†] Rest of herds: 0	Nelchina: 2,000 Rest of herds: 0
Alternative C	Western Arctic: 1,683,000 Nelchina: 1,063,000 Mulchatna: 610,000	Nelchina: 268,000 Western Arctic: 220,000 Mentasta: 43,000	Nelchina: 83,000 Western Arctic: 12,000 Mentasta: 8,000	Nelchina: 19,000 Rest of herds: 0
Alternative D	Western Arctic: 14,303,000 Mulchatna: 1,935,000 Nelchina: 1,828,000	Nelchina: 268,000 Western Arctic: 220,000 Mentasta: 43,000	Nelchina: 83,000 Western Arctic: 31,000 Mentasta: 8,000	Nelchina: 19,000 Rest of herds: < 1,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

The 17(d)(1) withdrawals that are in the focused analysis area overlap the ranges of the Beaver Mountains, Delta, Denali, Kenai Lowlands, Mentasta, Mulchatna, Nelchina, and Western Arctic herds; therefore, the differences among alternatives are the greatest for these herds. Alternatives with more acres of changed management would have larger impacts on hunting regulations in the affected areas, which could alter harvest levels or shift the spatial distribution of harvest.

As described above, the areas of priority conveyances or areas more likely to be developed are in important seasonal ranges for some herds. Of particular concern are areas within the post-calving and wintering areas of the Western Arctic herd and areas near calving areas for the Delta, Nelchina, and Mulchatna herds. The Western Arctic, Mulchatna, and Nelchina herds have all declined in size dramatically in recent years. Although most caribou herds are naturally cyclical in population size, potential impacts from development could lower herd growth for herds that are already at low levels; therefore, alternatives that are more likely to lead to development in these sensitive areas have a larger potential for impacts to caribou. Alternative B has the smallest area of potential impacts because it would exclude from withdrawal revocation parcels anticipated to have more conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs. Alternatives C and D would affect a similar number of acres in the focused analysis area. Both alternatives could have potential impacts on Western Arctic herd migratory and winter movements and impacts at various times of year on the other herds. The potential impacts to the Nelchina herd are likely to be largest given the large area across which the 17(d)(1) withdrawals would be revoked and the wide dispersal of these withdrawals across the range of this herd. This is of particular concern given the recent decline in the herd and the importance of this herd for sport and subsistence harvest. Alternative D does add some parcels where revocation of the 17(d)(1) withdrawals could have negative impacts on the Western Arctic and Mulchatna herds and increases the impact area in the focused analysis area within the range of the Nelchina herd.

The 17(d)(1) withdrawals within the range of the Western Arctic herd are in the Kobuk-Seward Peninsula and Bering Sea-Western Interior planning areas, where there is potential for ROWs and for mining of locatable minerals. The Beaver Mountains and Mulchatna herds are in the Bering Sea-Western Interior planning area where there is also potential for ROWs and for mining of locatable minerals. The Nelchina, Delta, Denali, and Mentasta herds are in the East Alaska planning area where there is potential for ROWs and mining of locatable minerals.

3.15.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 top filings become effective selections and are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect terrestrial mammals in ways similar to those described in Section 3.15.1.2.2.

The RFAs and planned actions (described in Section 3.1, Introduction and Methodology), in combination with the project, may negatively impact caribou in the analysis area. RFAs and planned actions that are most likely to impact caribou include projects that would occur in the range of the Western Arctic and Nelchina herds. Reasonably foreseeable or planned large developments in the winter range of the Western Arctic herd could occur as a result of the proposed Ambler Road and associated large mining projects. In addition, the expansion of the Red Dog Mine to the east will extend a road that has impacted the Western Arctic herd migration movements in the past (Joly and Cameron 2022; Wilson et al. 2016). Similarly, RFAs and planned actions are anticipated in the Nelchina herd's summer range (e.g., continued mining in the Valdez Creek Mining District and inundation of part of the range by the Susitna Watana Dam) and migratory route (e.g., Manh Choh Mine). These actions will alter habitat, disturb and displace caribou (due to increased human presence and activity), create additional hunter access, and cause vehicle-collision mortality. In addition, the continuing impacts of climate change described in Section 3.15.1.1, Affected Environment, will affect all herds.

The effects of a Secretarial revocation of 17(d)(1) withdrawals on caribou herd migration and subsequent development of the land could exacerbate those of the RFAs and planned actions and lower the abundance of caribou for subsistence harvesters. Changes in predators associated with development (including project-related development) or climate change could also influence caribou populations.

3.15.2 How would revocation of 17(d)(1) withdrawals affect moose abundance and distribution?

The ADFG monitors moose populations across the state and regulates hunting within 26 GMU (Figure 3.15-2). Each GMU has different management objectives for moose populations, and hunting regulations are modified based on these objectives and estimates of moose populations. The analysis area for moose abundance and distribution is all the GMUs that overlap with ANCSA 17(d)(1) withdrawals in the decision area because the impacts of development could change moose densities within a GMU and potentially affect all subsistence users of the GMU through changes in harvest regulations or moose availability. The temporal scale is long term, as described in Section 3.1.

The number of acres within GMUs that overlap 17(d)(1) withdrawals that would be revoked in the focused analysis area was used to determine impacts to moose abundance and distribution.

3.15.2.1 Affected Environment

Moose are widespread across Alaska and the analysis area, occurring in almost all areas with adequate browse available to sustain a population and adequate escape cover to avoid predators. Because of their large size and widespread distribution, moose are important for subsistence and non-local hunters in Alaska. Although moose densities vary regionally (Table 3.15-6), they are generally greater in areas with preferred habitat.

Moose prefer tall shrubs, including willow (*Salix* sp.), aspen (*Populus* sp.), and birch (*Betula* sp.), for winter browse (Seaton et al. 2011) and are often at highest densities in areas with high levels of early successional vegetation. This often includes areas with recent wildfires, clearcuts, and riparian areas where seasonal flooding or channel migration creates areas of vegetation disturbance. Burned areas generally provide ideal browse for moose between 11 and 30 years after a fire when tall shrub growth is maximized (Joly et al. 2016). As a result of climate change, the distribution of moose is expanding into tundra areas as the distribution of tall shrubs expands along riparian corridors (Tape, Christie, et al. 2016). In addition, increases in the frequency and size of wildfires are providing expanding areas of early successional habitat for moose.

Predators of moose include wolf, bear, and occasionally wolverine. A single brown bear (*Ursus arctos*) can kill many moose calves during the calving season (Brockman et al. 2017). Moose generally have one to two calves in late May or early June, and rut typically occurs in September and early October. Some moose populations make elevational migrations using higher elevation areas for rut and winter in lower elevation areas where snow is typically shallower (Coady 1974; Lundmark and Ball 2008). Moose are adapted to travel through deep snow, but snow depths greater than 40 centimeters are more energetically costly (Coady 1974). The number of caribou in the analysis area has declined recently, with large declines in the Western Arctic, Mulchatna, and Nelchina herds (see Section 3.15.1). This decline could result in changes in predator-prey dynamics that could result in higher predation on moose in the short term as wolves and bears shift to moose, but could also result in a decline in predator populations. Human harvest could also shift to moose, although the timing and location would be uncertain, and some impacts could be mitigated through regulation.

Most parts of the analysis area currently have low levels of development, but some moose in the analysis area are exposed to communities, roads, mines, and other types of development. Because moose feed on tall shrubs associated with road, pipeline, and transmission line corridors, moose may benefit from certain developments and often show a high tolerance of areas of human activity.

Parts of the analysis area may be undergoing rapid habitat alterations due to climate change. Climate change can impact subsistence harvest of moose by changing the timing of river freeze-up, changing snow cover in the winter, and increasing the frequency of extreme weather. Warming winters may also make food storage more difficult for subsistence harvesters. Climate change is likely to have both positive and negative effects on moose. A warming climate is resulting in an expansion of moose populations in northern Alaska as tall shrubs expand into riparian corridors (Tape, Gustine, et al. 2016). However, climate change is also partially responsible for declines in moose populations along the southern portion of their range because it has increased tick populations, which have negatively impacted moose energetics (Elzinga et al. 2023). Climate change will cause changes in plant species composition, increased frequency of wildfires, and changes in the timing of and depth of snow. Rain-on-snow events will increase in frequency and can create thick ice layers that make travel and access to browse difficult (Bieniek et al. 2018) and can increase success of predators. Moose browse can increase after wildfires, so an increase in wildfires is likely to increase moose densities. Widespread loss of forest due to spruce bark beetle (*Dendroctonus rufipennis*) infestation (Hicke et al. 2012; Werner et al. 2006) is likely to increase browse availability in the short term but may also increase the risk of predation.

Table 3.15-6. Estimated Moose Density or Trend by Game Management Units in the Analysis Area with Recent Moose Density or Trend Data Available

GMU	Density (moose/square mile)	Survey Type	Trend	Survey Year	Citation
1A	Low Density	Aerial Survey	Stable	2019	Dorendorf 2021
1B	N/A	N/A	Stable	N/A	Lowell 2018a
1D	N/A	N/A	Stable	2014	Koch 2017
2	0*	N/A	N/A	N/A	N/A
3	N/A	N/A	Increasing	N/A	Lowell 2018b
4	0*	N/A	N/A	N/A	N/A
5B	N/A	N/A	Stable	2015	Churchwell 2021
6A	520 moose [†]	GSPE	Stable/Declining	2019	Westing 2022
6D	N/A	N/A	Stable/Increasing	N/A	Westing 2022
8	0*	N/A	N/A	N/A	N/A
9A	N/A	N/A	Stable	1983	Crowley 2017
9B	0.30	GSPE	N/A	2012	Crowley 2017
9C	0.38	TCA	Declining	2010	Crowley 2017
9D	N/A	N/A	Stable	1983	Crowley 2017
9E	0.60	TCA	N/A	2010	Crowley 2017
11	0.90	TCA	N/A	2011–2013	Hatcher 2017
12	1.09	GSPE	Increasing	2015–2019	Wells 2023
13A	1.80	TCA	Increasing	2013	Robbins 2018
13B	1.60	TCA	Increasing	2013	Robbins 2018
13C	1.80	TCA	Increasing	2013	Robbins 2018
13D	0.40	TCA	Increasing	2013	Robbins 2018
13E	1.40	GSPE and TCA	Increasing	2013	Robbins 2018
14A	4.20	GSPE	Increasing	2013	Peltier 2017a
14B	2.4	GSPE	Increasing	2013	Peltier 2017b
14C	N/A	GSPE	Stable	2016	Spivey 2022
15A	818 moose [†]	GSPE	Declining	2020	Herreman 2022b
15B	837 moose [†]	GSPE	Declining/Stable	2017	Herreman 2022b
15C	3,529 moose [†]	GSPE	Stable/Increasing	2017	Herreman 2022b
16A	2,574 moose [†]	GSPE	N/A	2009	Peltier 2017c
16B	0.90–1.40	GSPE	N/A	2014	Peltier 2017c
17B	0.21–0.37	GSPE	Stable	2008	Barten 2018
17C	0.78	GSPE	Increasing	2013	Barten 2018
18	1,378 moose [†]	GSPE	Increasing	2015	Perry 2023
19A	0.33–1.50	GSPE	N/A	2014	Peirce 2018
19B	Unknown	N/A	Unknown	N/A	Peirce 2018
19C	Unknown	N/A	Unknown	N/A	Peirce 2018
19D	1.80	GSPE	N/A	2015	Peirce 2018

GMU	Density (moose/square mile)	Survey Type	Trend	Survey Year	Citation
19E	Unknown	N/A	Unknown	N/A	Peirce 2018
20A	2.40	GSPE	N/A	2015	Young 2017
20C	0.60	GSPE	N/A	2011	Hollis 2018
21A	0.30	GSPE	Stable/Increasing	2011	Peirce 2018
21B	0.97–1.41	TCA	Declining	2019	Longson 2023
21D	4.02	GSPE and TCA	Stable	2010–2014	Stout 2018a
21E	1.00	GSPE	N/A		Peirce 2018
22A	0.23	GSPE	Increasing	2012	Germaine 2023, Gorn and Dunker 2014
22B	0.25	GSPE	Stable	2013	Germaine 2023, Gorn and Dunker 2014
22C	0.27	GSPE	Declining	2013	Germaine 2023, Gorn and Dunker 2014
22D	1,106 moose [†]	GSPE	Stable/Declining	2014	Germaine 2023, Gorn and Dunker 2014
22E	701 moose [†]	GSPE	Increasing	2014	Germaine 2023, Gorn and Dunker 2014
23	0.22	GSPE	N/A	2017	ADFG 2017
24C	0.21	GSPE	N/A	2007	Stout 2018b
24D	0.82	GSPE	N/A	2007–2011	Stout 2018b
26A	N/A	N/A	Declining	2014	Klimstra and Daggett 2020

Note: GSPE = geospatial population estimator; N/A = not available; TCA = trend count area.

* No ADFG management report was prepared because these areas are not considered moose habitat.

[†] Reported as total moose in the GMU because moose density data are not available for the GMU.

3.15.2.2 Environmental Consequences

3.15.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.15.2.1, Affected Environment, would continue to impact moose populations.

3.15.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Mine development for locatable minerals (e.g., gold, silver, copper) that is likely to follow revocation of the 17(d)(1) withdrawals could have adverse impacts to moose through direct and indirect habitat loss, energetic impacts from disturbance, contamination, injury and mortality from vehicle collisions, and changes in hunter access. Mining for gold and other hard-rock materials has the potential to result in accidental discharges of chemical solutions (e.g., acids) and heavy metals with associated negative impacts to moose and potential negative effects of humans consuming moose. Mining activity and dust could also displace moose from potential habitat or result in increased energetic expenditure or decreases in feeding rates, although some moose populations have high tolerance for human activity and are attracted to vegetative growth in cleared areas, including road corridors and transmission lines. The

impacts of these activities on moose depend on the size, number, and location of activities as well as the level of human access and activity in the adjacent areas, but could result in lower populations because of direct mortality through harvest, increased predation, or vehicle collisions or indirect impacts such as decreased availability of preferred browse species. Moose and subsistence harvesters could also be impacted through exposure to contaminants without proper mitigation measures. Changes in moose distribution because of development can change availability for subsistence harvest. The effects from development of locatable minerals would be localized and long term; although, if not properly mitigated, contamination impacts could be regional.

Oil and gas exploration and CBNG activities (Ring of Fire and East Alaska planning areas) may include seismic tests, exploratory drilling, land clearing, accidental discharges, gravel roads, work camps, and temporary gravel pads. These effects would generally be localized and short term. Seismic surveys may displace moose for short distances during winter and cause increased energy expenditures. New gravel roads and pads would cause small amounts of direct habitat loss, and the associated human activity could result in increased energetic impacts to moose. Effects from oil and gas development would be long-term but localized to areas adjacent to development unless they are accompanied by greater hunter access.

Development of non-energy leasable minerals (e.g., phosphate, sulfur, potassium) and mineral materials (e.g., stone, gravel, sand) would be similar to impacts of locatable minerals with areas of direct habitat loss and indirect habitat loss through displacement from human activity, especially during calving.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

ROWs granted to support development made possible by the proposed revocation would primarily impact moose through changes in human access and, depending on regulations and access restrictions, the potential for increased harvest. They could also impact moose through displacement or by increasing the difficulty of accessing preferred seasonal ranges. Roads with high traffic volume could be difficult for moose to cross and result in mortality from vehicle collisions. Periodic vegetation clearing along roads and powerlines can result in increased levels of browse for moose. Linear features like roads and powerlines may be used preferentially by predators and, therefore, alter predator-prey dynamics in an area (DeMars and Boutin 2018). Prey species may avoid roads if they are associated with a higher density of predators and a higher risk of predation (DeMars and Boutin 2018; James and Stuart-Smith 2000). If ROWs result in greater hunter access, the effects could extend regionally within the GMU and be long term. ROWs can have large impacts because they typically extend across large areas, change human access, fragment habitat or alter migration routes, and alter predator distributions.

Impacts to moose populations as a result of higher harvest levels can be mitigated through changes in regulations; however, this could have negative impacts to subsistence users. Decreases in the amount of land open to Federal subsistence harvesters could impact moose populations by lowering harvest in some areas and increasing hunting pressure in other areas.

The impacts of other development would be of greater intensity if it is in seasonally important areas, especially wintering areas. Moose can be fairly tolerant of human activity and are often attracted to areas of cleared vegetation associated with development. Potential impacts to subsistence harvest can arise from changes in moose abundance, contamination of food sources, or changes in distribution so that moose are not present in traditional hunting areas or otherwise less accessible.

3.15.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, 17(d)(1) withdrawals would be revoked in part to allow Alaska Statehood Act selections, and State of Alaska Priority 1 and 2 top filed lands would convert to selections in parcels only where conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized. For example, 17(d)(1) withdrawals would be retained to protect specific known subsistence access areas (with some parcels near rivers), which would also protect some moose habitat.

There would be no direct or indirect impacts on moose for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.15.2.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3. Table 3.15-7 summarizes the total acres of each moose GMU that would be revoked under Alternative B in the focused analysis area. The largest amounts of land within areas with priority conveyances and in areas more likely to be developed that would be revoked occur in GMU 13. GMU 13 is an important area for sport hunting and Federal subsistence hunting of moose. Under Alternative B, the parcels selected for revocation of the 17(d)(1) withdrawals were selected to minimize conflicts with subsistence and recreational resources, which would limit the potential impacts.

Table 3.15-7. Summary of Impacts to Game Management Units Overlapping 17(d)(1) Withdrawals that Would be Revoked Under Alternative B

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
1D	1,826,000	< 1,000	< 1,000	0	0
5B	2,236,000	0	0	0	0
6D	6,072,000	0	0	0	0
9A	1,922,000	< 1,000	0	0	0
9B	5,570,000	6,000	0	0	0
9C	5,765,000	8,000	< 1,000	0	0
9D	6,127,000	0	0	0	0
9E	10,761,000	3,000	0	0	0
11	7,917,000	< 1,000	< 1,000	< 1,000	< 1,000
12	6,393,000	0	0	0	0
13A	2,842,000	21,000	2,000	2,000	2,000
13B	2,502,000	26,000	< 1,000	0	0
13C	1,320,000	41,000	< 1,000	< 1,000	< 1,000
13D	3,683,000	35,000	< 1,000	0	0

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
13E	4,614,000	54,000	1,000	< 1,000	< 1,000
14A	1,687,000	4,000	< 1,000	0	0
14B	1,399,000	< 1,000	< 1,000	0	0
14C	1,389,000	17,000	6,000	0	0
15A	1,205,000	< 1,000	0	0	0
15B	1,057,000	< 1,000	< 1,000	0	0
15C	2,394,000	< 1,000	< 1,000	< 1,000	< 1,000
16B	7,102,000	< 1,000	< 1,000	0	0
17B	6,257,000	0	0	0	0
17C	3,759,000	0	0	0	0
18	29,091,000	0	0	0	0
19A	3,650,000	< 1,000	0	0	0
19B	4,937,000	0	0	0	0
19C	4,295,000	0	0	0	0
19D	7,736,000	64,000	23,000	0	0
19E	2,732,000	0	0	0	0
20A	4,350,000	2,000	0	0	0
20C	7,624,000	4,000	4,000	0	0
21A	6,910,000	< 1,000	< 1,000	0	0
21B	5,971,000	0	0	0	0
21D	7,740,000	0	0	0	0
21E	5,116,000	0	0	0	0
22A	4,585,000	0	0	0	0
22B	5,008,000	23,000	0	0	0
22C	1,372,000	2,000	< 1,000	0	0
22D	5,318,000	0	0	0	0
22E	3,877,000	3,000	0	0	0
23	30,144,000	5,000	5,000	0	0
24C	1,953,000	0	0	0	0
24D	3,429,000	0	0	0	0
26A	35,975,000	110,000	0	0	0
Total	277,612,000	428,000	41,000	2,000	2,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.15.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts to moose for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. For those lands, the impacts to moose would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of moose range could be affected in the focused analysis area if the 17(d)(1) withdrawals are revoked (Table 3.15-8). This alternative includes some parcels where the 17(d)(1) withdrawals would be revoked that have higher potential for conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs that were excluded from Alternative B, and therefore, the potential for the impacts described in Section 3.15.1.2.2 would be higher. The largest areas of withdrawals revoked in the focused analysis area occur in GMUs 13 and 22.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to moose abundance and distribution. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.15-8. Summary of Impacts to Game Management Units Overlapping 17(d)(1) Withdrawals that Would be Revoked Under Alternative C

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
1A	4,454,000	< 1,000	0	0	0
1D	1,826,000	81,000	< 1,000	0	0
2	4,187,000	< 1,000	0	0	0
4	6,155,000	< 1,000	0	0	0
5B	2,236,000	39,000	0	0	0
6D	6,072,000	120,000	0	< 1,000	0
9A	1,922,000	2,000	0	0	0
9B	5,570,000	28,000	4,000	< 1,000	0
9C	5,765,000	37,000	< 1,000	0	0
9D	6,127,000	0	0	0	0
9E	10,761,000	3,000	0	0	0
11	7,917,000	14,000	8,000	1,000	< 1,000
12	6,393,000	65,000	23,000	8,000	0
13A	2,842,000	77,000	19,000	50,000	18,000
13B	2,502,000	311,000	27,000	< 1,000	< 1,000
13C	1,320,000	106,000	48,000	14,000	< 1,000

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
13D	3,683,000	154,000	3,000	4,000	< 1,000
13E	4,614,000	576,000	128,000	6,000	< 1,000
14A	1,687,000	30,000	< 1,000	1,000	0
14B	1,399,000	5,000	< 1,000	2,000	< 1,000
14C	1,389,000	83,000	8,000	2,000	< 1,000
15A	1,205,000	< 1,000	0	< 1,000	0
15B	1,057,000	< 1,000	< 1,000	< 1,000	0
15C	2,394,000	< 1,000	< 1,000	< 1,000	< 1,000
16A	1,193,000	< 1,000	0	< 1,000	0
16B	7,102,000	77,000	< 1,000	0	0
17B	6,257,000	5,000	0	< 1,000	0
17C	3,759,000	2,000	0	0	0
18	29,091,000	245,000	6,000	0	0
19A	3,650,000	401,000	< 1,000	< 1,000	0
19B	4,937,000	113,000	0	0	0
19C	4,295,000	105,000	0	0	0
19D	7,736,000	635,000	23,000	0	0
19E	2,732,000	248,000	0	< 1,000	0
20A	4,350,000	142,000	17,000	0	0
20C	7,624,000	8,000	4,000	0	0
21A	6,910,000	27,000	< 1,000	0	0
21B	5,971,000	2,000	0	0	0
21D	7,740,000	2,000	0	0	0
21E	5,116,000	98,000	20,000	0	0
22A	4,585,000	357,000	194,000	0	0
22B	5,008,000	432,000	0	4,000	0
22C	1,372,000	85,000	10,000	3,000	0
22D	5,318,000	238,000	18,000	21,000	4,000
22E	3,877,000	42,000	0	0	0
23	30,144,000	619,000	5,000	6,000	0
24C	1,953,000	0	0	0	0
24D	3,429,000	5,000	0	0	0
26A	35,975,000	180,000	0	0	0
Total	293,601,000	5,799,000	565,000	122,000	22,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.15.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals would be revoked. Upon revocation of these withdrawals, all the State’s top filings on lands otherwise unencumbered would become effective State selections, and the lands would not be managed pursuant to the Federal subsistence priority. This effect would likely be temporary for the Priority 3 and 4 top filings because they would be relinquished by the State or rejected by the BLM due to overselection within 10 years from the Secretary’s decision-making. These lands would return to Federal management and be open to Federal subsistence priority. The BLM would manage any lands that were not conveyed under their respective RMPs.

Revocation of the 17(d)(1) withdrawals would also open all lands to the public land laws and the potential to be disposed out of Federal ownership. Priority 1 and 2 top filings that become effective selections would be conveyed and result in permanent loss of Federal subsistence priority on those lands. This would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to moose. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the direct and indirect impacts described in Section 3.15.2.2.2. The greatest impacts to moose are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.15-9 summarizes the total acres of moose GMUs on 17(d)(1) withdrawals that would be revoked under Alternative D in the focused analysis area. Alternative D would have similar types of impacts to moose as Alternative C, but to a larger extent and magnitude because more acres of GMU overlap the 17(d)(1) withdrawals that would be revoked.

Table 3.15-9. Summary of Impacts to Game Management Units Overlapping 17(d)(1) Withdrawals that Would be Revoked Under Alternative D

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
1A	4,454,000	< 1,000	0	0	0
1B	2,086,000	< 1,000	0	0	0
1D	1,826,000	316,000	< 1,000	0	0
2	4,187,000	< 1,000	0	0	0
3	3,544,000	< 1,000	0	0	0
4	6,155,000	< 1,000	0	0	0
5B	2,236,000	39,000	0	0	0
6A	2,630,000	0	0	0	0
6D	6,072,000	124,000	0	< 1,000	0
8	6,009,000	< 1,000	0	0	0
9A	1,922,000	11,000	0	0	0
9B	5,570,000	525,000	4,000	2,000	0
9C	5,765,000	227,000	< 1,000	< 1,000	0
9D	6,127,000	5,000	0	0	0
9E	10,761,000	4,000	0	0	0
11	7,917,000	14,000	8,000	1,000	< 1,000

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
12	6,393,000	65,000	23,000	8,000	0
13A	2,842,000	103,000	19,000	50,000	18,000
13B	2,502,000	612,000	27,000	< 1,000	< 1,000
13C	1,320,000	115,000	48,000	14,000	< 1,000
13D	3,683,000	252,000	3,000	4,000	< 1,000
13E	4,614,000	1,093,000	128,000	6,000	< 1,000
14A	1,687,000	30,000	< 1,000	1,000	0
14B	1,399,000	12,000	< 1,000	2,000	< 1,000
14C	1,389,000	114,000	8,000	2,000	< 1,000
15A	1,205,000	< 1,000	0	< 1,000	0
15B	1,057,000	< 1,000	< 1,000	< 1,000	0
15C	2,394,000	< 1,000	< 1,000	< 1,000	< 1,000
16A	1,193,000	< 1,000	0	< 1,000	0
16B	7,102,000	469,000	< 1,000	0	0
17B	6,257,000	64,000	0	0	0
17C	3,759,000	402,000	0	< 1,000	0
18	29,091,000	687,000	6,000	0	0
19A	3,650,000	1,292,000	< 1,000	2,000	0
19B	4,937,000	114,000	0	0	0
19C	4,295,000	476,000	0	0	0
19D	7,736,000	1,854,000	23,000	0	0
19E	2,732,000	614,000	0	< 1,000	0
20A	4,350,000	160,000	17,000	0	0
20C	7,624,000	8,000	4,000	0	0
21A	6,910,000	451,000	< 1,000	0	0
21B	5,971,000	10,000	0	0	0
21D	7,740,000	1,797,000	0	0	0
21E	5,116,000	3,118,000	20,000	0	0
22A	4,585,000	2,652,000	194,000	0	0
22B	5,008,000	2,164,000	0	5,000	0
22C	1,372,000	85,000	10,000	3,000	0
22D	5,318,000	839,000	18,000	27,000	4,000
22E	3,877,000	180,000	0	0	0
23	30,144,000	5,940,000	5,000	25,000	0
24C	1,953,000	17,000	0	0	0
24D	3,429,000	179,000	0	0	0

GMU	Acres of GMU in Analysis Area	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
26A	35,975,000	496,000	0	0	0
Total	307,870,000	27,729,000	565,000	152,000	22,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.15.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact moose as described in Section 3.15.2.2.2. Of the action alternatives, Alternative B would revoke the fewest acres of 17(d)(1) withdrawals and potential conflicts with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs would be minimized, which would limit impacts to moose. Table 3.15-10 summarizes each alternative.

Table 3.15-10. Acres of 17(d)(1) Withdrawals that Would be Revoked for Moose Under Each Alternative

Alternative	Acres of GMU Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of GMU on Priority Conveyances	Acres of GMU on Lands More Likely to be Developed	Acres of GMU on Lands More Likely to be Developed on Priority Conveyances
Alternative A	0	0	0	0
Alternative B	428,000	41,000	2,000*	2,000
Alternative C	5,799,000	565,000	122,000	22,000
Alternative D	27,729,000	565,000	152,000	22,000

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.15.2.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect moose populations in ways similar to those described in Section 3.15.2.2.2.

RFAs and planned actions (described in Section 3.1, Introduction and Methodology), in combination with Secretarial revocation of 17(d)(1) withdrawals, may cause a mix of potential impacts to moose in the analysis area. RFAs and planned actions that are likely to impact moose include the development of the proposed Ambler Road and associated large-scale mines, Donlin Mine and pipeline, Alaska LNG pipeline, Susitna Watana Dam, Manh Choh Mine and associated ore trucking, and the Alphabet Hills Prescribed Burn. The Alphabet Hills Prescribed Burn will increase moose habitat in that area, and some of the other ROWs for RFAs and planned actions will create areas of good moose forage. These projects

may remove or alter habitat, increase moose-vehicle collisions, increase the risk of contaminants, and increase hunter access to more areas. In addition, the continuing impacts of climate change described in Section 3.15.2.1, Affected Environment, will affect moose.

The effects of Secretarial revocation of 17(d)(1) withdrawals and subsequent development on moose habitat could exacerbate effects of the RFAs and planned actions and lower the ability of moose to compensate for and adapt to changing climatic conditions. Changes in predators associated with development (including development following revocation of the 17(d)(1) withdrawals) or climate change could also impact moose populations.

3.15.3 How would revocation of 17(d)(1) withdrawals affect wood bison abundance and distribution?

The analysis area for wood bison (*Bison bison athabascaae*) abundance and distribution is the current wood bison range in Alaska because the impacts of development could negatively impact the entire herd (Figure 3.15-3). Development outside of the current range may also impact the herd if it causes indirect impacts that extend into the current range or if the current distribution of wood bison expands as its population grows. Because the population is a newly reintroduced herd, a future increase in population size and distribution is likely. The temporal scale is long term, as described in Section 3.1.

The number of acres where 17(d)(1) withdrawals would be revoked within the current range of wood bison in the focused analysis area was used to determine impacts to wood bison abundance and distribution.

3.15.3.1 Affected Environment

The wood bison population in Alaska was recently reintroduced in a limited range. This population could expand in the future. This analysis quantitatively describes the current wood bison range and qualitatively discusses changes in land status over a larger area.

Wood bison are the only terrestrial mammal species in Alaska that is Federally listed as threatened or endangered under the ESA. Wood bison in Alaska were recently reintroduced to Alaska and are designated as a nonessential experimental population under Section 10(j) of the ESA, and no critical habitat can be designated for the Alaska population. Because the wood bison population is designated as a nonessential experimental population, it is, by definition, not essential to the continued existence of the species. Wood bison are also the only terrestrial mammal listed as a sensitive species in Alaska by the BLM (BLM 2019). Wood bison were reintroduced along the Innoko River near Shageluk, Alaska, in 2015 when 130 bison were released. These individuals and their offspring make up the lower Innoko and Yukon rivers wood bison herd. In 2022, an additional 28 calves were released in the lower Innoko and Yukon rivers area near the existing wild herd. This second release was initially successful, and the yearlings joined and remained with the herd. Hunting of the Alaska wood bison population is not currently allowed but could occur in the future if the herd expands to a size that will support continued harvest (Alaska Wood Bison Management Planning Team 2022).

Wood bison are the larger of two subspecies of modern American bison, with adult males standing over 6 feet tall at the shoulder and weighing more than 2,000 pounds (ADFG 2023a). The lower Innoko and Yukon rivers wood bison herd is the first in Alaska since the extirpation of wood bison in the state ca. 1915 and is the only wild wood bison herd in the United States. As of fall 2022, the wild herd, including the 28 yearlings released in late summer 2022, had a minimum count of 150 individuals. This was smaller than the introduction of 158 individuals; however, the herd was considered established and successful after 7 years (Curl 2023). During the winter of 2022–2023, deep snow, ice layers, and late snowmelt led

to high mortality of the herd, and the population was estimated to be only 72 individuals in summer 2023 (ADFG 2023b). The high frequency of difficult winters that cause a decline in the populations may make the successful reintroduction of the species to this area difficult. Reintroductions of wood bison are being considered for other areas of Interior Alaska.

Wood bison primarily graze in fluctuating or perennial wetlands and grass meadows but also browse on willow (Waggoner and Hinkes 1986). They rely primarily on graminoids in the summer and herbaceous plants in the fall (Funck et al. 2020). In the winter, they rely primarily on graminoids in sedge-dominated wetlands (DeMars et al. 2020). Wood bison are very social, with cows and young typically living in groups of 20 to 60 animals and adult bulls in separate smaller groups (ADFG 2023a). Wood bison typically select open habitats (Hecker et al. 2023) and can be negatively impacted by deep snow during the winter and by rain-on-snow events, which limit mobility and access to food (Shepard et al. 2020). The current wood bison range is largely undeveloped by humans but is close to the small communities of Holy Cross and Shageluk. The herd could be impacted by climate change through more frequent ice layers, deeper snowpacks, or changes in forage.

The analysis area may be undergoing rapid habitat alterations due to climate change, which could have synergistic impacts with development activities that could impact wood bison in ways that may make it more difficult for wood bison to adapt to changes in their environment. Climate change may impact wood bison through changes in plant composition or quality, increases in snow depth or timing, increases in insects, disease and parasites, and changes in predator populations. Rain-on-snow events are expected to increase in frequency (Bieniek et al. 2018) and can make travel difficult and large areas of forage difficult or impossible to access (Shepard et al. 2020).

3.15.3.2 Environmental Consequences

3.15.3.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.15.3.1, Affected Environment, would continue to impact wood bison populations.

3.15.3.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Mine development for locatable minerals (e.g., gold, silver, copper) that is likely to occur following revocation of the 17(d)(1) withdrawals could have adverse impacts to wood bison similar to those described for moose. Mining activity could result in mortality to bison through vehicle collisions or through defense of life and property. Mining activity could also result in indirect effects through displacement, higher energetic costs, or contamination of forage or water. These impacts could be minimized through the use of vehicle plans and wildlife protection plans. The effects from development of locatable minerals would be localized and short term; although, if not properly mitigated, contamination impacts could be regional. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change

ROWs granted to support development made possible by the proposed revocation would primarily impact wood bison through changes in human access and, depending on regulations and access restrictions, the potential for hunting in the future. They could also impact wood bison through displacement or by increasing the difficulty of accessing preferred habitat types and preferred calving and wintering areas.

Roads with high traffic volume could be difficult to cross and result in mortality from vehicle collisions. Linear features like roads and powerlines may be used preferentially by predators and, therefore, alter predator-prey dynamics in an area. If ROWs result in greater human access, the effects could extend throughout the herd range and be long term.

ROWs have large impacts because they typically extend across large areas and have the potential to change human access, fragment habitat or alter migration routes, and alter predator distributions. The impacts of mining development would be large if the development occurs near important habitat areas for wood bison, hinders movement patterns, increases human access and activity levels, or results in increased contaminants in water or wood bison forage. Potential impacts to subsistence harvest would be minimal because wood bison harvest is not currently allowed; however, if development results in a decrease in the size of the population or the population growth rate, future harvest opportunities will be curtailed.

3.15.3.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on wood bison for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.15.3.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3; no acres of wood bison range would be impacted in the focused analysis area for any alternative (Table 3.15-11).

Table 3.15-11. Summary of Impacts to Wood Bison Range from Revocation of 17(d)(1) Withdrawals under Alternative B

Planning Area	Acres of Wood Bison Range in Analysis Area	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*,†	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Bay	0	0	0	0	0
Ring of Fire	0	0	0	0	0
Bering Sea-Western Interior	253,000	0	0	0	0
East Alaska	0	0	0	0	0
Kobuk-Seward Peninsula	0	0	0	0	0
Total	253,000	0	0	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.15.3.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts to wood bison for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to wood bison from the resulting development would be of the same type as Alternative B (Table 3.15-12). No acres of wood bison range would be impacted in the focused analysis area for any alternative.

Table 3.15-12. Summary of Impacts to Wood Bison Range from Revocation of 17(d)(1) Withdrawals under Alternative C

Planning Area	Acres of Wood Bison Range in Analysis Area	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*, †	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Bay	0	0	0	0	0
Ring of Fire	0	0	0	0	0
Bering Sea-Western Interior	253,000	0	0	0	0
East Alaska	0	0	0	0	0
Kobuk-Seward Peninsula	0	0	0	0	0
Total	253,000	0	0	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.15.3.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals would be revoked; the BLM would manage discretionary actions under their respective RMPs. No acres of wood bison range would be impacted in the focused analysis area (Table 3.15-13). Alternative D would revoke 17(d)(1) withdrawals on 102,000 acres of wood bison range that are not priority conveyances or more likely to be developed; these lands would likely stay in Federal management and have few, if any impacts.

Table 3.15-13. Summary of Impacts to Wood Bison Range from Revocation of 17(d)(1) Withdrawals under Alternative D

Planning Area	Acres of Wood Bison Range in Analysis Area	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed on Priority Conveyances
Bay	0	0	0	0	0
Ring of Fire	0	0	0	0	0
Bering Sea-Western Interior	253,000	102,000	0	0	0
East Alaska	0	0	0	0	0
Kobuk-Seward Peninsula	0	0	0	0	0
Total	253,000	102,000	0	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.15.3.2.6 COMPARISON OF ALTERNATIVES

No acres of wood bison range would be impacted for any alternative (Table 3.15-14).

Table 3.15-14. Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked

Alternative	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed*	Acres of Wood Bison Range Overlapping 17(d)(1) Withdrawals that Would be Revoked and More Likely to be Developed* on Priority Conveyances
Alternative A	0	0	0	0
Alternative B	0	0	0 [†]	0
Alternative C	0	0	0	0
Alternative D	102,000	0	0	0

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially revoked only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.15.3.2.7 CUMULATIVE IMPACTS

Because wood bison range would not overlap with priority conveyances or lands more likely to be developed under any alternative, no impacts to wood bison from the project are reasonably likely to occur, and thus no cumulative impacts would occur.

3.15.4 How would revocation of 17(d)(1) withdrawals affect other terrestrial mammal abundance and distribution?

The analysis area for other terrestrial mammal abundance and distribution is all ANCSA 17(d)(1) withdrawals in the decision area because the impacts of development would be mostly limited to these areas and adjacent land for most species. The temporal scale is long term.

Because there is a large number of species analyzed for this issue and a variety of habitats that support them, the number of acres where 17(d)(1) withdrawals would be revoked and that are more likely to be developed and more likely to be conveyed were used to analyze this issue.

3.15.4.1 Affected Environment

There are approximately 55 species of terrestrial mammals that occur or are suspected to occur in the analysis area (Table 3.15-15). These species have different distributions, preferred habitats, and life history; therefore, these species will vary in how they are impacted by land status changes in the analysis area. Twenty-nine of the species in Table 3.15-15 are species of greatest conservation need (SGCN) as defined by ADFG. SGCNs are species whose population is small, declining, or under significant threat; species that are culturally, ecologically, or economically important; species that function as indicators of environmental change; or species with a high percentage of their populations in Alaska (ADFG 2015).

Table 3.15-15. Terrestrial Mammal Species Known to or Suspected to Occur in the Analysis Area

Order	Family	SGCN	Common Name	Scientific Name
Artiodactyla	Bovidae		American bison	<i>Bison bison</i> *
Artiodactyla	Bovidae		Mountain goat	<i>Oreamnos americanus</i>
Artiodactyla	Bovidae		Muskox	<i>Ovibos moschatus</i>
Artiodactyla	Bovidae		Dall sheep	<i>Ovis dalli</i>
Artiodactyla	Cervidae		Moose	<i>Alces americanus</i>
Artiodactyla	Cervidae		Mule deer (Sitka black-tailed deer)	<i>Odocoileus hemionus</i>
Artiodactyla	Cervidae		Caribou	<i>Rangifer tarandus</i>
Carnivora	Canidae		Coyote	<i>Canis latrans</i>
Carnivora	Canidae		Wolf	<i>Canis lupus</i>
Carnivora	Canidae		Red fox	<i>Vulpes vulpes</i>
Carnivora	Canidae	x	Arctic fox	<i>Vulpes lagopus</i>
Carnivora	Felidae		Canadian lynx	<i>Lynx canadensis</i>
Carnivora	Mustelidae		Wolverine	<i>Gulo gulo</i>
Carnivora	Mustelidae		North American river otter	<i>Lontra canadensis</i>
Carnivora	Mustelidae		Least weasel	<i>Mustela nivalis</i>
Carnivora	Mustelidae		American marten	<i>Martes americana</i>
Carnivora	Mustelidae		Ermine	<i>Mustela erminea</i>
Carnivora	Mustelidae		American mink	<i>Neovison vison</i>
Carnivora	Ursidae		Brown bear	<i>Ursus arctos</i>
Carnivora	Ursidae		American black bear	<i>Ursus americanus</i>
Chiroptera	Vespertilionidae	x	Little brown bat (myotis)	<i>Myotis lucifugus</i>
Chiroptera	Vespertilionidae	x	Silver-haired bat	<i>Lasionycteris noctivagans</i>

Order	Family	SGCN	Common Name	Scientific Name
Chiroptera	Vespertilionidae	x	California bat (myotis)	<i>Myotis californicus</i>
Chiroptera	Vespertilionidae	x	Keen's long-eared bat (myotis)	<i>Myotis keenii</i>
Chiroptera	Vespertilionidae	x	Long-legged bat (myotis)	<i>Myotis volans</i>
Lagomorpha	Leporidae	x	Alaska hare	<i>Lepus othus</i>
Lagomorpha	Leporidae	x	Snowshoe hare	<i>Lepus americanus</i>
Lagomorpha	Ochotonidae	x	Collared pika	<i>Ochotona collaris</i>
Rodentia	Castoridae		American beaver	<i>Castor canadensis</i>
Rodentia	Cricetidae	x	Brown lemming	<i>Lemmus trimucronatus</i>
Rodentia	Cricetidae	x	Singing vole	<i>Microtus miurus</i>
Rodentia	Cricetidae	x	Root (tundra) vole	<i>Microtus oeconomus</i>
Rodentia	Cricetidae	x	Meadow vole	<i>Microtus pennsylvanicus</i>
Rodentia	Cricetidae	x	Northern red-backed vole	<i>Microtus rutilus</i>
Rodentia	Cricetidae	x	Long-tailed vole	<i>Microtus longicaudus</i>
Rodentia	Cricetidae	x	Taiga vole	<i>Microtus xanthognathus</i>
Rodentia	Cricetidae		Common muskrat	<i>Ondatra zibethicus</i>
Rodentia	Cricetidae	x	Northwestern deer mouse	<i>Peromyscus keeni</i>
Rodentia	Cricetidae		Western heather vole	<i>Phenacomys intermedius</i>
Rodentia	Cricetidae	x	Northern bog lemming	<i>Synaptomys borealis</i>
Rodentia	Cricetidae	x	Meadow jumping mouse	<i>Zapus hudsonicus</i>
Rodentia	Cricetidae	x	Collared lemming	<i>Dicrostonyx groenlandicus</i>
Rodentia	Erethizontidae		North American porcupine	<i>Erethizon dorsatum</i>
Rodentia	Sciuridae	x	Northern flying squirrel	<i>Glaucomys sabrinus</i>
Rodentia	Sciuridae	x	Alaska marmot	<i>Marmota broweri</i>
Rodentia	Sciuridae		Hoary marmot	<i>Marmota caligata</i>
Rodentia	Sciuridae	x	Arctic ground squirrel	<i>Spermophilus parryii</i>
Rodentia	Sciuridae	x	Red squirrel	<i>Tamiasciurus hudsonicus</i>
Soricomorpha	Soricidae		Pygmy shrew	<i>Sorex hoyi</i>
Soricomorpha	Soricidae		Holarctic least shrew (Alaska tiny shrew)	<i>Sorex minutissimus</i>
Soricomorpha	Soricidae	x	Dusky shrew	<i>Sorex monticolus</i>
Soricomorpha	Soricidae	x	American water shrew	<i>Sorex palustris</i>
Soricomorpha	Soricidae	x	Tundra shrew	<i>Sorex tundrensis</i>
Soricomorpha	Soricidae	x	Barren ground shrew	<i>Sorex ugyunak</i>
Soricomorpha	Soricidae	x	Cinereus shrew	<i>Sorex cinereus</i>

Source: MacDonald and Cook (2009).

* Both wood bison (*Bison bison athabascae*) and plains bison (*Bison bison bison*) could occur in different parts of the analysis area.

Additional terrestrial species to those listed in Table 3.15-15 are found only in Southeast Alaska or specific islands and are unlikely to occur in the analysis area.

Four of the five bat species known to or suspected to occur in the analysis area are only found in Southeast Alaska but could occur in the 17(d)(1) withdrawals in the northernmost portion of Southeast Alaska (MacDonald and Cook 2009). The little brown bat is the only Alaska bat species that occurs outside of Southeast Alaska. Their numbers have declined precipitously in much of the United States due to the rapid spread of the fungal pathogen *Pseudogymnoascus destructans* that causes white-nose

syndrome (WNS). If WNS spreads to Alaska, it could cause a rapid decline in the species. Little brown bats hibernate in small groups of bats in rock cavities or buildings, which could slow the spread of the disease, but there are limited data available about this species in Alaska (Blejwas et al. 2021).

Many of the species in the analysis area are used to varying degrees for subsistence activities, but the larger species are typically of greater importance. Black and brown bear, mountain goat, Dall sheep, and Sitka black-tailed deer are all important game species for subsistence and non-local hunters. Trappers often target wolf, wolverine, lynx, coyote, Arctic and red fox, beaver, marten, mink, and river otter.

The large carnivores in the analysis area are often habitat generalists that occur in many different ecosystems across Alaska, but other species are constrained to smaller ranges and specific habitat types. The NPS identified land subject to 17(d)(1) withdrawals near Haines as important for movement, denning, and feeding for brown bear and important for mountain goat (Crupi et al. 2021). Mountain goats are primarily found in coastal mountains in Southcentral and Southeastern Alaska, whereas Dall sheep occur in most non-coastal mountains in the state. Muskoxen occur primarily in tundra portions of the Seward Peninsula and Northwest Alaska. The aquatic furbearers (i.e., beaver, river otter, mink, and muskrat) are closely associated with waterbodies. Each small mammal species has preferred habitats (MacDonald and Cook 2009) that could be impacted by revocation of 17(d)(1) withdrawals.

Current anthropogenic impacts in the analysis area are concentrated along the road-accessible portions of the state, but some impacts occur near small communities off the road system, and various large and small development projects are spread across the state. Some portions of the analysis area may be undergoing rapid habitat alterations due to climate change, which could impact terrestrial mammals in multiple ways and act synergistically with development to limit the ability of terrestrial mammals to adapt to changes in the climate and anthropogenic impacts. Climate change can impact subsistence harvest of mammals by changing the timing of river freeze-up, limiting snow cover in the winter, and increasing the frequency of extreme weather. Warming winters may also make food storage more difficult. All terrestrial mammal species in the analysis area are likely to be impacted to some degree, but climate change will have multiple impacts to different terrestrial species, including changes in snow depth and timing, changing precipitation and plant communities, and spread of pathogens (Kutz et al. 2015). Beaver, red fox, snowshoe hare, lynx, and muskrat are expanding their ranges as habitat configurations change due to climate change (Tape, Christie, et al. 2016; Tape, Gustine, et al. 2016; Tape et al. 2018). The increase of red fox in tundra areas often results in lower densities of Arctic fox because red fox may take over their dens and kill Arctic fox pups (Elmhagen et al. 2017). An increase in spruce bark beetle-killed forest and associated logging changes species compositions of large areas (Werner et al. 2006). An increase in the elevation of the tree line in alpine areas is encroaching on the habitat of alpine species such as collared pika (*Ochotona collaris*) and Dall sheep (Aycrigg et al. 2021) in ways that limit and fragment the available habitat. Collared pikas have low heat tolerance and select areas with specific microclimates (Harrison 2023). Dall sheep and mountain goat habitat is naturally fragmented in clusters of alpine habitats, and the level of fragmentation could increase with climate change (Young et al. 2022). In addition, Dall sheep survival can be negatively influenced by weather events, including multiple freeze-thaw cycles (Van de Kerk et al. 2020). There has been a 74 percent decline in the Dall sheep population on NPS land in Northwest Alaska since 2011 (NPS 2022). Wolverines were designated as a threatened species in the contiguous United States (but not in Alaska) in 2023 (USFWS 2023). Wolverines dig maternal dens in deep snow, so they are likely to be impacted by changing snow depth (Copeland et al. 2010; McElvey et al. 2011) and habitat fragmentation as a result of changing snow patterns (McElvey et al. 2011).

3.15.4.2 Environmental Consequences

3.15.4.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.15.4.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities would continue to impact terrestrial mammal populations.

3.15.4.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Changes in landownership resulting from revocation of withdrawals could change the applicability of Federal subsistence hunting and trapping regulations for land parcels. The change to State of Alaska ownership could impact terrestrial mammals through changes in the timing or level of hunting and trapping activity on those parcels, as described in Section 3.14, Subsistence.

Mine development for locatable minerals (e.g., gold, silver, copper) could have adverse impacts to terrestrial mammals similar to those described for caribou and moose. Mining activity could result in mortality to mammals through vehicle collisions, and bear mortality could occur as a result of defense of life and property. This impact could be minimized through food and waste management plans and wildlife protection plans. Wolf and wolverine typically occur at lower densities near areas of human activity due to disturbance effects and higher levels of trapping (Fisher et al. 2022; May et al. 2006). Mountain goat has been shown to be displaced from areas of mining activity (White and Gregovich 2017) and exhibited limited habituation to close helicopter traffic (Côté et al. 2013), and effects on Dall sheep are likely to be similar (Phillips et al. 2010). Small mammals would be subject to increased mortality from direct habitat loss and limitation to movements. Contamination of waterbodies, if not properly mitigated, could negatively impact mammals, especially aquatic furbearers. The effects from development of locatable minerals would be localized and long term; although, if not properly mitigated, contamination impacts could be regional.

Oil and gas exploration and CBNG could have similar impacts to terrestrial mammals as those described for caribou and moose. Effects from oil and gas development would be localized and long term unless they are accompanied by greater hunter access or the spread of contaminants, in which case impacts would extend regionally. The potential for development of oil and gas and coal bed methane is high in the Ring of Fire and East Alaska planning areas and low in the other planning areas (as described in the RFD in EIS Appendix D).

Development of non-energy leasable minerals (e.g., phosphate, sulfur, potassium) and mineral materials (e.g., stone, gravel, sand) would be the same as those described for caribou and moose.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

ROWs granted to support development made possible by the proposed revocation would primarily impact terrestrial mammals through changes in human access and, depending on regulations and access restrictions, the potential for increased hunting and trapping. They could also impact mammals through displacement or by increasing the difficulty of accessing preferred habitat types. Roads with high traffic

volume could be difficult to cross and result in high levels of mortality from vehicle collisions. Linear features like roads and powerlines may be used preferentially by predators and, therefore, alter predator-prey dynamics in an area (DeMars and Boutin 2018; James and Stuart-Smith 2000). If ROWs result in greater hunter and trapper access, the effects could extend regionally and be long term (Paton et al. 2017).

ROWs have the potential to fragment wildlife habitat. Although much of the analysis area is currently undeveloped, some species, including large carnivores, move long distances over the course of a year, and they may use specific areas preferentially for movement corridors (see Figure 3.15-6). ROWs or other developments that cover large areas may hinder those movements. Extensive habitat fragmentation can have substantial negative impacts on species that require access to large home ranges or seasonally important habitats by restricting habitat suitable for movement or migration. This fragmentation can also result in a higher risk of local extirpations of less-mobile species that are constrained within small pockets of fragmented habitat. Alpine species like collared pika and Dall sheep are especially at risk as their habitat is also fragmented and constrained by climate change.

ROW impacts can extend across large areas, change human access, fragment habitat or alter migration routes, result in vehicle collision mortality, and alter predator distributions. The impacts of development would be large if development occurs in important habitat areas for different species. Bears often aggregate in specific locations to take advantage of seasonal abundant resources such as salmon streams. Disturbance to den or feeding sites for bears, wolf, wolverine, coyote, or foxes can cause negative impacts to those species. Potential impacts to subsistence harvest can arise from changes in mammal abundance, contamination of food sources, or changes in distribution so that subsistence species are not present in traditional hunting areas or are otherwise less accessible.

3.15.4.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

Under Alternative B, State of Alaska Priority 1 and 2 top filed lands would convert to selections following revocation of the 17(d)(1) withdrawals for parcels where conflicts with natural resources, cultural resources, subsistence, recreational resources, or proposed or existing ACECs would be minimized. This could also protect some terrestrial mammal habitat.

There would be no direct or indirect impacts on terrestrial mammals for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.15.4.2.2. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1.1.3.

Table 3.10-1 in Section 3.10.1.2.3, Realty and Lands, Alternative B (Partial Revocation), summarizes the acres of withdrawals that would be revoked; because all of the analysis area is terrestrial mammal habitat, this table also summarizes the acres of terrestrial mammal habitat where 17(d)(1) withdrawals would be revoked under Alternative B. Under Alternative B, there are parcels in Southwest Alaska, including areas near Iliamna Lake in the focused analysis area, that are in an area of high brown bear density (Lawhead and Prichard 2011; Mangipane et al. 2018). Brown bears in the area move long distances to access different seasonally available resources (Mangipane et al. 2018; Smith and Partridge 2004). Their movements may be impacted by development on land where the 17(d)(1) withdrawals have been revoked.

3.15.4.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts to terrestrial wildlife abundance or distribution on lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to terrestrial wildlife from the resulting development would be of the same type as Alternative B, but to a greater magnitude and extent because more acres of terrestrial wildlife habitat could be affected in the focused analysis area (see Table 3.10-1). This alternative includes withdrawal revocation on some parcels with higher potential for conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs that were excluded from Alternative B, and therefore, the potential for the impacts described in Section 3.15.4.2.2 would be higher.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to terrestrial mammal abundance and distribution. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection. Impacts to brown bears in Southwest Alaska would be similar to Alternative B.

3.15.4.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals would be revoked; the BLM would manage discretionary actions under their respective RMPs. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how wildlife on those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to terrestrial wildlife. In these instances, development could occur as described in the RFD in EIS Appendix D and would result in the direct and indirect impacts described in Section 3.15.4.2.2. The greatest impacts to terrestrial mammals are expected where development is more likely and conveyance out of Federal ownership is more likely. Alternative D would have similar types of impacts to terrestrial mammals as Alternative C, but to a larger extent and magnitude because more acres of habitat occur on the revocations. The potential for increased heli-skiing or the development of locatable minerals on priority conveyances in the Haines area could affect brown bears that use these areas for denning, feeding, and movement corridors (Crupi et al. 2021). However, most of the 17(d)(1) withdrawals in the Haines area are already subject to effective State selections that can be conveyed at any time regardless of the Secretary's decision on this EIS. A small parcel adjacent to the Taiya Inlet north of Haines is a State top filing and a priority conveyance.

Table 3.10-1 summarizes the acres of terrestrial wildlife habitat on 17(d)(1) withdrawals that would be revoked under Alternative D in the focused analysis area. Impacts to brown bears in Southwest Alaska would be similar to Alternative B, but additional land north of Lake Iliamna is in the focused analysis area, so impacts are likely to be larger.

3.15.4.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact terrestrial wildlife, as described in Section 3.15.4.2.2. Table 3.15-16 summarizes each alternative.

Table 3.15-16. Acres Where 17(d)(1) Withdrawals Would be Revoked in the Analysis Area for Terrestrial Mammals Under Each Alternative

Alternative	Acres where 17(d)(1) Withdrawals Would be Revoked	Acres where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*	Acres where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed* on Priority Conveyances
Alternative A	0	0	0	0
Alternative B	431,000	41,000	2,000 [†]	2,000
Alternative C	5,802,000	565,000	126,000 [‡]	23,000
Alternative D	27,734,000	565,000	156,000	23,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

[‡] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

Alternatives that revoke withdrawals on more land would have the potential for greater impacts to terrestrial mammals by allowing more development in important habitat areas or through increases in human activity, especially hunting and trapping. Alternative B would revoke the 17(d)(1) withdrawals across the fewest acres and retain the withdrawals in areas with high value for natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs. Alternative D would revoke the 17(d)(1) withdrawals across the most acres, resulting in the largest potential for negative impacts to terrestrial mammals.

3.15.4.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect terrestrial mammals in similar ways to those described in Section 3.15.4.2.2.

RFAs and planned actions (described in Section 3.1, Introduction and Methodology) in combination with Secretarial revocation of the 17(d)(1) withdrawals may cause a mix of potential impacts to terrestrial mammals in the analysis area. RFAs and planned actions that would have the largest potential impacts to terrestrial mammals include Ambler Road and associated large-scale mining projects, Susitna Watana Dam, Donlin Mine and pipeline, Alaska LNG pipeline, Graphite One Mine, and Manh Choh Mine. These projects would alter and fragment habitat, disturb and displace mammals (due to increased human presence and activity), create additional hunter access, and cause vehicle-collision mortality to terrestrial mammals. The largest impacts are likely to result from ROWs, increased human access, and large mining operations that may result in direct loss of habitat and the potential for increased contamination. In general, large carnivores (brown bear, wolf, and wolverine) are likely to be among the species most negatively impacted by cumulative impacts because of their need for large ranges and susceptibility to human disturbance and harvest. Although much of the analysis area is currently undeveloped, cumulative impacts of developments, especially linear infrastructure (such as ROWs), could cause habitat fragmentation by hindering movements of large carnivores and other mobile species between seasonally

important areas. In addition, the continuing impacts of climate change described in Section 3.15.4.1, Affected Environment, will affect terrestrial mammals.

Secretarial revocation of the 17(d)(1) withdrawals and the ensuing development could exacerbate the effects on terrestrial mammals of those of the RFAs and planned actions and negatively impact terrestrial mammal species and subsistence users. Changes in predators associated with development or climate change could impact prey populations.

3.16 VEGETATION, WETLANDS, AND SPECIAL STATUS PLANTS

3.16.1 How would revocation of 17(d)(1) withdrawals affect vegetation loss or change?

The analysis area for vegetation loss or change is the land subject to 17(d)(1) withdrawals in the decision area in the five BLM planning areas. This area encompasses the areas where vegetation and wetlands would be affected by revocation of these withdrawals. The quantitative analysis for vegetation loss or change is focused on the area more likely to be conveyed and developed following such revocation (i.e., the focused analysis area) and is discussed in the context of landcover, wetlands, and disturbance typically occurring in individual planning areas.

The temporal scale for impacts would be long term, as defined in Section 3.1, Introduction and Methodology.

The following indicator was used to analyze this issue:

- Acres of high-value vegetation communities (as defined as high-value bird habitat in Section 3.2.1, Available Migratory Bird Habitat)

3.16.1.1 Affected Environment

The vegetation of an area is determined by several factors, including climate, soils, permafrost, length of the growing season, and disturbance from events such as fires, wind, glaciation, flooding, and volcanic eruptions. Vegetation serves several critical functions. Vegetation regulates the flow of numerous biogeochemical cycles, including those of water, carbon, and nitrogen. Vegetation also strongly affects soil characteristics, including soil volume, chemistry, and texture. Vegetation serves as wildlife habitat, is the energy source for many animal and invertebrate species, and is the primary source of atmospheric oxygen.

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are regulated under Section 404 of the CWA, which requires authorization from the USACE to place fill in waters of the United States, including wetlands.

Wetland functions are the physical, chemical, and biological processes or attributes that contribute to the self-maintenance of a wetland ecosystem. Wetlands help reduce impacts from flooding, contribute to water quality and quantity, sequester carbon, remove sediments and toxicants, and provide habitat to support plant and animal biodiversity.

Vegetation and wetlands among the five planning areas encompass the broad range of vegetation types that occur throughout Alaska. Vegetation and wetlands may be considered higher value for a variety of reasons, including for providing preferred bird and other wildlife habitat, supporting subsistence or

threatened and endangered species, and providing direct surface water connection to traditional navigable waters (as described in EIS Appendix E). High-value vegetation communities include wetlands (e.g., marsh, fen, peatlands and riparian corridors), mature forest landcover, and other uplands, which represent preferred habitats for most bird and mammal species.

Wetlands are not discussed separately in this EIS, and most high-functioning wetlands are included as a subset of high-value vegetation communities. Wetlands make up 43.3 percent of Alaska's surface area (ADFG 2023) and are typically associated with important wetland function, including flood flow attenuation and storage, erosion control, groundwater recharge, organic matter production and export, and pollutant absorption. Higher value wetlands typically have surface water, are connected directly to lentic and lotic waters, support wildlife use with multiple strata of vegetation, and may occupy depressional topographic features. A list of the high-value vegetation communities used in this analysis is summarized in EIS Appendix E (described as high-value bird habitats). Figures 3.2-1 through 3.2-6 depict high-value habitat in the planning areas, as described in Section 3.2, Birds and Special Status Bird Species.

Existing activities or trends in the analysis area that have influenced and will continue to influence vegetation include climate change, fire and fire management, timber and minerals development, oil and gas exploration and development, and the construction of infrastructure (roads, ports, communities). Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to impact vegetation communities. These actions have and will continue to alter or remove vegetation, compact soils, and contribute to permafrost thaw at the local scale; none of the actions are large scale, nor have they impacted substantial portions of the analysis area. However, the trend of climate change is large scale and affects the entire analysis area by increasing temperatures and contributing to permafrost degradation, as described in Section 3.3.1.1, Climate, Affected Environment. Existing disturbance in the analysis area occurs from disease, fires, insect infestations, wildfire, and weather events and covers approximately 5 percent (1,414,000 acres) (LANDFIRE 2022).

Fire is the primary natural disturbance to vegetation in the Kobuk-Seward Peninsula, Bering Sea-Western Interior, and Bay planning areas, whereas insect outbreaks are the primary cause of vegetation mortality in the East and Ring of Fire planning areas. With ongoing climate change, those natural disturbance cycles are likely to result in increasing impacts from fire and insect infestation.

Impacts to vegetation are considered by planning area because the planning areas generally delineate ecologically distinct areas of the state.

3.16.1.1.1 BAY PLANNING AREA

Vegetation in the Bay planning area is largely undisturbed by human activity (BLM 2007), with most human activity and development near the communities of Dillingham and King Salmon. Large portions of the Bay planning area include Lake Clark National Park and Preserve, Wood-Tikchik State Park, Togiak National Wildlife Refuge, Cape Newenham National Wildlife Refuge, and Katmai National Park and Preserve where development has been limited. The Bay planning area primarily encompasses the Bristol Bay Lowlands ecoregion, which is characterized by rolling upland terrain formed on morainal deposits and coastal and deltaic lowlands. Dwarf shrub tundra is prevalent, with wetlands occupying the lowland terrain (Nowacki et al. 2001). Though most of the area is largely undisturbed, climate change may be accelerating habitat changes in this planning area, contributing to wetland drying, shrub expansion, and loss of wildlife habitat.

3.16.1.1.2 BERING SEA-WESTERN INTERIOR PLANNING AREA

The Bering Sea-Western Interior planning area encompasses eight ecoregions that define the vegetation and wetlands regionally. The eight ecoregions are Yukon-Kuskokwim Delta, Nulato Hills, Yukon River

Lowlands, Kuskokwim Mountains, Tanana-Kuskokwim Lowlands, Lime Hills, Alaska Range, and the Ahklun Mountains, with much of the planning area being within the Yukon Kuskokwim Delta and the Nulato Hills (BLM 2020; Nowacki et al. 2001). The Yukon Kuskokwim Delta is a broad deltaic lowland ranging from freshwater to saltwater influence. Soils are primarily warm organic and shallow with abundant wetlands providing numerous bird, fish, and mammal habitat. Where the terrain transitions into the Nulato Hills, permafrost becomes continuous throughout, and dryer dwarf shrub tundra vegetation dominates. Most human habitation is in small villages along the Yukon and Kuskokwim rivers. The entire area is experiencing rapidly expanding climate change effects ranging from shrub expansion, permafrost melt, coastal erosion, and wetland drying. Most impacts to vegetation, beyond community development, stem from mineral extraction impacts in the Alaska Range.

3.16.1.1.3 EAST ALASKA PLANNING AREA

The East Alaska planning area is a rugged and largely undeveloped area and includes the Chugach-St. Elias Mountains, Wrangell Mountains, Kluane Range, Alaska Range, Copper River Basin, and Coastal Rainforests ecoregions (Nowacki et al. 2001). Vegetation ranges broadly from coastal rainforest to high alpine tundra (BLM 2006a). Human habitation is limited to communities along transportation corridors (Glenn, Richardson, and Alaska highways), with tourism and recreation and forest harvesting posing the greatest threat to vegetation and wetland landcover types in the area. Climate change may not be advancing at as rapid a pace as the more western planning areas; however, adverse impacts in the East Alaska planning area include beetle-killed white spruce, coastal erosion, wetland drying, and glacial melt.

3.16.1.1.4 KOBUK-SEWARD PENINSULA PLANNING AREA

The Kobuk-Seward Peninsula planning area spans from coastal to interior landscapes with vast expanses of tussock tundra and shrublands. Portions of the planning area support open boreal forest conifer and hardwood species on mountain ridges, whereas slopes host alpine plant communities. The planning area intersects with the Seward Peninsula, Nulato Hills, Kobuk Ridges and Valleys, and the Brooks Foothills ecoregions (Nowacki et al. 2001). Vegetation in the Kobuk-Seward Peninsula planning area is primarily in a natural state with little human-caused disturbance. Roads are few and short; villages are few, small, and scattered; and mining sites are small and isolated. Riparian conditions are generally undisturbed and functioning well. Adverse effects from climate change are expanding rapidly in the area and include coastal erosion, permafrost melt, and shrub expansion beyond the normal range.

3.16.1.1.5 RING OF FIRE PLANNING AREA

The Ring of Fire planning area includes most of the southern coastal areas of Alaska and includes seven ecoregions: Bristol Bay Lowlands, Alaska Peninsula Mountains, Aleutian Chain, Coastal Western Hemlock/Sitka Spruce Forest, Cook Inlet, Alaska Range, and Pacific Coastal Mountains. Spruce-hardwood communities, interspersed with brush/shrub, meadow, and wetland communities, dominate taiga or boreal forest ecosystems in the Ring of Fire planning area's Cook Inlet ecoregion. Two conifer species, between seven and ten deciduous species, and between 510 and 738 vascular plant species are found in the boreal forest communities (BLM 2006b). The Cook Inlet Basin taiga is considered a "nationally important" biologically distinctive region of North America (Gallant et al. 1995). The Pacific Coastal Mountains ecoregion in southeast Alaska is dominated by icefields, glaciers, and bare rock cover. In this area, the timberline is generally low, forming at approximately 1,000 to 2,000 feet. Where soil has accumulated, alpine tundra communities form (McNab and Avers 1994).

The lowlands of Southcentral Alaska support extensive freshwater wetland areas. Scrub-shrub, forested, and palustrine wetlands make up most wetlands in the Ring of Fire planning area. The Pacific Coastal Mountains of Southeast and Southcentral Alaska have limited wetland habitat.

The Ring of Fire planning area encompasses most of the urban development in Alaska and represents numerous ongoing potential impacts, with some areas having already been highly impacted by development. Where human development occurs, climate change is exacerbating the ongoing effects of development such as coastal erosion, permafrost thaw, and fish and wildlife habitat degradation.

3.16.1.2 Environmental Consequences

3.16.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.16.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities would continue to impact vegetation.

3.16.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Lands conveyed to the State following revocation of 17(d)(1) withdrawals may experience changes to land management that could have resulting impacts on vegetation and wetlands. Land conveyed to the State following such revocation may be opened to multiple uses, including resource extraction and development. Where this occurs in areas that have a high likelihood of development (as described in the RFD in EIS Appendix D), impacts to vegetation and wetlands could occur. Impacts to wetlands would include the potential permanent loss of vegetative cover due to the placement of fill or from excavation. Numerous indirect effects could also occur because of the direct loss of vegetation and wetlands, including soil erosion, soil compaction, thermokarst subsidence, water diversions, ponding, introduction of invasive species, and fugitive dust. Indirect effects are most likely to result in the degradation or change in vegetation community composition that could reduce the function of high-value wildlife habitats and wetlands.

Mine development and operations would impact vegetation by stripping away the vegetative mat as part of mine site overburden removal, rerouting natural streams into stream bypass areas, trampling or eliminating vegetation (e.g., constructing roads, airstrips, and pads), and compacting soils throughout the mine site footprint. Potential effects from mining activity include the direct removal of wetlands and vegetation, soil compaction, and redistribution of soils that can hinder plant regrowth. Vegetation and wetlands adjacent to surface-disturbing activities can be degraded indirectly from fugitive dust deposition generated from traffic on gravel roads, pads, and material sites. In areas where vegetation regrowth is slow, recovery to the native vegetative state may be very slow or may not occur. Long-term surface disturbances also increase the potential to introduce and spread invasive plant species. The more development that occurs, the higher the risk of the introduction or spread of invasive species. Separating organic overburden from mined materials for future reclamation, backfilling all mining pits with tailings as mining progresses, and spreading the remaining vegetation and overburden piles on the ground surface as part of reclamation can lessen long-term impacts.

Mining impacts, both direct and indirect, may pose the most risk of causing permanent loss and degradation of vegetation and wetlands because of the broad extent of impacts associated with the construction and operations of mines. The impacts are primarily permanent and irreversible, where mitigation is not likely to fully replace the loss of habitat function.

The development of fluid leasable mineral extraction (i.e., oil and gas) facilities may result in similar effects to vegetation and wetlands as locatable mineral development. The permanent loss of high-value vegetation communities due to placement of fill and excavation and the degradation in function due to

indirect effects are the primary adverse effects. Specific activities resulting in the loss of vegetation and wetlands include infrastructure construction, exploration activities (seismic surveying and exploratory drilling), land clearing, accidental spills or discharges, roads and airstrips, work camps, and temporary and permanent gravel pads.

Road and pad construction (for any development) would remove natural vegetative cover, loosen the surface soil, compact soil, reduce water infiltration, change physical and biological properties of soils, reduce organic matter content, and increase erosion potential. Indirect impacts can come from fugitive dust generated by project roads, pads, and material sites that is deposited on adjacent vegetation. Land clearing and grading activities that remove vegetation and compact soils can also contribute to the establishment of invasive plant species. These effects are generally localized but long term.

Although most spills would likely occur on and be contained to roads or pads, some spills may still reach vegetated areas (e.g., pipeline leak). Vegetation is most vulnerable to large spills or accidental releases during later summer and early fall when soils are thawed to their seasonal maximum and plants are actively growing. The most vulnerable habitats are those with drier, well-drained soils that would allow oil to penetrate to plant roots and underground rhizomes and buds. Spills or releases that occur during winter months are less prone to damaging vegetation and wetlands due to the snow cover and frozen soils, which prevent the migration of spilled products into soils.

These impacts from mining and mineral leasing development are most likely to occur in areas that are more likely to be developed. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

Lands where the 17(d)(1) withdrawals are revoked and that are conveyed to the State could see an increase in development, including resource extraction and development of new ROWs, especially in the focused analysis area. ROWs may include the construction of roads, communications facilities, pipelines, and utility corridors. Where these activities occur (as described in the RFD in EIS Appendix D), impacts to vegetation and wetlands could result from clearing and grubbing of vegetation to construct corridors. Forested habitat that is cleared to provide ROW corridors and allowed to revegetate (e.g., pipeline corridor) would temporarily increase shrub-dominated cover types, which would provide improved wildlife habitat. Generally, impacts from ROWs expected to be granted as a result of revoking the withdrawals are likely localized and short to long term.

The State manages its lands differently for OHV, so revocations that lead to the conveyance of land to the State could increase the amount of OHV use. Any development increases caused by a revocation could also bring more users into an area and increase OHV use. OHV use on and off designated trails has the potential to destroy the vegetation mat, compact soils, accelerate permafrost melt, and lead to soil erosion and ponded water. Repeated stream and river crossings by OHVs can damage riverbanks, degrade riparian vegetation, and induce erosion. New trails can lead to trampled and broken vegetation and compacted and disturbed soils. OHV use typically originates from population centers and where invasive plant species are present, and OHVs can spread them as seeds or propagules that are carried in soil or mud caught in OHV tire treads.

3.16.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on high-value vegetation for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively

selected, they could be conveyed to the State, which will change how high-value vegetation is managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.16.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.16.1.2.2. Table 3.2-2 in Section 3.2.1.2.3, Birds and Special Status Bird Species, Alternative B (Partial Revocation), summarizes the total acres of wetlands and high-value vegetation communities on lands where the 17(d)(1) withdrawals would be revoked under Alternative B in the focused analysis area.

3.16.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on high-value vegetation for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to high-value vegetation communities from the resulting development would be the same as Alternative B but to a greater magnitude and extent because more acres of high-value vegetation communities would likely be conveyed out of Federal ownership and the likely development in the area could not be mitigated by the Federal review process. Table 3.2-3 in Section 3.2.1.2.4, Birds and Special Status Bird Species, Alternative C (Partial Revocation), summarizes the high-value habitat on lands more likely to be developed under Alternative C.

Top filed lands that become effectively selected due to revocation of 17(d)(1) withdrawals would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to vegetation. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

3.16.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to high-value vegetation communities. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.16.1.2.2. The greatest impacts to high-value vegetation communities are expected where development is more likely and conveyance out of Federal ownership is more likely.

Potential for impacts to high-value vegetation communities is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C. The focused analysis area is the area more likely to be conveyed and developed. Table 3.2-4 in Section 3.2.1.2.5, Birds and Special Status Bird Species, Alternative D (2021 Proposed Action), summarizes the total acres of wetland and high-value habitat in each planning area that would be revoked under Alternative D in the focused analysis area, which could disturb or destroy more high-value vegetation communities.

3.16.1.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact high-value vegetation as described in Section 3.16.1.2.2. Table 3.16-1 summarizes each alternative.

Table 3.16-1. Summary of Impacts to High-Value Vegetation Communities by Alternative

Alternative	Acres of High-Value Vegetation Communities Where 17(d)(1) Withdrawals Would be Revoked	Acres of High-Value Vegetation Communities Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Acres of High-Value Vegetation Communities Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*	Acres of High-Value Vegetation Communities on 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	174,000	17,000	< 1,000 [†]	< 1,000
Alternative C	1,768,000	131,000	39,000 [‡]	4,000
Alternative D	9,961,000	131,000	53,000	4,000

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

[†] Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially revoked only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

[‡] Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.16.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect vegetation resources in ways similar to those described in Section 3.16.1.2.2.

The RFAs and planned actions (described in Section 3.1, Introduction and Methodology), in combination with Secretarial revocation of 17(d)(1) withdrawals and the ensuing development of the land, may remove vegetation and wetlands, destroy habitat through deforestation, and compact soils through expanded OHV traffic and increased infrastructure construction, although the extent of the impacts would depend on the specific type and location of the activity. OHV use on lands conveyed to the State, if unmanaged, could allow for the proliferation of trails and increase associated impacts to vegetation and wetlands, including significant localized effects such as soil compaction and erosion.

Many of the effects of revocation of the 17(d)(1) withdrawals and any ensuing development on vegetation and wetlands in the analysis area may be exacerbated by the continued trend of climate change. For example, the effects of water withdrawals from lakes and rivers may be intensified by climate change. Overall cumulative impacts are expected to trend toward decreasing water availability (i.e., increased evapotranspiration) in developed regions of the analysis area. The permanency and scale of impacts vary by type of development and use but are in proportion to the amount of area impacted (BLM 2018). Also, climate change could exacerbate the impacts of the development likely to follow withdrawal revocation on permafrost thaw by increasing ambient temperatures and accelerating thaw (see Section 3.16.1). This

would affect vegetation by changing water content and drainage in soils and thus changing vegetation patterns in and adjacent to thaw footprints.

3.16.2 How would revocation of 17(d)(1) withdrawals affect special status plant species populations?

The analysis area and temporal scale for impacts to special status plant species populations are the same as that described in Section 3.16.1.

The following indicator was used to analyze this issue:

- Presence of known ESA species or BLM sensitive plant species and other rare plant populations

3.16.2.1 Affected Environment

There are 51 sensitive plants and 39 watchlist plants on BLM's *Alaska Special Status Species List* (BLM 2019) and one ESA listed plant species. The Alaska Center for Conservation Science (ACCS) maintains a database of rare plant occurrences and collections throughout the state and tracks global, State, and Federal ranking categories, including BLM's *Alaska Special Status Species List*. The current list of rare plants on 17(d)(1) withdrawals was obtained from ACCS (2021). The current ACCS data represent documented collections but do not indicate a complete rare species list on 17(d)(1) withdrawals. Rare plant studies occur rarely across Alaska, and most of the analysis area lands are very remote with limited accessibility. Therefore, the potential impacts to rare plants in Alaska is best analyzed through analysis of impacts to rare plant habitat availability.

Reasonably foreseeable and planned actions (described in Table 3.1-6) will continue to adversely affect special status plant species. Habitat degradation and destruction are the most serious threats to special status plant species. The threat to rare plant populations is from habitat loss due to human development and ongoing climate change trends. Conserving rare species and unique habitat is a necessary step toward maintaining species diversity on BLM-managed lands. The BLM's national and State goals and objectives for BLM rare and sensitive plant species are to consider the overall welfare of these species when undertaking actions on public lands, and to not contribute to the need to list the species under the ESA.

Table 3.16-2 summarizes the special status plant species found within the five planning areas and whether they have been documented on ANCSA 17(d)(1) withdrawals. The table is an incomplete representation of the actual occurrence of BLM sensitive and ESA species on 17(d)(1) withdrawals because surveys in remote areas are rarely conducted. If a species has been documented in the planning area but not on 17(d)(1) withdrawals, it may still be present depending on availability of preferred habitat. It is very likely that the full list of species present in the analysis area is much larger than listed in Table 3.16-2. The endangered Aleutian shield fern (*Polystichum aleuticum*) is the only ESA-listed species present within the five planning areas. This species only occurs at a specific elevation on Mount Reed on Adak Island, which is not a part of the 17(d)(1) withdrawals and is therefore not considered further in this analysis.

Table 3.16-2. Special Status Plant Species Within the Five Planning Areas

Common Name	Scientific Name	Planning Area	Listing Status	Documented on 17(d)(1) Withdrawals	Reference
Alaska moonwort	<i>Botrychium alaskense</i>	Bering Sea-Western Interior, East Alaska	BLM watchlist	Yes	ACCS 2021
Aleutian shield fern	<i>Polystichum aleuticum</i>	Ring of Fire	ESA	No	ACCS 2021
Arctic dwarf primrose	<i>Douglasia beringensis</i>	Bering Sea-Western Interior	BLM sensitive	Yes	BLM 2020
Barneby's locoweed	<i>Oxytropis arctica</i> var. <i>barnebyana</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021
Bering sea dock	<i>Rumex beringensis</i>	Bay, Bering Sea-Western Interior	BLM sensitive	Yes	ACCS 2021; BLM 2007, 2019, 2020
Chukchi primrose	<i>Primula tschuktschorum</i>	Bay, Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021; BLM 2007, 2019
Eurasian junegrass	<i>Koeleria asiatica</i>	Bering Sea-Western Interior	BLM watchlist	Yes	ACCS 2021
Fringed gentian	<i>Gentianopsis richardsonii</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021
Glacier buttercup	<i>Ranunculus glacialis</i> ssp. <i>camissonis</i>	Kobuk-Seward Peninsula	BLM watchlist	No	ACCS 2021
Harold's milkvetch	<i>Astragalus robbinsii</i> var. <i>harringtonii</i>	Ring of Fire	BLM watchlist	Yes	ACCS 2021
Inuit wallflower	<i>Parrya nauruaq</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021
Kamchatka buttercup	<i>Oxygraphis glacialis</i>	Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Kokrines locoweed	<i>Oxytropis kokrinesis</i>	Bering Sea-Western Interior, Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021; BLM 2020
Krause's sorrel	<i>Rumex krausei</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021
Nakedstem saxifrage	<i>Micranthes nudicaulis</i> ssp. <i>nudicaulis</i>	Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Pacific buttercup	<i>Ranunculus pacificus</i>	Bering Sea-Western Interior	BLM sensitive	No	BLM 2020
Pale dandelion	<i>Agoseris glauca</i>	Ring of Fire	BLM watchlist	Yes	ACCS 2021
Parry sedge	<i>Carex parryana</i>	Ring of Fire	BLM sensitive	Yes	ACCS 2021
Pearshaped smelowskia	<i>Smelowskia pyriformis</i>	Bay, Bering Sea-Western Interior	BLM sensitive	Yes	ACCS 2021; BLM 2007, 2019, 2020
Purple wormwood	<i>Artemisia globularia</i> var. <i>lutea</i>	Kobuk-Seward Peninsula, Ring of Fire	BLM sensitive	Yes	ACCS 2021
Shacklette's catseye	<i>Cryptantha shackletteana</i>	East Alaska	BLM sensitive	No	NPS 1986

Common Name	Scientific Name	Planning Area	Listing Status	Documented on 17(d)(1) Withdrawals	Reference
Siberian buttercup	<i>Ranunculus ponojensis</i>	Bering Sea-Western Interior	BLM sensitive	Yes	BLM 2020
Small-leaf bittercress	<i>Cardamine blaisdellii</i>	Bering Sea-Western Interior, Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Sessile-leaved scurvy grass	<i>Cochlearia sessilifolia</i>	East Alaska, Ring of Fire	BLM sensitive	Yes	NPS 1986
Stipulated cinquefoil	<i>Potentilla stipularis</i>	Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Tea-leaf willow	<i>Salix planifolia</i>	Ring of Fire	BLM watchlist	Yes	ACCS 2021
Weak saxifrage	<i>Saxifraga rivularis</i> ssp. <i>arctolitoralis</i>	Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Wright's alkaligrass	<i>Puccinellia wrightii</i> ssp. <i>wrightii</i>	Kobuk-Seward Peninsula	BLM watchlist	Yes	ACCS 2021
Yellow-ball wormwood or Arctic wormwood	<i>Artemisia senjavinensis</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021
Yukon aster	<i>Symphotrichum yukonense</i>	Kobuk-Seward Peninsula	BLM sensitive	Yes	ACCS 2021

3.16.2.2 Environmental Consequences

3.16.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all ANCSA 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.16.2.1, Affected Environment, would continue, and climate change, infrastructure development, and other human activities would continue to impact special status plant species.

3.16.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Lands where the 17(d)(1) withdrawals are revoked and that lead to a conveyance to the State would lose BLM management designed to protect special status species. These lands may be opened to multiple uses, including resource extraction and development. The RFD (see EIS Appendix D) describes where the likelihood of development and potential for conveyance is high; these are the areas where the most effects to rare and special status plant communities could occur. Use of lands where 17(d)(1) withdrawals have been revoked could adversely impact special status plant species due to actions that could remove or damage individual plants. Development activity that could occur once 17(d)(1) withdrawals are revoked and that could impact special status plant species are described in Section 3.16.1.2.2, Impacts Common to All Action Alternatives, for general vegetation. Activities that damage or remove vegetation and wetlands have the potential to kill individual special status plants or degrade or remove their habitats. Impacts to tundra vegetation and populations of special status plants would vary from short term and low impact to long-term destruction of habitat that supports special status plants. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

The most vulnerable habitats from spills or other accidental releases are those with drier, well-drained soils that would allow oil to penetrate to plant roots and underground rhizomes and buds. Any oil spill in dry habitats with special status plant species would be expected to have severe impacts to local special status plant communities.

OHV use (especially during summer and fall), mining, ROW development, guided hiking and climbing, helicopter landings in summer, trail construction, non-motorized recreational activities, utility systems, or other activities could subject rare or special status plant populations to additional impacts and cause localized decreases in some populations where they occur, especially if near human settlements.

Habitat degradation and destruction are the most serious threats to rare and special status plants. Rare communities are particularly vulnerable because either there are so few of them or their total acreage is very limited. These impacts are described in Section 3.16.2.2.2.

3.16.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on special status plants for lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how special status plants are managed and allow activities like development, which could harm the special status species (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section

3.16.2.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership and be developed, as described in Section 3.1.1.3, Analysis Areas. Although rare plants occur on the 17(d)(1) withdrawals that would be revoked under Alternative B, there are no rare plant occurrences in the focused analysis area (Table 3.16-3).

Table 3.16-3. Special Status Plant Species On 17(d)(1) Withdrawals that Would be Revoked under Alternative B

Species	Located on 17(d)(1) Withdrawals that Would be Revoked	Located on 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Located on 17(d)(1) Withdrawals that Would be Revoked on Lands More Likely to be Developed*,†	Located on 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances and More Likely to be Developed
Small-leaf bittercress	Yes	No	No	No
Yellow-ball wormwood or Arctic wormwood	Yes	No	No	No

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.16.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on special status plants for lands that remain withdrawn under Alternative C. Fifteen species are located on 17(d)(1) withdrawals that would be revoked under Alternative C (Table 3.16-4). For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to special status plants (disturbance or habitat loss due to development) from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres of withdrawals would be revoked. The more acres of withdrawals revoked, the more likely it would be for special status plants to occur on those acres and be disturbed. Although BLM special status plants occur on the 17(d)(1) withdrawals that would be revoked under Alternative C, there are no BLM special status plant occurrences in the focused analysis area (see Table 3.16-4).

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to special status plant species. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.16-4. Special Status Plant Species On 17(d)(1) Withdrawals Revoked under Alternative C

Species	Located on 17(d)(1) Withdrawals that Would be Revoked	Located on 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances	Located on 17(d)(1) Withdrawals that Would be Revoked on Lands More Likely to be Developed*,†	Located on 17(d)(1) Withdrawals that Would be Revoked on Priority Conveyances and More Likely to be Developed
Small-leaf bittercress	Yes	Yes	No	No
Purple wormwood	Yes	Yes	No	No
Yellow-ball wormwood or Arctic wormwood	Yes	Yes	No	No
Glacier buttercup	Yes	No	Yes	No
Harold's milkvetch	Yes	No	No	No
Barneby's locoweed	Yes	No	No	No
Inuit wallflower	Yes	No	No	No
Nakedstem saxifrage	Yes	No	No	No
Parry sedge	Yes	No	No	No
Tea-leaf willow	Yes	No	No	No
Pearshaped smelowskia	Yes	No	No	No
Weak saxifrage	Yes	No	No	No
Sessile-leaved scurvy grass	Yes	No	No	No
Chukchi primrose	Yes	No	No	No
Yukon aster	Yes	No	No	No

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.16.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to special status plants. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.16.2.2.2. Twenty-six species are located on 17(d)(1) withdrawals that would be revoked under Alternative D (Table 3.16-5). The greatest impacts to special status plants are expected where development is more likely and conveyance out of Federal ownership is more likely. Alternative D would have similar types of impacts to special status plants (disturbance or habitat loss due to development) as Alternative C but to a larger extent and magnitude because more species of special status plants could occur where the 17(d)(1) withdrawals are revoked. Although BLM special status plants occur on the 17(d)(1) withdrawals that would be revoked under Alternative D, there are no BLM special status plant occurrences in the focused analysis area (see Table 3.16-5).

Potential for impacts to special status plants is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and/or be more likely to be developed under this alternative than under Alternative B or Alternative C, which would disturb or destroy more plants. Additionally, any areas removed from Alternative B as an area sensitive to disturbance would be impacted under Alternative D. These areas might include habitat that has experienced less development and that could support more sensitive plant species.

Table 3.16-5. Special Status Plant Species on 17(d)(1) Withdrawals Revoked under Alternative D

Species	Located on 17(d)(1) Withdrawals Revoked	Located on 17(d)(1) Withdrawals Revoked on Priority Conveyances	Located on 17(d)(1) Withdrawals Revoked on Lands More Likely to be Developed*	Located on 17(d)(1) Withdrawals Revoked on Priority Conveyances and More Likely to be Developed
Small-leaf bittercress	Yes	Yes	No	No
Purple wormwood	Yes	Yes	No	No
Yellow-ball wormwood or Arctic wormwood	Yes	Yes	No	No
Glacier buttercup	Yes	No	Yes	No
Harold's milkvetch	Yes	No	No	No
Chukchi primrose	Yes	No	Yes	No
Parry sedge	Yes	No	No	No
Alaska moonwort	Yes	No	No	No
Barneby's locoweed	Yes	No	No	No
Eurasian junegrass	Yes	No	No	No
Bering sea dock	Yes	No	No	No
Pale dandelion	Yes	No	No	No
Kokrines locoweed	Yes	No	No	No
Krause's sorrel	Yes	No	No	No
Inuit wallflower	Yes	No	No	No
Nakedstem saxifrage	Yes	No	No	No
Tea-leaf willow	Yes	No	No	No
Siberian buttercup	Yes	No	No	No
Pearshaped smelowskia	Yes	No	No	No
Fringed gentian	Yes	No	No	No
Weak saxifrage	Yes	No	No	No
Stipulated cinquefoil	Yes	No	No	No
Sessile-leaved scurvy grass	Yes	No	No	No
Chukchi primrose	Yes	No	No	No
Yukon aster	Yes	No	No	No
Wright's alkaligrass	Yes	No	No	No

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.16.2.2.6 COMPARISON OF ALTERNATIVES

Where the 17(d)(1) withdrawals are revoked across a greater number of acres, the potential for development to occur is higher, which would impact special status plants, as described in Section 3.16.2.2.2. Table 3.16.6 summarizes each alternative. Acres revoked in areas that have had little previous disturbance have the potential to impact sensitive plant species that are generally found in less disturbed areas.

Table 3.16-6. Number of Rare and Special Status Species Plants on 17(d)(1) Withdrawals

Alternative	Number of Special Status Plant Species on Revocations	Number of Special Status Plant Species on Priority Conveyances	Number of Special Status Plant Species on Lands More Likely to be Developed	Number of Special Status Plant Species on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	2	0	0*	0
Alternative C	15	3	1	0
Alternative D	26	3	2	0

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially revoked only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.16.2.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect special status plant species resources in ways similar to those described in Section 3.16.2.2.2.

The RFAs and planned actions (described in Section 3.1, Introduction and Methodology), in combination with Secretarial revocation of the 17(d)(1) withdrawals and any ensuing development, may remove or destroy rare or special status plant communities and their habitats, although the extent of the impacts would depend on the specific type and location of the activity.

The continued trend of climate change is anticipated to exacerbate the effects of Secretarial revocation of the 17(d)(1) withdrawal and any ensuing development on rare and special status plant communities in the analysis area, as described in Section 3.16.1.2.7, Cumulative Impacts.

3.17 WATER RESOURCES

3.17.1 How would revocation of 17(d)(1) withdrawals affect water quality?

The analysis area for water resources is the HUC 6 watersheds that intersect the 17(d)(1) withdrawals in the decision area. The temporal scale of impacts would be long term.

The following indicators were used to analyze this issue:

- Miles of streams and rivers in the potential 17(d)(1) withdrawal revocations
- Acres of lake and ponds and miles of streams in the potential 17(d)(1) withdrawal revocations
- Acres of wetland areas in the potential 17(d)(1) withdrawal revocations

3.17.1.1 **Affected Environment**

Water resources ranging across the five planning areas include rivers, streams, lakes, ponds, wetlands, saltmarshes, and coastal estuaries (BLM 2006a, 2006b, 2007, 2008, 2020a). Water resources in the analysis area are influenced primarily by climate, topography, and geology. Climate dictates water availability from precipitation and seasonality as well as evapotranspiration rates. Topography defines watershed boundaries, major rivers, and general directions of flow. Geology influences groundwater and lake recharge rates and permafrost prevalence. This section addresses potential water quality impacts. Figures 3.7-1 through 3.7-5 show and Table 3.7-3 lists the HUC 6 watersheds in the analysis area (USGS 2023). Table 3.17-1 summarizes water resources in the analysis area.

Table 3.17-1. Summary of Water Resources on 17(d)(1) Withdrawals in the Analysis Area

Area	Streams and Rivers (miles)	Lakes and Ponds (acres)	Wetlands (acres)
Analysis area	752,711	5,407,552	47,527,000
17(d)(1) withdrawals	64,741	166,474	2,400,000

Sources: USFWS (2023); USGS (2023).

Water quality is typically good to excellent across the planning areas, except for suspended sediment and turbidity (BLM 2006a, 2006b, 2007, 2008, 2020a). Turbidity levels are naturally elevated in most Alaska streams during high-flow events regardless of land use (BLM 2020a). Generally, degradation of water quality decreases following spring breakup or following a storm event as suspended sediments increase. Thawing permafrost can cause thermokarst and increased erosion, resulting in increased turbidity in receiving waterbodies (BLM 2008). Permafrost and thermokarst are discussed in Section 3.13, Soils and Permafrost. Decomposition of dead salmon and vegetation can also temporarily degrade water quality (BLM 2006b). Lakes and ponds provide important resources for many regions, especially lakes deeper than approximately 6 feet that may be the only available water source during winter months. Sampling of 10 ponds near Kotzebue in 1990 and 1991 found that pH ranged from slight acidic to slightly basic and hardness was relatively low (BLM 2008).

Few waterbodies in the analysis area have been assessed¹⁷ by the Alaska Department of Environmental Conservation (ADEC) for water quality or listed as impaired under CWA Section 303(d), which is defined as “persistently exceeding state water quality standards.” Impairment can derive from levels of pollutants, dissolved oxygen, pH, temperature, turbidity, and other water qualities. ADEC classifies Section 303(d) impaired waterbodies as “Category 5” waterbodies. Absence of listing as a Section 303(d) impaired water does not indicate that a waterbody meets water quality standards since data may not be available for all waterbodies. The Section 303(d) list includes waterbodies in which one or more water quality criteria are not attained or waterbodies that are impaired for at least one designated use (ADEC 2022).

¹⁷ It would be unreasonable to survey all waters in Alaska to identify all impaired waters. The 303d list is the best available science (40 CFR 1502.21). See Appendix I, Incomplete or Unavailable Data, for a discussion of this knowledge gap.

No waterbodies in the Bay, East Alaska, or Kobuk-Seward Peninsula planning areas are listed as impaired by ADEC on its Section 303(d) list (ADEC 2022). Within the Bering Sea-Western Interior planning area, portions of Red Devil Creek and the Kuskokwim River, downstream from the confluence with Red Devil Creek, are listed as Section 303(d) impaired waterbodies; the impaired waters exceed water quality standards for antimony, arsenic, and mercury (ADEC 2022). The middle Kuskokwim River runs through the “mercury belt,” a highly mineralized region that contains mercury, gold, silver and other deposits. The belt has high mercury occurrence and historic mining activity (such as the Red Devil Mine, abandoned in 1971) (Matz et al. 2017). Both the naturally occurring mercury and the historic mining may contribute to the area’s Section 303(d) impaired waterbody status.

Though various types of mining methods have influenced water quality in the past, changes in placer mining practices in the 1980s limited direct discharge of process water to adjacent rivers and streams on both State and Federal land. However, hundreds of stream miles are still considered impaired by placer mining due to elevated turbidities (ADEC 2022). Most of the Section 303(d) impaired waterbodies in the analysis area are in the Ring of Fire planning area and include Katlian River (sedimentation/siltation and turbidity), Kimshan Cover (arsenic, copper, lead, mercury), Egegik River (petroleum hydrocarbons), Salt Chuck Bay (copper), and Little Susitna River (turbidity) (ADEC 2022).

Throughout the analysis area, human activities can affect water quality by contributing sewage effluent or by contributing other point sources of discharge near communities or military installations. Dumping of garbage and disposing of human waste near rivers and streams have also locally impacted water quality (BLM 2007). Non-point sources of sediment include roads and OHV routes. Rivers and streams in developed areas often have poor water quality due to urban runoff (BLM 2006b). Water quality in the Kodiak, Southcentral, and Southeast areas is often impacted by urban populations; several waterbodies in these areas are listed as 303(d) impaired or have been previously impaired and now have active recovery plans (ADEC 2022).

The National Atmospheric Deposition Program (NADP) oversees the National Trends Network (NTN) to provide a long-term record of precipitation chemistry to monitor atmospheric deposition and its effects on surface waterbodies and other natural resources (NADP 2023). Two NTN sites operate in the analysis area. Data collected at the King Salmon NTN site within the Bay planning area from 2009 through 2023 generally show static trends in water chemistry and moderately increasing trends in precipitation and wet deposition of monitored chemical compounds. Data collected at the Juneau NTN site within the Ring of Fire planning area from 2004 through 2023 generally show static trends in water chemistry, precipitation, and wet deposition (NADP 2024).

Abandoned non-reclaimed placer mining, active placer mining with erosion control issues, and runoff from wildfire areas can contribute additional sediment and other pollutants to local streams (BLM 2020a). Legacy or abandoned mine lands occur in the Bay, Bering Sea-Western Interior, and Kobuk Seward Peninsula planning areas and are a result of actions completed prior to mine reclamation laws, policies, and regulations. For example, placer mining operations on the Salmon River (in Goodnews Bay) extending back to 1937 have caused significant changes to the hydrological characteristics of the Salmon River watershed. Deposition of porous gravel and cobble tailings have replaced fine particulate material necessary for natural river functions (BLM 2007). As described above, changes in placer mining practices in the 1980s limited direct discharge of process water to adjacent rivers and streams on both State and Federal. For example, modern mining regulations require concurrent reclamation and financial bonds to ensure a site is reclaimed. Thus, existing placer and hard-rock mining activities are required to comply with all pertinent Federal and State regulations pertaining to water quality but can continue to pose a risk to water quality (BLM 2006a).

Timber harvest operations in permafrost areas typically limit heavy equipment access to periods when the ground is frozen, thus impacts on water quality have been minimal (BLM 2006a). Wildfire can lead to increased erosion and to reduced land stability, resulting in greater sedimentation of rivers and streams as well as changes to organic carbon, nutrients, and trace metals (USGS 2022). Operation of mechanized equipment during fireline construction on ice-rich, fine-grained, permafrost soils frequently results in erosion and permafrost thawing. Runoff from impacted areas can cause gullies and channels, leading to siltation and increased turbidity in resultant waterbodies (BLM 2006a).

Dispersed recreation (e.g., hunting, fishing, float trips) and OHV use have contributed to localized disturbance of vegetation and erosion at stream crossings and riparian areas, resulting in increased water turbidity and sedimentation (BLM 2006a, 2007).

Roughly half of Alaska's population and 90 percent of the state's rural residents depend primarily on groundwater. Unconsolidated alluvial deposits or glacial outwash form the most productive aquifers and are typically suitable for domestic uses with moderate or minimal treatment. Naturally occurring concentrations of arsenic, antimony, iron, and manganese exceeding Federal drinking-water standards are the most common problems requiring treatment. Alluvial groundwater is typically hard to moderately hard due to calcium bicarbonate or calcium magnesium bicarbonate and may require treatment for some uses (BLM 2020a).

Groundwater springs typically have good water quality compared to surface waters in Arctic areas and provide an important source of flowing water during winter months (BLM 2008).

Existing activities or trends in the analysis area that have influenced and will continue to influence water quality include fire and fire management, timber and minerals development, oil and gas exploration and development, ROWs, and the construction of infrastructure (roads, ports, communities). On BLM-managed lands, there are also 68,000 acres of authorized ROW in the five planning areas (see RFD in EIS Appendix D), though they are largely concentrated in the Ring of Fire and East Alaska planning areas where lands are more accessible to the existing road system. These existing actions have altered or removed vegetation, altered substrates, and hardened surfaces at the local scale, all of which can increase sediment loads in receiving waterbodies. None of the actions are large scale, nor have they impacted substantial portions of the analysis area. However, the trend of climate change is large scale and affects the entire analysis area by increasing water temperatures, and changing precipitation levels and timing, as described more below and in Section 3.3, Climate.

The existing trend of climate change, discussed in Section 3.3, is long term and affects the entire state. Warmer temperatures are melting ice and thawing permafrost, which is causing increased intensity of storms and coastal erosion events. Most of Alaska has experienced an increased frequency of extreme precipitation events. More intense precipitation can increase bank and channel erosion, resulting in increased turbidity, suspended solids, and siltation in receiving waterbodies. Thaw-induced erosion of permafrost and changes in wildfire patterns, including direct results on vegetation and soil and indirect results from human responses, can lead to mobilization of fine soil particles that contribute to increases in turbidity, suspended solids, and siltation in receiving waterbodies. Widespread permafrost thaw and wildfires have also altered the concentration of organic carbon, nutrients, and trace metals in Arctic rivers (USGS 2022); climate change is likely to intensify these trends. Changing global and regional temperatures also directly impacts water temperature.

3.17.1.2 Environmental Consequences

3.17.1.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.17.1.1, Affected Environment, would continue, and climate change, infrastructure development, and other trends and human activities would continue to impact water quality.

3.17.1.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

Development of any variety in areas where the 17(d)(1) withdrawals are revoked could degrade surface water and groundwater quality through the construction and operation of infrastructure. The magnitude and duration of impacts would vary depending on the amount and location of areas open to such uses, conditions applied to such uses, and the proximity of such used to water resources. The following general types of effects to water quality could occur:

- Thermokarst erosion resulting from thawing permafrost
- Increased stages and velocities of floodwater
- Increased channel scour and bank erosion
- Increased surface erosion and wind scour from damage or removal of organic mat
- Increased turbidity, total dissolved solids, and total suspended solids (TSS) in receiving waterbodies
- Increased siltation and sedimentation
- Accidental hazardous material spills
- Decreased water quantity due to water withdrawals
- Changes in groundwater recharge potential from removal or compaction of surface soils and gravel
- Changes to dissolved oxygen, pH, temperature, nutrients, conductivity, and other water chemistry characteristics
- Increased concentrations of metals and other contaminants
- Acidification of surface water from exposure to acid rock drainage
- Changes to the interaction and mixing between groundwater, permafrost, and surface water from drilling, impounding, or use
- Changes to local nearshore water quality from impacted watersheds

Although each of the action alternatives could result in similar types of impacts to water quality, the location, magnitude, and duration of those impacts would be different for each, as discussed below. Impacts to water quality would depend on magnitude and extent of site-specific development on the lands where the 17(d)(1) withdrawal has been revoked. Table 3.17-1 summarizes water resources affecting water quality on 17(d)(1) withdrawals in the analysis area.

Any development with the potential to impact water quality would be subject to ADEC's water quality standards and potentially require a wastewater discharge permit (depending on the nature and quantity of discharge). Infrastructure construction would have to meet the requirements of an ADEC Construction General Permit, including development and implementation of a stormwater pollution prevention plan, to ensure protection of water quality and human health. Pertinent ADEC requirements are described in Section 3.2.4 Water Resources in BLM (2020b).

Leasable mineral exploration and development activities in the Ring of Fire and East Alaska planning areas (see RFD in EIS Appendix D) may include seismic exploration, exploratory drilling, land clearing, spills and accidental discharges, gravel roads and pads, work camps, pipelines, and temporary disturbances. Effects from oil and gas development on water quality would generally be localized and potentially long term. The magnitude of development effects would depend on the location, depth, size, and geology of the project.

Development on lands where the 17(d)(1) withdrawal has been revoked would increase the potential for spills or releases of contaminants into adjacent waterbodies, which would degrade water quality of impacted waters at the spill site and downstream. In fact, recent studies indicate that spills may be more frequent than previously recognized (Lubetkin 2022). The effects of these contaminants on water quality of streams, lakes, and groundwater would depend on the type of spill, quantity of material spilled, time of year (frozen ground and surface waters), and the discharge in the receiving waterbody.

Surface runoff from roads, gravel pads, airstrips, and materials sites could increase turbidity, TSS, and sedimentation in downstream waterbodies. Fugitive dust from construction and gravel infrastructure can also be deposited on snow and ice during winter, subsequently accelerating melting and increasing turbidity in water the following spring. Soils on road embankments are more susceptible to erosion during snowmelt and rainfall runoff than soils in vegetated areas, leading to increased turbidity of receiving waters (BLM 2020b). Construction of culverts and bridges can alter flow patterns and volumes, which can impact dissolved oxygen, pH, and temperature. Changes in water depth and velocity can result in erosion and sedimentation.

Disturbance of vegetation, soil, and riparian wetlands within watersheds is a potential impact of infrastructure construction. Canopy cover and riparian connection play important roles in temperature regulation, and management changes or developments resulting in loss of riparian wetlands can result in increased water temperatures. Impacts to riparian wetlands can also result in increased erosion and sedimentation and changes to pH, nutrient loading, and organic content with potentially detrimental impacts on water quality.

Development of roads, pads, and physical infrastructure can result in localized permafrost thaw, which can impact surface water quality. Locally, reduced groundwater flow and interrupted surface drainage could result in areas of pooling on the uphill side of the embankment and drying of soils on the downslope side. Pooling would result in greater thermal absorption in summer, accelerating permafrost thaw and potential thermokarsting. Drying may reduce the vegetative cover, allowing increased solar absorption and further permafrost thaw. Groundwater flow beneath roadway embankments may increase the thaw of permafrost (BLM 2020b).

Freshwater may be withdrawn or diverted from lakes and rivers in the analysis area for several primary uses: mining operations, pipeline maintenance, production drilling, maintenance activities (dust control), and potable water use. Water withdrawal from lakes causes a temporary increase in salinity, calcium, magnesium, sodium, potassium, and chloride levels (BLM 2019). Temporary water quality effects from water withdrawals from ice-covered lakes during winter may include decreasing dissolved oxygen concentrations, alkalinity, and pH until spring breakup and snowmelt. Pumping affects lakes that are shallow with less volume much more than deeper lakes. Water withdrawal would decrease the overall

volume of water from the water source used, which can cause changes in dissolved oxygen, pH, and temperature. Changes resulting from infrastructure development on surface and groundwater flow may result in increases or decreases in local streamflow and potential changes in timing of lake and wetland recharge (BLM 2020b). Effects on lakes across the analysis area may differ due to variations in geology, vegetation, and climate. Water withdrawals would have to follow ADNR permitting requirements, which requires that withdrawals do not exceed levels where fish would be impacted in fish-bearing lakes.

Seismic surveys in support of oil and gas exploration activities could result in long-term impacts on vegetation, permafrost, and surface waters, leading to thermokarst erosion and increased turbidity, TSS, and sedimentation (BLM 2019).

Mining activities could adversely affect water quality by increasing erosion, sedimentation, and point and non-point discharges to streams, lakes, and groundwater (BLM 2020a). Hard-rock mining for locatable minerals has the potential for point-source discharges of contaminants (e.g., heavy metals, chemicals) into downstream waterbodies. Exposure of rock creates the potential for acid rock drainage to develop and impact downstream waterbodies. Disturbance of soil during mining activities increases the potential for erosion and downstream increases to turbidity, suspended solids, and sedimentation. Fugitive dust from ore transport over gravel roads and tailings disposal can introduce fine sediments and contaminants into adjacent waterbodies, degrading water quality. Placer mining removes and sorts material from streambeds and thus has the potential to directly increase erosion and turbidity, suspended solids, and sedimentation in streams. Altering water flow paths also has the potential to impact water temperature and dissolved oxygen. Potential impacts on water quality from roads and infrastructure supporting mineral extraction activities are like those described above for leasable minerals. Effects from mining activities on water quality would be generally localized and potentially long term. The magnitude of development effects would depend on the location, depth, size, and geology of the project. Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.17.1.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no direct or indirect impacts on water quality on lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part to allow for State selection under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which will change how they are managed and could lead to development (as described in the RFD in EIS Appendix D). This would result in the impacts from future development described in Section 3.17.1.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership and developed, as described in Section 3.1. Table 3.17-2 summarizes the water resources on lands where the 17(d)(1) withdrawals would be revoked under Alternative B. See Table 3.7-4 for a summary of stream miles on revocations by HUC.

Table 3.17-2. Water Resources on Lands More Likely to be Impacted on 17(d)(1) Withdrawals Revoked under Alternative B

Water Resource	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*,†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and More Likely to be Developed
Streams and rivers (miles)	752,711	978	86	22	22
303(d) impaired waterbodies (miles)	166	0	0	0	0
Lakes and ponds (acres)	5,407,552	18,977	3,763	704	704
Wetlands (acres)	47,527,000	72,000	3,000	2,000	2,000

Sources: ADEC (2022); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.17.1.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on water quality for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to water quality from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more miles or acres of waterbodies could be affected in the focused analysis area. Table 3.17-3 summarizes the water resources on lands more likely to be developed under Alternative C. See Table 3.7-6 for a summary of stream miles on revocations by HUC.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in BLM [2022]) and experience minimal impacts to adjacent waterbodies.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to water quality. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Table 3.17-3. Water Resources on Lands More Likely to be Impacted on 17(d)(1) Withdrawals Revoked under Alternative C

Water Resource	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed*,†	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Streams and rivers (miles)	752,711	13,950	1,623	1,176	283
303(d) impaired waterbodies (miles)	166	2	0	2	0
Lakes and ponds (acres)	5,407,552	58,088	8,484	17,061	2,722
Wetlands (acres)	47,527,000	675,000	42,000	54,000	17,000

Sources: ADEC (2022); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

† Under Alternative C, lands more likely to be developed include encumbered lands, and therefore the values in the table likely overestimate the actual acres. This overestimation is less than 5% of the reported numbers in the table.

3.17.1.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals in the decision area would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the previously withdrawn land allowing for the disposal of lands and the location of mining claims. Lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to water quality. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.17.1.2.2. The greatest impacts to water quality are expected where development is more likely and conveyance out of Federal ownership is more likely. Table 3.17-1 summarizes the total acres where 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. See Table 3.7-8 for a summary of stream miles on revocations by HUC. Alternative D would have similar types of impacts to water quality as Alternative C but to a larger extent and magnitude because more miles and acres of waterbodies occur on lands where the 17(d)(1) withdrawals would be revoked.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in BLM [2022]) and experience minimal impacts to adjacent waterbodies.

Potential for impacts to water quality is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more miles and acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

Table 3.17-4 summarizes the total acres where the 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area.

Table 3.17-4. Water Resources on Lands More Likely to be Impacted on 17(d)(1) Withdrawals Revoked under Alternative D

Water Resource	In Analysis Area	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked and More Likely to be Developed*	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and More Likely to be Developed
Streams and rivers (miles)	752,711	64,741	1,623	1,405	283
303(d) impaired waterbodies (miles)	166	2	0	2	0
Lakes and ponds (acres)	5,407,552	58,088	8,484	17,061	2,722
Wetlands (acres)	47,527,000	2,400,000	42,000	55,000	17,000

Sources: ADEC (2022); USFWS (2023); USGS (2023).

* As described in Section 3.1.1.2, Reasonably Foreseeable Development Scenario, lands more likely to be developed consist of 17(d)(1) withdrawals that are not already open to mineral entry per their existing PLO or on effective selections.

3.17.1.2.6 COMPARISON OF ALTERNATIVES

Alternative D has the most miles of rivers and streams in the focused analysis area, highest areas of lakes and ponds in the focused analysis area, and most acres of wetlands in the focused analysis area. Therefore, Alternative D has the highest possibility of impacts on water quality (Table 3.17-5).

Alternative C has considerably fewer miles of river and streams, acres of lakes and ponds, and acres of wetlands within areas where the 17(d)(1) withdrawals would be revoked areas compared to Alternative D. Both Alternatives C and D would result in 2.13 miles of 303(d) impaired streams being included in area where the 17(d)(1) withdrawals would be revoked.

Alternative B has the least number of rivers and streams, lakes and ponds, and wetlands of the alternatives, and therefore Alternative B is likely to have the least impact on water quality.

Table 3.17-5. Miles of Streams and Rivers where 17(d)(1) Withdrawals Would be Revoked by Alternative

Alternative	Where 17(d)(1) Withdrawals Would be Revoked	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances	Where 17(d)(1) Withdrawals Would be Revoked on Lands More Likely to be Developed	Where 17(d)(1) Withdrawals Would be Revoked on Priority Conveyances and Lands More Likely to be Developed
Alternative A	0	0	0	0
Alternative B	978	86	22*	22
Alternative C	13,950	1,623	1,176	283
Alternative D	64,741	1,623	1,405	283

Source: USGS (2023).

* Though there are withdrawals that would be revoked on lands that meet the RFD scenario's definition of *more likely to be developed* (see EIS Appendix D), these lands would not be developed under Alternative B except where they are conveyed to the State (priority conveyances). This is because 17(d)(1) withdrawals under Alternative B would be *partially* revoked *only* to allow State selection; they would not be revoked in a manner that would allow development on lands that stay in Federal management. Therefore, acres more likely to be developed not on priority conveyances were removed from this calculation for Alternative B only.

3.17.1.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect water quality in similar ways to those described in Section 3.17.1.2.2.

The RFAs and planned actions described in Section 3.1, Introduction and Methodology, in combination with Secretarial revocation of the 17(d)(1) withdrawals and any ensuing development, may have adverse effects on drainage patterns and water quality, although the extent of the impacts would depend on the specific type and location of the activity. Although many of the RFAs and planned actions would constitute relatively small projects that would not lead to substantial changes in water quality, some of the larger projects (e.g., mine development, oil and gas development, port expansion) would contribute to local or even regional impacts to water quality that could be compounded when the effects of 17(d)(1) withdrawals and consequent development are added to them.

Future remediation and restoration of past mining activities may improve water quality (e.g., Tulsequah Chief Mine, Salt Chuck Mine, Ross Adams Mine, Kennecott Mines and Mill Town Site Cleanup) and mitigate 303(d) impaired waters (Red Devil Mine Cleanup). However, potential development of new mines (e.g., Ambler Mining District, Graphite One Mine, Manh Choh Mine, Donlin Gold), mine expansion (e.g., Constantine Mine Expansion, Red Dog Mine Expansion, Valdez Creek Mining District), and development of oil and gas facilities (e.g., Beluga River Unit Gas Well 211-35, Alaska LNG pipeline, Donlin Gold gas pipeline) would result in new potential impacts to water quality in the analysis area. Where land with 17(d)(1) withdrawals that would be revoked have the most potential for development (the focused analysis area) overlap with reasonably foreseeable or planned large-scale development, effects to water quality could be compounded.

Development of mineral extraction facilities would also include development of supporting roads, pipelines, and communication infrastructure in addition to potential and planned road development listed among the RFA and planned actions (e.g., Ambler Road, Cape Blossom Road, Moore) that could also detrimentally impact water quality through increased turbidity, sedimentation, spills, point- and non-point source contamination, acid rock drainage, permafrost degradation, and changes to water chemistry (dissolved oxygen, pH, conductivity, etc.). Development of the Susitna Watana Dam would capture sediments from upstream in the basin, which may improve turbidity and TSS in the effluent water, but at risk of disrupting natural sediment balances in the downstream river. Potential development of new communication infrastructure within the analysis area (e.g., OTZ Microwave Tower Broadband Project, GCI Fiber Optic, State of Alaska Tsina Communication Site) are likely to increase potential for other development in the general vicinity, potentially further increasing impacts on water quality. RFAs or planned actions like the Alphabet Hills Prescribed Burn may further increase soil disturbance and erosion with downstream increases of turbidity, TSS, and sedimentation.

Furthermore, the continuing trend of climate change is likely to continue to increase water temperature (and decrease dissolved oxygen) and continue to contribute to permafrost degradation. Although these impacts are not quantified, overall cumulative impacts are expected to trend toward decreasing water quality in developed regions of the analysis area. The permanency and scale of impacts vary by type of development and use but are in proportion to the amount of area impacted (BLM 2018). The most observable changes are expected in watersheds with the highest concentration of human activity or management change.

3.17.2 How would revocation of 17(d)(1) withdrawals affect water availability?

The analysis area for water availability is the HUC 6 watersheds that overlap 17(d)(1) withdrawals in the decision area. The temporal scale of impacts would be long term.

The following indicators were used to analyze this issue:

- Miles of streams and rivers on 17(d)(1) withdrawals (above ground conveyance)
- Acres of lakes, ponds, and wetlands on 17(d)(1) withdrawals (above ground storage)

3.17.2.1 Affected Environment

This section addresses potential impacts to water availability. The major watersheds of the analysis area are described in Section 3.17.1.1, Affected Environment. Hydrology is a principal driver affecting physical, chemical, and biological processes within aquatic systems. Hydrology of watersheds across the analysis area is diverse and naturally varied due to the large range of topographic, climatic, and geologic conditions. Hydrology of the different regions is typically driven either by glacial activity and snowmelt (with runoff peaking in the spring) or by maritime climates and steep slopes (with peak flows in spring and fall) (BLM 2006b). Glacial-fed streams typically have low to no flows during the winter and high streamflow from snowmelt in the spring and summer. Many arctic streams receive a high portion of annual discharge in a less than a month due to snowmelt (BLM 2008). Tidal impacts can significantly impact water levels and flow in river outlets (BLM 2007).

Natural attenuation (through evaporation, absorption by plants and soils) and storage (in lakes, ponds, wetlands, etc.) determine the distribution and timing of water inputs throughout any given watershed. Numerous things can re-distribute the amount and timing of water inputs to a system, such as vegetation and water management, human use of water, infrastructure and development, natural landscape features, and climate changes. Human activities directly impact the landscape and affect water supply and storage, such as decreasing infiltration and increasing runoff by compacting soils with roads and equipment; this in turn can change the rate and timing of groundwater and lake recharge. The hydrology of a landscape may be redefined over time because of compounding water distribution changes.

Permafrost persistence creates a barrier to infiltration and limits groundwater storage where present, thereby limiting potential for development of groundwater resources (BLM 2008). Groundwater resources are generally abundant in glacial outwash and alluvium deposits within discontinuous permafrost and areas without permafrost (BLM 2006b, 2020a).

Natural springs provide important sources of flowing water during winter in Arctic regions, supporting wildlife and providing drinking water sources for some communities (BLM 2008).

The analysis area has limited coverage from meteorological or hydrological recording stations; given this, widespread and detailed records of precipitation, discharge, and stage describing hydrological processes are limited. The USGS has established stations to monitor surface water quantity across the analysis area, including active stations and discontinued stations providing historic observations, but data collection locations are sparse compared to the overall size of the analysis area. The USGS also collects information on groundwater resources at select sites, including in the Lower Nushagak River, Lake Clark, and Kuskokwim Delta watersheds (BLM 2007). NPS Inventory & Monitoring networks provide additional water quantity data for NPS-managed lands in the analysis area. For example, the Southwest Alaska Network collects stage and discharge data at the outlets of Naknek Lake, Lake Brooks, Lake Clark, and Kijik Lake in the Bay planning area (NPS 2020). Overall, hydrologic data are unavailable for most of the

waterbodies in the analysis area. Data that are available show high variability in precipitation, discharge, and seasonal hydrologic patterns across the analysis area.

Three BLM-managed national wild and scenic rivers are in the analysis area: the Delta and Gulkana rivers within the Copper River watershed and the Unalakleet River. The BLM monitors these rivers for instream flows to quantify the amount of water necessary to support values for which these areas were designated (BLM 2006a). Current BLM management plans for the Goodnews River identify the need to “Perfect legal water rights to the water resources on public lands in support of Bureau programs, and in compliance with the Alaska Water Use Act” and to “Protect existing water rights of the U.S.” (BLM 2007).

Existing activities or trends in the analysis area have influenced and will continue to influence water availability and include fire and fire management, timber and minerals development, oil and gas exploration and development, ROWs, and the construction of infrastructure (roads, ports, communities). These actions have altered or removed vegetation, altered substrates, and hardened surfaces at the local scale, which can increase overland water flow and create higher flows in receiving waterbodies. Also, placer mining on the Salmon River (near Goodnews Bay) has resulted in deposition of porous gravel and cobble tailings that result in portions of the river becoming discontinuous due to subsurface flow during low flow periods (BLM 2007). None of the actions are large scale, nor have they impacted substantial portions of the analysis area. However, the trend of climate change is large scale and affects the entire analysis area by increasing water temperatures and by changing precipitation levels and timing, as described in Section 3.3, Climate.

Temperature increases have a perpetuating impact in a system where hydrologic patterns are tied to distinct seasonal processes (BLM 2020c). Warmer temperatures directly result in melting ice and permafrost, changed precipitation patterns, and redistribution in water storage. Each impact contributes indirectly to landscape-scale changes in the hydrologic cycle. More frequent and intense precipitation results in higher seasonal peak flows, whereas early snowmelt results in earlier peaks to streamflows with potentially greater runoff. Flows in glacier-fed streams are likely to increase due to glacier recession. However, higher temperatures, a longer growing season, and increased evapotranspiration may lead to lower baseflows, which could reduce water available for consumptive use (BLM 2019). Decreased snow cover, later first snowfalls, and earlier snowmelt increase the availability of water for use over the calendar year while decreasing the duration of snow cover. Permafrost thaw redistributes the storage of water, changing the amount and connection of lakes, indirectly impacting lake recharge rates and infiltration to groundwater.

3.17.2.2 Environmental Consequences

3.17.2.2.1 ALTERNATIVE A (NO ACTION ALTERNATIVE, PREFERRED ALTERNATIVE)

Under Alternative A, all 17(d)(1) withdrawals would remain in place; therefore, there would be no change in the management of the analysis area. The reasonably foreseeable trends and planned actions described in Section 3.17.1.1, Affected Environment, would continue, and water availability would continue to be affected by changing climate and permafrost conditions (see Section 3.13, Soils and Permafrost, and Section 3.3, Climate), as well as infrastructure development and other human activities listed.

3.17.2.2.2 IMPACTS COMMON TO ALL ACTION ALTERNATIVES

The revocation of 17(d)(1) withdrawals and any ensuing development may impact water availability primarily through increased potential for land development and management changes.

Although water availability fluctuates naturally, human activities also impact the distribution and quantity of water in the analysis area. The RMPs for each of the five planning areas address key management actions related to water supply, including protecting the hydrologic regime, restoring watersheds, and meeting the BLM Alaska Land Health Standards. Human activities impact the distribution of water and the hydrologic cycle directly and indirectly. The construction of roads can change hydraulic pathways, increase runoff and erosion, and change waterbody geometry. Existing 17(d)(1) withdrawals are largely segregated from mining and development; however, impacts to these lands from existing roads upstream may occur. Access roads, water withdrawals, and development impacts to land may decrease water storage and alter water supply (due to increased runoff from soil compaction, land cover changes, and thawing permafrost and ice) in and immediately downstream of these areas.

The following potential impacts on surface water and groundwater water availability could occur from development following revocation of 17(d)(1) withdrawals:

- Increased water use and withdrawal
- Reduced lake water levels and volumes
- Alteration of wetland and lake recharge rates
- Blockage, convergence, or divergence of natural drainage
- Disruption of surface water hydrology
- Increased stages and velocities of floodwater

Leasable mineral exploration and development in the Ring of Fire and East Alaska planning areas (see RFD in EIS Appendix D) may include seismic exploration, exploratory drilling, land clearing, gravel roads and pads, work camps, pipelines, and temporary disturbances. Effects on water availability would be generally localized and short term. The magnitude of development effects would depend on the location, depth, size, and geology of the project.

Long-term effects of gravel roads and pads over the life of a development could include potential changes to the existing hydrologic regime, changing flow peaks and timing, although this is expected to be largely mitigated with properly placed culverts and bridges. The construction of gravel roads and pads would compact underlying soil, potentially impacting permafrost thaw depths, and reduce natural infiltration into areas below the gravel footprint, all of which could alter the shallow groundwater movement. Gravel for construction of infrastructure would result in development of material sites. Mining gravel may require temporary pumping of groundwater, which could change the groundwater level and impact the water level or flow of adjacent streams. Following reclamation, material sites mined below natural groundwater levels may function like a natural lake (BLM 2020b).

Disturbance of vegetation, soil, and riparian wetlands within watersheds is a potential impact of infrastructure construction. Loss of vegetation can increase overland flows and subsequently cause higher peak flows in receiving streams. Seismic surveys in support of oil and gas exploration activities could result in long-term impacts on vegetation, permafrost, and surface waters, which could impact natural flow patterns, change flow rates and timing, and impact lake and groundwater recharge rates.

Infrastructure can cause changes in snow accumulation and drifting patterns that could change drainage patterns once the snow melts and increase inundation (flooding) or drying of affected areas (BLM 2020b). Snow drifting could also result in insulation of the surface soils, reducing the freezing of surface soils (active layer) and potentially increasing the depth of permafrost thaw. Increased inundation from melting snow accumulations could increase areas of pooling and thermokarst action, creating settlement,

impounded areas of water, and increased permafrost thaw. Groundwater flow beneath roadway embankments may increase the thaw of permafrost.

Freshwater may be withdrawn or diverted from lakes and rivers in the analysis area for several primary uses: mining operations, pipeline maintenance, production drilling, dust control, and potable water use. Pumping affects shallow lakes with less volume much more than deeper lakes. Water withdrawal at individual permitted lakes is not expected to impact the hydrology other than causing minor fluctuations in water levels during winter. The impacts of water withdrawal generally decrease as natural lake recharge occurs during spring breakup. Many lakes and wetland areas have surface and subsurface connections with adjacent lakes, whereby water withdrawals from a lake might lower the level of an adjacent lake. This effect would likely be short-lived due to the annual recharge processes from snowmelt during breakup and the high level of interconnectivity of the lakes (BLM 2020b). Effects on lakes across the analysis area may differ due to variations in geology, vegetation, and climate. Water withdrawals would have to follow ADNR permitting requirements.

Mining activity has the potential to significantly alter water availability because of water withdrawals or diversions (BLM 2020a). Excavation and stockpile of overburden and ore can change natural drainage patterns and watershed boundaries, impacting downstream baseflows, groundwater infiltration and recharge rates, and surface water recharge rates. Placer mining can alter streambed substrate composition causing increased subsurface flow and decreased floodplain connectivity, which can ultimately result in intermittent flows and dry channel beds. Effects from mining activities on water availability would be generally localized and potentially long term. The magnitude of development effects would depend on the location, depth, size, and geology of the project.

ROWs granted in support of development made possible by the proposed revocations have the potential to have large impacts because they can extend across large areas and intersect numerous watersheds. Linear infrastructure or actions in ROWs could adversely affect water availability by increasing water demand, disrupting natural flow patterns, changing snow drifting and accumulation patterns, and altering runoff characteristics of watersheds (BLM 2020a). Impacts from ROW development on water availability would be similar to those described for roads. ROW development would increase stream crossings for roads, trails, pipelines, or utility corridors as well as other linear infrastructure requiring construction of culverts or bridges to convey water. Effects from ROW development on water availability could be large in scale and long term. Impacts are likely to be the greatest during construction of ROW infrastructure. The magnitude of development effects would be dependent on the location, depth, size, and geology of the project.

Water withdrawals for developments made possible by the proposed revocations could reduce volumes of lakes; impacts would generally be temporary assuming recharge rates are adequate. Drawdowns in water elevation can dry adjacent wetlands and impact vegetation.

Although development is not reasonably likely outside of the lands identified as more likely to be developed, due to the sheer number of acres where the withdrawals would be revoked, there is potential for some type of change to occur, though that potential is low, and it would be too speculative to try to describe the details of such change.

3.17.2.2.3 ALTERNATIVE B (PARTIAL REVOCATION)

There would be no project-related impacts on water availability on lands that remain withdrawn under Alternative B because there would be no change to the land status. Lands where the 17(d)(1) withdrawals are revoked in part under Alternative B, and on which there are no other encumbrances, would be available for effective selections to fall into place from State top filings. Once lands are effectively selected, they could be conveyed to the State, which could lead to development (as described in the RFD

in EIS Appendix D). This would result in the impacts from future development described in Section 3.17.2.2.2, Impacts Common to All Action Alternatives. The focused analysis area is the area more likely to be conveyed out of Federal ownership or developed, as described in Section 3.1. Table 3.17-2 summarizes the water resources on lands more likely to be developed under Alternative B.

Because Alternative B would only revoke 17(d)(1) withdrawals that have no or minimal conflict with natural resources, cultural resources, subsistence resources, recreational resources, or proposed or existing ACECs, impacts to water availability would be less than if more or all withdrawals were revoked (Alternatives C and D).

3.17.2.2.4 ALTERNATIVE C (PARTIAL REVOCATION)

There would be no direct or indirect impacts on water availability for lands that remain withdrawn under Alternative C. For lands where a 17(d)(1) withdrawal is revoked under Alternative C, the lands would be opened to mineral development on both Federal lands and State top filed lands that would become effective selections. The impacts to water availability from the resulting development would be of the same type as Alternative B but to a greater magnitude and extent because more acres could be affected in the focused analysis area. Table 3.17-3 summarizes the water resources on lands more likely to be developed under Alternative C.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to water availability.

Top filed lands that become effectively selected due to the withdrawal revocation would be conveyed if they are Priority 1 or 2, which would change how those lands are managed and potentially reduce the number of requirements for avoidance and minimization of impacts to water availability. For this analysis, it is assumed that although top filings of any priority would become effective selections following revocation of the 17(d)(1) withdrawals if the land is not otherwise encumbered, Priority 1 and 2 top filings would be conveyed to the State, and Priority 3 and 4 top filings would be relinquished by the State or rejected by the BLM due to overselection.

Alternative C would revoke withdrawals adjacent to the following BLM-managed wild and scenic rivers: the Unalakleet River in the Bering Sea-Western Interior planning area and the Delta and Gulkana rivers in the East planning area. Some of the revocations near the Gulkana River are priority conveyances or more likely to be developed. As described in Section 3.10.2.1, Realty and Lands, Affected Environment, ANILCA 606 withdrew lands within 0.5 mile of wild and scenic rivers from mineral entry and made them unavailable for disposal under the public land laws within the river corridors. Therefore, any Secretarial decision to revoke 17(d)(1) withdrawals would not directly affect wild and scenic river corridors.

3.17.2.2.5 ALTERNATIVE D (2021 PROPOSED ACTION)

Under Alternative D, all 17(d)(1) withdrawals would be revoked; the BLM would manage discretionary actions under the respective RMPs for the planning areas. The public land laws would apply on the lands previously withdrawn allowing for the disposal of lands and the location of mining claims. Selected lands where the 17(d)(1) withdrawals are revoked under Alternative D could be conveyed if they are Priority 1 or 2, which would change how water resources are managed on those lands. In these instances, development could occur, as described in the RFD in EIS Appendix D, and would result in the impacts described in Section 3.17.2.2.2. The greatest impacts to water quality are expected where development is likely and the land is conveyed out of Federal ownership. Table 3.2-4 summarizes the total acres where the 17(d)(1) withdrawals would be revoked under Alternative D in the focused analysis area. Alternative D would have the same likely impacts to water availability as Alternative C and would likely have additional impacts to water quality given the vast area opened to mineral entry.

Parcels conveyed as Native allotments would likely see little surface disturbance (i.e., largely limited to the construction cabins or fish camps as described in BLM [2022]) and would experience minimal impacts to water availability.

Potential for impacts to water availability is greatest under this alternative because the 17(d)(1) withdrawals would be revoked across the most acres; therefore, more acres within the decision area would likely be conveyed and be more likely to be developed under this alternative than under Alternative B or Alternative C.

Similar to Alternative C, Alternative D would also revoke withdrawals adjacent to the three BLM-managed wild and scenic rivers in the decision area. Effects would be similar but to a greater magnitude because a greater extent of revocations would occur near the rivers.

3.17.2.2.6 COMPARISON OF ALTERNATIVES

Alternative D has the highest possibility of impacts on water availability because there are more miles of streams and rivers in the focused analysis area (see Table 3.17-5). Alternative C has considerably fewer miles of river and streams and acres of lakes and ponds in the focused analysis area. Alternative B has the fewest miles of rivers and stream and fewest acres of lakes and ponds in the focused analysis area of the action alternatives. Therefore, Alternative B would have the fewest impacts on water availability.

3.17.2.2.7 CUMULATIVE IMPACTS

Following revocation of the 17(d)(1) withdrawals, conveyance of the land to the State of Alaska is likely to lead to an increase in development in areas where State Priority 1 and 2 effective selections are conveyed. This development, considered in the context of the reasonably foreseeable trends and planned actions described in Section 3.1, Introduction and Methodology, could affect water availability in ways similar to those described in Section 3.17.2.2.2.

RFAs, planned actions, and future trends are described in Section 3.1, Introduction and Methodology. The lack of development and access has minimized direct impacts to water availability on BLM-managed lands over much of the analysis area. However, impacts from potential development resulting from any revocation of 17(d)(1) withdrawals in combination with reasonably foreseeable and planned actions are likely to increase demand on water resources. Specifically, increased development (e.g., Ambler Mining District, Graphite One Mine, Manh Choh Mine, Donlin Gold, Constantine Mine Expansion, Red Dog Mine expansion, Valdez Creek Mining District, Beluga River Unit Gas Well 211-35, Alaska LNG pipeline, Donlin Gold gas pipeline) will increase demand for water use and withdrawals from lakes and streams.

Development of mineral extraction facilities would also include development of supporting roads, pipelines, and communication infrastructure in addition to potential road development listed in the RFA (e.g., Ambler Road, Cape Blossom Road, Moore ROW) and could also decrease water availability through withdrawals for construction and maintenance. Compaction of soil can impact and reduce lake recharge rates. Development of the Susitna Watana Dam would permanently impact water availability and management within the Susitna River watershed. Potential development of new communication infrastructure in the analysis area (e.g., OTZ Microwave Tower Broadband Project, GCI Fiber Optic, State of Alaska Tsina Communication Site) is likely to increase potential for other development in the general vicinity.

Furthermore, effects of water withdrawals from lakes and rivers may be intensified by climate change. Overall cumulative impacts are expected to trend toward decreasing water availability in developed regions of the analysis area. The permanency and scale of impacts vary by type of development and use but are in proportion to the amount of area impacted (BLM 2018). The most observable changes are expected in watersheds with the highest concentration of human activity or management change.

CHAPTER 4. LITERATURE CITED

Executive Summary and Chapters 1 and 2

- Alaska Interagency Coordination Center. 2020. 2020 Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement. Agreement No. BLM MOU AK-2020-003. DUNS No. 062740881. Available at: <https://fire.ak.blm.gov/administration/asma.php>. Accessed October 19, 2023.
- . 2023. Alaska Interagency Wildland Fire Management Plan (2023 Review). March 2023. Available at: [https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/3.%20Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan%20\(AIWFMP\)/Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan.pdf](https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/3.%20Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan%20(AIWFMP)/Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan.pdf). Accessed October 19, 2023.
- Bureau of Land Management (BLM). 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: BLM Glennallen Field Office. Available at: https://eplanning.blm.gov/public_projects/lup/66965/83528/100157/Volume_1_combined.pdf. Accessed August 21, 2023.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: BLM Anchorage Field Office.
- . 2007a. *East Alaska Record of Decision and Approved Resource Management Plan*. DOI-BLM-AK-A020-2020-0037-RMP-EA. Glennallen, Alaska: BLM Glennallen Field Office.
- . 2007b. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: BLM Anchorage Field Office.
- . 2007c. *Kobuk-Seward Peninsula Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-07/021+1610+025. Fairbanks, Alaska, and Anchorage, Alaska: BLM Central Yukon Field Office and Anchorage Field Office.
- . 2008a. *Bay Record of Decision and Approved Resource Management Plan*. Anchorage, Alaska: BLM Anchorage Field Office.
- . 2008b. *Kobuk-Seward Peninsula Record of Decision and Approved Resource Management Plan*. Fairbanks, Alaska, and Anchorage, Alaska: BLM Central Yukon Field Office and Anchorage Field Office.
- . 2008c. *Ring of Fire Record of Decision and Approved Management Plan*. BLM/AK/PL-08/013+1610+010. Anchorage, Alaska: BLM Anchorage Field Office.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: BLM Anchorage Field Office.
- . 2021. *Bering Sea – Western Interior Record of Decision and Approved Resource Management Plan*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-19/011+1610+A020. Anchorage, Alaska: BLM Anchorage Field Office.

———. 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: BLM State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.

Chapter 3

Introduction and Methodology

Alaska Department of Fish and Game (ADFG). 2023. Wood Bison Update Summer 2022. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=woodbisonrestoration.herdupdates#woodbison2022>. Accessed August 29, 2023.

Alaska Department of Natural Resources (ADNR). 2023. Palmer Project: Project Description. Available at: <https://dnr.alaska.gov/mlw/mining/large-mines/palmer/>. Accessed October 22, 2023.

Alaska Department of Transportation and Public Facilities. 2023a. Kotzebue to Cape Blossom Road. Available at: <https://dot.alaska.gov/nreg/capeblossomroad/>. Accessed August 29, 2023.

———. 2023b. Shishmaref Relocation Road Planning and Environmental Linkages (PEL) Study. Available at: <https://dot.alaska.gov/nreg/shishmaref/>. Accessed August 29, 2023.

Alaska Division of Forestry. 2022. *Haines State Forest, Five Year Forest Management Schedule 2022 - 2026*. Haines: Alaska Division of Forestry. Available at: https://www.hainesalaska.gov/sites/default/files/fileattachments/community/page/32516/haines_state_forest_five-year_forest_management_schedule_for_the_period.pdf. Accessed February 27, 2024.

Bureau of Land Management (BLM). 2012. *Gordon and Kathy Moore Travel with Tracked Vehicle across BLM-Managed Lands on an Established Public Use Trail Environmental Assessment*. Available at: https://eplanning.blm.gov/public_projects/nepa/30961/39663/41563/Moore_EA_Final_web2.pdf. Accessed August 29, 2023.

———. 2018. Donlin Gold Project Final Environmental Impact Statement, Chapter 1. Available at: https://eplanning.blm.gov/public_projects/nepa/35860/154831/189499/Ch_1_Project_Introduction_and_Purpose_and_Need.pdf. Accessed August 29, 2023.

———. 2021a. Alphabet Hill Prescribed Burn Environmental Assessment. Available at: https://eplanning.blm.gov/public_projects/2013379/200482895/20038380/250044577/0020-EA_Alphabet%20Hill%20Prescribed%20Burn%20-%20Public%20Review%20Copy.pdf. Accessed August 29, 2023.

———. 2021b. *2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends*. U.S. Department of the Interior, Bureau of Land Management. Available at: <https://www.blm.gov/content/ghg/2021/>. Accessed August 23, 2023.

———. 2022a. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.

- . 2022b. Emergency Flood Repair Richardson Highway Categorical Exclusion. Available at: https://eplanning.blm.gov/public_projects/2020840/200531564/20066582/250072764/0025-CX_Emergency%20Flood%20Repair%20Richardson%20Highway_signed.pdf. Accessed August 29, 2023.
- . 2023a. Alaska Long National Scenic Trail. Available at: <https://www.blm.gov/programs/national-conservation-lands/alaska/alaska-long-national-scenic-trail>. Accessed October 4, 2023.
- . 2023b. Alaska LNG Project. Available at: <https://eplanning.blm.gov/eplanning-ui/project/124122/510>. Accessed August 29, 2023.
- . 2023c. Beluga River Unit Gas Well 211-35. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2025184/510>. Accessed August 29, 2023.
- . 2023d. EVOS Conservation Easement: Bookey. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2024420/510>. Accessed August 29, 2023.
- . 2023e. Jack River Trail Rehabilitation. Available at: <https://eplanning.blm.gov/eplanning-ui/project/38770/510>. Accessed August 29, 2023.
- . 2023f. PLMP 758.9 Staging Area. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2024143/510>. Accessed August 29, 2023.
- . 2023g. Road to Ambler/Ambler Mining District Industrial Road Access. Available at: <https://eplanning.blm.gov/eplanning-ui/project/57323/510>. Accessed August 29, 2023.
- Brehmer, E. 2020. Alaska lawmakers take another look at the Susitna-Watana hydro project. Available at: <https://www.adn.com/business-economy/energy/2020/02/20/alaska-lawmakers-take-another-look-at-the-susitna-watana-hydro-project/>. Accessed August 29, 2023.
- Constantine Mining. 2019. Plan of Operations Palmer Advanced Exploration Project. Phase II - Underground Exploration Upland Mining Lease No. 9100759. April 2019. Constantine Mining, Vancouver, B.C. Available at: <https://dnr.alaska.gov/mlw/mining/large-mines/palmer/>. Accessed February 27, 2024.
- Council on Environmental Quality. 1997. *Considering Cumulative Effects Under the National Environmental Policy Act*. Available at: https://ceq.doe.gov/publications/cumulative_effects.html. Accessed August 29, 2023.
- Diggings, The. 2023. Valdez Creek Mine and Mill, Matanuska-Susitna, Alaska. Available at: https://thediggings.com/mines/348#google_vignette. Accessed August 29, 2023.
- Graphite One Inc. 2022. *Preliminary Feasibility Study Technical Report: Graphite One Project*. Available at: <https://www.graphiteoneinc.com/wp-content/uploads/2022/10/JDS-Graphite-One-NI-43-101-PFS-20221013-compressed.pdf>. Accessed August 29, 2023.
- Kincross. 2023. Man Choh, Trucking. Available at: <https://manhchoh.com/ore-transportation/>. Accessed August 29, 2023.
- Lieb, J.W. 1994. *Analysis of Nelchina Caribou Range – III*. Alaska Department of Fish and Game Division of Wildlife Conservation. Available at: https://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/94_ca_nel_lieb.pdf.

- MacArthur, A.R. 2019. DNR Collecting Comments On Natural Gas Pipeline To Power Proposed Donlin Mine. Public Media for Alaska’s Yukon-Kuskokwim Delta. Available at: <https://www.kyuk.org/environment/2019-03-05/dnr-collecting-comments-on-natural-gas-pipeline-to-power-proposed-donlin-mine>. Accessed August 29, 2023.
- Mining Technology. 2017. Graphite Creek Project, Alaska. Available at: <https://www.mining-technology.com/projects/graphite-creek-project-alaska/>. Accessed August 29, 2023.
- Moran, R. 2023. Pebble Mine Information: Technical Information. Available at: <http://www.pebblescience.org/Pebble-Mine/technical-background.html>. Accessed October 22, 2023.
- National Oceanic and Atmospheric Administration (NOAA). 2023. Susitna Watana Dam. Available at: <https://www.fisheries.noaa.gov/alaska/habitat-conservation/susitna-watana-dam>. Accessed August 29, 2023.
- Public Media for Alaska’s Yukon-Kuskokwim Delta (KYUK). 2020. Final Feasibility Plan For Red Devil Mine Clean Up Released. Available at: <https://www.kyuk.org/environment/2020-02-11/final-feasibility-plan-for-red-devil-mine-clean-up-released>. Accessed August 29, 2023.
- Rosen, Y. 2018. Alaska’s Red Dog Mine plans expansion into new territory. Available at: <https://www.arctictoday.com/alaskas-red-dog-mine-plans-expansion-new-territory/>. Accessed August 29, 2023.
- Smith, C. 2021. Constantine’s Palmer Project is the subject of a new report in the Guardian. Available at: <https://khns.org/constantines-palmer-project-and-impacts-on-the-chilkat-valley-is-the-subject-of-a-new-report-in-the-guardian>. Accessed August 29, 2023.
- U.S. Army Corps of Engineers (USACE). 2019. Port of Nome Modification – Civil Project Management Brach Public Notice. U.S. Army Corps of Engineers, Alaska District. Available at: <https://www.poa.usace.army.mil/Portals/34/PublicNoticedraftIRFEAPortofNomeMod8May2019fr.pdf>. Accessed August 29, 2023.
- U.S. Environmental Protection Agency (EPA). 2021. Climate Change Indicators: Permafrost. Available at: <https://www.epa.gov/climate-indicators/climate-change-indicators-permafrost#:~:text=Key%20Points%201%20Between%201978%20and%202020%2C%20permafrost,change%2C%20at%20%2B1.5%2C%20BOF%20per%20decade.%20...%20More%20items>. Accessed March 6, 2024.
- U.S. Geologic Survey (USGS). 2023. Nome Offshore Placer deposits. Available at: https://mrdata.usgs.gov/ardf/show-ardf.php?ardf_num=NM253. Accessed August 29, 2023.

Birds and Special Status Bird Species

- Alaska Shorebird Group (ASG). 2019. Alaska shorebird conservation plan, version III. Alaska Shorebird Group. Available at: https://alaskashorebirdgroup.com/wp-content/uploads/2020/04/ASC_Plan_full_version2019-1.pdf.
- Andres, B.A., P.A. Smith, R.I.G. Morrison, C.L. Gratto-Trevor, S.C. Brown, and C.A. Friis. 2012. Population estimates of North American shorebirds, 2012. *Wader Study Group Bulletin* 119:178–194.

- Arctic Monitoring and Assessment Programme. 2021. *Arctic climate change update 2021: Key Trends and Impacts*. Arctic Monitoring and Assessment Programme. Available at: <https://www.amap.no/documents/download/6759/inline>.
- Baker, A., P. Gonzalez, R.I.G. Morrison, and B.A. Harrington. 2020. Red Knot (*Calidris canutus*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/redkno/1.0/introduction>. Accessed October 19, 2023.
- Billerman, S.M., B.K. Keeney, P.G. Rodewald, and T.S. Schulenberg (editors). 2022. *Birds of the World*. Ithaca, New York: Cornell Laboratory of Ornithology. Available at: <https://birdsoftheworld.org/bow/home>. Accessed October 19, 2023.
- Booms, T.L., T.J. Cade, and N.J. Clum. 2020. Gyrfalcon (*Falco rusticolus*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/gyrfal/1.0/introduction>. Accessed October 19, 2023.
- Bureau of Land Management (BLM). 2019. BLM Alaska Special Status Species List – 2019. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Alaska_Special-Status-Species-List_2019.pdf. Accessed October 20, 2023.
- . 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: BLM State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.
- Day, R.H., M.L. Kissling, K.J. Kuletz, D.A. Nigro, and P. Pyle. 2020. Kittlitz's Murrelet (*Brachyramphus brevirostris*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/kitmur/1.0/introduction>. Accessed October 19, 2023.
- Fredrickson, L.H. 2020. Steller's Eider (*Polysticta stelleri*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/steeid/1.0/introduction>. Accessed October 19, 2023.
- Gill, R.E., P.S. Tomkovich, and B.J. McCaffery. 2020. Rock Sandpiper (*Calidris ptilocnemis*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/rocsan/1.0/introduction>. Accessed October 19, 2023.
- Handel, C.M., I.J. Stenhouse, and S.M. Matsuoka. (editors). 2021. *Alaska Landbird Conservation Plan*, version 2.0. Anchorage, Alaska: Boreal Partners in Flight.
- Johnson, O.W., P.G. Connors, and P. Pyle. 2021. American Golden-Plover (*Pluvialis dominica*), version 1.1. In *Birds of the World*, edited by P.G. Rodewald, B.K. Keeney, and S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/amgplo/1.1/introduction>. Accessed October 19, 2023.
- Jones, B.M., G. Grosse, C.D. Arp, M.C. Jones, K.M. Walter Anthony, and V.E. Romanovsky. 2011. Modern thermokarst lake dynamics in the continuous permafrost zone, northern Seward Peninsula, Alaska. *Journal of Geophysical Research: Biogeosciences* 116:G00M03.

- Katzner, T.E., M.N. Kochert, K. Steenhof, C.L. McIntyre, E.H. Craig, and T.A. Miller. 2020. Golden Eagle (*Aquila chrysaetos*), version 2.0. In *Birds of the World*, edited by P.G. Rodewald and B.K. Keeney. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/goleag/2.0/introduction>. Accessed October 19, 2023.
- Kushlan J.A., M.J. Steinkamp, K.C. Parsons, J. Capp, M.A. Cruz, M. Coulter, I. Davidson, L. Dickson, N. Edelson, R. Elliot, R.M. Erwin, S. Hatch, S. Kress, R. Milko, S. Miller, K. Mills, R. Paul, R. Phillips, J.E. Saliva, B. Sydeman, J. Trapp, J. Wheeler, and K. Wohl. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan, Version 1. Washington, D.C.: Waterbird Conservation for the Americas.
- LANDFIRE. 2022. Existing Vegetation Type Layer, LANDFIRE 2.3.0. U.S. Department of Interior, Geological Survey, and U.S. Department of Agriculture. Available at: <https://www.landfire.gov/viewer/>. Accessed October 19, 2023.
- McCaffery, B.J., and R.E. Gill. 2020. Bar-tailed Godwit (*Limosa lapponica*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/batgod/1.0/introduction>. Accessed October 19, 2023.
- Marks, J.S., T.L. Tibbitts, R.E. Gill, and B.J. McCaffery. 2020. Bristle-thighed Curlew (*Numenius tahitiensis*), version 1.0. In *Birds of the World*, edited by A.F. Poole and F.B. Gill. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/brtcur/1.0/introduction>. Accessed October 19, 2023.
- Mitchell, C.D., and M.W. Eichholz. 2020. Trumpeter Swan (*Cygnus buccinator*), version 1.0. In *Birds of the World*, edited by P.G. Rodewald. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/truswa/1.0/introduction>. Accessed October 19, 2023.
- Morrison, R., B. McCaffery, R. Gill, S. Skagen, S. Jones, G. Page, C. Gratto-Trevor, and B. Andres. 2006. Population estimates of North American shorebirds, 2006. *Wader Study Group Bulletin* 111:67–85.
- Mowbray, T.B., C.R. Ely, J.S. Sedinger, and R.E. Trost. 2020. Canada Goose (*Branta canadensis*), version 1.0. In *Birds of the World*, edited by P.G. Rodewald. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/cangoo/1.0/introduction>. Accessed October 19, 2023.
- Murphy, A., D. Diefenbach, M. Ternent, M. Lovallo, D. Miller. 2021. Threading the needle: How humans influence predator-prey spatiotemporal interactions in a multiple-predator system. *Journal of Animal Ecology* 90:2377–2390.
- National Research Council. 2003. *Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope*. Washington D.C.: The National Academies Press. Available at: <https://doi.org/10.17226/10639>.
- North, M.R. 2020. Aleutian Tern (*Onychoprion aleuticus*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/aleter1/1.0/introduction>. Accessed October 19, 2023.

- Petersen, M.R., J.B. Grand, and C.P. Dau. 2020. Spectacled Eider (*Somateria fischeri*), version 1.0. In *Birds of the World*, edited by A.F. Poole and F.B. Gill. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/speeid/1.0/introduction>. Accessed October 19, 2023.
- Rizzolo, D.J., C.E. Gray, J.A. Schmutz, J.F. Barr, C. Eberl, and J.W. McIntyre. 2020. Red-throated Loon (*Gavia stellata*), version 2.0. In *Birds of the World*, edited by P.G. Rodewald and B.K. Keeney. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/retloo/2.0/introduction>. Accessed October 19, 2023.
- Rosenberg, K.V., A.M. Dokter, P.J. Blancher, J.R. Sauer, A.C. Smith, P.A. Smith, J.C. Stanton, A. Panjabi, L. Helft, M. Parr, and P.P. Marra. 2019. Decline of the North American avifauna. *Science* 366:120–124.
- Saalfeld, S.T., D.C. McEwen, D.C. Kesler, M.G. Butler, J.A. Cunningham, A.C. Doll, W.B. English, D.E. Gerik, K. Grond, P. Herzog, B.L. Hill, B.J. Lagassé, and R.B. Lanctot. 2019. Phenological mismatch in Arctic-breeding shorebirds: Impact of snowmelt and unpredictable weather conditions on food availability and chick growth. *Ecology and Evolution* 9:6693–6707.
- Schmutz, J.A., M.R. Petersen, and R.F. Rockwell. 2020. Emperor Goose (*Anser canagicus*), version 1.0. In *Birds of the World*, edited by A.F. Poole. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/empgoo/1.0/introduction>. Accessed October 19, 2023.
- Scoyoc, A.V. J.A. Smith, K.M. Gaynor, K. Barker, and J.S. Brashares. 2023. The influence of human activity on predator-prey spatiotemporal overlap. *Journal of Animal Ecology* 92:1124–1134.
- Skeel, M.A., and E.P. Mallory. 2020. Whimbrel (*Numenius phaeopus*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/whimbr/1.0/introduction>. Accessed October 19, 2023.
- Stehn, R.A., C.P. Dau, B. Conant, and W.I. Butler. 1993. Decline of spectacled eiders nesting in western Alaska. *Arctic* 46:264–277.
- Stickney, A. A., Obritschkewitsch, T. and Burgess, R. M. 2014. Shifts in fox den occupancy in the Greater Prudhoe Bay Area, Alaska. *Arctic* 67:196–202.
- Swanson, D.K. 2019. Thermokarst and precipitation drive changes in the area of lakes and ponds in the National Parks of northwestern Alaska, 1984–2018. *Arctic, Antarctic, and Alpine Research* 51:265–279.
- Tape, K., M. Hallinger, J. Welker, and R. Ruess. 2012. Landscape Heterogeneity of Shrub Expansion in Arctic Alaska. *Ecosystems* 15:711–724
- Uher-Koch, B.D., M.R. North, and J.A. Schmutz. 2020. Yellow-billed Loon (*Gavia adamsii*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/yebloo/1.0/introduction>. Accessed October 19, 2023.
- U.S. Fish and Wildlife Service (USFWS). 2002. *Steller's Eider Recovery Plan*. Fairbanks, Alaska: U.S. Fish and Wildlife Service. Available at: https://www.adfg.alaska.gov/static/species/specialstatus/pdfs/stellerseider_2003_recovery.pdf.

- Walker, B.M., N.R. Senner, C.S. Elphick, and J. Klima. 2020. Hudsonian Godwit (*Limosa haemastica*), version 1.0. In *Birds of the World*, edited by A.F. Poole. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/hudgod/1.0/introduction>. Accessed October 19, 2023.
- Warnock, N.D., and R.E. Gill. 2020. Dunlin (*Calidris alpina*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/dunlin/1.0/introduction>. Accessed October 19, 2023.
- Wiggins, D.A., D.W. Holt, and S.M. Leasure. 2020. Short-eared Owl (*Asio flammeus*), version 1.0. In *Birds of the World*, edited by S.M. Billerman. Ithaca, New York: Cornell Lab of Ornithology. Available at: <https://birdsoftheworld.org/bow/species/sheowl/1.0/introduction>. Accessed October 19, 2023.

Climate

- Bureau of Land Management (BLM). 2022. *2021 BLM Specialist Report on Annual Greenhouse Gas Emissions and Climate Trends from Coal, Oil, and Gas Exploration and Development on the Federal Mineral Estate*. Available at: <https://www.blm.gov/content/ghg/2021>. Accessed October 19, 2023.
- Intergovernmental Panel on Climate Change (IPCC). 2022. J.A. Hicke, S. Lucatello, L.D., Mortsch, J. Dawson, M. Domínguez Aguilar, C.A.F. Enquist, E.A. Gilmore, D.S. Gutzler, S. Harper, K. Holsman, E.B. Jewett, T.A. Kohler, and K. Miller, authors. In *Climate Change 2022: Impacts, Adaptation, and Vulnerability, Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by H.O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, and B. Rama, pp. 1929–2042. Cambridge, United Kingdom, and New York, New York: Cambridge University Press.
- National Centers for Environmental Information. 2021. 1991-2020 U.S. Climate Normals (monthly) for Alaska Climate Stations Nome AP, Bethel AP, Iliamna AP, Gulkana AP, & Yakutat State AP. Available at: <https://www.ncei.noaa.gov/access/us-climate-normals/>. Accessed July 12, 2023.
- Stein, T. 2017. As the North Slope of Alaska warms, greenhouse gases have nowhere to go but up. Available at: <https://www.climate.gov/news-features/features/north-slope-alaska-warms-greenhouse-gases-have-nowhere-go>. Accessed March 2024.
- U.S. Environmental Protection Agency (EPA). 2023a. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available at: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>. Accessed April 22, 2024.
- . 2023b. 2020 National Emissions Inventory (NEI) Data. Available at: <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data>. Accessed July 12, 2023.

Cultural Resources

- Alaska Department of Natural Resources (ADNR). 2023a. Alaska Heritage Resources Survey (AHRS) / Integrated Business Suite (IBS). Office of History and Archaeology. Anchorage, Alaska.
- . 2023b. RS 2477 Trail Search. Division of Mining, Land, and Water. Available at: <https://dnr.alaska.gov/mlw/paad/rs-2477/search/>. Accessed October 20, 2023.

- Alaska Department of Natural Resources (ADNR) and Bureau of Land Management (BLM). 2014. Protocol for Managing Cultural Resources on Lands Administered by the Bureau of Land Management in Alaska. ADNR Office of History and Archaeology. Available at: <https://www.blm.gov/sites/blm.gov/files/AK%20Protocol.pdf>. Accessed October 24, 2023.
- Bureau of Indian Affairs (BIA). 2023. ANCSA Program. U.S. Department of the Interior. Available at: <https://www.bia.gov/regional-offices/alaska/ancsa-program>. Accessed August 24, 2023.
- Bureau of Land Management (BLM). 2004. *8100 - The Foundations for Managing Cultural Resources - (Public)*. Manual Update. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/mediacenter_blmpolicymanual8100.pdf. Accessed October 20, 2023.
- . 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office. Available at: https://eplanning.blm.gov/public_projects/lup/66965/83528/100157/Volume_1_combined.pdf. Accessed August 21, 2023.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007a. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007b. *Kobuk-Seward Peninsula Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-07/021+1610+025. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: B Bureau of Land Management, Anchorage Field Office.
- . 2022a. *ANCSA 17 (d)(1) Withdrawals Environmental Impact Statement Public Scoping Report*. DOI-BLM-AK-0000-2022-0003-EIS. U.S. Department of the Interior, Bureau of Land Management. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2018002/570>. Accessed October 20, 2023.
- . 2022b. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.
- Kari, J.M. 2006. *Traditional Cultural Properties in the Vicinity of Sparrevohn Long Range Radar Site*. Anchorage, Alaska: Cultural Heritage Studies, Environment and Natural Resources Institute, University of Alaska Anchorage.
- National Preservation Institute. 2023. What are “Cultural Resources”? Available at: <https://www.npi.org/what-are-cultural-resources>. Accessed October 24, 2023.

North Slope Borough. 2023. *Traditional Land Use Inventory Sites*. Utqiagvik, Alaska: Department of Iñupiat History, Language and Culture.

Smith, G., and J. Kari. 2023. Alaska Native Place Names Database. Available at: <https://blm-egis.maps.arcgis.com/home/item.html?id=f8228386669545c8aef1829c16c24414#overview>. Accessed October 19, 2023.

Stephen R. Braund & Associates (SRB&A). 2018. *Nuiqsut Paisanich: A 2018 Addendum*. Prepared for the City of Nuiqsut, Alaska. Anchorage, Alaska.

Economics

Alaska Department of Labor and Workforce Development (ADLWD). 2023a. *2021 Nonresidents Working in Alaska*. Available at: <https://live.laborstats.alaska.gov/reshire/nonres.pdf>. Accessed October 19, 2023.

———. 2023b. Quarterly Census of Employment and Wages, Annual January to December 2022. Available at: <https://live.laborstats.alaska.gov/article/current-quarterly-census-employment-and-wages-qcew>. Accessed October 19, 2023.

———. 2023c. Alaska Not Seasonally Adjusted Labor Force Area Data for year 2023. Available at: <https://live.laborstats.alaska.gov/data-pages/labor-force-area-data?a=0&s=2>. Accessed October 19, 2023.

Alaska Department of Revenue. 2023. Spring 2023 Revenue Forecast. Available at: <http://tax.alaska.gov/programs/documentviewer/viewer.aspx?1773r>. Accessed October 19, 2023.

Bureau of Economic Analysis. 2023a. Gross Domestic Product, Personal Income, and Per Capita Income for Alaska Boroughs and Census Areas, data year 2021. Available at: <https://apps.bea.gov/iTable/?reqid=70&step=1&acrdn=5>. Accessed October 19, 2023.

———. 2023b. Outdoor Recreation Satellite Account, Value-Added Outdoor Recreation, by State, Selected Activities, 2022. Available at: <https://www.bea.gov/data/special-topics/outdoor-recreation>.

Bureau of Ocean Energy Management (BOEM). 2016. *Final Environmental Impact Statement, Cook Inlet Planning Area, Oil and Gas Lease Sale 244*. Available at: <https://www.boem.gov/sites/default/files/about-boem/BOEM-Regions/Alaska-Region/Environment/Environmental-Analysis/Cook-Inlet-Lease-Sale-244-Final-EIS-Volume-1.pdf>. Accessed October 19, 2023.

Cuyno, L., D. Schug, M. Flight, A. Bhattacharya, and E. Horsch. 2022. *Kenai Peninsula Borough Economy, 2008 to 2020*. Anchorage, Alaska: U.S. Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2022-053. Contract No. 140M0121F0003. Available at: https://www.boem.gov/sites/default/files/documents/regions/alaska-ocs-region/environment/BOEM_2022-053.pdf. Accessed October 19, 2023.

Fall, J.A. 2016. *Subsistence in Alaska: A Year 2014 Update*. Anchorage, Alaska: Alaska Department of Fish and Game, Division of Subsistence. Available at: https://www.adfg.alaska.gov/static/home/subsistence/pdfs/subsistence_update_2014.pdf. Accessed June 24, 2024.

- Feige, C. 2021. Outstanding High Priority Conveyance Requests. Letter from Alaska Department of Natural Resources to Bureau of Land Management, with attachments of letters from 2019. April 13, 2021. Anchorage, Alaska.
- Fried, N. 2015. The Denali Borough, A diverse stable rural economy. *Alaska Economic Trends* 35(9).
- Herz, N. 2023. Tesla needs graphite. Western Alaska has plenty. But mining it raises fears in nearby villages. *Alaska Public Media* 29 September. Available at: <https://alaskapublic.org/2023/09/29/tesla-needs-graphite-alaska-has-plenty-but-mining-it-raises-fears-in-nearby-villages/>. Accessed October 14, 2023.
- Holmes, T.P., J.M. Bowker, J. Englin, E. Hjerpe, J.B. Loomis, S. Phillips, and R. Richardson. 2016. A synthesis of the economic values of wilderness. *Journal of Forestry* 3(114):320–328.
- JDS Energy and Mining Inc. 2022. *Preliminary Feasibility Study Technical Report, Graphite One Project*. Prepared for Graphite One, Inc., Vancouver, British Columbia. Vancouver, British Columbia: JDS Energy and Mining Inc.
- Loeffler, B., and B. Watson. 2022. The Economic Potential of Alaska's Mining Industry. Available at: https://www.akleg.gov/basis/get_documents.asp?docid=14812. Accessed October 19, 2023.
- McDowell Group. 2014. *The Economic Impacts of Placer Mining in Alaska*. Prepared for the Alaska Miners Association. Cited in Loeffler, B., and B. Watson. 2022. The Economic Potential of Alaska's Mining Industry. Available at: https://www.akleg.gov/basis/get_documents.asp?docid=14812. Accessed October 19, 2023.
- . 2020. *The Role of the Oil and Gas Industry in Alaska's Economy*. Prepared for Alaska Oil and Gas Association. Anchorage, Alaska: McDowell Group. Available at: <https://www.aoga.org/wp-content/uploads/2021/01/Reports-2020.1.23-Economic-Impact-Report-McDowell-Group-CORRECTED-2020.12.3.pdf>. Accessed October 19, 2023.
- McKinley Research Group, LLC (McKinley). 2022. The Economic Benefits of Alaska's Mining Industry. Prepared for the Alaska Miners Association. Anchorage, Alaska: McKinley Research Group, LLC. Available at: https://www.uaf.edu/maps/about/Economic%20benefits%20of%20Alaska%20Mining%20Industry_McKinley.pdf. Accessed October 19, 2023.
- Office of the State Assessor. 2023. Alaska Taxable 2022, Municipal Taxation – Rates and Policies. Volume LXII. Available at: <https://www.commerce.alaska.gov/web/Portals/4/pub/OSA/taxable%20reports/2022%20Alaska%20Taxable%20Report.pdf>. Accessed October 19, 2023.
- Resource Development Council. 2023. Alaska's Mining Industry. Available at: <https://www.akrdc.org/mining>. Accessed October 19, 2023.
- Windisch-Cole, B. 2001. Yukon-Koyukuk Census Area, A profile of rural Interior Alaska. *Alaska Economic Trends* 219(2). February 2001. Available at: <https://www.labor.alaska.gov/trends/trendspdf/feb01.pdf>. Accessed October 19, 2023.
- Wood, D., A. Helfgott, M. D'Amico, and E. Romanin. 2021. *The Mosaic Approach: a Multidimensional Strategy for Strengthening America's Critical Minerals Supply Chain*. Washington, D.C.: Woodrow Wilson International Center for Scholars. Available at: https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdf. Accessed October 19, 2023.

Environmental Justice

Bureau of Land Management (BLM). *Addressing Environmental Justice in NEPA Documents: Frequently Asked Questions*. 2022. Washington, D.C.: U.S. Department of the Interior, Bureau of Land Management, Socioeconomics Program. Available at: https://www.blm.gov/sites/default/files/docs/2022-09/IM2022-059_att1.pdf. Accessed October 19, 2023.

U.S. Census Bureau. 2023. American Community Survey 5-Year Estimates, Tables DP01, DP03, and C17002. Available at: <https://data.census.gov/table>. Accessed July 7, 2023.

U.S. Environmental Protection Agency (EPA). 2023. EJ 2020 Glossary. Available at: <https://www.epa.gov/environmentaljustice/ej-2020-glossary>. Accessed November 7, 2023.

Fish and Aquatic Species

Alaska Department of Environmental Conservation (ADEC). 2022. Integrated Water Quality Monitoring and Assessment Report. Available at: <https://dec.alaska.gov/water/water-quality/integrated-report/>. Accessed October 19, 2023.

Alaska Department of Fish and Game (ADFG). 2022. State of Alaska Special Status Species: Fish Stocks of Concern. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akfishstocks>. Accessed March 5, 2024.

———. 2023. Anadromous Waters Catalog 2023 Regulatory Mapping Data Files. Available at: <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.dataFiles>. Accessed on July 19, 2023.

Arnett, H. 2005. Harrison Creek Reclamation, Phase 1; An Overview of Issues and Approaches for the Reclamation of Placer Mined Lands. Doc. No. WO 769306. Prepared by USKH, Inc. for the Bureau of Land Management, Washington, D.C. 81 p.

Arp, C.D., M.S. Whitman, B.M. Jones, D.A. Nigro, V.A. Alexeev, A. Gädeke, S. Fritz, R. Daanen, A.K. Liljedahl, F.J. Adams, B.V. Gaglioti, G. Grosse, K.C. Heim, J.R. Beaver, L. Cai, M. Engram, and H.R. Uher-Koch. 2019. Ice roads through lake-rich Arctic watersheds: Integrating climate uncertainty and freshwater habitat responses into adaptive management. *Arctic, Antarctic, and Alpine Research* 51(1):9–23.

Brady, C., M. Varner, J. Post, S. Miller, N. Cappuccio. 2018. *Developing Quantifiable Management Objectives from Reference Conditions for Wadeable Streams in the Eastern Interior Field Office*. BLM Open File Report #169, May 2018. Anchorage, Alaska: Bureau of Land Management. 35pp. Available: <https://www.blm.gov/documents/alaska/blm-library/report/developing-quantifiable-management-objectives-reference>. Accessed March 26, 2024.

Brennan, S.R., D.E. Schindler, T.J. Cline, T.E. Walsworth, G. Buck, and D.P. Fernandez. 2019. Shifting habitat mosaics and fish production across river basins. *Science* 364(6442):783–786.

Bureau of Land Management (BLM). 1988a. *Birch Creek Placer Mining Final Cumulative Environmental Impact Statement*. Anchorage: Bureau of Land Management, Alaska State Office.

- . 1988b. *Beaver Creek Placer Mining Final Cumulative Environmental Impact Statement*. Anchorage: Bureau of Land Management, Alaska State Office.
- . 1988c. *Fortymile River Placer Mining Final Cumulative Environmental Impact Statement*. Bureau of Land Management, Alaska State Office: Anchorage.
- . 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007a. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007b. *Kobuk-Seward Peninsula Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-07/021+1610+025. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.
- . 2008. *Kobuk-Seward Peninsula Record of Decision and Approved Resource Management Plan*. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.
- . 2019. BLM Alaska Special Status Species List – 2019. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Alaska_Special-Status-Species-List_2019.pdf. Accessed August 29, 2023.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.
- Carlson, R.F., K. Karle, and B. Schalk. 1998. Channel Stability of Reclaimed Placer Mined Streams in Alaska. Phase I – Assessment of Past Reclamation Activities. Interim Report.
- Cott, P.A., P.K. Sibley, A.M. Gordon, R.A. Bodaly, K.H. Mills, W.M. Somers, and G.A. Fillatre. 2008. Effects of Water Withdrawal from Ice-covered Lakes on Oxygen, Temperature and Fish. *Journal of the American Water Association* 44(2):328–342.
- Crozier, L.G., B.J. Burke, B.E. Chasco., D.L. Widener, and R.W. Zabel. 2021. Climate change threatens Chinook salmon throughout their life cycle. *Communications Biology* 4(1):222.
- Des Roches, S., L.H. Pendleton, B. Shapiro, and E.P. Palkovacs. 2021. Conserving intraspecific variation for nature’s contributions to people. *Nature Ecology & Evolution* 5(5):574–582.

- Federal Subsistence Board. 2023. Kuskokwim River federal waters closed to gill nets for the protection of Chinook, Chum, and Coho Salmon. Temporary Special Action, revised, FSA-YD-23-01. Available at: <https://www.doi.gov/sites/doi.gov/files/kusko-tsa-fsa-yd-23-01-final.pdf>. Accessed October 20, 2023.
- Giefer, J., and S. Graziano. 2023a. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2023. Special Publication No. 23-02. Anchorage: Alaska Department of Fish and Game.
- . 2023b. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Southcentral Region, Effective June 1, 2023. Special Publication No. 23-03. Anchorage: Alaska Department of Fish and Game.
- . 2023c. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Southeastern Region, Effective June 1, 2023. Special Publication No. 23-04. Anchorage: Alaska Department of Fish and Game.
- . 2023d. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Southwestern Region, Effective June 1, 2023. Special Publication No. 23-05. Anchorage: Alaska Department of Fish and Game.
- . 2023e. Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Western Region, Effective June 1, 2023. Special Publication No. 23-06. Anchorage: Alaska Department of Fish and Game.
- Harman, W., M. Varner, E. Lamb, and D. McLeod. 2023. *Stream Design and Reclamation Guide for Interior Alaska*. BLM Technical Report 65. Anchorage: Bureau of Land Management. Available at: <https://www.blm.gov/alaska/blm-library/report/stream-design-and-reclamation-guide-interior-alaska>. Accessed March 26, 2024.
- Harvey, B.C., and T.E. Lisle. 1998. Effects of suction dredging on streams: a review and an evaluation strategy. *Fisheries* 23(8):8–17.
- Jallen, D.M., C.M. Gleason, B.M. Borba, F.W. West, S.K.S. Decker, and S.R. Ransbury. 2022. Yukon River salmon stock status and salmon fisheries, 2022: A report to the Alaska Board of Fisheries, January 2023. Special Publication No. 22-20. Anchorage: Alaska Department of Fish and Game.
- Kondolf, G.M., Smeltzer, M., and Kimball, L. 2002. *Freshwater Gravel Mining and Dredging Issues*. Olympia: Washington Departments of Fish and Wildlife, Ecology, and Transportation.
- Limpinsel, D., S. McDermott, C. Felkley, E. Ammann, S. Coxe, G.A. Harrington, S. Kelly, J.L. Pirtle, L. Shaw, and M. Zaleski. 2023. *Impacts to Essential Fish Habitat from Non-Fishing Activities in Alaska: EFH 5-year review from 2018–2023*. National Oceanic and Atmospheric Administration Technical Memorandum. NMFS-F/AKR-30. Juneau: National Marine Fisheries Service, Alaska Region. DOI: 10.25923/9z4h-n860.
- Linderman, J.C., Jr., and D.J. Bergstrom. 2006. Kuskokwim River Chinook and chum salmon stock status and Kuskokwim area fisheries; a report to the Alaska Board of Fisheries. Special Publication No. 06-35. Anchorage, Alaska: Alaska Department of Fish and Game.

- Lubetkin, S. 2022. *Alaska Mining Spills: A Comparison of the Predicted Impacts Described in Permitting Documents and Spill Records from Five Major Operational Hardrock Mines*. Available at: <https://earthworks.org/wp-content/uploads/2022/06/Alaska-Mining-Spills-Retrospective-Analysis-4-2022-2.pdf>. Accessed August 2023.
- McKenna, B. 2015. Abundance and Run Timing of Adult Salmon in Henshaw Creek, Kanuti National Wildlife Refuge, Alaska, 2014. Tanana Chiefs Conference, Fisheries Program, FRMP 14-209.
- Milner, A.M., and R.J. Piorkowski. 2004. Microinvertebrate assemblages in streams of interior Alaska following alluvial gold mining. *River Research and Applications* 20:719–731.
- Murdoch, A., B.M. Connors, N.W. Lapointe, J. Mills Flemming, S.J. Cooke, and C. Mantyka-Pringle. 2023. Multiple environmental drivers across life stages influence Yukon River Chinook salmon productivity. *Canadian Journal of Fisheries and Aquatic Sciences* 81(1):97–114.
- Oke, K., C. Cunningham, P. Westley, M. Baskett, S. Carlson, J. Clark, A. Hendry, V. Karatayev, N. Kendall, J. Kibele, H. Kindsvater, K. Kobayashi, B. Lewis, S. Munch, J. Reynolds, G. Vick, and E. Palkovacs. 2020. Recent declines in salmon body size impact ecosystems and fisheries. *Nature Communications* 11:4155.
- Pentz, S.B., and R.A. Kostaschuk. 1999. Effect of placer mining on suspended sediment in reaches of sensitive fish habitat. *Environmental Geology* 37(1-2):78–89.
- Rand, P.S., and G.T. Ruggerone. 2024. Biennial patterns in Alaskan sockeye salmon ocean growth are associated with pink salmon abundance in the Gulf of Alaska and the Bering Sea. *ICES Journal of Marine Science* 2024. Available at: <https://doi.org/10.1093/icesjms/fsae022>.
- Schindler, D.E., R. Hilborn, B. Chasco, C.P. Boatright, T.P. Quinn, L.A. Rogers, and M.S. Webster. 2010. Population diversity and the portfolio effect in an exploited species. *Nature* 465(7298):609–612.
- Schwanke, C.J. 2015. *Seasonal Distribution and Migration of Rainbow Trout in the Gulkana River, 2010-2012*. Alaska Department of Fish and Game, Division of Sport Fish, Research and Technical Services. 44pp. Available at: <https://www.adfg.alaska.gov/fedaidpdfs/FDS15-01.pdf>.
- Sergeant C.J., E.K. Sexton, J.W. Moore, A.R. Westwood, S.A. Nagorski, J.L. Ebersole, D.M. Chambers, S.L. O'Neal, R.L. Malison, F.R. Hauer, D.C. Whited, J. Weitz, J. Caldwell, M. Capito, M. Connor, C.A. Frissell, G. Knox, E.D. Lowery, R. Macnair, V. Marlatt, J.K. McIntyre, M.V. McPhee, and N. Skuce. 2022. Risks of mining to salmonid-bearing watersheds. *Science Advances* 8(26):eabn0929.
- Sloat, M.R., and G.H. Reeves. 2014. Individual condition, standard metabolic rate, and rearing temperature influence steelhead and rainbow trout (*Oncorhynchus mykiss*) life histories. *Canadian Journal of Fisheries and Aquatic Sciences* 71(4):491–501.
- Tidwell, A., B. Shalk, R. Carlson, and K. Karle. 2000. Development of improved techniques to reclaim placer-mined watersheds. University of Alaska Fairbanks, Department of Civil and Environmental Engineering. 80pp.
- Tockner, K. and Stanford, J.A., 2002. Riverine flood plains: present state and future trends. *Environmental Conservation* 29(3):308–330.

- Trombulak, S.C., and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. *Conservation Biology* 14(1):18–30.
- United States and Canada Yukon River Joint Technical Committee. 2022. Yukon River salmon 2021 season summary and 2022 season outlook. Regional Information Report No. 3A22-01. Anchorage: Alaska Department of Fish and Game, Division of Commercial Fisheries.
- U.S. Fish and Wildlife Service (USFWS). 2023. National Wetlands Inventory Mapper. Available at: <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>. Accessed July 20, 2023.
- U.S. Forest Service. 2008. *Daves Creek Watershed Restoration Plan*. Anchorage, Alaska: Chugach National Forest.
- U.S. Geological Survey (USGS). 2023. National Hydrography Dataset. Available at: <https://www.usgs.gov/national-hydrography>. Accessed July 19, 2023.
- Von Biela, V., S. Laske, A. Stanek, R. Brown, and K. Dunton. 2022. Borealization of nearshore fishes on an interior Arctic shelf over multiple decades. *Global Change Biology* 29:1822–1838.
- Walker, D.A., and K.R. Everett. 1987. Road dust and its environmental impact on Alaska taiga and tundra. *Arctic and Alpine Research* 19(4):479–489.
- Wuttig, K. G., D. F. Fleming, and Jeff Olsen. 2004. *Stock assessment and population biology of the Copper River steelhead*. U. S. Fish and Wildlife, Office of Subsistence Management, Fisheries Resource Monitoring Program, Final Report (Study No. 03-001). Fairbanks: Alaska Department of Fish and Game, Division of Sport Fish.

Minerals

No citations are included in the EIS Mineral section.

Paleontological Resources

- Bureau of Land Management (BLM). 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007a. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007b. *Kobuk-Seward Peninsula Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-07/021+1610+025. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.

- . 2016. Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. Instruction Memorandum No. 2016-124. Available at: <https://www.blm.gov/policy/im-2016-124>. Accessed August 29, 2023.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management, State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.

Realty and Lands

- Bureau of Land Management (BLM). 1986. *The Iditarod National Historic Trail: Seward to Nome Route, A Comprehensive Management Plan*. Anchorage, Alaska: Bureau of Land Management, Anchorage District Office.
- . 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
 - . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
 - . 2006c. *River Management Plan Revision for the Gulkana River*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
 - . 2007. *Kobuk-Seward Peninsula Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-07/021+1610+025. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.
 - . 2008a. *Bay Record of Decision and Approved Resource Management Plan*. Anchorage, Alaska: BLM Anchorage Field Office.
 - . 2008b. *Kobuk-Seward Peninsula Record of Decision and Approved Resource Management Plan*. Fairbanks, Alaska, and Anchorage, Alaska: Bureau of Land Management, Central Yukon Field Office and Anchorage Field Office.
 - . 2013. *Triumverate LLC Commercial Heli-skiing Special Recreation Permit Environmental Assessment*. DOI-BLM-AK-A010-2013-0008-EA. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
 - . 2019. *Final Environmental Impact Statement for the Proposed Haines Amendment to the Ring of Fire Resource Management Plan*. DOI-BLM-AK-A020-2018-0023-EIS. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
 - . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.

- . 2021. Proposed East Alaska Resource Management Plan Amendment and Environmental Assessment. DOI-BLM-AK-A020-2020-0037-RMP-EA. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office. Available at: https://eplanning.blm.gov/public_projects/2003781/200394638/20047285/250053470/Proposed%20East%20Alaska%20RMP%20Amendment_Environmental%20Assessment%20Sept%202021.pdf. Accessed October 20, 2023.
- . 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.
- . 2023a. Alaska Long National Scenic Trail. Available at: <https://www.blm.gov/programs/national-conservation-lands/alaska/alaska-long-national-scenic-trail>. Accessed October 4, 2023.
- . 2023b. Iditarod National Historic Trail. Available at: <https://www.blm.gov/programs/national-conservation-lands/national-scenic-and-historic-trails/iditarod>. Accessed October 4, 2023.

Recreation and Travel Management

- Alaska Department of Natural Resources (ADNR). 2001. Kenai Area Plan. Available at: <https://dnr.alaska.gov/mlw/planning/areaplans/kenai/pdf/complete-kenai-area-plan.pdf>. Accessed October 4, 2023.
- . 2008. Northwest Area Plan for State Lands. Available at: https://dnr.alaska.gov/mlw/planning/areaplans/northwest/pdf/nwap_2008_complete.pdf. Accessed October 4, 2023.
 - . 2012. Knik River Public Use Area Management Plan. Available at: https://dnr.alaska.gov/mlw/planning/mgtplans/knik-river-pua/pdf/krmp_final_complete.pdf. Accessed October 4, 2023.
 - . 2014. Yukon Tanana Area Plan. Available at: https://dnr.alaska.gov/mlw/planning/areaplans/ytap/pdf/ytap_2014_complete.pdf. Accessed October 4, 2023.
- Alaska Department of Natural Resources and Alaska Department of Fish and Game (ADFG). 1985. Susitna Area Plan. Available at: https://dnr.alaska.gov/mlw/planning/areaplans/susitna/pdf/susitna_area_plan.pdf. Accessed October 4, 2023.
- . 1986. Copper River Basin Area Plan for State Lands. Available at: <https://dnr.alaska.gov/mlw/planning/areaplans/crbap/pdf/copper-river-basin-area-plan-for-state-lands.pdf>. Accessed October 4, 2023.
- Alaska Department of Transportation and Public Facilities (ADOTPF). 2023. Alaska DOT&PF Roadway Data Webmap. Available at: <https://akdot.maps.arcgis.com/home/webmap/viewer.html?webmap=0642c35270ba418e95dd61756ccf1b7b#!>. Accessed July 20, 2023.
- Alaska Geospatial Council. 2023a. Alaska Ports and Harbors Map. Available at: <https://agio-hub.maps.arcgis.com/apps/webappviewer/index.html?id=c148cbffd07444a9aa7d99257aa053ac>. Accessed July 20, 2023.

- _____. 2023b. Alaska State-Owned Airports and Runways Map. Available at: <https://agio-hub.maps.arcgis.com/apps/webappviewer/index.html?id=075ba771f36c4e09869eafe4f96d5171>. Accessed July 20, 2023.
- _____. 2023c. Alaska Railroad Map. Available at: <https://agc.dnr.alaska.gov/maps/agio-hub::alaska-railroad/explore?location=62.661218%2C-143.417321%2C5.65>. Accessed July 20, 2023.
- Bureau of Land Management (BLM). 1986. *The Iditarod National Historic Trail Seward to Nome Route: A Comprehensive Management Plan*. Anchorage, Alaska: Bureau of Land Management: Anchorage District Office. Available at: <https://jukebox.uaf.edu/sites/default/files/documents/INHT%20CMP%201986.pdf>. Accessed October 4, 2023.
- _____. 2014. *H-8320-1 - Planning for Recreation and Visitor Services*. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Media_Library_BLM_Policy_H-8320-1.pdf. Accessed March 1, 2024.
- _____. 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.

Social Systems

- Alaska Advisory Committee to the U.S. Commission on Civil Rights. 2002. *Racism's Frontier: The Untold Story of Discrimination and Division in Alaska*. Chapter 4: The Administration of Justice. Available at: <https://www.usccr.gov/files/pubs/sac/ak0402/main.htm>. Accessed November 7, 2023.
- Alaska Department of Labor and Workforce Development (ADLWD). 2023. Alaska Economic Trends: the cost of living in Alaska. Available at: <https://live.laborstats.alaska.gov/trends-magazine/2023/July/the-cost-of-living-in-alaska>. Accessed October 8, 2023.
- American Society of Civil Engineers. 2021. 2021 Alaska Infrastructure Report Card. Available at: <https://infrastructurereportcard.org/state-item/alaska/>. Accessed October 8, 2023.
- Kojola, E., and D.N. Pellow. 2021. New directions in environmental justice studies: examining the state and violence. *Environmental Politics* 30:1–2, 100–118. Available at: <https://doi.org/10.1080/09644016.2020.1836898>. Accessed March 28, 2024.
- Martin, K, K. Barrick, N.J. Richardson, D. Liao, and D. Heller. 2019. *Violent Victimization Known to Law Enforcement in the Bakken Oil-Producing Region of Montana and North Dakota, 2006–2012*. Washington, D.C.: Bureau of Justice Statistics. Available at: <https://www.ojp.gov/ncjrs/virtual-library/abstracts/violent-victimization-known-law-enforcement-bakken-oil-producing>. Accessed March 28, 2024.
- NewFields. 2019. *Health Impact Assessment – Ambler Road, Alaska*. Available at: eplanning.blm.gov/epl-front-office/projects/nepa/57323/20004515/250005370/Ambler_Road_HIA_Final.pdf. Accessed March 28, 2024.

Siebens, J., and T. Julian. 2011. Native North American Languages Spoken at Home in the United States and Puerto Rico: 2006–2010. Available at: <https://www2.census.gov/library/publications/2011/acs/acsbr10-10.pdf>. Accessed November 7, 2023.

Soils and Permafrost

Bureau of Land Management (BLM). 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.

Jorgenson, T., K. Yoshikawa, M. Kanevskiy, Y. Shur, V. Romanovsky, S. Marchenko, G. Grosse, J. Brown, and B. Jones. 2008. Permafrost characteristics of Alaska. In *Proceedings of the Ninth International Conference on Permafrost*, edited by D.L. Kane and K.M. Hinkel. Fairbanks: Institute of Northern Engineering, University of Alaska Fairbanks.

Jorgenson, M.T., M. Kanevskiy, Y. Shur, N. Moskalenko, D.R.N. Brown, K. Wickland, R. Striegl, and J. Koch. 2015. Role of ground ice dynamics and ecological feedbacks in recent ice wedge degradation and stabilization. *Journal of Geophysical Research* 120:2280–2297.

U.S. Department of Agriculture. 2017. Alaska and Changing Climate - Climate Hubs. Available at: <https://www.climatehubs.usda.gov/hubs/northwest/topic/alaska-and-changing-climate>. Accessed November 7, 2023.

Walker, D.A., M.K. Reynolds, M.Z. Kanevskiy, Y.S. Shur, V.E. Romanovsky, B.M. Jones, M. Buchhorn, M.T. Jorgenson, J. Šibík, A.L. Breen, A. Kade, E. Watson-Cook, G. Matyshak, H. Bergstedt, A.K. Liljedahl, R.P. Daanen, B. Connor, D. Nicolsky, and J.L. Peirce. 2022. Cumulative impacts of a gravel road and climate change in an ice-wedge-polygon landscape, Prudhoe Bay, Alaska. *Arctic Science* 8(4):1040–1066.

Subsistence

ABR and Stephen R. Braund & Associates (SRB&A). 2014. Assessment of the Potential Effects of an Elevated Pipeline Along the Red Dog Mine Haul Road on Caribou Distribution, Movements, and Crossing Success. Part One: Review of Literature and Expert Opinion. Prepared for Red Dog Operations, Anchorage, Alaska. Available at: https://static1.squarespace.com/static/5580adbbe4b020d041496999/t/5f7641c61251b158b95d7134/1601585616803/Caribou+and+Linear+Structures_Final_April+2014_new_SRBA.pdf. Accessed October 20, 2023.

Alaska Department of Fish and Game (ADFG). 2022. 2022-2023 Alaska Hunting Regulations. Previously available at: https://www.adfg.alaska.gov/static/regulations/wildliferegulations/pdfs/regulations_complete.pdf. Accessed June 20, 2023.

Alaska Federation of Natives. 2012. First Peoples of Alaska. Proclamation to Achieve Subsistence Rights and Protection of Native Cultures. Available at: <https://www.nativefederation.org/wp-content/uploads/2018/07/Subsistence-Proclamation-2012.pdf>. Accessed October 20, 2023.

Brinkman, T.J., W.D. Hansen, F.S. Chapin III, G. Kofinas, S. BurnSilver, T.S. Rupp. 2016. Arctic communities perceive climate impacts on access as a critical challenge to availability of subsistence resources. *Climatic Change* (2016) 139:413–427. DOI: 10.1007/s10584-016-1819-6.

- Brubaker, M., J. Bell, H. Dingman, S. Evans, K. Kasak, M. Itta, and R. Drake. 2014. *Climate Change in Nuiqsut, Alaska: Strategies for Community Health*. Prepared for Alaska Native Tribal Health Consortium Center for Climate and Health. Available at: https://anthc.org/wp-content/uploads/2016/01/CCH_AR_072014_Climate-Change-in-Nuiqsut.pdf. Accessed October 20, 2023.
- Bureau of Land Management (BLM). 2006. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2020. *Ambler Road Final Environmental Impact Statement*. DOI-BLM-AK-F030-2016-0008-EIS BLM/AK/PL- 19/013+1610+F030. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2023. Federal Caribou and Moose Subsistence Permit Data, 2010–2022. On file, Bureau of Land Management, Glennallen Field Office.
- BurnSilver, S., J. Magdanz, R. Stotts, M. Berman, and G. Kofinas. 2016. Are Mixed Economies Persistent or Transitional? Evidence Using Social Networks from Arctic Alaska. *American Anthropologist* 118:121–129. DOI:10.1111/aman.12447.
- Doyon Limited. 2024. About Us. Available at: <https://www.doyon.com/about/#:~:text=Mission,enhance%20our%20land%20and%20resources>. Accessed March 12, 2024.
- Fall, J.A., and M.L. Kostick. 2018. Food Security and Wild Resource Harvests in Alaska. Alaska Department of Fish and Game Division of Subsistence. Available at: https://www.adfg.alaska.gov/static/home/subsistence/pdfs/food_security_whitepaper.pdf.
- Federal Subsistence Management Program. 2020. *Federal Subsistence Management Regulations for the Harvest of Wildlife on Federal Public Lands in Alaska*. Anchorage, Alaska. Available at: <https://www.doi.gov/sites/doi.gov/files/2020-2022-wildlife-regs-book-web-reduced-size.pdf>.
- . 2022. Changes in Federal Moose and Caribou Hunting Regulations in Units 23 and 26A. April 6. Available at: <https://www.doi.gov/subsistence/news/general/changes-federal-moose-and-caribou-hunting-regulations-units-23-and-26a>. Accessed September 12, 2023.
- Georgette, S., and H. Loon. 1988. The Noatak River: Fall Caribou Hunting and Airplane Use. Technical Paper No. 162. Kotzebue: Alaska Department of Fish and Game, Division of Subsistence.
- Guettabi, M., J. Greenberg, J. Little, and K. Joly. 2016. *Evaluating Differences in Household Subsistence Harvest Patterns between the Ambler Project and Non-Project Zones*. Natural Resource Report NPS/GAAR/NRR—2016/1280. Fort Collins, Colorado: U.S. Department of the Interior National Park Service, Natural Resource Stewardship and Science.
- Herman-Mercer, N.M., M. Laituri, M. Massey, E. Matkin, R.C. Toohey, K. Elder, P.F. Schuster, and E. Mutter. 2019. Vulnerability of Subsistence Systems Due to Social and Environmental Change: A Case Study in the Yukon-Kuskokwim Delta, Alaska. *Arctic* 72(3):258–272.
- Joly, J. 2017. Alaska: Extraordinary Parks, Extraordinarily Complicated. *Akron Law Review* 50(1):Article 4. Available at: <http://ideaexchange.uakron.edu/akronlawreview/vol50/iss1/4>. Accessed October 19, 2023.

- Kofinas, G., S.B. BurnSilver, J. Magdanz, R. Stotts, and M. Okada. 2016. *Subsistence Sharing Networks and Cooperation: Kaktovik, Wainwright, and Venetie, Alaska*. OCS Study Bureau of Ocean Management 2015-023. Available at: https://www.north-slope.org/wp-content/uploads/2022/04/subsistence_sharing_networks_BOEM-2015-23.pdf.
- Magdanz, J. S., J. Greenberg, J. Little, and D. Koster. 2016. The Persistence of Subsistence: Wild Food Harvests in Rural Alaska, 1983-2013. *Social Science Research Network* 2779464. Available at: <http://dx.doi.org/10.2139/ssrn.2779464>.
- Martin, S. 2015. Indigenous social and economic adaptations in northern Alaska as measures of resilience. *Ecology and Society* 20(4):8. Available at: dx.doi.org/10.5751/ES-07586-200408.
- Mason, R., and A. Craver. 2023. Responding to the Effects of Climate Change on Subsistence in Alaska. National Park Service. Available at: <https://www.nps.gov/articles/000/aps-22-1-6.htm>. Accessed February 6, 2024.
- Moerlein, K., and C. Carothers. 2012. Total Environment of Change: Impacts of Climate Change and Social Transitions on Subsistence Fisheries in Northwest Alaska. *Ecology and Society* 17(1):10.
- NANA. 2024. Mission and Values. Available at: <https://www.nana.com/about-us/mission-values/>. Accessed March 12, 2024.
- Palinkas, L.A., M.A. Downs, J.S. Petterson, and J. Russell. 1993. Social, Cultural, and Psychological Impacts of the Exxon Valdez Oil Spill. *Human Organization* 52(1):13.
- Ready, E. 2019. Why subsistence matters. *Hunter Gatherer Research* 3(4):635–349.
- Schmidt, J., and G. Kofinas. 2018. *Local Knowledge and Science: Observation of Landscape Change in the Nuiqsut Homelands*. Anchorage: University of Alaska, Institute of Social and Economic Research.
- Steinacher, S. 2006. A Crisis in the Making in Northwest Alaska; Caribou, Hunting Pressure, and Conflicting Values. Alaska Fish & Wildlife News. Alaska Department of Fish and Game. September 2006. Available at: https://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=236.
- Stephen R. Braund & Associates (SRB&A). 2007. *Subsistence Use Areas and Traditional Knowledge Study for Tyonek and Beluga, Alaska*. DRven Corporation. Anchorage, Alaska. Available at: https://www.dropbox.com/s/hs8nlrpsc85z2tk/SRB%26A-2007-PacRim%20Coal%20Chuitna%20Coal%20Project_%20W.pdf?dl=1. Accessed October 20, 2023.
- . 2009. *Impacts and Benefits of Oil and Gas Development to Barrow, Nuiqsut, Wainwright, and Atkasuk Harvesters*. Prepared for the North Slope Borough Department of Wildlife Management, Barrow, Alaska. Anchorage, Alaska: Stephen R. Braund & Associates.
- . 2014. *Assessment of the Potential Effects of an Elevated Pipeline Along the Red Dog Mine Haul Road on Caribou Distribution, Movements, and Crossing Success. Part Two: Report of Traditional Knowledge Workshops, Kivalina and Noatak*. Prepared for Teck Alaska Incorporated. Anchorage, Alaska. Available at: https://srbak.squarespace.com/s/Caribou-and-Linear-Structures_Vol-2_Traditional-Knowledge_Sept-2014.pdf. Accessed October 20, 2023.

- . 2017. Appendix D Final Subsistence and Traditional Knowledge Studies Report. Privileged and Confidential. DOCKET NO. CP17-____-000 RESOURCE REPORT NO. 5 DOC NO: USAI-PE-SRREG-00-000005-000. Anchorage, Alaska. Available at: http://alaska-lng.com/wp-content/uploads/2017/04/Alaska-LNG-RR5-AppxD_041417_public.pdf. Accessed October 20, 2023.
- . 2018. *Nuiqsut Paisanich: A 2018 Addendum*. Prepared for the City of Nuiqsut, Alaska. Anchorage, Alaska.
- . 2023. *Nuiqsut Caribou Subsistence Monitoring Project: 2021 (Year 14) Report*. Submitted to ConocoPhillips Alaska, Inc. North Slope Borough Department of Wildlife Management. Stephen R. Braund & Associates.
- Sullender, B. 2017. *Ecological Impacts of Road- and Aircraft-Based Access to Oil Infrastructure*. Edited by Audubon Alaska. Available at: https://ak.audubon.org/sites/default/files/road_aircraft_access_report_final.pdf.
- U.S. Army Corps of Engineers (USACE). 2018. *Alaska Stand Alone Pipeline Project: Final Supplemental Environmental Impact Statement*. Anchorage, Alaska. Available at: https://www.arlis.org/docs/vol1/AlaskaGas/Report4/Report_ASAP_FSEIS/. Accessed October 20, 2023.
- Wilson, R.R., L.S. Parrett, K. Joly, and J.R. Dau. 2016. Effects of Roads on Individual Caribou Movements During Migration. *Biological Conservation* 195:2–8.
- Wolfe, R.J. 2000. Subsistence in Alaska: A year 2000 update. Juneau: Alaska Department of Fish and Game, Division of Subsistence.

Terrestrial Mammals

- Alaska Department of Fish and Game (ADFG). 2015. *2015 Alaska Wildlife Action Plan*. Juneau, Alaska. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=wildlifediversity.swap>. Accessed March 29, 2024.
- . 2017. *The Status of Moose and Factors Influencing Their Populations*. Federal Aid Division of Wildlife Conservation. Available at: https://www.adfg.alaska.gov/static/home/about/divisions/wildlifeconservation/pdfs/reports/akw_20_1.0_moose_fy2017_performance_report_11_30_17.pdf.
- . 2023a. Wood bison species profile. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=woodbison.main>. Accessed October 20, 2023.
- . 2023b. Wood bison update summer 2023. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=woodbisonrestoration.herdupdates#woodbison2023>. Accessed November 6, 2023.
- Alaska Wood Bison Management Planning Team. 2022. *Wood bison management plan for lower Innoko-Yukon River in Westcentral Alaska, 2020–2023*. Wildlife Management Plan ADF&G/DWC/WMP-2022-1. Juneau: Alaska Department of Fish and Game.

- Aycrigg, J.L., A.G. Wells, E.O. Garton, B. Magipane, G.E. Liston, L.R. Prugh, and J.L. Rachlow. 2021. Habitat selection by Dall's sheep is influenced by multiple factors including direct and indirect climate effects. *PLoS ONE* 16(3):e0248763.
- Barten, N.L. 2018. *Moose management report and plan, Game Management Unit 17: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-49. Juneau: Alaska Department of Fish and Game.
- Barten, N.L., and L.N. Watine. 2020. *Caribou management report and plan, Game Management Units 9A, 9B, 9C, 17, 18, 19A, 19B: Report period 1 July 2012–30 June 2017, and plan period 1 July 17–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-2. Juneau: Alaska Department of Fish and Game.
- Barton, J.B. 2020. *Caribou management report and plan, Game Management Units 19, 21A, and 21E: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-4. Juneau: Alaska Department of Fish and Game.
- Bieniek, P.A., U.S. Bhatt, J.E. Walsh, R. Lader, B. Griffith, J. K. Roach, and R.L. Thoman. 2018. Assessment of Alaska rain-on-snow events using dynamical downscaling. *Journal of Applied Meteorology and Climatology* 57:1847–1863.
- Blejwas, K. M., G.W. Pendleton, M.L. Kohan, L.O. Beard. 2021. The Milieu Souterrain Superficiel as hibernation habitat for bats: implications for white-nose syndrome. *Journal of Mammalogy* 102(4):1110–1127,
- Boulanger, J.K., G. Poole, A. Gunn, J. Adamczewski, and J. Wierzchowski. 2021. Estimation of trends in zone of influence of mine sites on barren-ground caribou populations in the Northwest Territories, Canada, using new methods. *Wildlife Biology* 2021: wlb.00719
- Brockman, C.J., W.B. Collins, J.M. Welker, D.E. Spalinger, and B.W. Dale. 2017. Determining Kill Rates of Ungulate Calves by Brown Bears Using Neck-Mounted Cameras. *Wildlife Society Bulletin* 41:88–97.
- Bureau of Land Management (BLM). 2019. BLM Alaska Special Status Species List – 2019. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Alaska_Special-Status-Species-List_2019.pdf. Accessed October 20, 2023.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- Chen, W.J., S.G. Leblanc, H.P. White, C. Prevost, B. Milakovic, C. Rock, G. Sharam, H. O'Keefe, L. Corey, B. Croft, A. Gunn, S. van der Wielen, A. Football, B. Tracz, J. Pellissey, and J. Boulanger. 2017. Does dust from arctic mines affect caribou forage? *Journal of Environmental Protection* 8(3):258–276.
- Churchwell, R.T. 2021. *Moose management report and plan, Game Management Unit 5: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025*. Species Management Report and Plan ADF&G/DWC/SMR&P-2021-48. Juneau: Alaska Department of Fish and Game.

- Coady, J.W. 1974. Influence of snow on behavior of moose. *Canadian Naturalist* 101:417–436.
- Copeland, J.S., K.S. McKelvey, K.B. Aubry, A. Landa, J. Persson, R.M. Inman, J. Krebs, E. Lofroth, H. Golden, J.R. Squires, A. Magoun, M.K. Schwartz, J. Wilmot, C.L. Copeland, R.E. Yates, I. Kojola, and R. May. 2010. The bioclimatic envelope of the wolverine (*Gulo gulo*): do climatic constraints limit its geographic distribution? *Canadian Journal of Zoology* 88:233–246.
- Côté S. D., S. Ilamel, A. St-Louis, and J. Mainguy. 2013. Do mountain goats Habituate to helicopter disturbance? *Journal of Wildlife Management* 77(6):1244–1248.
- Crowley, D.W. 2017. *Moose management report and plan, Game Management Unit 9: Report period 1 July 2010–30 June 2015 and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-5. Juneau: Alaska Department of Fish and Game.
- . 2019. *Caribou management report and plan, Game Management Units 9C and 9E: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2019-13. Juneau: Alaska Department of Fish and Game.
- Crowley, D.W., and C.C. Peterson. 2020. *Caribou management report and plan, Game Management Unit 9D: Report period 1 July 2012–30 June 2017, and plan period 1 July 2018–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-13. Juneau: Alaska Department of Fish and Game.
- Crupi A.P., D.P. Gregovich, K.S. White. 2021. Steep and deep: Terrain and climate factors explain brown bear (*Ursus arctos*) alpine den site selection to guide heli-skiing management. *PLOS ONE* 15(9):e0238711. Available at: <https://doi.org/10.1371/journal.pone.0238711>.
- Curl, J. 2023. Wood bison restoration in Alaska 2022: A year of progress. *Alaska Fish & Wildlife News* February 2023. Juneau: Alaska Department of Fish and Game, Division of Wildlife Conservation. Available at: https://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=1055. Accessed October 20, 2023.
- Dau, J. 2015. Chapter 14, Units 21D, 22A, 22B, 22C, 22D, 22E, 23, 24 and 26A. In *Caribou management report of survey and inventory activities 1 July 2012–30 June 2014*, edited by P. Harper and Laura A. McCarthy, pp. 14-1–14-89. Species Management Report ADF&G/DWC/SMR-2015-4. Juneau: Alaska Department of Fish and Game.
- DeMars, C.A., and S. Boutin. 2018. Nowhere to hide: Effects of linear features on predator–prey dynamics in a large mammal system. *Journal of Animal Ecology* 87:274–284.
- DeMars, C.A., S.E. Nielsen, and M.A. Edwards. 2020. Effects of linear features on resource selection and movement rates of wood bison (*Bison bison athabasca*). *Canadian Journal of Zoology* 98:21–31.
- Dorendorf, R. 2021. *Moose management report and plan, Game Management Unit 1A: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025*. Species Management Report and Plan ADF&G/DWC/SMR&P-2021-33. Juneau: Alaska Department of Fish and Game.

- Eftesøl, S., K. Flyndal, D. Tsegaye, and J.E. Colman. 2019. Mining activity disturbs habitat use of reindeer in Finnmark, northern Norway. *Polar Biology* 42:1849–1858.
- Elmhagen, B., D. Berteaux, R.M. Burgess, D. Ehrich, D. Gallant, H. Henttonen, R.A. Ims, S.T. Killengreen, J. Niemimaa, K. Norén, T. Ollila, A. Rodnikova, A.A. Sokolov, N.A. Sokolova, A.A. Stickney, and A. Angerbjörn. 2017. Homage to Hersteinsson and Macdonald: Climate warming and resource subsidies cause red fox range expansion and arctic fox decline. *Polar Research* 36(Suppl. 1).
- Elzinga, D.C., C. Beckford, and W.C. Strickland. 2023. A mathematical model of the impacts of climate change on the winter tick epizootic in moose. *Ecological Modelling* 483:110421.
- Fancy, S.G., and R.G. White. 1987. Energy expenditures for locomotion by barren-ground caribou. *Canadian Journal of Zoology* 65:122–128.
- Finstad, G.L., H.R. Bader, and A.K. Prichard. 2002. Conflicts between reindeer herding and an expanding caribou herd in Alaska. *Rangifer* Special Issue No. 13:33–37.
- Fisher, J.T., S. Murray, M. Barrueto, K. Carroll, A.P. Clevenger, D. Hausleitner, W. Harrower, N. Heim, K. Heinemeyer, A.L. Jacob, T.S. Jung, A. Kortello, A. Ladle, R. Long, P. MacKay, and M.A. Sawaya. 2022. Wolverines (*Gulo gulo*) in a changing landscape and warming climate: A decadal synthesis of global conservation ecology research. *Global Ecology and Conservation* 34:e02019.
- Fullman, T.J., B.T. Person, A.K. Prichard, L.S. Parrett. 2021. Variation in winter site fidelity within and among individuals influences movement behavior in a partially migratory ungulate. *PLoS ONE* 16(9):e0258128. Available at: <https://doi.org/10.1371/journal.pone.0258128>.
- Funck, J., C. Kellam, C.T. Seaton, and M.J. Wooler. 2020. Stable isotopic signatures in modern wood bison (*Bison bison athabasca*) hairs as telltale biomarkers of nutritional stress. *Canadian Journal of Zoology* 98(8):505–514.
- Germaine, S.R. 2023. Moose management report and plan, Game Management Unit 22: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020. Species Management Report and Plan ADF&G/DWC/SMR&P-2023-15. Juneau: Alaska Department of Fish and Game.
- Gorn, T., and W.R. Dunker. 2014. Unit 22 moose management report. In *Moose management report of survey and inventory activities 1 July 2011–30 June 2013*, edited by P. Harper and Laura A. McCarthy, pp. 31-1–31-38. Species Management Report ADF&G/DWC/SMR-2014-6. Juneau: Alaska Department of Fish and Game.
- Harrison, L.A. 2023. How climate influences occupancy and behavior of pikas in Alaska. Unpublished M.S. thesis, University of Idaho.
- Hatcher, H.L. 2017. *Moose management report and plan, Game Management Unit 11: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P2017-2. Juneau: Alaska Department of Fish and Game.
- . 2020. *Mentasta caribou herd management report and plan, Game Management Unit 11: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-15. Juneau: Alaska Department of Fish and Game.

- . 2022. 2022 Nelchina Caribou Hunt Quotas and Bag Limits Announced. Advisory Announcement dated July 14, 2022. Juneau: Alaska Department of Fish and Game.
- Hatcher, H.L., and W.F. Robbins. 2021. Nelchina caribou herd management report and plan, Game Management Unit 13: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022. Species Management Report and Plan ADF&G/DWC/SMR&P-2021-16. Juneau: Alaska Department of Fish and Game.
- Hecker, L.J., M.A. Edwards, and S.E. Nielsen. 2023. Behavioral habitat selection of wood bison (*Bison bison athabascae*) in boreal forests. *Mammal Research* 68:341–353.
- Herreman, J. 2022a. *Caribou management report and plan, Game Management Units 7 and 15: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2021*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-19. Juneau: Alaska Department of Fish and Game.
- . 2022b. Moose management report and plan, Game Management Unit 15: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025. Species Management Report and Plan ADF&G/DWC/SMR&P-2022-24. Juneau: Alaska Department of Fish and Game.
- Hicke, J.A., M.C. Johnson, J.L. Hayes, and H.K. Preisler. 2012. Review: Effects of bark beetle-caused mortality on wildfire. *Forest Ecology and Management* 271:81–90.
- Hollis, A.L. 2018. *Moose management report and plan, Game Management Units 20C, 20F, and 25C: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-48. Juneau: Alaska Department of Fish and Game.
- . 2021. *Delta caribou herd management report and plan, Game Management Unit 20A: Report period 1 July 2012–30 June 2017, and plan period 1 July 2017–30 June 2022*. Species Management Report and Plan ADF&G/DWC/SMR&P-2021-29. Juneau: Alaska Department of Fish and Game.
- James, A.R.C., and A.K. Stuart-Smith. 2000. Distribution of caribou and wolves in relation to linear corridors. *Journal of Wildlife Management* 64:154–159.
- Johnson, H.E., T.S. Golden, L.G. Adams, D.D. Gustine, and E.A. Lenart. 2020. Caribou use of habitat near energy development in Arctic Alaska. *Journal of Wildlife Management* 84:401–412.
- Johnson, H.E., T.S. Golden, L.G. Adams, D.D. Gustine, E.A. Lenart, and P.S. Barboza. 2021. Dynamic selection for forage quality and quantity in response to phenology and insects in an Arctic ungulate. *Ecology and Evolution* 11:11664–11688.
- Joly K., M.D. Cameron. 2022. Caribou vital sign annual report for the Arctic Network Inventory and Monitoring Program: September 2021 – August 2022. Natural Resource Report NPS/ARCN/NRR – 2022/2484. Fort Collins: National Park Service.
- Joly, K., M.S. Sorum, T. Craig, and E.L. Julianus. 2016. The effects of sex, terrain, wildfire, winter severity, and maternal status on habitat selection by moose in north-central Alaska. *Alces* 52:101–115.

- Klimstra, R., and C.T. Daggett. 2020. *Moose management report and plan, Game Management Unit 26A: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2020-9. Juneau: Alaska Department of Fish and Game.
- Koch, C.H. 2017. *Moose management report and plan, Game Management Unit 1D: Report period 1 July 2010–30 June 2015 and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-1. Juneau: Alaska Department of Fish and Game.
- Kutz S.J., T. Bollinger, M. Branigan, S. Checkley, T. Davison, M. Dumond, B. Elkin, T. Forde, W. Hutchins, A. Niptanatiak, and K. Orsell. 2015. Erysipelothrix rhusiopathiae associated with recent widespread muskox mortalities in the Canadian Arctic. *The Canadian Veterinary Journal* 56: 560–563.
- LaVine, R. 2023. Federal Subsistence Board Closes Federal Public Lands to Caribou Hunting by All Users in Units 11, 12, and 13 for 2023-2024. Federal Subsistence Management Board, October 20, 2023. Available at: <https://www.doi.gov/subsistence/news/general/federal-subsistence-board-closes-federal-public-lands-caribou-hunting-all>.
- Lawhead, B.E., J.P. Parrett, A.K. Prichard, and D.A. Yokel. 2006. A literature review and synthesis on the effect of pipeline height on caribou crossing success. BLM Alaska Open-File Report 106. Fairbanks, Alaska: U.S. Department of the Interior, Bureau of Land Management.
- Lawhead, B.E., and A.K. Prichard. 2011. Pebble Project Environmental Baseline Document. Chapter 16.2. Terrestrial Mammals–Mine Study Area. Anchorage, Alaska: Pebble Limited Partnership.
- Longson, S.M. 2023. *Moose management report and plan, Game Management Unit 21B: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025*. Species Management Report and Plan ADF&G/DWC/SMR&P-2023-1. Juneau: Alaska Department of Fish and Game.
- Lowell, R.E. 2018a. Moose management report and plan, Game Management Unit 1B: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-3. Juneau: Alaska Department of Fish and Game.
- . 2018b. Moose management report and plan, Game Management Unit 3: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020. Species Management Report and Plan bADF&G/DWC/SMR&P-2018-2. Juneau: Alaska Department of Fish and Game.
- Lundmark, C., and J.P. Ball. 2008. Living in Snowy Environments: Quantifying The Influence of Snow on Moose Behavior. *Arctic, Antarctic, and Alpine Research* 40(1):111–118.
- MacDonald, S.O., and J.A. Cook. 2009. Recent Mammals of Alaska. Fairbanks: University of Alaska Press.
- McElvey, K.S., J.P. Copeland, M.K. Schwartz, J.S. Littell, K.B. Aubry, J.R. Squires, S.A. Parks, M.M. Elsner, and G. S. Mauger. 2011. Climate change predicted to shift wolverine distributions, connectivity, and dispersal corridors. *Ecological Applications* 21:2882–2897.

- Mangipane L.S., J.L. Belant, T.L. Hiller, M.E. Colvin, D.D. Gustine, B.A. Mangipane, and G.V. Hilderbrand. 2018. Influences of landscape heterogeneity on home-range sizes of brown bears. *Mammalian Biology* 88:1–7.
- May, R., A. Landa, J. van Dijk, J.D.C. Linnell, and R. Andersen. 2006. Impact of infrastructure on habitat selection of wolverines (*Gulo gulo*). *Wildlife Biology* 12:285–295.
- Naiden, A. 2023. Western Arctic Caribou Herd keeps shrinking, 2023 census shows. Anchorage Daily News. Available at: <https://www.adn.com/alaska-news/wildlife/2023/10/29/western-arctic-caribou-herd-keeps-shrinking-2023-census-shows/>. Accessed October 29, 2023.
- National Park Service. 2016. Population dynamics of the Denali Caribou Herd. Available at: <https://www.nps.gov/articles/denali-caribou-herd.htm>. Accessed June 22, 2023.
- . 2022. Dall's Sheep Resource Brief for the Arctic Network. Last updated November 2022. Available at: <https://www.nps.gov/articles/000/dalls-sheep-resource-brief.htm>. Accessed February 11, 2024.
- National Resource Council. 2003. *Cumulative environmental effects of oil and gas activities on Alaska's North Slope*. Washington, D.C.: The National Academies Press.
- Palm, E.C., M.J. Sutor, K. Joly, J.D. Herriges, A.P. Kelly, D. Hervieux, K.L.M. Russell, T.W. Bentzen, N.C. Larter, and M. Hebblewhite. 2022. Increasing fire frequency and severity will increase habitat loss for a boreal forest indicator species. *Ecological Applications* 32:e2549.
- Panzacchi, M.B., Van Moorster, and O. Strand. 2013. A road in the middle of one of the last wild reindeer migration routes in Norway: crossing behaviour and threats to conservation. Available at: <https://septentrio.uit.no/index.php/rangifer/article/view/2521/3299>.
- Parlee, B.L., J. Sandlos, and D.C. Natcher. 2018. Undermining subsistence: Barren-ground caribou in a tragedy of open access. *Science Advances* 4: e1701611.
- Paton, D.G., S. Ciuti, M. Quinn, and M.S. Boyce. 2017. Hunting exacerbates the response to human disturbance in large herbivores while migrating through a road network. *Ecosphere* 8(6):e01841.
- Peirce, J.M. 2018. *Moose management report and plan, Game Management Unit 19: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-22. Juneau: Alaska Department of Fish and Game.
- Peltier, T.C. 2017a. *Moose management report and plan, Game Management Unit 14A: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-4. Juneau: Alaska Department of Fish and Game.
- . 2017b. *Moose management report and plan, Game Management Units 14B: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-8. Juneau: Alaska Department of Fish and Game.
- . 2017c. *Moose management report and plan, Game Management Units 16A and 16B: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-7. Juneau: Alaska Department of Fish and Game.

- Perry, P. 2023. Moose management report and plan, Game Management Unit 18: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020. Species Management Report and Plan ADF&G/DWC/SMR&P-2023-14. Juneau: Alaska Department of Fish and Game.
- Phillips, L.M., R. Mace, and T. Meier. 2010. Assessing impacts of traffic on large mammals in Denali National Park and Preserve. *Park Science* 27(2):60–65.
- Plante, S., C. Dussault, J.H. Richard, S.D. Côté. 2018. Human disturbance effects and cumulative habitat loss in endangered migratory caribou. *Biological Conservation* 224:129–143.
- Prichard, A.K., B.E. Lawhead, E.A. Lenart, and J.H. Welch. 2020. Caribou distribution and movements in a northern Alaska oilfield. *Journal of Wildlife Management* 84:1483–1499.
- Prichard, A.K., L.S. Parrett, E.A. Lenart, J. Caikoski, K. Joly, and B.T. Person. 2020. Interchange and overlap among four adjacent arctic caribou herd. *Journal of Wildlife Management* 84:1500–1514.
- Richards, K. 2023. Why is the Western Arctic Caribou Herd Shrinking? 164,000 is the lowest count since early 1980s. Alaska Fish and Wildlife News, August 2023. Available at: https://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=1070.
- Robbins, W.F. 2018. *Moose management report and plan, Game Management Unit 13: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P2018-47. Juneau: Alaska Department of Fish and Game.
- Roffler, G.H., L.G. Adams, S.L. Talbot, G.K. Sage, and B.W. Dale. 2012. Range overlap and individual movements during breeding season influence genetic relationships of caribou herds in south-central Alaska. *Journal of Mammalogy* 93(5):1318–1330.
- Russell, D.E., A. Gunn, and S. Kutz. 2019. Migratory tundra caribou and wild reindeer. Arctic Report Card: Update for 2018. Available at: <https://www.arctic.noaa.gov/Report-Card/Report-Card-2018/>. Accessed October 20, 2023.
- Seaton, C. T., T. F. Paragi, R. D. Boertje, K. Kielland, S. DuBois, and C. L. Fleener. 2011. Browse biomass removal and nutritional condition of moose *Alces alces*. *Wildlife Biology* 17(1):55–66. <https://doi.org/10.2981/10-010>.
- Severson, J.P., T.C. Vosburgh, and H.E. Johnson. 2023. Effects of vehicle traffic on space use and road crossings of caribou in the Arctic. *Ecological Applications* 33(8):p.e2923.
- Shepard, A.H.C., L.J. Hecker, M.A. Edwards, and S.E. Nielsen. 2020. Determining the influence of snow and temperature on the movement rates of wood bison (*Bison bison athabasca*). *Canadian Journal of Zoology* 99:489–496.
- Smith, T.S., and S.T. Partridge. 2004. Dynamics of intertidal foraging by coastal brown bears in southwestern Alaska. *Journal of Wildlife Management* 68(2):233–240.
- Spivey, T. 2022. *Moose management report and plan, Game Management Unit 14C: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025*. Species Management Report and Plan ADF&G/DWC/SMR&P-2022-12. Juneau: Alaska Department of Fish and Game.

- Stinchcomb, T.R., T.J. Brinkman, and D. Betchkal. 2020. Extensive aircraft activity impacts subsistence areas: acoustic evidence from Arctic Alaska. *Environmental Research Letters* 15:115005.
- Stout, G.W. 2018a. *Moose management report and plan, Game Management Unit 21D: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-5. Juneau: Alaska Department of Fish and Game.
- . 2018b. *Moose management report and plan, Game Management Unit 24: Report period 1 July 2010–30 June 2015, and plan period 1 July 2015–30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2018-19. Juneau: Alaska Department of Fish and Game.
- Taillon, J., M. Festa-Bianchet, and S.D. Côté. 2012. Shifting targets in the tundra: protection of migratory caribou calving grounds must account for spatial changes over time. *Biological Conservation* 147(1):163–173.
- Tape, K.D., K. Christie, G. Carroll, and J.A. O'Donnell. 2016. Novel Wildlife in the Arctic: The Influence of Changing Riparian Ecosystems and Shrub Habitat Expansion on Snowshoe Hares. *Global Change Biology* 22(1):208–219.
- Tape, K.D., D.D. Gustine, R.W. Ruess, L.G. Adams, and J.A. Clark. 2016. Range Expansion of Moose in Arctic Alaska Linked to Warming and Increased Shrub Habitat. *PLOS ONE* 11(4):e0152636.
- Tape, K.D., B.M. Jones, C.D. Arp, I Nitze, and G. Grosse. 2018. Tundra be dammed: Beaver colonization of the Arctic. *Global Change Biology* 24(10):4478–4488.
- U.S. Fish and Wildlife Service (USFWS). 2022. News from Selawik Refuge, Northwest Alaska Caribou Update 2022. Available at: <https://www.doi.gov/sites/doi.gov/files/11.-selawik-nwr-caribou-report-508.pdf>.
- . 2023. Endangered and Threatened Wildlife and Plants; Threatened Species Status with Section 4(d) Rule for North American Wolverine. 88 Federal Register 83726. 50 Code of Federal Regulations 17. Available at: <https://www.federalregister.gov/documents/2023/11/30/2023-26206/endangered-and-threatened-wildlife-and-plants-threatened-species-status-with-section-4d-rule-for>.
- Van de Kerk, M., S. Arthur, M. Bertram, B. Borg, J. Herriges, J. Lawler, B. Mangipane, C. Lambert Koizumi, B. Wendling, and L. Prugh. 2020. Environmental Influences on Dall's Sheep Survival. *Journal of Wildlife Management* 84:1127–1138. Available at: <https://doi.org/10.1002/jwmg.21873>.
- Valkenburg, P., M.A. Keech, R.A. Sellers, R.W. Tobey, and B.W. Dale. 2002. *Investigation of regulating and limiting factors in the Delta caribou herd. Final Research Technical Report 1 July 1996-June 2002, Federal Aid in Wildlife Restoration Project 3.42*. Juneau: Alaska Department of Fish and Game, Division of Wildlife Conservation.
- Virgl, J.A., W.J. Rettie, and D.W. Coulton. 2017. Spatial and temporal changes in seasonal range attributes in a declining barren-ground caribou herd. *Rangifer* 37(1):31.
- Vistnes, I., and C. Nellemann. 2008. The matter of spatial and temporal scales: a review of reindeer and caribou response to human activity. *Polar Biology* 31:399–407.

- Waggoner, V., and M. Hinkes. 1986. Summer and fall browse utilization by an Alaskan bison herd. *Journal of Wildlife Management* 50(2):322–324.
- Welch, J.H., A.K. Prichard, and M.J. Macander. 2023. Caribou monitoring study for the Alpine Satellite Development Program and Greater Moose's Tooth Unit, 2022. Fairbanks, Alaska: ABR, Inc.—Environmental Research & Services. 85 pp.
- Wells, J.J. 2023. Moose management report and plan, Game Management Unit 12: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025. Species Management Report and Plan ADF&G/DWC/SMR&P-2023-24. Juneau: Alaska Department of Fish and Game.
- Werner, R.A., E.H. Holsten, S.M. Matsuoka, and R.E. Burnside. 2006. Spruce beetles and forest ecosystems in south-central Alaska: A review of 30 years of research. *Forest Ecology and Management* 227:195–206.
- Westing, C. 2022. Moose management report and plan, Game Management Unit 6: Report period 1 July 2015–30 June 2020, and plan period 1 July 2020–30 June 2025. Species Management Report and Plan ADF&G/DWC/SMR&P-2022-20. Juneau: Alaska Department of Fish and Game.
- White, K. S., and D. P. Gregovich. 2017. Mountain goat resource selection in relation to mining-related disturbance. *Wildlife Biology* 1(4).
- Wilson, R.R., L.S. Parrett, K. Joly, and J.R. Dau. 2016. Effects of roads on individual caribou movements during migration. *Biological Conservation* 195:2–8.
- Young, D.D., Jr. 2017. *Moose management report and plan, Game Management Unit 20A: Report period 1 July 2010-30 June 2015, and plan period 1 July 2015-30 June 2020*. Species Management Report and Plan ADF&G/DWC/SMR&P-2017-3. Juneau: Alaska Department of Fish and Game.
- Young, K.B., T.M. Lewis, K.S. White, and A.B. Shafer. 2022. Quantifying the effects of recent glacial history and future climate change on a unique population of mountain goats. *Biological Conservation* 272:109631.

Vegetation, Wetlands, and Special Status Plants

- Alaska Center for Conservation Science (ACCS). 2021. Plant Species and Ecosystems of Conservation Concern. Available at: <https://accs.uaa.alaska.edu/vegetation/conservation-concern/>. Accessed October 19, 2023.
- Alaska Department of Fish and Game (ADFG). 2023. Habitat. Ecosystems. Wetlands. Available at: <https://www.adfg.alaska.gov/index.cfm?adfg=ecosystems.list>. Accessed October 19, 2023.
- Bureau of Land Management (BLM). 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.

- . 2007. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2018. *Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project Final Supplemental Environmental Impact Statement*. Anchorage, Alaska: Bureau of Land Management, Alaska State Office. September 2018.
- . 2019. BLM Alaska Special Status Species List – 2019. Available at: https://www.blm.gov/sites/blm.gov/files/uploads/Alaska_Special-Status-Species-List_2019.pdf. Accessed August 29, 2023.
- . 2020. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management: Anchorage Field Office.
- Gallant, A.L., E.F. Binnian, J.M. Omernik, and M.B. Shasby. 1995. *Ecoregions of Alaska*. U.S. Geological Survey Professional Paper 1567.
- LANDFIRE. 2022. *Vegetation Disturbance Layer, LANDFIRE 2.3.0*. U.S. Department of the Interior, U.S. Geological Survey, and U.S. Department of Agriculture. Available at: <http://www.landfire.gov/viewer>. Accessed on June 23, 2023.
- McNab, W.H., and P.E. Avers. 1994. *Ecological Subregions of the United States*. U.S. Forest Service, prepared in cooperation with Regional Compilers and the ECOMAP Team of the Forest Service.
- National Park Service. 1986. *Wrangell-St. Elias National Park and Preserve general management plan*. Anchorage, Alaska.
- Nowacki, G.J., P. Spencer, M. Flemming, T. Brock, and T. Jorgenson. 2001. *Unified Ecoregions of Alaska*. U.S. Geological Service Open-File Report 2002-297. U.S. Geological Survey.

Water Resources

- Alaska Department of Environmental Conservation (ADEC). 2022. *Integrated Water Quality Monitoring and Assessment Report*. Available at: <https://dec.alaska.gov/water/water-quality/integrated-report/>. Accessed October 19, 2023.
- Bureau of Land Management (BLM). 2006a. *East Alaska Proposed Resource Management Plan and Final Environmental Impact Statement*. Glennallen, Alaska: Bureau of Land Management, Glennallen Field Office.
- . 2006b. *Ring of Fire Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-06/022+1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2007. *Bay Proposed Resource Management Plan and Final Environmental Impact Statement*. BLM/AK/PL-08/002+ 1610+040. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.

- . 2008. *Kobuk-Seward Peninsula Final Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2006-0001-RMP-EIS. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2018. *Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project Final Supplemental Environmental Impact Statement*. Anchorage, Alaska: Bureau of Land Management, Alaska State Office.
- . 2019. *Coastal Plain Oil and Gas Leasing Program Final Environmental Impact Statement*. DOI-BLM-AK-0000-2018-0002-EIS, BLM/AK/PL-19/014+1610+F020. Anchorage, Alaska: Bureau of Land Management, Alaska State Office.
- . 2020a. *Bering Sea – Western Interior Proposed Resource Management Plan and Final Environmental Impact Statement*. DOI-BLM-AK-A010-2013-0039-RMP-EIS. BLM/AK/PL-21/001+1610+A020. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2020b. *Ambler Road Final Environmental Impact Statement*. DOI-BLM-AK-F030-2016-0008-EIS BLM/AK/PL- 19/013+1610+F030. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2020c. *National Petroleum Reserve in Alaska (NPR-A) Final Integrated Activity Plan and Environmental Impact Statement*. In cooperation with the U.S. Bureau of Ocean Energy Management, National Park Service, Inupiat Community of the Arctic Slope, North Slope Borough, State of Alaska, and U.S. Fish and Wildlife Service. DOI-BLM-AK-R000-2019-0001-EIS. Anchorage, Alaska: Bureau of Land Management, Anchorage Field Office.
- . 2022. *Environmental Assessment Alaska Native Vietnam-era Veterans Land Allotment Program*. DOI-BLM-AK-0000-2021-0005-EA. Anchorage, Alaska: Bureau of Land Management, State Office. Available at: <https://eplanning.blm.gov/eplanning-ui/project/2014748/570>. Accessed October 16, 2023.
- Lubetkin, S. 2022. *Alaska Mining Spills: A comparison of the predicted impacts described in permitting documents and spill records from five major operational hardrock mines*. Available at: <https://earthworks.org/wp-content/uploads/2022/06/Alaska-Mining-Spills-Retrospective-Analysis-4-2022-2.pdf>. Accessed August 2023.
- Matz, A., M. Varner, M. Albert, and K. Wuttig. 2017. *BLM Technical Report 61: Mercury, Arsenic, and Antimony in Aquatic Biota from the Middle Kuskokwim River Region, Alaska, 2010-2014*. Anchorage, Alaska: Bureau of Land Management.
- National Atmospheric Deposition Program (NADP). 2023. *National Atmospheric Deposition Program 2022 Annual Summary*. Madison, Wisconsin: Wisconsin State Laboratory of Hygiene, University of Wisconsin-Madison.
- . 2024. NTN Interactive Map. Available at: <https://nadp.slh.wisc.edu/maps-data/ntn-interactive-map>. Accessed March 6, 2024.
- National Park Service (NPS). 2020. Water Quantity. Anchorage, Alaska: NPS Southwest Alaska Network. Available at: <https://irma.nps.gov/DataStore/DownloadFile/637872>. Accessed March 6, 2024.

U.S. Fish and Wildlife Service (USFWS). 2023. National Wetlands Inventory. Available at: <https://www.fws.gov/program/national-wetlands-inventory/data-download>. Accessed October 19, 2023.

U.S. Geological Survey (USGS). 2022. The Rusting of Arctic Rivers: Freshwater Ecosystems Respond to Rapidly Uptaking Metals. Available at: <https://www.usgs.gov/centers/alaska-science-center/science/rusting-arctic-rivers-freshwater-ecosystems-respond-rapidly/>. Accessed July 19, 2023.

———. 2023. Watershed Boundary Dataset. Available at: <https://www.usgs.gov/national-hydrography/access-national-hydrography-products>. Accessed October 19, 2023.

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CHAPTER 5. LIST OF PREPARERS

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Table 5.1-1. List of Preparers for the ANCSA 17(d)(1) Withdrawals Environmental Impact Statement

Name	Affiliation	Role or Responsibility
Racheal Jones	BLM	Project manager
Brittany Templeton	BLM	Realty and lands
Cindy Hamfler	BLM	Geographic information systems (GIS)
Rob Brumbaugh	BLM	Minerals and non-renewable resources
Elia Nay	BLM	Alaska Native coordinator
Aliza DuComb	BLM	Vegetation communities, special status plants and non-native plant species, geology, soils, permafrost, cave and karst, landscape ecology and ecosystems
Anna Hoessle	BLM	Water Resources, riparian, and floodplains
Scott Claggett	BLM	Public involvement
Benjamin Stratton	BLM	Water resources
V.J. Maisonet-Montanez	BLM	Air quality and air quality-related values, noise, climate
Kevin Keeler	BLM	Iditarod National Historic Trail
Matthew Varner	BLM	Fish and aquatic species
Joseph Galluzzi	BLM	Solid minerals
Brent Breithaupt	BLM	Paleontology
Jacob Vialpando	BLM	Anchorage field manager
William Dunk	BLM	Anchorage district manager
Craig Townsend	BLM	Wildlife, special status species
Bruce Seppi	BLM	Subsistence biology, ANILCA 810
Jared Hammatt	BLM	Wildland fire ecology and management, forestry and woodland products
Jenny Blanchard	BLM	Cultural and historic resources, Tribal consultation
Stolf Short	BLM	Outdoor recreation and travel management
Scott Justham	BLM	Outdoor recreation travel management
Francis Marley	BLM	Hazardous materials
Thomas Sparks	BLM	Realty and lands
Fred Transburg	BLM	Locatable minerals, mineral materials
Stewart Allen	BLM	Socioeconomics, environmental justice
Leyla Arsan	SWCA	Project manager
Stephanie Trapp	SWCA	Assistant project manager
Rachel Carlson	SWCA	Project coordinator
Amanda Childs	SWCA	Realty and lands, paleontology, quality control and quality assurance
Amanda Ehrenkrantz	SWCA	Natural and renewable resources lead
Matt Petersen	SWCA	Alternatives development

Name	Affiliation	Role or Responsibility
Catherine Chatfield	SWCA	GIS
Rachel Johnson	SWCA	GIS
Allen Stutz	SWCA	GIS
Brad Sohm	SWCA	Air quality, noise, climate
Jo Guest	SWCA	Air quality, noise, climate
Ryan Rausch	SWCA	Outdoor recreation and travel management
Emma Clinton	SWCA	Outdoor recreation and travel management
Janet Guinn	SWCA	RFD scenario
Samantha Mello	SWCA	RFD scenario
Linda Tucker Burfitt	SWCA	Lead technical editor
Kelcie Witzens	SWCA	Formatter, Section 508 compliance
Wendy Davis	ABR	Vegetation communities, special status plants, and non-native plant species
John Seigle	ABR	Fish and aquatic species
Alex Prichard	ABR	Wildlife, special status species
Rebecca McGuire	ABR	Birds and special status species
Keri Nutter	DOWL	Geology, soils, permafrost, cave and karst
Rich Pribyl	DOWL	Water resources
Matt Blakeslee	DOWL	Geology, soils, permafrost, cave and karst
Marcus Hartley	Northern Economics (NEI)	Socioeconomics, environmental justice
Leah Cuyno	NEI	Socioeconomics
Don Schug	NEI	Environmental justice
Stephen Braund	SRB&A	Subsistence, ANILCA 810, cultural and historic resources
Paul Lawrence	SRB&A	Subsistence, ANILCA 810, cultural and historic resources
Liz Sears	SRB&A	Subsistence, ANILCA 810
Randy Tedor	SRB&A	Cultural and historic resources