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

Southwest Wyoming CO_2 Sequestration

DOI-BLM-WY-D090-2023-0010-EA
Location: Wyoming – High Desert District – Kemmerer and Rock Springs Field Offices

Environmental Assessment

July 2024

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

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1.0 Introduction

This environmental assessment (EA) has been prepared to analyze and disclose the site-specific environmental consequences of Moxa Carbon Storage, LLC's application to the Bureau of Land Management (BLM), Kemmerer and Rock Springs Field Offices. This application was originally submitted under the entity Tallgrass High Plains Carbon Storage, LLC, which was changed to Moxa Carbon Storage, LLC in February of 2023. The proposal from Moxa Carbon requests the use of BLM-administered federal pore space in Lincoln, Uinta and Sweetwater counties in southwest Wyoming. The project is called Southwest (SW) Wyoming CO_2 (carbon dioxide) Sequestration Project.

The right-of-way needed for the pore space is for the injection and permanent geologic sequestration of carbon dioxide and does not include any related surface infrastructure. Total federally managed BLM lands requested for the right-of-way is 605,091 acres.

The application was filed with the Rock Springs Field Office (RSFO) on September 14, 2022. Majority of the lands are within the Kemmerer Field Office (KFO); therefore, KFO will be the lead office for this right-of-way. The legal land description of the project is shown in Appendix 3 and a map of the area is shown as Map 1 on page 6.

1.1 Purpose and Need

The purpose for the federal action is for the BLM to respond to an application for a right-of-way by Moxa Carbon to dispose of carbon dioxide in the federal pore space under BLM administered surface, while minimizing disturbance and utilizing existing rights-of-way, where applicable.

The need for the federal action is established by the BLM's responsibility under Title V of the Federal Land Policy and Management Act of October 21, 1976, 43 CFR 2800- Rights-of-Way under the Federal Land Policy And Management Act, the Kemmerer Resource Management Plan and Record of Decision, May 24, 2020, (as amended), and the Green River Resource Management Plan and Record of Decision, August 8, 1997 (as amended).

Decision to be Made
The BLM's authorized officer will decide whether or not to grant the right-of-way to Moxa Carbon and if so, under what terms and conditions. Stipulations, other restrictions and required mitigation would be administered once the right-of-way grant approval has been determined.

1.2 Scoping, Public Involvement and Issues

Internal Scoping
The BLM interdisciplinary team (IDT) members formulated potential issues (see Appendix 1 below) with the associated Proposed Action during internal scoping which was conducted during January 2023.

External Scoping
External scoping began on April 26, 2023, and the public comment period was open for 30 days. Scoping included two alternatives; 1) no action alternative, and 2) proposed action. Press releases were sent to statewide media, posted online and on the BLMs social media. The BLM sent informational letters about the project to 53 various state and local governments, interested parties and native American Tribes requesting comments during the scoping period. There were 12 comments received. The scoping comments can be reviewed in Appendix 5, along with who submitted the comments and the BLM's responses.

Identification of Issues
For each resource identified in Appendix 1, the rationale for determination to analyze the resource is described. Resources which may be affected by the Proposed Action or other alternatives, which are carried forward throughout this analysis are briefly explained as follows:

- **Sage-Grouse**
  - **Issue 1:** How would Greater Sage-grouse general habitat management areas be impacted by the proposal? Section 3.1
  - **Issue 2:** How would Greater Sage-grouse priority habitat management areas be impacted by the proposal? Section 3.2

- **Big Game**
  - **Issue 3:** How would crucial winter range habitat be impacted for deer, moose, pronghorn, and elk by the proposal? Section 3.3
  - **Issue 4:** How would elk parturition habitat be impacted by the proposal? Section 3.4

- **Raptor Nesting**
  - **Issue 5:** How would raptor nesting be impacted by the proposal? Section 3.5

- **BLM Sensitive Species - Wildlife**
  - **Issue 6:** How would pygmy rabbit be impacted by the proposal? Section 3.6
  - **Issue 7:** How would white-tailed prairie dogs be impacted by the proposal? Section 3.7
  - **Issue 8:** How would Idaho pocket gopher be impacted by the proposal? Section 3.8
  - **Issue 9:** How would BLM sensitive bats be impacts by the proposal? Section 3.9
  - **Issue 10:** How would migratory birds be impacted by the proposal? Section 3.10
  - **Issue 11:** How would mountain plover be impacted by the proposal? Section 3.11
  - **Issue 12:** How would BLM sensitive amphibians be impacted by the proposal? Section 3.12

- **Endangered Species**
  - **Issue 13:** How would Canada lynx be impacted by the proposal? Section 3.13
  - **Issue 14:** How would yellow-billed cuckoo be impacted by the proposal? Section 3.14

- **Issue 15:** How would Ute Ladies-tresses be impacted by the proposal? Section 3.15

- **Riparian Areas and Wetlands**
  - **Issue 16:** How would riparian areas and wetlands be impacted by the proposal? Section 3.16

- **Paleontological**
  - **Issue 17:** How would paleontological resources be impacted by the proposal? Section 3.17

- **Soils**
  - **Issue 18:** How would soils be impacted by the proposal? Section 3.18

- **BLM Special Status Plants**
  - **Issue 19:** How would BLM special status plant ACEC be impacted by the proposal? Section 3.19
  - **Issue 20:** How would BLM special status plants outside of the special status plant ACEC be impacted by the proposal? Section 3.20

- **Cultural/Historic Trails**
  - **Issue 21:** Issue Statement: How would the granting of the ROW impact Blacks Fork Cutoff, Slate Creek Cutoff, Sublette Cutoff, and the Oregon Trail National Historic Trails (NHTs)? Section 3.21
  - **Issue 22:** Issue Statement: How would the proposed project impact cultural and historic resources? Section 3.22

- **Visual Resources**
  - **Issue 23:** How would visual resources be impacted by the proposal? Section 3.25

- **Oregon Trail SRMA**
  - **Issue 24:** How would the Oregon Trail Special Recreation Management Area be impacted by the proposal? Section 3.24

Environmental Assessment Public Review and Comment
In addition to public participation in the public scoping period, this EA will be available for members of the public to comment on the content of this draft.

2.0 Proposed Action and Alternatives

No Action
Under the No Action alternative, the BLM would reject the proposal as submitted by Moxa Carbon therefore denying Moxa Carbon's proposal to use BLM-administered federal pore space for permanent geologic sequestration. Moxa Carbon would be unable to capture, transport, and

permanently sequester significant quantities of carbon dioxide in the BLM-administered federal pore space, though Moxa Carbon could potentially use the non-federal pore space in the project area or resubmit the ROW application to the BLM.

Proposed Action

The proposed ROW would be authorized in Uinta and Sweetwater counties in southwest Wyoming for permanent geologic sequestration of carbon dioxide.[1] The BLM's ROW authorization would only provide for use of the subsurface BLM-administered federal pore space within the project area, and not State of Wyoming or private lands. The BLM's pore space ROW grant would not authorize surface-disturbing activities or surface occupancy of BLM-administered public lands.

Additional ROWs may be submitted to the BLM in the future, should Moxa Carbon eventually seek BLM authorization to construct and use surface infrastructure on BLM-administered public lands. As Moxa Carbon explained in a letter submitting their application to the BLM, the pore space ROW is the "first step in a larger project that will consist of CO_2 capture infrastructure at planned ammonia production facilities and other potential CO_2 source points, CO_2 compression and pumps, a CO_2 pipeline, and sequestration surface facilities. Once the details of the larger sequestration project are finalized, [Moxa Carbon] will request the use of specific federal surface lands through a separate ROW application."

Accordingly, the proposed action does not include any use of BLM-administered public lands for related surface infrastructure (such as access roads, well pads, pipelines, etc.). These types of surface infrastructure are not currently proposed. In the future, related surface infrastructure may be proposed entirely on non-federal lands, on BLM-administered public lands, or on both federal and non-federal lands. The BLM does not authorize or regulate use of non-federal lands, and the BLM's ROW grant would not authorize or restrict use of the non-federal lands in the project area by the non-federal landowners (or anyone granted the lawful right by the landowner to use their lands).

In addition to a ROW granting the use of BLM-administered federal pore space for permanent geologic sequestration, Moxa Carbon would be required to seek approval from the State of Wyoming Department of Environmental Quality[2] for the construction and eventual operation of one or more Class VI Underground Injection Control (UIC) wells utilizing the BLM-administered federal pore space. The proposed action incorporates the terms and conditions

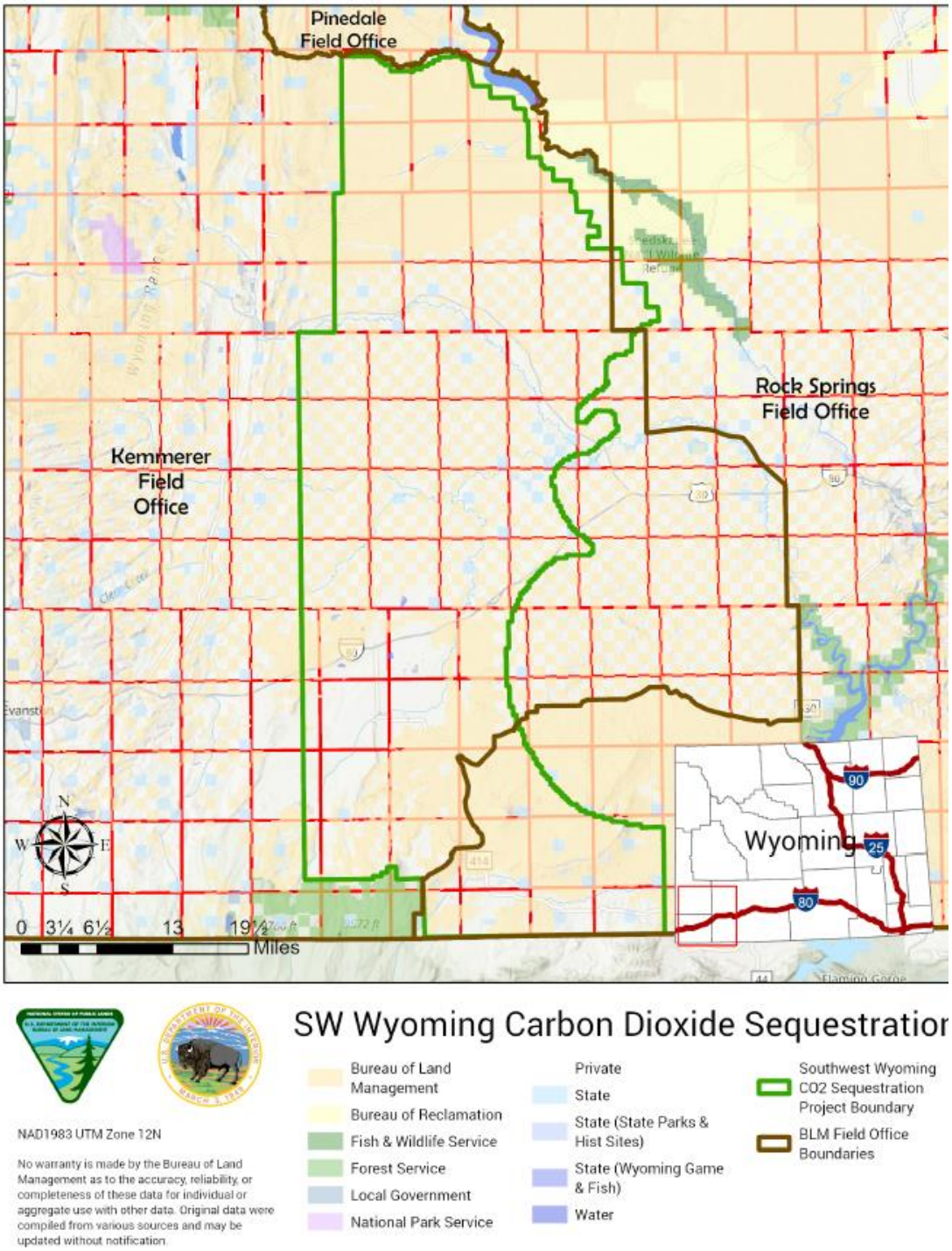
[1] The BLM has issued policy on the use of ROWs for carbon capture, utilization, and storage projects located on BLM-administered public lands (see BLM Instruction Memorandum 2022-041, "National Policy for the Right-of-Way Authorizations Necessary for Site Characterization, Capture, Transportation, Injection, and Permanent Geologic Sequestration of Carbon Dioxide in Connection with Carbon Sequestration Projects," June 8, 2022). Available at: https://www.blm.gov/policy/im-2022-041

[2] On October 9, 2020, the State of Wyoming was granted primacy by the Environmental Protection Agency to administer the Class VI Underground Injection Control program in Wyoming, other than within Indian lands (see 85 FR 64053-64056, October 9, 2020).

identified in Appendix 4, including a stipulation that would require the ROW grant holder to seek and obtain authorization from the BLM under a Notice to Proceed (NTP) before using the BLM-administered federal pore space (e.g., before beginning injection operations that would result in the CO_2 plume encroaching upon public lands). The BLM will not issue an NTP until the ROW grant holder obtains an authorization to inject from the Wyoming Department of Environmental Quality's Water Quality Division (WDEQ-WQD) under W.S. § 35-11-313 and a unitization order from the Wyoming Oil and Gas Conservation Commission (WOGCC) under W.S. § 35-11-314 to -317.

Details regarding the construction and operation of the Class VI injection wells (and appurtenant infrastructure) are unknown at this time. The BLM cannot predict with reasonable certainty how many Class VI wells will be constructed, where exactly they will be constructed, or the timing and duration of associated operations. To the extent additional BLM authorizations are necessary to allow for use of the BLM-administered federal pore space, the BLM will ensure NEPA compliance by screening the actions in accordance with the applicable regulations & BLM policies and providing for future public participation.

While the use of Class VI wells for permanent geologic sequestration is relatively new in Wyoming, operations involving the subsurface injection of CO_2 to deep geologic formations is not novel, and the nature of operations is expected to be similar to oil & gas exploration and production operations in many regards, particularly those associated with injection of CO_2 for enhanced oil recovery (EOR).



Map 1 – Proposed Action Area

Alternatives Considered but not Analyzed in Detail

Moxa Carbon conducted a geologic study encompassing the Rock Springs Uplift, Hanna Basin and sequestration sites near Wamsutter. The study indicated that neither of these sites could hold

the CO_2 volumes they anticipated sequestering. Internal and External scoping did not identify an alternate proposed location.

2.1 Conformance

The Proposed Action would be required to comply with all applicable federal, state, and local laws, plans, and permits required for this type of activity. This Proposed Action is subject to the following land use plans:

- The Green River Resource Management Plan and Record of Decision (GRRMP; 1997), as amended, and 43 CFR 1610.5.
    - The Proposed Action is in conformance with the applicable LUP because it is specifically provided for in the following LUP decision(s): Page 9 of the GRRMP/ROD: *"The objectives for the management of the land and realty program are to: 1) manage the public lands to support the goals and objectives of other resource programs; 2) respond to public demand for land use authorizations; and 3) acquire administrative and public access where necessary."*
    - In February 2011, the BLM published an NOI in the Federal Register to revise the Green River RMP as the Rock Springs RMP. Since this revision is ongoing, conformance is assessed against the existing Green River Approved RMP and ROD (1997). Management decisions in the pending Rock Springs RMP and ROD could affect development within the project area in the future.
- The Final Environmental Impact Statements (FEIS) for the KFO Planning Area (August 2008; BLM 2008a) and the Kemmerer Resource Management Plan/Record of Decision (KRMP/ROD) approved on May 24, 2010 (BLM 2010a).
    - The Proposed Action is in conformance with the RMP as amended and the land use direction pertaining to Land Resources (LR); Goal LR: 3; Manage public lands to meet access and (or) right-of-way needs. The site-specific analysis in this EA tiers to and incorporates by reference the information and analysis contained in these documents.
- Record of Decision and Approved Resource Management Plan Amendments for the Rocky Mountain Region including the Greater Sage-Grouse Sub-Regions of: Lewiston, North Dakota, Northwest Colorado and Wyoming and the Approved Resource Management Plans for Billings, Buffalo, Cody, HiLine, Miles City, Pompeys Pillar National Monument, South Dakota and Worland (Approved: September 21, 2015) (ARMPA) (2015a)
    - In November 2021, the BLM published an NOI in the Federal Register to amend land use plans regarding Greater Sage-grouse conservation in a number of Western states, including Wyoming. Since this RMP amendment is ongoing, conformance is assessed against the existing 2015 ARMPA. Management decisions in the pending 2021 Greater Sage-grouse Land Use Plan Amendments EIS and ROD could affect development within the project area in the future.

Due to the project being located in multiple field offices, RMP decisions will apply to the portions of the project within its planning area.

Relationship to Statutes, Regulations, and other Applicable Plans

- American Indian Religious Freedom Act – 42 USC § 1996
- Archaeological Resources Protection Act - 16 USC § 470aa et seq.
- Clean Air Act – 42 U.S.C. § 7401, et seq.
- Clean Water Act - 33 U.S.C. § 1251 et seq.
- Endangered Species Act (ESA) - 16 U.S.C. § 1531 et seq.
- Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761)
- Migratory Bird Treaty Act (16 U.S.C. § 703-7120) (MBTA).
- National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. § 4321 et seq.
- National Historic Preservation Act (NHPA, Section 106) Title 54 U.S.C. § 306108
- Native American Graves Protection and Repatriation Act - 25 USC § 3001

3.0 Affected Environment/Environmental Effects

This chapter describes the existing environment that would be affected by the No Action Alternative or the Proposed Action and discloses the potential impacts of these alternatives. Resources which are not present or are not affected by the Proposed Action or alternatives, as determined during internal scoping, are documented on the IDT checklist (Appendix 1) and resource issues carried forward are identified in Section 1.2. The elimination of non-relevant resources is consistent with 40 CFR 1500.4.

The Environmental Consequences (direct/indirect effects analysis) sections of this chapter disclose the impacts that the Proposed Action and No Action Alternatives are likely to have when considered in the context of impacts associated with past, present, and reasonably foreseeable future actions that have occurred, or are likely to occur, in the project area.

Reasonably foreseeable future actions (RFFAs) include those actions for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends. The only actions for the project area, which are highly probable, are continued livestock grazing, range improvement projects and recreation. There are no proposals for new infrastructure at this time.

The issuance of a pore space ROW grant would not authorize actual injection operations (which are subject to approval by the State of Wyoming, the delegated authority to administer the Class VI UIC program in Wyoming) and would not authorize surface-disturbing activities (which would require additional authorization by the BLM if located on BLM-administered public lands). The BLM cannot reasonably determine at the pore space ROW stage: whether actual

injection operations to use the pore space will eventually be proposed and authorized, or the exact location and nature of such operations. As a result, this EA discloses the general effects and potential mitigation that could be applied by the BLM, acknowledging that actual injection operations (if proposed and authorized) would result in potential effects to the resources described below. Disclosing the anticipated impacts of issuing a pore space ROW grant (even the uncertain future effects associated with potential injection operations), serves NEPA's twin aims to ensure that agencies consider the environmental consequences of proposed actions and inform the public about agency decision making. Additional NEPA compliance documentation will be completed by the BLM (including public participation) once additional, related proposals for use of public lands are submitted to the BLM.

3.1 Greater Sage-Grouse General Habitat

Issue Statement: How would Greater Sage-grouse general habitat management areas be impacted by the proposal?

Affected Environment

Greater Sage-grouse are considered a sensitive species by the BLM. One of the primary management strategies for conservation of Greater Sage-grouse is the designation and protection of habitat considered important to the long-term success of sage-grouse management (BLM 2015a).

The Proposed Action occurs within mapped Wyoming Greater Sage-grouse General Habitat Management Area (GHMA; Map 3.1). GHMA is defined as lands likely to be occupied outside of Priority Habitat Management Area (PHMA) where some special management would apply to sustain greater sage-grouse populations (BLM 2015a). There is a total of 704,057 acres of GHMA habitat in the project area (including Federal, Private and State of Wyoming Lands).

Additionally, greater sage-grouse congregate for courtship and breeding annually in specific areas known as leks. A total of 51 occupied leks (21 in GHMA) are located within the project area and a total of 171,413 acres of the project area is located within a two-mile seasonal nesting buffer in GHMA (Map 3.1).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project related disturbance would occur. Greater Sage-grouse general habitat management areas would not be impacted.

Proposed Action

Impacts to Greater Sage-grouse are generally caused by removal and fragmentation of sagebrush habitats associated with roads and infrastructure. If surface disturbance or disruptive activities were to occur, project activities would directly impact designated Greater Sage-grouse GHMA within the project area. There is a total of 171,413 acres of GHMA designated nesting habitat within the project area. Research indicates that Greater Sage-grouse hens also avoid nesting in

developed areas. Any development associated with the project would adversely impact nesting habitat, both through direct loss and avoidance of the area by Greater sage-grouse.

Cumulative Impacts

The cumulative impact analysis area (CIAA) for Greater Sage-grouse GHMA include all GHMA within a 4-mile buffer of the project area (954,491 acres). There is a total of 63 leks within the CIAA. Cumulative impacts to Greater-Sage grouse would be similar to those described under the Proposed Action. There are currently 143,972 acres of disturbance within the project area. Existing uses include grazing, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, it would result in additional cumulative impacts to Greater Sage-grouse GHMA.

Mitigation Measures/Conditions of Approval

Surface occupancy and surface disturbing activities would be prohibited or restricted within a 0.25-mile radius of the perimeter of occupied sage-grouse leks within GHMA.

Avoid human activity between 8pm and 8 am from March 1 to May 15 within 0.25 miles of the perimeter of occupied greater sage-grouse leks.

Surface disturbing and/or disruptive activities would be prohibited from March 15 to June 30 to protect sage-grouse nesting and early brood rearing habitats within 2 miles of the perimeter of any occupied lek within GHMA.

3.2 Greater Sage-Grouse Priority Habitat

Issue Statement: How would Greater Sage-grouse priority habitat management areas be impacted by the proposal?

Affected Environment

Greater Sage-grouse are considered a sensitive species by the BLM. One of the primary management strategies for conservation of Greater Sage-grouse is the designation and protection of habitat considered important to the long-term success of sage-grouse management.

The Proposed Action occurs within mapped Wyoming Greater Sage-grouse priority habitat management area (PHMA; Map 3.2). PHMA is defined as having the highest value to maintaining sustainable Greater Sage-grouse populations. These areas include breeding, late brood-rearing, winter concentration areas, and migration or connectivity corridors (BLM 2015a). A total of 340,790 acres of PHMA occurs within the project area.

Additionally, Greater Sage-grouse congregate for courtship and breeding annually in specific areas known as leks. A total of 51 occupied leks (30 leks PHMA) are located within the project area (Map 3.2).

Environmental Consequences (direct/indirect effects)

No Action
Under the No Action Alternative, the project would not be permitted therefore no project related disturbance would occur on public lands. Greater Sage-grouse PHMA would not be impacted.

Proposed Action
Impacts to Greater Sage-grouse are generally caused by removal and fragmentation of sagebrush habitats associated with roads and infrastructure. If surface disturbance or disruptive activities were to occur, project activities would directly impact greater sage grouse PHMA. There is a total of 340,790 acres of PHMA within the project area. Research indicates that Greater Sage-grouse hens also avoid nesting in developed areas. Any development associated with the project would adversely impact nesting habitat, both through direct loss and avoidance of the area by Greater Sage-grouse. Surface disturbance or disruptions within a PHMA would be subject to density and disturbance thresholds as outlined in the Approved Resource Management Plan Amendment (ARPMA; BLM 2015a).

Cumulative Impacts
The CIAA for Greater Sage-grouse PHMA includes all PHMA within an 11-mile buffer of the project area (711,207 acres) based on Connelly et al., 2000. There is a total of 68 leks within the CIAA. Cumulative impacts to Greater-Sage grouse would be similar to those described under the Proposed Action. There are currently 43,972 acres of disturbance within the project area. Existing uses include grazing, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to Greater Sage-grouse PHMA.

Mitigation Measures/Conditions of Approval
Construction activity and surface disturbance would be prohibited during the periods of March 15 – June 30 for the protection of Greater Sage-grouse PHMA habitat. Any exceptions to this requirement must have prior written approval from the authorized officer.

Surface disturbing and disruptive activities would be restricted to 1 disturbance per 640-acre average or less than 5% disturbance in PHMA.

Surface occupancy and surface disturbing activities would be prohibited or restricted within a 0.6-mile radius of the perimeter of occupied sage-grouse leks within PHMA.

Avoid human activity between 8pm and 8 am from March 1 to May 15 within 0.25 miles of the perimeter of occupied greater sage-grouse leks.

3.3 Big Game Crucial Winter Range Habitat
Issue Statement: How would crucial winter range habitat be impacted for deer, moose, pronghorn, and elk by the proposal?

Affected Environment

Big game species that occur in the project area include Rocky Mountain elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and moose (*Alces alces*).

The proposed project occurs within designated crucial winter range (CWR) for all big game species (Map 3.3.1 Elk, Map 3.3.2 Mule Deer, Map 3.3.3 Moose, Map 3.3.4 Pronghorn). CWR are areas where a wildlife species is confined during periods of heavy snow cover or are portions of year-round range that provide crucial forage and/ or cover during severe winter conditions.

Elk

There are two Wyoming Game and Fish Department (WGFD) designated elk herd units within the project area including the Uinta and West Green River herds. The Uinta herd has been below population management objectives for seven years and the West Green River herd is currently within the population management objectives (WGFD 2021b). There is a total of 121,587 acres of elk CWR within the project boundary.

Mule Deer

There are two WGFD designated mule herd units within the project area including the Wyoming Range and Uinta herds. The Wyoming Range herd has been below population management objectives for six years and the Uinta herd is also below the population management objectives (WGFD 2021b). There is a total of 144,031 acres of mule deer CWR within the project boundary.

Pronghorn

There are three WGFD designated pronghorn herd units within the project area including the Sublette, Carter Lease, and Uinta-Cedar Mountain pronghorn herd. The Sublette herd has been below population management objectives for 11 years, the Carter Lease is above population objective, and the Uinta-Cedar Mountain herd is above the population management objectives (WGFD 2021b). There is a total of 306,383 acres of pronghorn CWR within the project boundary.

Moose

There are two WGFD designated moose herd units within the project area including the Lincoln and Uinta moose herds. The Lincoln herd has been below population management objectives for six years and there is no population objective for the Uinta herd as it is considered a limited opportunity type objective (WGFD 2021b). There is a total of 29,037 acres of moose CWR within the project boundary.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Impacts to big game CWR from the project would not occur.

Proposed Action
If surface disturbance or disruptive activities were to occur, project activities would directly impact elk, mule deer, moose and pronghorn CWR as these habitats occupy portions of the project area. Big game species would be temporarily displaced by any construction activities that occur during sensitive time periods in CWR. Disruptive activities during winter months can reduce the chances of big game survival and potentially impact big game populations. Additionally, if construction of infrastructure occurred, there would be a direct loss of habitat within designated CWR. Areas of overlapping big game CWR are of greater importance because they provide crucial habitat for more than one species of big game. The impacts of habitat loss within overlapping CWRs would be greater than in non-overlapping areas. Timing restrictions that prohibit surface disturbing and disruptive activities during winter months can reduce these impacts. Impact thresholds identified for each species below are based on acreages of disturbance that correspond to "moderate," "high," and "extreme" impacts to big game habitat effectiveness as identified by the Wyoming Game and Fish Department (WGFD 2010b).

Elk
Existing disturbance in elk CWR averages 27 acres of disturbance per square mile within the project boundary and would be classified as a high level of impact (WGFD 2010b). High impacts are defined as more difficult or at times impossible to effectively mitigate within the project area. The impact can be reduced, but probably not eliminated through seasonal use restrictions and more intensive management (WGFD 2010b). If surface disturbance or disruptive activities were to occur, project activities would directly impact elk CWR and add additional impacts to an area of high disturbance.

Mule Deer
Impacts to mule deer CWR would be similar to all big game species as described above. Existing disturbance in mule deer CWR averages 15 acres of disturbance per square mile within the project boundary and would be classified as a moderate level of impact (WGFD 2010b). Moderate impacts are defined as an impairment of habitat function becomes discernable – however the impact can be significantly reduced or eliminated through seasonal use restrictions (WGFD 2010b). If surface disturbance or disruptive activities were to occur, project activities would directly impact mule deer CWR and add additional impacts to an area of moderate disturbance.

Pronghorn
Impacts to pronghorn CWR would be similar to all big game species as described above. Existing disturbance in pronghorn CWR averages 60 acres of disturbance per square mile within the project boundary and would be classified as a high level of impact (WGFD 2010b). High impacts are defined as more difficult or at times impossible to effectively mitigate within the project area. The impact can be reduced, but probably not eliminated through seasonal use restrictions and more intensive management (WGFD 2010b). If surface disturbance or disruptive activities were to occur, project activities would directly impact pronghorn CWR and add additional impacts to an area of high disturbance.

Moose

Impacts to moose CWR would be similar to all big game species as described above. Existing disturbance in moose CWR averages 27 acres of disturbance per square mile within the project boundary and would be classified as a high level of impact (WGFD 2010b). High impacts are defined as more difficult or at times impossible to effectively mitigate within the project area. The impact can be reduced, but probably not eliminated through seasonal use restrictions and more intensive management (WGFD 2010b). If surface disturbance or disruptive activities were to occur, project activities would directly impact moose CWR and add additional impacts to an area of high disturbance.

Cumulative Impacts

Elk

The CIAA for elk is the two designated elk crucial winter range polygons that intersect the project area (266,407 acres). Crucial winter range is a habitat component that is the determining factor in a population's ability to maintain itself at a certain level. These two polygons within the CIAA provide a crucial habitat component for four elk herd units. Existing land use activities in the CIAA include grazing, oil and gas production, and recreation activities. There are currently 21,370 acres of disturbance within the CIAA. Cumulative impacts to elk would be similar to those described under the Proposed Action. Elk crucial winter range within the CIAA boundary is considered to be at a high level. High impacts are defined as more difficult or at times impossible to effectively mitigate. The impact can be reduced, but probably not eliminated through seasonal use restrictions and more intensive management (WGFD 2010b). If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, it could result in additional cumulative impacts to elk. To minimize impacts to elk crucial winter range a seasonal timing restriction would be placed on surface disturbing and disruptive activities within designated CWR.

Mule Deer

The CIAA for mule deer is the two designated mule deer crucial winter range polygons that intersect the project area (291,284 acres). Crucial winter range is a habitat component that is the determining factor in a population's ability to maintain itself at a certain level. These two polygons within the CIAA provide a crucial habitat component for five deer herd units Existing land use activities include grazing, oil and gas production, and recreation activities. There are currently 32,651 acres of disturbance within the CIAA. Cumulative impacts to mule deer would be similar to those described under the Proposed Action. Mule Deer CWR within the CIAA boundary is classified as moderately impacted. Moderate impacts are defined as an impairment of habitat function becomes discernable – however the impact can be significantly reduced or eliminated through seasonal use restrictions (WGFD 2010b). If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to mule deer. To minimize impacts to mule deer crucial winter range a seasonal timing restriction would be placed on surface disturbing and disruptive activities within designated CWR.

Pronghorn

The CIAA for pronghorn is all delineated pronghorn CWR polygons within the project area and all CWR for the three pronghorn herd units outside the project boundary, east to the Green River (726,537 acres). Crucial winter range is a habitat component that is the determining factor in a population's ability to maintain itself at a certain level. Existing land use activities include grazing, oil and gas production, mining and recreation activities. There are currently 57,785 acres of disturbance and existing uses within the CIAA. Cumulative impacts to pronghorn would be similar to those described under the Proposed Action. Pronghorn CWR within the CIAA boundary is classified as moderately impacted. Moderate impacts are defined as an impairment of habitat function becomes discernable – however the impact can be significantly reduced or eliminated through seasonal use restrictions (WGFD 2010b). If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to pronghorn. To minimize impacts to pronghorn crucial winter range a seasonal timing restriction would be placed on surface disturbing and disruptive activities within designated CWR.

Moose

The CIAA for moose is all of the designated moose crucial winter range polygons that intersect the project area (85,681 acres). Crucial winter range is a habitat component that is the determining factor in a population's ability to maintain itself at a certain level. Existing land use activities include grazing, oil and gas production, and recreation activities. There are currently 42,282 acres of disturbance within the CIAA. Cumulative impacts to moose would be similar to those described under the Proposed Action. Moose crucial winter range within the CIAA boundary is considered to be at a high level. High impacts are defined as more difficult or at times impossible to effectively mitigate. The impact can be reduced, but probably not eliminated through seasonal use restrictions and more intensive management (WGFD 2010b). If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to moose. To minimize impacts to moose crucial winter range a seasonal timing restriction would be placed on surface disturbing and disruptive activities within designated CWR.

Mitigation Measures/Conditions of Approval

Construction activity and surface disturbance would be prohibited during the periods of November 15 – April 30 for the protection of big game crucial winter range habitat. Any exceptions to this requirement must have prior written approval from the authorized officer.

3.4 Elk Parturition Habitat

Issue Statement: How would elk parturition habitat be impacted by the proposal?

Affected Environment

The proposed project area occurs within multiple seasonal habitats utilized by Rocky Mountain elk (*Cervus canadensis*). The southern portion of the proposed project area contains 15,867 acres of designated parturition habitat (Map 3.4). Parturition habitats are documented birthing areas which includes calving areas, fawning areas, and lambing grounds. Parturition areas may

be used as nurseries by multiple big game species (The Wyoming Chapter of the Wildlife Society 2007).

There are two WGFD designated elk herd units within the project area including the Uinta and West Green River herds. The Uinta herd has been below population management objectives for seven years and the West Green River herd is currently within the population management objectives (WGFD 2021b). Designated parturition habitat within the project area is completely within the Uinta elk herd management unit.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Designated elk parturition habitat would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact designated elk parturition areas as they occupy portions of the project area. Noise and human disturbance during construction activities are likely to disturb and displace elk within designated parturition areas in and adjacent to the proposed project area. Additionally, any construction of infrastructure would result in direct loss of habitat within designated parturition areas. To protect big game birthing habitat, surface disturbing and disruptive activities will be prohibited from May 1 to June 30 within designated/mapped parturition range (Map 3.4; BLM 2008, BLM 1997).

Cumulative Impacts

The CIAA is the entire designated parturition habitat within the Uinta elk herd management area (76,819 acres). The designated elk parturition is the only designated parturition area for elk herds that occur within the project area. Existing uses within the project area includes grazing, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to designated elk parturition.

Mitigation Measures/Conditions of Approval

Construction activity and surface disturbance would be prohibited during the periods of May 1-June 30 to protect elk parturition. Any exceptions to this requirement must have prior written approval from the authorized officer.

3.5 Raptor Nesting

Issue Statement: How would raptor nesting be impacted by the proposal?

Affected Environment

Raptors include eagles, hawks, owls, falcons, and vultures. Nesting sites for these species include cliffs, trees and shrubs, cavities, rock outcrops, ground substrate, and man-made structures. Most

species build substantial stick nests and many re-use the same or alternate nests within their territory. There are 437 nest locations consisting of 10 species of raptors within the project area (Table 1 and Map 3.5). BLM Wyoming sensitive species (burrowing owl, Ferruginous hawk, and golden eagle) are discussed in more detail below.

Burrowing Owl

Burrowing owls (*Athene cunicularia*) are listed as a BLM Wyoming sensitive species. This species occurs throughout Wyoming and requires short-grass habitats, open areas within grasslands, desert, and shrub-steppes (BLM 2010e). Nesting sites are correlated heavily with prairie dog colonies (WGFD 2006b, McDonald et al. 2004f). Burrowing owls prey on insects and small mammals primarily during daylight hours. Due to the widespread eradication of prairie dogs and land-use changes, this species is declining throughout the western United States.

Ferruginous Hawk

The ferruginous hawk (*Buteo regalis*) occurs in arid and open grassland, shrub steppe, and desert habitats in western North America. Wintering occurs in grasslands in the southwestern U.S. and northern Mexico. This raptor is a prairie dog specialist that also preys on other small mammals, birds, reptiles, and large invertebrates (Travsky and Beauvais 2023e). Ferruginous hawks are listed as a BLM Wyoming sensitive species because population status and trends are unknown, they are experiencing ongoing loss of habitat, and are sensitive to human disturbance. Suitable habitat and nesting substrate required by ferruginous hawks is ubiquitous in the area.

Golden eagle

Golden eagles (*Aquila chrysaetos*) are listed as a BLM Wyoming sensitive species and are year-round residents in Wyoming (BLM 2010e). The average territory size is approximately 20 to 55 square miles with a breeding season that typically begins in early spring (Palmer 1988b). The species primarily preys on small mammals, but may eat a variety of other prey, including carrion. Golden eagles are sensitive to extensive human activity around nest sites and are threatened by loss of nesting habitat to industrial development, powerline mortalities, and other factors (Nicholoff 2003d). Suitable habitat and nesting substrate required by golden eagles is present throughout the project area.

Table 1 - Raptor nests by species within project area.

Raptor Nests		
Common Name	**Scientific Name**	**Number of Nests**
American Kestrel	*Falco sparverius*	3
Burrowing Owl *	*Athene cunicularia*	24
Ferruginous Hawk*	*Buteo regalis*	63
Golden Eagle*	*Aquila chrysaetos*	72
Great Horned Owl	*Bubo virginianus*	3
Northern Harrier	*Circus hudsonius*	2
Osprey	*Pandion haliaetus*	3

Prairie Falcon	*Falco mexicanus*	9
Red-tailed Hawk	*Buteo jamaicensis*	15
Swainson's Hawk	*Buteo swainsoni*	4
Unknown	N/A	239

* BLM Wyoming sensitive species

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Raptor nesting and associated habitats would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact raptor nesting habitat areas that occupy portions of the project area. Habitat loss, degradation, and fragmentation are widely accepted causes contributing to raptor population declines worldwide (Newton 2010c). Availability of nests and food supply are considered limiting factors for raptor populations (Temple 1986 and Watson and Langslow 1989). Raptors compensate for the loss of foraging and nesting habitat by abandoning established territories and/or attempting to utilize less productive or already occupied territories (Nelson 1979, Newton 2010c). Human activities near active raptor nests may interfere with nest productivity. If disruptive activities occur during nesting, they could be sufficient to cause adult birds to remain away from the nest and their chicks for the duration of the activities. This absence can lead to overheating or chilling of eggs or chicks and can result in egg or chick mortality.

To reduce impacts described above, there are two management buffers placed on existing raptor nest outlined in the Green River and Kemmerer Resource Management Plans (BLM 1997 and 2008a). The prohibition on surface occupancy is required within 250 to 600 meters of the nest, depending on the raptor species (Table 2). For a ROW involving surface disturbing activities, the BLM would prohibit surface occupancy within areas identified in the RMP as no surface occupancy. The second buffer is a seasonal timing restriction. This restriction is a timing limitation during the breeding season around active raptor nests to reduce the risk of decreased productivity or nest failure. Seasonal restrictions are species specific and range from 0.75 to 1 mile (Table 2).

Cumulative Impacts

The CIAA for raptors is a one-mile buffer of the project area (1,164,807 acres). A one-mile buffer was selected as the CIAA and corresponds to the larges protective nesting buffer and includes all nest outside the project area that may be impacted. There is a total of 439 raptor nests within the CIAA. Cumulative impacts to raptors would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation

activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to nesting raptors. To minimize impacts to raptors, a species-specific seasonal timing restriction and surface occupancy prohibition buffer would be placed on all nests that occur in the project area (Table 2) for any BLM-authorized surface disturbing or disruptive activities.

Mitigation Measures/Conditions of Approval
Construction activity and surface disturbance would be prohibited during the periods of February 1 – July 31 for the protection of nesting raptors. Any exceptions to this requirement must have prior written approval from the authorized officer.

Construction activity and surface disturbance would be prohibited during the periods of April 1 – September 10 for the protection of burrowing owls. Any exceptions to this requirement must have prior written approval from the authorized officer.

Table 2 - Species specific raptor buffers

Raptor Nests			
Common Name	**Scientific Name**	**Surface Occupancy Prohibition (Meters)**	**Seasonal Timing Restriction (Miles)**
American Kestrel	*Falco sparverius*	250	0.75
Burrowing Owl *	*Athene cunicularia*	250	0.75
Ferruginous Hawk*	*Buteo regalis*	400	1
Golden Eagle*	*Aquila chrysaetos*	600	0.75
Great Horned Owl	*Bubo virginianus*	250	0.75
Northern Harrier	*Circus hudsonius*	250	0.75
Osprey	*Pandion haliaetus*	250	0.75
Prairie Falcon	*Falco mexicanus*	250	0.75
Red-tailed Hawk	*Buteo jamaicensis*	250	0.75
Swainson's Hawk	*Buteo swainsoni*	250	0.75
Other Raptors	n/a	250	0.75

3.6 Pygmy Rabbit

Issue Statement: How would pygmy rabbit be impacted by the proposal?

Affected Environment

Pygmy rabbit (*Sylvilagus idahoensis*) is a BLM sensitive species that is distributed throughout the sagebrush steppe of southwestern Wyoming (BLM 2010e, WGFD 2017a). This species is found in areas with tall, dense stands of sagebrush (*Artemisia* spp.) and require deep, loose soils

to develop burrows for shelter and breeding (WGFD 2018). Observations occur throughout the entire project area with mapped burrows concentrated in the northern portion of the project area. Mapping efforts were a result of surveys associated with previous projects, while observation data came from both past project surveys and Wyoming Natural Diversity Database WYNDD data. A total of 1,137 acres of pygmy rabbit burrows have been mapped and WYNDD distribution models place approximately 918,465 acres of pygmy rabbit habitat within the project boundary (Map 3.6).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Pygmy rabbits and associated habitats would not be impacted.

Proposed Action

Impacts to pygmy rabbit typically occur from conversion of shrub-steppe to other uses (i.e., energy development) causing habitat fragmentation (Keinath and McGee 2004). If surface disturbance or disruptive activities were to occur, project activities would directly impact pygmy rabbit habitat areas as they occupy portions of the project area. Noise and human disturbance during construction activities are likely to disturb and displace pygmy rabbit that occur within and adjacent to the proposed project area. Additionally, any construction of infrastructure would result in direct loss of habitat or burrows. To protect pygmy rabbit populations and habitat, avoid surface disturbing activities in occupied pygmy rabbit habitats. Pre-construction surveys would be conducted to determine presence/ absence of pygmy rabbit outside of known occupied areas (See Map; BLM ARMPA 2015a, BLM 1997). To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied pygmy rabbit habitat.

Cumulative Impacts

The CIAA for pygmy rabbit is a 1-mile buffer of the project boundary (1,164,807 acres). This species is a non-migratory animal, The CIAA was selected was selected to ensure that impacts to home ranges on the edge of the project boundary would be analyzed. Cumulative impacts to pygmy rabbits would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to pygmy rabbit habitat.

Mitigation Measures/Conditions of Approval

Pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied pygmy rabbit habitat.

3.7 White-tailed Prairie Dogs

Issue Statement: How would white-tailed prairie dogs be impacted by the proposal?

Affected Environment

White-tailed prairie dog (*Cynomys leucurus*) is a BLM sensitive species that is distributed in the western and the central parts of Wyoming, mostly in areas dominated by sagebrush (BLM 2010e, WGFD 2005e). White-tailed prairie dog colonies are found in areas with open plant communities and requires deep and well-drained soils in which to develop burrow systems. Mapped colonies are concentrated in the northern portion of the project area because of survey efforts associated with previous energy development projects. However, white-tailed prairie dogs occur through the entire project area. A total of 139,140 acres prairie dog colonies has been mapped within the project area (Map 3.7).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. White-tailed prairie dogs and associated habitats would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact white-tailed prairie dog colonies as they occur throughout the project area. If surface disturbance or disruptive activities were to occur, project activities would directly impact white-tailed prairie dog habitat. There is a total of 139,140 acres of mapped prairie dog colonies and any construction of infrastructure would result in direct loss of habitat or burrows.
Pre-construction surveys would be conducted to determine presence/ absence of white-tailed prairie dogs outside of known occupied areas (See Map; BLM ARMPA 2015a, BLM 1997). To reduce impacts described above, surface disturbance and disruptive activities in occupied white-tailed prairie dog colonies or complexes of 200 acres or greater would be prohibited.

Cumulative Impacts

The CIAA for white-tailed prairie dogs is a 1-mile buffer of the project area (1,164,807 acres). This species is a non-migratory animal, and the CIAA was selected was selected to ensure that impacts to home ranges on the edge of the project boundary would be analyzed. There is a total of 234,382 acres of mapped prairie dog colonies within the CIAA. Cumulative impacts to white-tailed prairie dogs would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the project area. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, it could result in additional cumulative impacts to white-tailed prairie dog. To minimize impacts to white-tailed prairie dogs, surface disturbance would be prohibited in colonies or complexes of 200 acres or greater.

Mitigation Measures/Conditions of Approval

To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied white-tailed prairie dog habitat. Surface disturbance and disruptive activities in occupied white-tailed prairie dog colonies or complexes of 200 acres or greater would be prohibited.

3.8 Idaho Pocket Gopher

Issue Statement: How would Idaho pocket gopher be impacted by the proposal?

Affected Environment

Idaho pocket gopher (*Thomomys idahoensis*) is a BLM sensitive species that is distributed throughout southwestern Wyoming (BLM 2010e). This species preferentially inhabits mountain foothill and sagebrush shrublands but can occur in a variety of habitats, including ponderosa pine (*Pinus ponderosa*), grasslands, shrub-steppe, subalpine meadows, and areas with shallow, rocky soils (Abernethy et al 2016a, WGFD 2017a). One WYNDD observation of Idaho pocket gopher is in the southernmost portion of the project area, but a total of 357,758 acres of Idaho pocket gopher WYNDD modeled habitat is within the project area (Map 3.8).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Idaho pocket gophers and associated habitats would not be impacted.

Proposed Action

Impacts to Idaho pocket gophers are generally from soil disturbance and compaction associated with energy development activities including increased road development (Beauvais and Dark-Smiley 2005a). If surface disturbance or disruptive activities were to occur, project activities would directly impact Idaho pocket gopher habitat as they occupy portions of the project area. Noise and human disturbance during construction activities are likely to disturb and displace Idaho pocket gopher that occur within and adjacent to the proposed project area. Additionally, any construction of infrastructure would result in direct loss of habitat. To protect Idaho pocket gopher populations and habitat, avoid surface disturbing activities in occupied Idaho pocket gopher habitats. Pre-construction surveys would be conducted to determine presence/ absence of Idaho pocket gopher outside of known occupied areas (Map 3.8; BLM ARMPA 2015a, BLM 1997).

Cumulative Impacts

The CIAA for Idaho pocket gopher is a 1-mile buffer off modeled distribution (710,294 acres). This species is a non-migratory animal, The CIAA was selected was selected to ensure that impacts to home ranges on the edge of the project boundary would be analyzed There is a total of 357,758 acres of modeled distribution within the CIAA. Cumulative impacts to Idaho pocket gopher would be similar to those described under the Proposed Action. There are currently

143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, it could result in additional cumulative impacts to Idaho pocket gopher habitat.

Mitigation Measures/Conditions of Approval

To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied Idaho pocket gopher habitat.

3.9 BLM Sensitive Bats

Issue Statement: How would BLM sensitive bats be impacts by the proposal?

Affected Environment

There are three BLM sensitive species of bats that occur within the project area including Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum),* and long-eared myotis (*Myotis evotis*). In general, population abundance and trend are not well documented in Wyoming. There are no known hibernacula in the project area and bat use is primarily foraging, roosting, and migrating.

Townsend's Big-eared Bat

Townsend's big-eared bat is distributed throughout most of Wyoming but is concentrated in the southeastern and north central portions of the state (Hester and Grenier 2005d). Townsend's big eared bat requires undisturbed roosting structures such as caves or abandoned mines during all seasons and stages of its life cycle. WYNND models indicate 14,724 acres of habitat on the eastern edge of the project area (Map 3.9.1).

Spotted Bat

Spotted bat distribution in Wyoming is not well documented, although according to Clark and Stromberg (Hester and Grenier 2005d) it may be expected to occur throughout the western part of the state. This species occurs in a wide variety of habitats and roosts in cracks and crevices in cliffs and canyons (Hester and Grenier 2005d). Roost sites must be in proximity of foraging and water sources (Luce, 2004b). WYNND models indicate 94,897 acres of habitat on the eastern edge of the project area (Map 3.9.2).

Long-eared Myotis

Long-eared myotis occurs throughout most of Wyoming at elevations between 5,000 and 9,800 ft. This species inhabits primarily coniferous forest and woodland (Hester and Grenier 2005d). Long-eared Myotis uses a wide variety of roosts, including buildings, rock crevices, and hollow trees. Roosts are more likely to be found in proximity of foraging sites and water. WYNND models indicate occurrence of the species throughout the entire project area (605,091 acres; Map 3.9.3).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Bats and associated habitats would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact bat habitat as they occupy portions of the project area. If construction activities occur, it would impact foraging areas and habitat. Any infrastructure associated with the project could lead to direct and indirect mortalities.

Townsend's Big-eared Bat

A total of 14,724 acres of Townsend's big-eared bat habitat occurs on the eastern edge of the project area, which accounts for approximately 1.4 % of the project area. Although all available habitat in the project area could be impacted by implementation. Pre-construction surveys and avoidance of habitat where possible would help reduce impacts to bat species.

Spotted Bat

A total of 94,897 acres of spotted bat habitat occurs within the project area, which accounts for approximately 9.4 % of the project area. Although all available habitat in the project area could be impacted by implementation. Pre-construction surveys and avoidance of habitat where possible, would help minimize impacts to bat species.

Long-eared Myotis

Long eared myotis habitat occurs throughout the entire project area (1,005,797 acres). Although all available habitat in the project area could be impacted by implementation. Pre-construction surveys and avoidance of habitat where possible, would help minimize impacts to bat species.

Cumulative Impacts

The CIAA for BLM sensitive bats is a 1-mile buffer of the project area (1,164,807 acres). There are no known hibernacula or resident populations of bats within the project area. A one- mile buffer is typically recommended for ground-based disturbances. The CIAA was selected to analyze activities that would occur on the edge of the project boundary. The CIAA Cumulative impacts to BLM sensitive bats would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to BLM sensitive bats. All available habitat in the project area could be impacted by implementation.

Mitigation Measures/Conditions of Approval

Pre-construction surveys and avoidance of habitat where possible would help reduce impacts to bat species.

3.10 Migratory Birds

Issue Statement: How would migratory birds be impacted by the proposal?

Affected Environment

Many migratory bird species may be found throughout the project area (USFWS 2023f). Both generalist species that inhabit multiple habitat types and specialist species that are only found in salt desert scrub and sagebrush shrublands occur within the project area. The analysis of impacted to migratory birds is focused on USFWS Bird Species of Conservation Concern (BCC) for region 12 (USFWS 2021a), Wyoming Partners in Flight (PIF) Priority Species (Ceroviski, et al 2001a), and Wyoming Species of Greatest Conservation Need (SGCN) (WYGFD 2017a). Table 3 summarizes non-raptor migratory bird species that could occur in the project area based on their range and habitat requirements described by WYNDD 2023 and Cornell Lab of Ornithology (Cornell 2022a). Four of these migratory birds are BLM sensitive species (Brewer's sparrow, sagebrush sparrow, loggerhead shrike, sage thrasher. Species listed in Table 3 typically occur in the area during the breeding season (January 15 to September 30); most migrating out of the area for the winter.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Migratory birds would not be impacted.

Proposed Action

Avian migration is a natural phenomenon that occurs as bird species migrate between breeding and wintering grounds and typically occur in Wyoming during late summer through fall and late winter through spring. Direct impacts to migratory birds would occur throughout the entire project area if surface disturbing activities were to occur via removal of habitat and noise disturbance from development activities.

If surface disturbance occurs, mitigation measures or habitat improvement/ development/ reclamation plans would be developed by the proponent in consultation with and to the satisfaction of BLM, the USFWS, and the appropriate state agencies. Mitigation measures may include, but not limited to, seasonal operations in buffer zones around "occupied" nests and other important habitat areas, protection of "active" nests, off or on-site habitat improvement or development, special reclamation measures, or other appropriate measures for long-term nest or habitat protection (BLM 1997).

Table 3 - Summary of Migratory Birds of Conservation Concern and Eagles

Species	Status	Seasonal Use	Density/KM^2 within Project Area (2022)	Suitable Habitat in Wildlife Analysis Area

BLM Sensitive Species				
Brewers Sparrow (*Spizella breweri*)	PIF Priority; SGCN; BLM Sensitive	Breeding	59.83	Scrub/shrublands
Loggerhead Shrike (*Lanius ludovicianus*)	PIF Priority; SGCN; BLM Sensitive	Breeding	0.86	Open woodlands, grasslands, desert scrublands
Sagebrush Sparrow (*Artemisiospiza nevadensis*)	PIF Priority; SGCN; BLM Sensitive	Breeding	20.03	Scrub/shrublands
Sage Thrasher (*Oreoscoptes montanus*)	PIF Priority; SGCN; BLM Sensitive	Breeding	7.39	Scrub/shrublands

Species of Greatest Conservation Concern / Birds of Conservation Concern				
Black Rosy-finch (*Leucosticte atrata*)	BCC	Breeding	Unknown	Cliffs and tundra
California Gull (Larus californicus)	BCC	Breeding	Unknown	Lakes, ponds, and rivers
Cassin's Finch (*Carpodacus cassinii*)	BCC	Breeding	Unknown	Coniferous, mixed forests, and aspen
Clark's Nutcracker (*Nucifraga columbiana*)	BCC	Breeding	0.3	Coniferous and mixed forests
Common nighthawk *(Chordeiles minor)*	SGCN	Breeding	0.64	Scrub/shrublands
Evening Grosbeak (*Coccothraustes vespertinus*)	BCC	Breeding	Unknown	Coniferous and mixed forests
Franklin's Gull (*Leucophaeus pipixcan*)	BCC	Breeding	Unknown	Lakes and ponds
Lesser Yellowlegs (*Tringa flavipes*)	BCC	Breeding	Unknown	Marshes, mudflats, shores, ponds; open boreal woods
Lewis's Woodpecker (*Melanerpes lewis*)	BCC	Breeding	Unknown	Mixed forest, Cottonwoods, open woodlands
Olive-sided Flycatcher (*Contopus cooperi*)	BCC	Breeding	Unknown	Mixed forest edges; open woodlands
Pinyon Jay (*Gymnorhinus cyanocephalus*)	BCC	Breeding	0.06	Juniper woodlands, scrub/shrublands, open woodlands
Rufous Hummingbird (*Selasphorus rufus*)	BCC	Breeding	Unknown	Scrub/shrublands, open woodlands
Vesper sparrow *(Pooecetes gramineus)*	PIF Priority	Breeding	9.97	Scrub/shrublands
Virginia's Warbler (*Vermivora virginiae*)	BCC	Breeding	Unknown	Juniper woodlands, open woodlands
Western Grebe (*Aechmophorus occidentalis*)	BCC	Breeding	Unknown	Lakes and ponds
Willet (*Tringa semipalmata*)	BCC	Breeding	Unknown	Marshes, wet meadows, mudflats, shorelines

Non-sensitive Migratory Birds

American crow *(Corvus brahcyrhynchos)*	Least Concern	Year-round	0.06	Scrub/shrublands
American kestrel *(Falco sparverius)*	Least Concern	Breeding	0.18	Nesting habitat on mesa. Foraging habitat in scrub/shrublands.
American robin *(Turdus mirgratorius)*	Least Concern	Breeding	2.2	Scrub/shrublands
Black-billed magpie (*Pica hudsonia)*	Least Concern	Year-round	0.29	Scrub/shrublands/ forest edges/ riparian areas
Blue-gray gnatcatcher (*Polioptila caerulea)*	Least Concern	Breeding	0.74	Scrub/shrublands
Brewer's blackbird (*Euphagus cyanocephalus)*	Least Concern	Breeding	3.81	Scrub/shrublands/ riparian woodlands
Brown-headed cowbird *(Molothrus ater)*	Least Concern	Breeding	0.67	Scrub/shrublands
Common raven *(Corvus corax)*	Least Concern	Year-round	0.11	Scrub/shrublands
Eastern kingbird (*Tyrannus tyrannus*)	Least Concern	Breeding	0.82	Forest edges/ riparian areas
Gray flycatcher (*Empidonax wrightii*)	Least Concern	Breeding	2.43	Scrub/shrublands/ juniper
Green-tailed towhee *(Pipilo cholorurus)*	Least Concern	Breeding	6.54	Scrub/shrublands
Horned lark *(Eremophila alpestris)*	Least Concern	Breeding	66.93	Scrub/shrublands
Lark sparrow *(Chondestes grammacus)*	Least Concern	Breeding	1.15	Scrub/shrublands
Long-billed curlew *(Numenius americanus)*	Least Concern	Breeding	0.04	Scrub/shrublands/ pastures
Mountain bluebird *(Sialia currucoides)*	Least Concern	Breeding	3.29	Scrub/shrublands
Mourning dove *(Zenaida macroura)*	Least Concern	Breeding	1.16	Scrub/shrublands/ clearings
Northern flicker *(Colaptes auratus)*	Least Concern	Breeding	0.19	Forest edges
Red crossbill *(Lozia curvirostra)*	Least Concern	Breeding	0.31	Montane coniferous forests

Red-winged blackbird *(Agelaius phoeniceus)*	Least Concern	Breeding	0.38	Riparian areas/ pastures
Rock wren *(Salpinctes obsoletus)*	Least Concern	Breeding	3.34	Rock slopes
Say's pheobe *(Sayornis saya)*	Least Concern	Breeding	0.34	Scrub/shrublands
Western meadowlark *(Sturnella neglecta)*	Least Concern	Breeding	1.21	Scrub/shrublands
Western tanager *(Piranga ludoviciana)*	Least Concern	Breeding	0.22	Coniferous forests
White-crowned sparrow *(Zonotrichia leucophrys)*	Least Concern	Breeding	0.92	Forest edges

[1] Data references for density estimates within SW Wyoming CO_2 Sequestration Project: Pavlacky et al. 2017c and Reese et al. 2022c. Density estimates were calculated using the Integrated Monitoring in Bird Conservation Regions (IMBCR) program in coordination with the Birds Conservancy of the Rockies.

[2] BGEPA = protected by Bald and Golden Eagle Protection Act; BCC = Bird of Conservation Concern; MBTA = protected by the Migratory Bird Treaty Act; BCR = Bird Conservation Regions

[3] Species with an unknown density rating were not detected during 2022 Integrated Monitoring in Bird Conservation Regions (IMBCR) surveys. This is likely due to the monitoring protocol used which best targets terrestrial dwelling birds (i.e., songbirds, tree-dwelling birds, and perching birds). It is uncommon for raptors, waterfowl, and nocturnal species to be detected during these surveys. For these species, targeted surveys are necessary to estimate population sizes. Rare species or species that occur in low densities may also not be detected on IMBCR surveys unless a large sampling effort occurs.

Cumulative Impacts

The CIAA for migratory birds is a 1-mile buffer of the project area (1,164,807 acres). A one-mile buffer is typically recommended for ground-based disturbances. The CIAA was selected to analyze activities that would occur on the edge of the project boundary. Cumulative impacts to migratory birds would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, it could result in additional cumulative impacts to migratory birds. All available habitat in the project area could be impacted by implementation.

Mitigation Measures/Conditions of Approval

Pre-construction surveys and avoidance of habitat where possible would help reduce impacts to migratory bird species.

3.11 Mountain Plover

Issue Statement: How would mountain plover be impacted by the proposal?

Affected Environment

Mountain plover (*Charadrius montanus*) is a BLM sensitive species that occurs throughout Wyoming between mid-March to late October migrating outside Wyoming during winter (BLM 2010e). This species occurs in sparsely vegetated desert and prairie habitats utilizing areas grazed by herbivores, such as prairie dogs (*Cynomys* spp.), pronghorn (*Antilocapra americana*), and domestic livestock. In the western periphery of its range, it uses xeric shrubland communities dominated by bare ground with saltbush (*Atriplex* spp.) and sagebrush (*Artemisia* spp.) (Wickens, et al 2015b, WGFD 2017a).

Many observations of mountain plover from past project surveys and WYNDD data occur in the northernmost portion of the project area, but a total of 476,865 acres of mountain plover WYNDD distribution modeled habitat is within the project area (Map 3.11).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Mountain plover and associated habitats would not be impacted.

Proposed Action

Impacts to mountain plover include loss of native habitats, loss of prairie dogs, and habitat fragmentation (Dinsmore 2003c). If surface disturbance or disruptive activities were to occur, project activities would directly impact mountain plover habitat as it occupies portions of the project area. Noise and human disturbance during construction activities are likely to displace mountain plover that occur within and adjacent to the proposed project area resulting in habitat loss. To protect mountain plover breeding and nesting habitats, no surface occupancy or surface disturbing activities should occur within any identified mountain plover habitat between April 10 to July 10 (KFO RMP Decision 4010). Pre-construction surveys are recommended to determine presence/ absence of mountain plover outside of known occupied areas (See Map; BLM ARMPA 2015a, BLM 1997).

Cumulative Impacts

The CIAA for mountain plover is a 1-mile buffer off modeled distribution (936,908 acres). A one- mile buffer is typically recommended for ground based disturbances. The CIAA was selected to analyze activities that would occur on the edge of the project boundary. Cumulative impacts to mountain plover would be similar to those described under the Proposed Action. There are currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to mountain plover. Although all available habitat in the project area could be impacted by implementation.

Mitigation Measures/Conditions of Approval

To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. No surface occupancy or surface disturbing activities would occur between April 10 to July 10 to protect mountain plover breeding and nesting habitat.

3.12 BLM Sensitive Species - Amphibians

Issue Statement: How would BLM sensitive amphibians be impacted by the proposal?

Affected Environment

Amphibian distribution data is limited throughout Wyoming. Based on available data, two special status amphibian species occur in the project area, the Great Basin spadefoot toad (*Spea intermontana*) and the northern leopard frog (*Lithobates pipiens*); both are BLM sensitive species. The Great Basin spadefoot toad is a habitat generalist in a landscape and habitat models indicate they occur throughout the project area Map 3.12.1. Great Basin Spadefoot toads require ephemeral or permanent stands of water for breeding. Species ranges and modeled habitat from WYNND indicate this species occurs within approximately 848,190 acres within the project area.

The northern leopard frog occurs in or near permanent water sources in a wide range of habitat types. Northern leopard frogs require small fishless ponds for reproduction and upland habitats for summertime foraging (Smith and Keinath 2004c). In the project area habitat for the northern leopard frog is associated with major perineal streams Map 3.12.2. Species ranges and modeled habitat from WYNND indicate this species occurs within approximately 92,660 acres of habitat within the project area.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. BLM sensitive amphibians and associated habitats would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact sensitive amphibian habitat as it occupies portions of the project area. Amphibians could be directly impacted by the removal of habitat associated with construction. Linear features that cross stream channels can also result in increased sedimentation and reduce the quality of amphibian habitat. Impacts would be reduced by prohibiting surface disturbance within 500 feet of surface water and/or riparian areas.

Cumulative Impacts

The CIAA for amphibians is a 1-mile buffer of the project area (1,164,807 acres). These species are non-migratory animals. The CIAA was selected was selected to ensure that impacts to home ranges on the edge of the project boundary would be analyzed. Cumulative impacts to BLM sensitive amphibians would be similar to those described under the Proposed Action. There are

currently 143,388 acres of disturbance within the CIAA. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the wildlife analysis area, it could result in additional cumulative impacts to BLM sensitive amphibians. Although all available habitat in the project area could be impacted by implementation.

Mitigation Measures/Conditions of Approval
Impacts would be reduced by prohibiting surface disturbance within 500 feet of surface water and/or riparian areas.

3.13 Endangered Species – Canada Lynx

Issue Statement: How would Canada lynx be impacted by the proposal?

Affected Environment

Canada lynx (*Lynx canadensis*) is an Endangered Species Act (ESA) threatened species that occurs throughout Alaska eastward to the Atlantic coast of Canada with southern extensions into the contiguous United States along the Rocky Mountains and Cascade Mountains. This species occurs in boreal spruce-fir forest ecosystems and subalpine forests at about 4,900-11,500 feet elevation and are likely to persist in areas that are characterized by deep snow and dense horizontal forest cover that support adequate densities of snowshoe hare (Beauvais et al 2016b). There have been sparce observations of Canada lynx within the project area, the most recent occurring in 1995. Six designated critical habitat areas known as Lynx Analysis Units (LAUs) occur along the southern border of the project area (BLM 31-1, BLM 31-2, BLM 31-3, BLM 31-4, BLM 32, and BLM 33-2) (BLM 2005b; Map 3.13).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Canada lynx and associated habitats would not be impacted.

Proposed Action

Potential impacts to Canada lynx include loss of habitat or displacement from construction activities. If surface disturbance or disruptive activities were to occur, an informal/formal endangered species act consultation may be required for any surface disturbing activities within identified habitat for listed species. During the consultation process ways to mitigate and/or reduce impacts would be identified including following best management practices outlined in the programmatic biological evaluation and the Canada Lynx Conservation Assessment and Strategy (BLM 2005b, LCAS 2013).

Cumulative Impacts

The cumulative Impact Analysis Area (CIAA) for Canada Lynx is a 1-mile buffer around designated Lynx Analysis Units (LAUs; 29,094 acres). A one- mile buffer is typically recommended for ground-based disturbances. The CIAA was selected to analyze activities that would occur on the edge of the LAU's. Cumulative impacts to Canada lynx would be similar to those described under the Proposed Action. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, an informal/formal endangered species act consultation may be required.

3.14 Endangered Species – Yellow-billed Cuckoo

Issue Statement: How would yellow-billed cuckoo be impacted by the proposal?

Affected Environment

Observations of yellow-billed cuckoo (*Cuccyzus americanus)* have not been documented within the project area. Yellow-billed cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland and dense thickets along streams and marshes. The entire project area is within an area of influence (AOI), designated by the United States Fish and Wildlife Service. Areas of influence identify areas where any project located within should consider potential effects to the Threatened, Endangered, Proposed, and Candidate species and designated and proposed critical habitat (ESA 1973). AOI's typically encompass larger areas than where the species is known to exist because of direct and indirect effects to the species and their habitat.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. The yellow-billed cuckoo and associated habitats would not be impacted.

Proposed Action

Potential impacts to yellow-billed cuckoo include loss of habitat or displacement from construction activities. If surface disturbance or disruptive activities were to occur, an informal/formal endangered species act consultation may be required for any surface disturbing activities within identified habitat for listed species. During the consultation process ways to mitigate and/or reduce impacts would be identified including following best management practices outlined in the programmatic biological evaluation (BLM 2003b).

Cumulative Impacts

The CIAA for a yellow-billed cuckoo is a 1-mile buffer of the major rivers in the project area (193,736 acres). A one- mile buffer is typically recommended for ground-based disturbances. The CIAA was selected to analyze activities that would occur on the edge of the project boundary. Cumulative impacts to yellow-billed cuckoo would be similar to those described under the Proposed Action. Existing land uses include grazing, mining, oil and gas production,

and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, an informal/formal endangered species act consultation may be required.

3.15 Endangered Species – Ute Ladies'-tresses

Issue Statement: How would Ute Ladies-tresses be impacted by the proposal?

Affected Environment

Observations of Ute ladies'-tresses (*Spiranthes diluvialis*) have not been documented within the project area. However, the Fish and Wildlife Service (FWS) has identified 327,544 acres of habitat defined as the Area of Influence (AOI) for Ute ladies'-tresses. The AOI identifies areas where any project located should consider potential effects to the Threatened, Endangered, Proposed, and Candidate species and designated critical habitat. An AOI typically encompass larger areas than where the species is known to exist because of direct and indirect effects to the species and their habitat (Map 3.15). Habitat for Ute lady's tresses varies but is usually associated with moist environments including alkaline wetlands, moist meadows, floodplains, flooded river terraces, sub-irrigated or spring-fed abandoned stream channels and valleys, lakeshores, irrigation canals, berms, levees, or irrigated meadows.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Ute ladies' tresses and associated habitats would not be impacted.

Proposed Action

Potential impacts to Ute ladies'-tresses include loss of habitat or displacement from construction activities. If surface disturbance or disruptive activities were to occur, an informal/formal endangered species act consultation may be required for any surface disturbing activities within identified habitat for listed species. For federally listed species, protective measures are developed and implemented in coordination with the USFWS. During the consultation process ways to mitigate and/or reduce impacts would be identified including following best management practices outlined in the programmatic biological evaluation (UTE BLM 2005b).

Cumulative Impacts

The CIAA for Ute ladies'-tresses is the CIAA for riparian and wetland areas and is delineated by a 500-foot avoidance buffer around the USFWS National Wetland Inventory (NWI) wetland and riparian polygons (approximately 24,077 acres). The 500-foot buffer is the standard avoidance area and would include all riparian habitat within the project area. Cumulative impacts to Ute ladies'-tresses would be similar to those described under the Proposed Action. Existing land uses include grazing, mining, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from SW Wyoming CO_2 Sequestration Project were to occur within the CIAA, an informal/formal endangered species act consultation may be required.

3.16 Riparian Areas and Wetlands

Issue Statement: How would riparian areas and wetlands be impacted by the proposal?

Affected Environment

Riparian areas are defined as the transitional area between water features and uplands and are often delineated by the presence of vegetative species that are dependent on sustained levels of high soil moisture. Wetlands are often found adjacent to streams and ponds but may also be associated with groundwater seeps and meadows that do not contain open water. The project area is dominated by a High Desert Sagebrush Steppe environment with limited amounts of riparian areas and wetlands. These areas tend to be more diverse, more productive, and hold water and green vegetation much longer than the surrounding uplands making them important areas for wildlife. Additionally, riparian and wetland vegetation have well developed root systems that provide many key watershed functions such as bank stabilization, water infiltration, and flood control.

Map 3.16 shows riparian areas and wetlands in the project area.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action alternative, the BLM-administered federal pore space would not be leased and the potential for future surface and subsurface disturbance related to carbon sequestration would remain at their present levels.

Proposed Action

Under the Proposed Action, the applicant would be granted the right to occupy the federal pore space associated with the requested subsurface Federal ROW, and the potential for surface and subsurface disturbance related to CO_2 sequestration would increase in relation to the level of future activity. Surface and subsurface disturbances can affect the flow of surface and groundwater upon which riparian areas are dependent. The guidelines provided in the KFRMP and GRRRMP would direct surface disturbance and reclamation practices. These guidelines reduce and minimize, but do not fully eliminate, direct and indirect impacts to riparian areas and wetlands, including bank destabilization, changes in water infiltration and flood control, and overall watershed impairment.

Cumulative Impacts

The CIAA for riparian and wetland areas are the portions within the project area delineated by a 500-foot avoidance buffer around USFWS National Wetland Inventory (NWI) wetland and riparian polygons (approximately 24,077 acres). The NWI is the best available database that delineates both riparian and wetland habitat within the project area and it is conservative in the way that it is more likely an overestimate of riparian and wetland occurrences than an underestimate. Cumulative impacts to riparian areas and wetlands would be similar to those described under the Proposed Action, combined with existing land uses that include grazing,

mining, oil and gas production, and recreation activities. Surface and subsurface disturbance and these historic land uses would have a cumulative impact upon the health and distribution of riparian communities within the USFWS National Wetland Inventory.

3.17 Paleontological Resources

Issue Statement: How would paleontological resources be impacted by the proposal?

Affected Environment

The BLM adopted the Potential Fossil Yield Classification (PFYC) system to identify and classify fossil resources on federal lands. These paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding fossil resources can be broadly predicted from the geological units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of fossil resources.

The requested right-of-way is located within the KFO and RSFO jurisdictions and is located within large areas of PFYC 3 to PFYC 5, which have a high to very high probability for finding important paleontological resources (Love and Christiansen 1985). These include the Tipton and Luman Tongues of the Green River Formation, various members of the Bridger Formation as well as the Niland Tongue of the Wasatch Formation. The total acreage for PFYC 3 is 840 acres; PFYC 4 covers 13 acres and PFYC 5 covers 739,464 acres.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the Proposed Action would not be authorized and there would be no impact to fossil localities on public lands.

Proposed Action

The proposed right-of-way does not authorize any surface disturbance, thus there is no possibility of affecting paleontological resources at this time. However, the potential for impacts to paleontological resources from future disturbance is determined to be high in areas that are classified as PFYC 5, which is the vast majority of the project area. In addition to direct impacts due to construction of future proposed facilities, construction may increase erosion within, downstream and adjacent to the project area, which can lead to the exposure of buried paleontological resources and may result in increased visitation for avocational collectors of vertebrate fossils artifacts. If surface disturbance is proposed in PFYC 5 areas, further evaluation would be needed and may include the requirements for a pre-construction survey and/or a paleontological monitor during ground disturbance activities. These are addressed in the stipulations below.

Cumulative Impacts

The Cumulative Effects Analysis Area for paleontological resources include the total acreage of PFYC 3, 4 and 5 within the project area. Approval of the project right-of-way at this stage will

have no cumulative impact to paleontological resources. However, if specific ground-breaking activities, which would be granted via separate rights-of-way, are constructed for the carbon sequestration projects, paleontological resources may face increased impact from exposure to erosion due to construction activities. Avocational fossil collectors or persons looking to sell fossils may use project access roads to sensitive fossil areas.

Pre-approval requirements in PFYC Class III, IV & V areas
A pre-surface disturbance paleontological field study must be conducted by a BLM permitted paleontologist. A written report of the findings by the paleontologist must be submitted to the BLM Authorized Officer with recommendations for mitigation or avoidance. Authorization for an activity to proceed cannot be given by a consulting paleontologist. Performance of the survey, either by a consulting paleontologist or qualified BLM staff, or submission of the report does not constitute approval for the activity to proceed. The BLM must review the report, including adequacy of the field methods and findings. The Authorized Officer must approve the findings and determine the need for monitoring or other mitigation prior to approval to proceed. See IM-2009-011 and attachments for more information.

Mitigation Measures/Conditions of Approval
A variety of stipulations would be applied to future authorizations that involve surface/subsurface disturbance and construction:

(Construction Monitor)
A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will be on site at all times during construction. Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

(Open Trench Inspection)
A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will inspect the open pipeline trench after construction and before the pipeline is placed into the trench. Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

(Spot Check)
A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will be on site at all times during construction and shall inspect any bedrock exposed during surface disturbing activities (such as the construction of the reserve pit, well pad, access road, etc.). Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

3.18 Soils

Issue Statement: How would soils be impacted by the proposal?

Affected Environment

Soils within the project area are broken up into 3 distinct groups: Green River Basin Uplands, Relict Alluvial Fans and Floodplains. The largest soil group by geographic area represented within the project boundary is the Green River Basin Uplands, this group contains the sedimentary uplands of the Green River basin. Low relief bedrock-controlled ridges, erosional side slopes and alluvial fans dominate the landscape with badlands and small sand dunes. Soils in this group are formed from shales producing clayey textures with poor surface water infiltration and high runoff potential. Soils are found to contain high carbonate levels and are largely saline which create a high erosion factor. Low organic matter content within these soils makes silt and sand particles highly susceptible to erosion due to lack of binding.

The second group, the Relict Alluvial Fans is in the extreme southern part of the project area near the base of the Uinta Mountain range. These landforms were created due to alluvial material flushing out of the canyons of the nearby mountains. Glacial till occurs in the southern part of Uinta County and is found on high level outwash terraces. Soil in this area is generally deep, with rock and cobbles throughout the profile.

The third group, the floodplains is found along major drainages, and makes up the smallest percentage of the project area. These soils can be divided into three groups due to surrounding soil types and they are not uniform in character. The group that is found within the project area is mainly influenced by the Hams fork River within the Opal area. The soils tend to have more rock and vary more in texture but are usually less saline than the groups.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the Proposed Action would not take place and there would not be a potential impact to soils on public lands.

Proposed Action

The proposed right-of-way is for 605,091 acres of pore space underneath federal managed lands in Lincoln, Uinta, and Sweetwater counties in southwest Wyoming for storage of carbon dioxide. The permitting of the right-of-way does not have any surface disturbance or proposed surface facilities currently. However, there is potential for surface disturbance to occur at a future date.

Surface disturbing activities have a potential to increase soil erosion factors, mix soil horizons and break up soil crusts. These erosion factors are increased if surface disturbance is conducted on areas where slopes are 20% or greater. Generally, surface disturbing activities result in the removal of vegetation. The absence of vegetation reduces the presence of organic materials and soil binding capabilities, this increases potential for erosion. Further erosion of soil makes it a

less productive community and decreases potential productivity and recovery of plant communities. Mixing of soil horizons and breaking up of soil crusts due to construction practices influences soil organic matter and productivity also leading to less vegetation and soil binding factors increasing chances of erosion.

Cumulative Impacts

The CIAA is the whole 605,091 acres of the proposed right-of-way. Cumulative impacts to soils would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. If surface disturbance or disruptive activities from the SW Wyoming CO_2 Sequestration Project were to occur within the CIAA it could increase the already existing impacts to soils.

3.19 BLM Special Status Plant Species ACEC

Issue Statement: How would the Special Status Plant Species ACEC be impacted by the proposal?

Affected Environment

The Special Status Plant Species Area of Critical Environmental Concern (ACEC) consists of individual polygons around known plant populations designated to protect BLM species that occurs within the southern portion of the project area (i.e., Uinta green-thread, precocious milkvetch, and Cedar Mountain easter daisy). Information on each of the species are described in section 3.20. This Special Status Plant Species ACEC was designated in 1997 (Map 3.20). Special status plants are those listed, proposed for listing, or candidates for listing as threatened and endangered under the ESA, identified by the state in a category implying potential endangerment or extinction, or species designated by the BLM State Director as sensitive. Management priority and emphasis for the ACEC was given to maintain or enhance these species and their habitats. The special status plant ACEC consist of numerous individually mapped sensitive plant populations. The total area of the Special Status Plant Species ACEC is 585 acres. Approximately 557 acres of designated ACEC occurs within the project area.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. The Special Status Plant Species Area of Critical Environmental Concern would not be impacted.

Proposed Action

If surface disturbance or disruptive activities were to occur, project activities would directly impact the Special Status Plant Species ACEC as it occupies 557 acres of the project area. Potential impacts include loss of habitat or a reduction in habitat quality from construction activities. Although all of the Special Status Plant Species ACEC in the project area could be impacted by implementation, designated boundaries would be protected by closing them to surface disturbing activities, which would minimize any impacts to species from the project.

Cumulative Impacts

The CIAA is the designated the Special Status Plant Species ACEC (585 acres). Current uses within the CIAA include grazing and recreation activities. Cumulative impacts would be similar to those described under the Proposed Action in combination with the other land uses in the CIAA. A total of 95% of the ACEC occurs within the project area boundary. Currently, less than 0.1% of the CIAA is disturbed. If surface disturbance or disruptive activities from the carbon sequestration project were to occur, indirect impacts and reduction of plant vigor could occur.

Mitigation Measures/Conditions of Approval

Known locations of the plants would be protected under ACEC designations and restrictions to surface disturbing activities, which would minimize any impacts to special status plant species from the project.

3.20 BLM Special Status Plants

Issue Statement: How would BLM special status plants outside the special status plant ACEC be impacted by the proposal?

Affected Environment

Beaver Rim Phlox

Beaver rim phlox (*Phlox pungens*) is a BLM sensitive species endemic to the Wind River and Green River basins and southeastern foothills of the Wind River Range in Fremont, Lincoln, and Sublette counties of Wyoming (BLM 2010e). This species is typically found in concave washes along summit rims, mid-slopes, and ridgetops of gray to reddish brown clay-shale soils with a surface layer of white limey-sandstone in cushion plant/ bunchgrass vegetation or openings in *Artemisia nova*/ *A. tridentata* grasslands at 6,000 to 7,400 feet (NatureServe 2023b, USFS 2002b). The species range reaches approximately 17,352 acres within project area and modeled habitat from WYNND indicate this species occurs within approximates 6,720 acres of the northern portion of the project area (Map 3.20.1).

Precocious Milkvetch

Precocious milkvetch (*Astragalus proimanthes*) is a BLM sensitive species endemic to Wyoming (BLM 2010e). This species is found in grassland and talus/ scree habitats with course calcareous clay soils on summits and upper slopes of low, windy ridges at about 7000 ft (NatureServe 2023a, Jouseau 2016c). Observations and modeled habitat from WYNDD and BLM Rock Springs Field Office surveys indicate this species occurs within approximately 15,688 acres of the southeastern portion of the project area (Map 3.20.2).

Treleases Milkvetch

Trelease's milkvetch (*Astragalus racemosus var. treleasei*) is a BLM sensitive species that is endemic to northeast Utah and southwest Wyoming (BLM 2010e). In Wyoming, this species is found in the Green River Basin and the foothills of the Wyoming Range in sparsely- vegetated, shale-derived substrates in outwash flats and slopes along river valleys at 6,500-7,500 ft. This

species frequently occurs with thickspike wheatgrass (*Elymus lanceolatus),* rubber rabbitbrush (*Ericameria nauseosa* var. *oreophila*), green rabbitbrush (*Chrysothamnus viscidiflorus*) and shadscale (*Atriplex confertifolia*) (Heidel 2003a, NatureServe 2023d). There is approximately 3,793 acres of mapped habitat that occur throughout the project area (Map 3.20.3).

Tufted Twinpod

Tufted twinpod (*Physaria condensata*) is a BLM sensitive species endemic to the southern Overthrust Belt and lower Green River Basin in Lincoln, Uinta, and Sublette counties in Wyoming (BLM 2010e). Populations are typically found in cushion plant and bunchgrass communities in semi-barren, wind-blasted upper slopes and rims of calcareous shale or sandstone desert mesas at elevations of 6,000-7,760 feet (NatureServe 2023c, Fertig 2002a). There are five mapped tufted twinpod populations within the project area and approximately 116,203 acres of modeled habitat along the northwest portion of the project area (Map 3.20.4).

Stemless Beardtongue

Stemless beardtongue (*Penstemon acaulis* var.*acaulis*) is a narrow endemic of the southern Green River Basin and northern foothills of the Uinta Range in Sweetwater County, Wyoming and Daggett County, Utah (Jouseau, M.R.G. 2012). Approximately 1,467 acres of mapped populations and habitat for stemless beardtongue occur in the southeast portion of the proposed project area (Map 3.20.5).

Large-fruited Bladderpod

Large-fruited bladderpod (*Lesquerella macrocarpa*) occurs in the western United States and is endemic to southwestern Wyoming. Habitat occurs along the western rim of the Great Divide Basin in Fremont and Sweetwater counties, the Green River Basin near Opal, Wyoming in Lincoln County, and Ross Butte in Sublette County (Heidel, B. 2009). Approximately 44 acres of mapped populations and habitat occurs within the proposed project area (Map 3.20.6).

Entire-leaved Peppergrass

Entire-leaved peppergrass (*Lepidium integrifolium* var. *integrifolium*) is a regional endemic of northeastern Utah and southwestern Wyoming. Its habitat is restricted to alkaline wet meadows associated with low-elevation riparian habitat of foothills and valley bottoms. Wyoming populations occur in sparsely vegetated, seasonally saturated flats of silts and silt loams derived from Quaternary alluvium, sometimes with a claypan. One known population occurs on approximately one acre within the proposed project area (Heidel, B. 2004a; Map 3.20.7).

Uinta Green-thread

Uinta green-thread (T*helesperma pubescens*) is a BLM sensitive species endemic to Utah and southwest Wyoming. This species is found on mesa-like mountains in sparsely vegetated cushion plant communities and sagebrush grasslands at 8,040-8,960 ft (Fertig 2001b). In the project area, it occurs on BLM-managed public land off the north side of the Uinta Mountains and on Cedar, Sage Creek and Hickey Mountains. These mountains are isolated plateaus capped with cobbly, coarse soils formed from Bishop conglomerate. The Uinta green-thread grows along the rims of these mountaintops. Species ranges and modeled habitat from WYNND indicate this

species habitat occurs within approximately 3,111 acres in the southern portion of the project area (Map 3.20.8). A total of 2,554 acres of Uinta green-thread habitat occurs outside of the Special Status Plant Species Area of Critical Environmental Concern and of the ACEC.

Cedar Mountain Easter Daisy

Cedar Mountain easter daisy (*Townsendia microcephala*) is a BLM sensitive species endemic to southwestern Wyoming and known only from the northern foothills of the Uinta Range (Sweetwater and Uinta counties). This species occurs on exposed, west-facing upper slopes and ridges at 8,200- 8,500 feet (Markow and Fertig 2001c). The total population was estimated at 2,280- 4,550 plants (Fertig 1995 in Markow and Fertig 2001c). Species ranges and modeled habitat from WYNND indicate this species habitat occurs within approximates 1,816 acres in the southern portion of the project area (Map 3.20.9). A total of 1,755acres of Uinta green-thread habitat occurs outside of the Special Status Plant Species Area of Critical Environmental Concern and of the ACEC.

Limber Pine

Limber pine (*Pinus flexilis*), a BLM Sensitive Species ranges in elevation from 5,720-9,670 feet (2019 Jones). Due to drought tolerance, it is commonly found associated with juniper woodlands in the High Desert District. However, it can also be present in the mixed conifer forests that extend from US Forest Service lands adjacent to the Utah border. Within the project area limber pine is likely to occur over the 15,859 acres of mixed conifer forest and juniper woodland cover present in the southernmost portion of the project area (Map 3.20.10).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the project would not be permitted therefore no project-related disturbance would occur on public lands. Sensitive plant populations and associated habitats would not be impacted.

Proposed Action

The proposed project covers 1,005,797 acres (including private and State of Wyoming) within the KFO and RSFO offices which overlaps with nine BLM sensitive plant species habitats. If surface disturbance activities were to occur, surface disturbance and loss of habitat from project activities would directly impact special status plant habitats. Possible indirect negative impacts which may result if surface disturbing activities were to occur include fugitive dust from construction activities and vehicle traffic on unpaved roads. Fugitive dust could occur from construction activities, thus negatively impacting habitat quality and plant vigor.

Beaver Rim Phlox

A total of 6,720 acres of beaver rim phlox habitat occurs within the project area, which accounts for approximately 0.67% of the project area and 0.58% of the known habitat. Impacts to Beaver Rim phlox would be the same as those described above. If surface disturbance or disruptive

activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Although all habitat in the project area could be impacted by implementation, known locations of the plants would be protected by these areas to surface disturbing activities, which would minimize any impacts to the species from the project.

Precocious Milkvetch

A total of 15,688 acres of precocious milkvetch habitat occurs within the project area, which accounts for approximately 1.6% of the project area and 20.1% of the known habitat. Impacts to precocious milkvetch would be the same as those described above. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Although all habitat in the project area could be impacted by implementation, known locations of the plants would be protected by these areas to surface disturbing activities, which would minimize any impacts to the species from the project.

Treleases Milkvetch

A total of 3,793 acres of treleases milkvetch habitat that occurs within the project area, which accounts for approximately 0.3% of the project area and 2.5% of the known habitat. Impacts to treleases milkvetch would be the same as those described above. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Although all habitat in the project area could be impacted by implementation, known locations of the plants would be protected by these areas to surface disturbing activities, which would minimize any impacts to the species from the project.

Tufted Twinpod

A total of 116,203 acres of tufted twinpod habitat occurs within the project area, which accounts for approximately 1.8% of the project area and 16% of the known habitat. Impacts to tufted twinpod would be the same as those described above. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Although all habitat in the project area could be impacted by implementation, known locations of the plants would be protected by these areas to surface disturbing activities, which would minimize any impacts to the species from the project.

Stemless Beardtongue

A total of 1,467acres of Stemless Beardstongue habitat occur within the project area, which accounts for approximately 0.5% of the project area and 43% of the known habitat. Although all habitat in the project area could be impacted by implementation, known location of the plants would be protected by closing them to surface disturbing activities, which would minimize any impacts to the species from the project.

Large-fruited Bladderpod

A total of 44 acres of large-fruited bladderpod habitat occur within the project area, which accounts for approximately 0.004% of the project area and 0.4% of the known habitat. Impacts to large-fruited bladderpod would be the same as those described above. If surface disturbance

or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Although all habitat in the project area could be impacted by implementation, known location of the plants would be protected by closing them to surface disturbing activities, which would minimize any impacts to the species from the project.

Entire-leaved Peppergrass

Less than 1 acre of entire-leaved peppergrass habitat occur within the project area, which accounts for approximately less than 0.001% of the project area and less than 0.001% of the known habitat. Although all habitat in the project area could be impacted by implementation, known location of the plants would be protected by closing them to surface disturbing activities, which would minimize any impacts to the species from the project.

Uinta Green-thread

A total of 3,111 acres of Uinta green-thread habitat occurs within the project area, which accounts for approximately 0.3% of the project area and 80% of the known habitat. Impacts to Uinta green-thread would be the same as those described above. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Approximately 80% of the existing habitat could be impacted if surface disturbing activities are permitted. The other 20% of Uinta green-thread habitat, would be protected under ACEC designation.

Cedar Mountain Easter Daisy

A total of 1,816 acres of Cedar Mountain easter daisy habitat occurs within the project area, which accounts for approximately 0.2% of the project area and 100% of the known habitat. Impacts to Uinta Cedar Mountain easter daisy would be the same as those described above. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it would result in direct loss of habitat. Approximately 97% of the existing habitat could be impacted if surface disturbing activities are permitted. The other 3% of Cedar Mountain easter daisy habitat, would be protected under ACEC designation.

Limber Pine

Within the project area limber pine is likely to occur over the 15,859 acres of mixed conifer forest and juniper woodland cover present in the southernmost portion of the project area. There are no designated ACECs for limber pine. There is a potential for temporary or permanent loss of limber pine cover with future surface disturbing activities.

Cumulative Impacts

Beaver Rim Phlox

The CIAA for the Beaver Rim phlox is the entire modeled population of the plant species with a 1-mile buffer (19,693 acres). Cumulative impacts to beaver rim phlox would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 9% of the habitat for Beaver Rim phlox in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were

to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Precocious Milkvetch

The CIAA for the precocious milkvetch is the entire modeled population of the plant species with a 1-mile buffer (37,101 acres). Cumulative impacts to precocious milkvetch would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 2% of the habitat for precocious milkvetch in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Treleases Milkvetch

The CIAA for the trelease's milkvetch is the entire modeled population of the plant species with a 1-mile buffer (38,470 acres). Cumulative impacts to Trelease's milkvetch would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 4.2% of the habitat for Trelease's milkvetch in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Tufted Twinpod

The CIAA for the tufted twinpod is the entire modeled population of the plant species with a 1mile buffer (46,439 acres). Cumulative impacts to tufted twinpod would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 28% of the habitat for tufted twinpod in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Stemless Beardtongue

The CIAA for the stemless beardtongue is the entire modeled population of the plant species with a 1-mile buffer (20,995 acres). Cumulative impacts to stemless beardtongue would be the same as those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 5.3% of the habitat for stemless beardtongue in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Large-fruited Bladderpod

The CIAA for the large-fruited bladderpod is the entire modeled population of the plant species with a 1-mile buffer (40,677 acres). Cumulative impacts to large-fruited bladderpod would be the same as those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 0.13% of the habitat for large-fruited

bladderpod in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Entire-leaved Peppergrass

The cumulative impact analysis area (CIAA) for the entire-leaved peppergrass is the entire modeled population of the plant species with a 1-mile buffer (2,009 acres). Cumulative impacts to entire-leaved peppergrass would be the same as those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 6.2 % of the habitat for entire-leafed peppergrass in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to 80% of the modeled plant habitat within the CIAA.

Uinta Green-thread

The cumulative impact analysis area (CIAA) for the Uinta green-thread is the entire modeled population of the plant species with a 1-mile buffer (3,897 acres). Cumulative impacts to Uinta green-thread would be similar to those described under the Proposed Action. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 0.3 % of the habitat for Uinta green-thread in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to 97% of the modeled plant habitat within the CIAA.

Cedar Mountain Easter Daisy

The cumulative impact analysis area (CIAA) for the Cedar Mountain easter daisy is the entire modeled population of the plant species with a 1-mile buffer (1, 816 acres). Cumulative impacts to Cedar Mountain easter daisy would be the same as those described under the Proposed Action because the entire known population occurs within the project area. Existing land uses include grazing, oil and gas production, and recreation activities. Currently 0.8 % of the habitat for Cedar Mountain easter daisy in the CIAA is disturbed. If surface disturbance or disruptive activities from the CO_2 sequestration project were to occur, it could result in additional loss of habitat and impacts to the entire plant population within the CIAA.

Limber Pine

The CIAA is an estimated 15,859 acres of forest and woodland cover within the project area. Current disturbances and existing uses within the project area includes grazing, oil and gas production, and recreation. Disturbances impact limber pine health and resilience by damaging or preventing regeneration. These activities also introduce invasive plants, insects, and diseases which compete for resources, cause mortality, and reduce vigor. Direct removal of limber pine reduces sources of regeneration and genetic diversity.

Mitigation Measures/Conditions of Approval

To minimize impacts described above, pre-construction surveys would be required in areas of

sensitive plant species habitat. Surface disturbing activities will be avoided in occupied sensitive plant species populations.

3.21 National Historic Trails

Issue Statement: How would the granting of the ROW impact Blacks Fork Cutoff, Slate Creek Cutoff, Sublette Cutoff, and the Oregon Trail National Historic Trails (NHTs)?

Affected Environment

The requested ROW is situated within the Green River Basin Subregion (GBS), a physiographic-based, cultural resource study area as defined in the BLM KFO's Proposed Resource Management Plan/Final Environmental Impact Statement (BLM 2008a:3-96 and Map 27). The requested ROW is in an area with National Register of Historic Places (NRHP)-eligible historic transportation routes. NHT I-, NHT II-, and NHT III-contributing segments of the following NHTs are situated within the area encompassed by the subsurface Federal ROW: Slate Creek Cutoff, Sublette Cutoff, Blacks Fork Cutoff, and Dempsey-Hockaday Cutoff of the Oregon-California NHT, and the Emigrant NHT (BLM 2004d:163).

Within the RSFO, per the Green River RMP, the area within ¼ mile, or the visual horizon (whichever is closer), of a contributing segment of NHT is an avoidance area for surface disturbing activities and new Rights-of-Ways. Within the KFO, per the BLM KFO RMP and ROD, the viewshed of NHT segments are protected by the following guidelines:

- Class 1 segments: a 3-mile buffer north and east of U.S. Highway 30 and 1 mile within other areas outside the checkerboard;
- Class 2 segments: a 1-mile buffer in blocked federal lands south of U.S. Highway 30;
- The viewshed of Class 1 and 2 NHT segments located within the checkerboard are managed to protect the character of setting within the federal sections in which they occur;
- Class 3 segments: manage the viewshed according to the appropriate VRM class for the area.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action alternative, the pore space associated with the requested subsurface Federal ROW would not be leased, and the potential for future surface and subsurface disturbance related to carbon sequestration would remain at their present levels. There would be no impacts to NHTs under the No Action alternative.

Proposed Action

Under the proposed action, the applicant would be granted the right to occupy the federal pore space associated with the requested subsurface Federal ROW. Pursuant to Section V.B.ii.a and Appendix B.2 of the State Protocol, the proposed subsurface ROW request for geologic

sequestration of CO_2 has no potential to affect historic properties because the issuance of leases, easements, and rights-of-way does not authorize or promote surface disturbance.

However, all subsequent applications under the ROW will be analyzed under NHPA Section 106 and the BLM/SHPO protocol agreement as separate undertakings once a project specific application has been received. Should any new cultural resources be discovered, standard stipulations and mitigation measures will be implemented individually for site specific discoveries.

Cumulative Impacts

Although BLM issuance of the proposed right-of-way would not affect National Historic Trails, the cumulative effects from subsequent implementation, construction, and operations, associated with geologic sequestration of CO_2, has the potential to impact cultural resources. Current impacts to the trails in this area are associated with other authorized use activities such as oil and gas, grazing, and recreation. Cultural resources are a non-renewable resource, and the increase in infrastructure development has the potential to adversely impact the cultural landscape. The greatest potential for impacts to historic properties, in the right-of-way area, over the long-term, would come from construction associated with infrastructure development.

3.22 Cultural Resources

Issue Statement: How would the proposed project impact cultural and historic resources?

Affected Environment

The project area contains sites that have been identified by regional Native American tribes, through agency consultation, as being culturally sensitive due to their sanctity and significance to traditional tribal values. The requested ROW is situated within the GBS, a physiographic-based, cultural resource study area as defined in the BLM KFO's Proposed Resource Management Plan/Final Environmental Impact Statement (BLM 2008a:3-96 and Map 27). The 2004 KFO's Cultural Resources Class I Regional Overview provides a summary of cultural resource site types recorded in the project vicinity as well as a narrative context for the region's prehistory, Native American tribes, and historical development (BLM 2004d). The GBS contains the greatest concentration of cultural resources in the BLM KFO. A total of 4,837 cultural resources, consisting of 4,335 prehistoric sites and 502 historic sites, have been documented within the GBS from 1975 to 2003 (BLM 2004d:149).

The BLM KFO RMP and ROD preserves the viewshed of the following historic properties, situated within the area encompassed by the subsurface Federal ROW, with a 3-mile buffer. In addition, these historic properties are protected from surface disturbing activities within the defined boundaries indicated below:

- Emigrant Spring/Slate Creek: 87-acres
- Gateway Petroglyphs: 518-acres
- Johnston Scout Rock: 2-acres

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action alternative, the pore space associated with the requested subsurface Federal ROW would not be leased, and the potential for future surface and subsurface disturbance related to carbon sequestration would remain at their present levels. There would be no impacts to cultural resources under the No Action alternative.

Proposed Action

Under the proposed action, the applicant would be granted the right to occupy the federal pore space associated with the requested subsurface Federal ROW. Pursuant to Section V.B.ii. and Appendix B.2 of the State Protocol, the proposed subsurface ROW request for geologic sequestration of CO_2 has no potential to affect historic properties because the issuance of leases, easements, and rights-of-way does not authorize or promote surface disturbance.

However, all subsequent applications under the ROW will be analyzed under NHPA Section 106 and the BLM/SHPO protocol agreement as separate undertakings once a project specific application has been received. Should any new cultural resources be discovered, standard stipulations and mitigation measures will be implemented individually for site specific discoveries.

Cumulative Impacts

Current impacts to the cultural and historic resources in this area are associated with other authorized use activities such as oil and gas, grazing, and recreation. Although BLM issuance of the proposed right-of-way would not affect cultural and historic properties, the cumulative effects from subsequent implementation, construction, and operations associated with geologic sequestration of CO2, has the potential to impact cultural resources. Cultural resources are a non-renewable resource, and the increase in infrastructure development has the potential to adversely impact the cultural landscape. The greatest potential for impacts to historic properties, in the right-of-way area, over the long-term, would come from construction associated with infrastructure development.

3.23 Visual Resources

Issue Statement: How would visual resources be impacted by the proposal?

Affected Environment

The project area encapsulates a variety of landscapes with varying degrees of development on the landscape. The Proposed Action falls within Visual Resource Management (VRM) Classes II, III, and IV, see Map 3.23. The landscape varies between open rolling desert, the foothills to the Wyoming Range, and urban backcountry interface surrounding the town of Mountain View, Wyoming. Project approval and or stipulations would depend on what the nature of the future surface disturbing activity and the landscape class in which it occurs. Objectives for class management are as follows:

Class II Objective: Retain the existing character of the landscape. Allow a low level of change that should not attract the attention of a casual observer.

Class III Objective: Partially retain the existing character of the landscape. Allow a moderate level of change that may attract attention but should not dominate the view of a casual observer.

Class IV Objective: Provide for management activities that require major modifications of the existing character of the landscape. The level of change may be high and may dominate the view and be the major focus of viewer attention.

Proposed development or modifications to the landscape in VRM class II and III areas will be evaluated using the contrast rating system described in BLM Manual H8431. Modifications to the landscape will be assessed based on impacts to the existing line, form, color, and texture of the landscape.

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the proposed right-of-way would not be issued and there would be no impact to visual resources on public lands.

Proposed Action

If surface disturbing activities were to occur as a part of the SW Wyoming CO_2 Sequestration Project, the effect of additional impacts to the landscape could potentially fall outside of VRM class objectives in VRM Class II and III. New development on a lightly developed viewshed could cause the viewshed as a whole to be more heavily impacted. These existing impacts would be considered along with the new surface disturbing project design when making a determination. Mitigations would be necessary to keep developments within the acceptable levels of contrast for the associated VRM class.

Cumulative Impacts

The CIAA for visual impacts is the project area. The CIAA for visual resources includes three VRM classes. While impacts to the visual landscape exist across the project area, landscapes in VRM IV have moderate to heavily impacts, while those in VRM II and III are respectively less impacted and more pristine.

3.24 Oregon Trail Special Recreation Management Area

Issue Statement: How would the Oregon Trail Special Recreation Management Area be impacted by the proposal?

Affected Environment

The Oregon Trail Special Recreation Management Area (SRMA) surrounds a segment of the Oregon – California National Historic Trail (see Map 3.24). As outlined in the KRMP, the

SRMA management objective is to provide an opportunity to visit and learn about trail history and use while maintaining the setting character and present condition of trails and associated historic sites. The SRMA within the proposed project area includes multiple National Historic Trails (NHTs) variants, including the Sublette Cutoff, Slate Creek Cutoff, Hams Fork Cutoff, Oregon-Mormon-Pony Express, Overland Trail, and the Blacks Fork Cutoff. These various segments of the NHTs have been classified as ranging between Oregon-California Trails Association Condition Classes 1 and 4 (Class 1 being unaltered trail and Class 4 being location-verified but altered by activities such as road construction).

Environmental Consequences (direct/indirect effects)

No Action

Under the No Action Alternative, the proposed right-of-way would not be issued and there would be no impact to the Oregon Trail SRMA.

Proposed Action

The proposed action is unlikely to affect the characteristics because it is a sub-surface right-of-way. The average user would therefore not be aware of the project when visiting the trail. However, surface disturbing activity within the SRMA would have an impact on its setting, character, viewsheds and present condition of the trails and associated historic sites. Surface disturbing activities within the SRMA have the ability to degrade the user experience for recreators on the trail by changing the above characteristics, moving the experience farther from that of the original pioneers. The management objectives for the Oregon Trail SRMA state that the setting, character, and present condition of the trails and associated historic sites must be maintained. Any surface disturbing activities applied for under future rights-of-way within the SRMA would be subject to this management objective.

Cumulative Impacts

Current impacts to the trails in this area are associated with other authorized use activities such as oil and gas, grazing, and recreation. There are currently no other known proposals for actions that would have the ability to change the characteristics of the trail within this portion of the SRMA. The cumulative effects from subsequent implementation, construction, and operations associated with geologic sequestration of CO_2, has the potential to further impact the Oregon Trail SRMA when combined with the existing authorized uses in the proposed project area.

4.0 Tribes, Individuals, Organizations, or Agencies Consulted

There were 53 public scoping comment letters sent out to tribes, individuals, organizations, and other local, state and federal agencies in April 2023 for a 30-day comment period. It was also posted in ePlanning for general public comments. A total of 12 comments were received. The comment table is Appendix 6 of this document.

5.0 List of Preparers

Name	Title	Responsibility
Ryan McCammon	Physical Scientist (Air Quality)	Air Resources: Ozone – Non-attainment, Air Resources: other than ozone, Climate Change and Green House Gases
Abigail Stemmler	Forester	Woodland/Forestry
Kaisa McKenna Lisa Aleshire	Realty Specialist Realty Specialist	Land Resources/Access
Cheyenne Laeske Patrick Lionberger	Wildlife Biologist Wildlife Biologist	Migratory Birds, Threatened, Endangered, Sensitive or Candidate Animal Species, Wildlife/Fisheries, Threatened, Endangered, Sensitive or Candidate Plant Species, Areas of Critical Environmental Concern – Plants
Jace Stott Christina Handy Hope Wentzel	Rangeland Management Specialist Rangeland Management Specialist Rangeland Management Specialist	Range/Livestock Management, Vegetation
Doug Tingwall Scott Stadler Morgan Robins	Archeologist Archeologist Archeologist	Cultural Resources/Native American Religious Concerns
Ben Molitor TJ Franklin	Natural Resource Specialist Natural Resource Specialist	Soils, Weeds - Invasive, Non-native Species
Rich Fleming Gene Smith	Geologist Archeologist	Paleontology
Alex Gardiner Dennis Doncaster	Fish Biologist Hydrologist	Water Quality (drinking/ground), Wetlands/Riparian/ Floodplains
Steve Walker TJ Franklin	Petroleum Engineer Technician Natural Resource Specialist	Wastes (hazardous or solid)
Hunter Harridge Lauren Hazzard Jerry Frimml	Outdoor Recreation Planner Outdoor Recreation Planner Outdoor Recreation Planner	Areas of Critical Environmental Concern, Lands with Wilderness Characteristics, Recreation, Special Designations, Travel Management, Wild and Scenic Rivers, Wilderness Study Areas, Visual Resources Management
Phil Lockwood	Fire Management Specialist	Fuels/Fire Management
Karsyn Lamb	Economist	Environmental Justice and Socioeconomics
Jay D'Ewart	Wild Horse & Burro Specialist	Wild Horse & Burro

Name	Title	Responsibility
Louis Niglio	Geologist	Fluid Mineral Resources/Energy Production/Reservoir Management
Tracy Hoover Maura Bradshaw Jacob Earnhart	Project Coordinator Planning & Environmental Specialist Planning & Environmental Specialist	Project Leads

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Appendix 1 – Issues Considered but not Carried Forward for Detailed Analysis

IDT Resource Issue Determinations
NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected or effects cannot be meaningfully analyzed
PI = present with potential for impact analyzed in detail in the NEPA document, or identified in a DNA as requiring further analysis
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents

Determi-nation	**Resource**	**Rationale for Determination**	**Initials**	**Date**
NI	Air Resources: Ozone – Non-attainment	*This resource will not be further analyzed.* The Proposed Action conforms to all applicable local, state, and federal air quality laws, regulations, and statutes including 40 CFR 93.153 subpart B and Chapter 8, Section 3 of the Wyoming Air Quality Standards and Regulations (WAQSR). It has been determined that the potential maximum total direct and indirect emissions are below the *de minimis* threshold of 100 tons per year of Nitrous Oxides (NOx) or Volatile Organic Compounds (VOCs). A copy of the general conformity evaluation (August 5, 2022) is stored in the administrative record.	RM	3/10/2023
NI	Air Resources: other than ozone	*This resource will not be further analyzed.* Best management practices, as applicable, will be required in the Conditions of Approval to minimize emissions and control fugitive dust during construction activities.	RM	3/10/2023
PI	Areas of Critical Environmental Concern (ACEC)	*This resource will not be further analyzed.*	HH LH	5/5/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		RSFO: The Special Status Pant ACEC is within the project area. {GRRA ROD 1997, pg. 34} See section 3.21.		
NI	Climate Change and Green House Gases (GHGs)	*This resource will not be further analyzed.* In order to assess the potential for climate change, and the resultant effects of climate change, the standard approach is to measure and predict emissions of greenhouse gases (GHGs) measured in terms of global warming potentials (GWPs) and as carbon dioxide equivalents (CO_2e), with some gases like methane demonstrating much higher GWPs (28-36X greater than CO_2). The GWP provides a method to quantify the cumulative effects of multiple GHGs released into atmosphere using a standard "currency" at local, regional, national, and global scales. The proposed action would not produce or contribute to the environment hydrocarbons or other potential "downstream" sources of GHGs.	RM	3/10/2023
PI	Cultural Resources/Native American Religious Concerns	See section 3.24 and 3.25.	DT SS	5/3/2023 5/3/2023
NI	Environmental Justice (Executive Order (EO) 12898)	*This resource will not be further analyzed.* The EJ screening identified two potential minority, low-income or other special status populations in the project area. The action alternatives were reviewed in accordance with Executive Order 12898 and no significantly adverse of disproportionate impacts to minority low-income, and indigenous populations are expected at the time, though meaningful involvement is	KL	3/14/23

Determi-nation	Resource	Rationale for Determination	Initials	Date
		considered ongoing. No surface disturbance is anticipated for the pore space right-of-way, so negligible increases to regional populations and no substantial impact to public support services are currently expected. Disruptions to social life are expected to be minimal throughout the project, as the project has a discreet presence above ground. The project in total is also expected to improve health impacts associated with communities proximal to wells (associated emissions, flaring, and ensuing air quality), which are felt more adversely and disproportionately by potential EJ populations. However, these beneficial impacts would not be realized until project completion.		
NI	Fluid Mineral Resources/ Energy Production/ Reservoir Management	*This resource will not be further analyzed.* Based on pore space determination report from Reservoir Management Group (RMG), no economically producible hydrocarbons or helium were identified in the Madison and Nugget formations.	NL	
NI	Fuels/Fire Management	*This resource will not be further analyzed.* The project area overlaps with planned fuels treatments and fire management units. There will be no impacts from a sub-surface right-of-way. Once surface disturbance occurs or when surface infrastructure is in place fire management priorities will need to be updated and hazardous fuels reduction treatments may be reprioritized or relocated.	PL	4/19/2023
NI	Land Resources/Access	*This resource will not be further analyzed.* Other rights-of-way have	KM LA	2/9/2023 2/14/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		been identified in the area and will not be affected. Any proposed surface disturbance will require a separate application		
NI	Lands with Wilderness Characteristics	*This resource will not be further analyzed.* **KFO** Lands with Wilderness Characteristics (LWC) will not be affected by a subsurface right-of-way. The project area is made up of units found not to have wilderness character and un-inventoried areas. Additional analysis will be required if the applicant applies for surface disturbing activity within un-inventoried areas in the future. **RSFO** LWC will not be affected by subsurface right-of-way as they do not exist within the project area. Areas inventoried for wilderness characteristics fail size requirements, either to location within the checkerboard or due to the density of existing motorized routes.	HH LH	4/26/2023 5/2/2023
NI	Range/Livestock Management	*This resource will not be further analyzed.* **KFO:** No surface impacts, however, more project details will be needed to determine if surface disturbance will impact forage availability which could reduce AUM's, and if disturbances could impact livestock movement. **RSFO:** The proposed action involves issuing a sub-surface right-of-way, with no surface disturbance proposed at this time. Because of this, there are no expected impacts to livestock operations from this action. Once specific actions are proposed that	JS CH HW	3/30/2023 3/30/2023 4/18/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		involve surface disturbing activities, the BLM will consider potential impacts to livestock grazing in future NEPA analyses.		
PI	Migratory Birds (Migratory Bird Treaty Act, WO 13186)	See section 3.10.	CL PL	
PI	Paleontology	See section 3.19.	RF GS	
NI	Recreation	*This resource will not be further analyzed.* Recreation would not require further analysis to issue a sub-surface right-of-way. Additional analysis will be required if the applicant applies for surface disturbing activity in the future. Portions of the project area fall within the Oregon Trail Special Recreation Management Area which has the management objective to provide visitors the opportunity to visit and learn about trail history and use while maintaining the setting, character, and present condition of trails and associated historical sites. The remainder of the project area falls within the KFO Extensive Recreation Management Area where Recreation is to be managed in a custodial manner for compatibility with other uses.	HH LH	4/26/2023 5/2/2023
NI	Socio-Economics	*This resource will not be further analyzed.* The Proposed Action would not contribute to any population growth or reduction except as applies to peak construction periods. It would, however, help support the economic health of the existing community. Disruptions to social life are expected to be minimal throughout the project, as the project has a discreet presence	KL	3/14/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		above ground. It is anticipated that the Project will result in an increase in jobs related to construction and clean energy operations, an additional revenue source for private landowners whose pore space will be a part of the overall project that will indirectly contribute to associated community economies, and an increase of tax revenue provided through direct and indirect expenditures related to the project's creation and operation. The project in total is also expected to improve health impacts associated with communities proximal to wells, associated flaring, and ensuing air quality impacts, however, these beneficial impacts would not be realized until project completion.		
NI	Soils	*This resource will not be further analyzed.* **KFO/RSFO**: Erodible soils are within project area. However, this right-of-way action will not impact soils	BM TJF	5/2/2023 5/2/2023
NI	Solid Minerals/ Geologic Resources	*This resource will not be further analyzed.* **RSFO**: The proposed project area pore space edge meets the edge of the Known Sodium Leasing Area (KSLA) and/or Mechanically Mineable Trona Area (MMTA). While CO2 laterally entering the KSLA or MMTA itself is not a foreseeable issue due to the proposed deep depth of the target formations, there still exists a concern that CO2 may travel laterally or vertically into existing mine workings posing a safety risk to the underground miners. Consequently, a complete	HG	5/11/2023

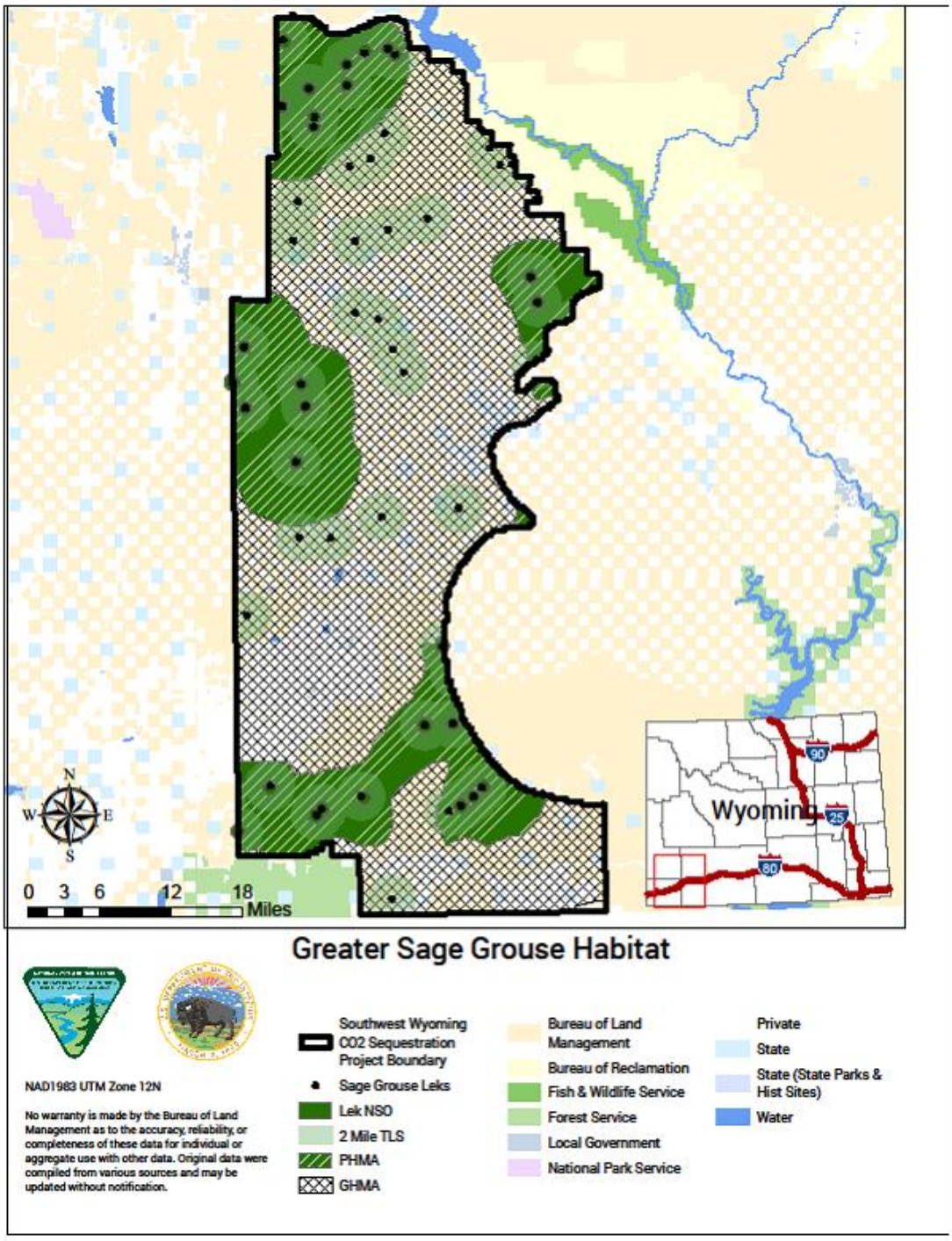
Determi-nation	Resource	Rationale for Determination	Initials	Date
		reservoir characterization, including but not limited to confining zone characteristics and faulting or fracturing are necessary to ensure the proposed CO2 injection zone(s) are not breached. Should the applicant receive the Wyoming Class VI Wyoming Department of Environmental Quality permit (which is a prerequisite to use of the BLM-administered federal pore space), these concerns would be mitigated. Additional analysis may be required if the applicant applies for surface disturbing activity.		
NI	Solid Minerals/ Geologic Resources	*This resource will not be further analyzed.* **RSFO:** The proposed project area overlaps with potential helium resources. The Bruff Unit 1 test well is the only well within the proposed area to test for helium, and it produced helium from the Madison and Nugget Formations (the proposed formations) between 0.27% and 1.52% helium at less than 100 mcf where a typical economic well is closer to 10,000 mcf making the helium within the target formations uneconomic (Appendix 4).	HG	8/8/2023
PI	Special Designations and Management Areas	See section 3.28.		
	Threatened, Endangered, Candidate Wildlife Species	**KFO**: Multiple threatened and endangered and Candidate species are present within the proposed project area, including Greater Sage-grouse, Yellow-billed Cuckoo, Canada Lynx, and Monarch Butterfly. If surface disturbing activities were to occur, timing stipulations will apply, and species-specific surveys will be required where habitat is present.	CL PL TAG	4/13/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		T&E Colorado River Fishes (Bonytail, Colorado Pikeminnow, Humpback Chub, and Razorback Sucker) may require consultation if water use exceeds 0.10 acre feet. **RSFO**: T&E and Candidate species include Yellow-billed Cuckoo, Monarch Butterfly, Bonytail, Colorado Pikeminnow, Humpback Chub, and Razorback Sucker.		
PI	Sensitive Wildlife Species	See sections 3.6 through 3.12.	CL PL TAG	4/13/2023
PI	Threatened, Endangered, Sensitive or Candidate Plant Species	See section 3.17 and 3.22.	CL PL	
NI	Vegetation	*This resource will not be further analyzed.* The proposed action involves issuing a sub-surface right-of-way, with no surface disturbance proposed at this time. Because of this, there are no expected impacts to vegetation from this action. Once specific actions are proposed that involve surface disturbing activities, the BLM will consider potential impacts to vegetation in future NEPA analyses.	JS HW TJF	4/18/2023
NI	Visual Resources Management	See section 3.27.	HH LH	4/26/2023 5/2/2023
NI	Wastes (hazardous or solid)	*This resource will not be further analyzed.* Without further context of a Plan of development it is impossible to meaningfully analyze or predict what hazardous wastes would be involved. In the event of further project development Hazardous or solid wastes will be managed and responded to per BLM Manual 1703-Hazard Management and Resource Restoration	BM TJF	5/2/2023 5/2/2023

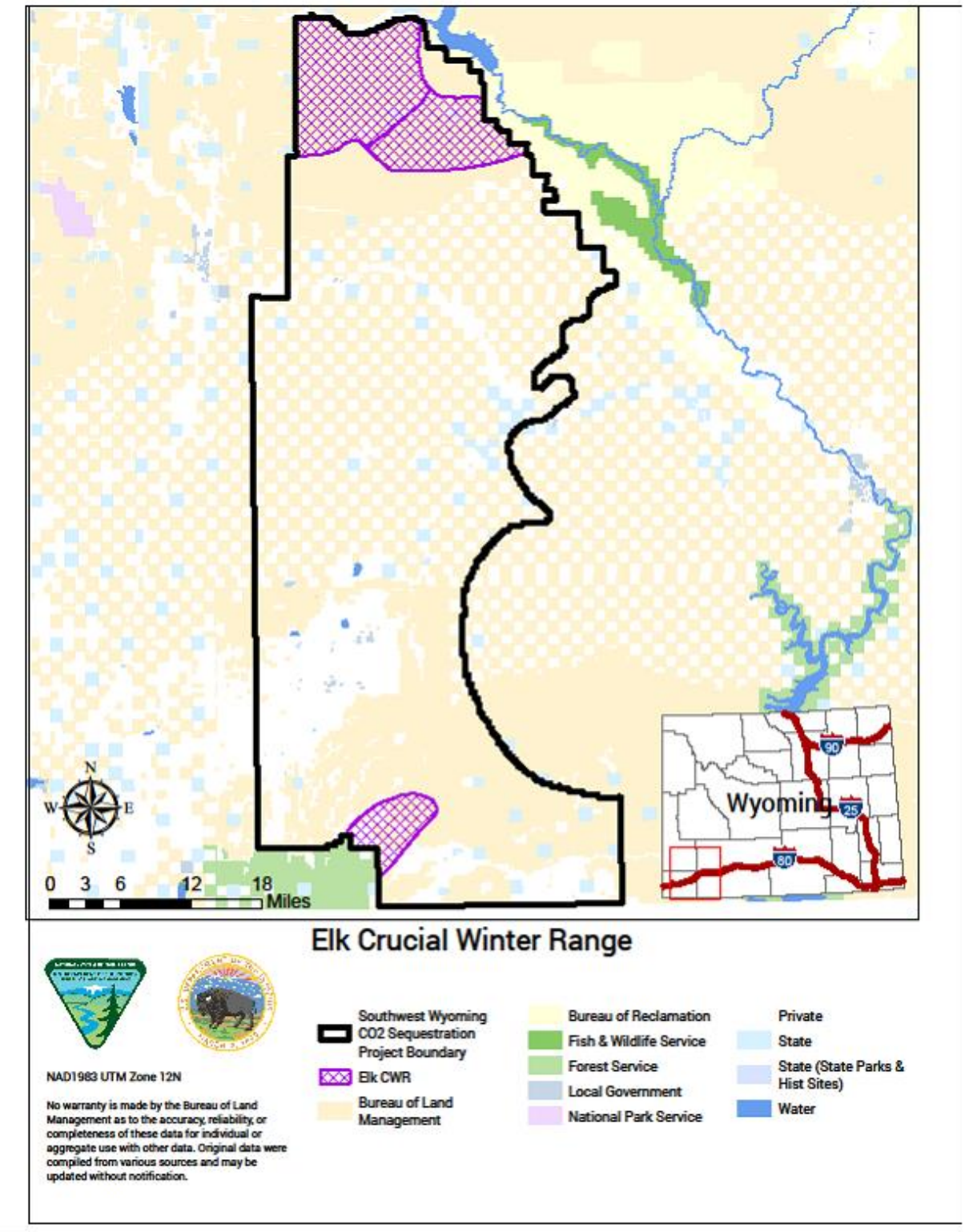
Determi-nation	Resource	Rationale for Determination	Initials	Date
		in accordance with procedures outlined in the National Contingency Plan (40 CFR 300). The operator is responsible for safe use, storage and containment of hazardous materials or waste, biological and/or solid waste. The release of any hazardous materials/ waste, in reportable quantities, must be immediately reported to NRC and BLM.		
NI	Water Quality (drinking/ground)	*This resource will not be further analyzed.* The BLM will provide for compliance with applicable water quality standards by requiring the applicant obtain the necessary authorizations from the State of Wyoming, including permitting under the Wyoming Department of Environmental Quality's Class VI Undergound Injection Control program. The State of Wyoming has been delegated primacy to regulate Class VI UIC wells in Wyoming by the Environmental Protection Agency (see 85 FR 64053-64056, October 9, 2020).	TAG JB JPB	4/13/2023 8/28/2023 1/11/2024
NI	Wetlands/Riparian/ Floodplains (EO 11990)	Riparian see section 3.18.	TAG JB JPB	4/13/2023 8/28/2023 1/11/2024
NP	Wild and Scenic Rivers (Wild and Scenic Rivers Act)	*This resource will not be further analyzed.* There are no wild and scenic rivers within or adjacent to the project area.	HH LH	4/26/2023 5/2/2023
NP	Wilderness/Wilderness Study Areas (WSA)	*This resource will not be further analyzed.* There are No WSA's or Wilderness Areas within or adjacent to the project area.	HH LH	4/26/2023 5/2/2023
NI	Weeds - Invasive, Non-native Species (Federal Noxious Weed Control Act, EO 13112)	*This resource will not be further analyzed.* While actual construction and development could lead to noxious weeds being established. It is	BM TJF	5/2/2023 5/2/2023

Determi-nation	Resource	Rationale for Determination	Initials	Date
		impossible to predict at what scale or meaningfully analyze the impacts without a plan of development. The operator will need to implement a weed monitoring and control plan. Per BLM Handbook H-9011-1, submission of a Pesticide Use Permit (PUP) and annual Pesticide Application Report (PAR) will be required.		
NP	Wild Horse and Burro	*This resource will not be further analyzed.* There are no herd management areas within the project area.	JD	2/2/2023
PI	Wildlife/Fisheries	See sections 3.1 through 3.12, 3.15 and 3.16.	CL/PL TAG	4/13/2023
NI	Woodland/Forestry	*This resource will not be further analyzed.* The proposed action involves no surface disturbance at this time. Because of this, there are no expected impacts to forest or woodlands from this action. Once specific actions are proposed that involve surface disturbing activities, the BLM will consider potential impacts to forests and woodlands in future NEPA analyses.	AS	2/9/2023

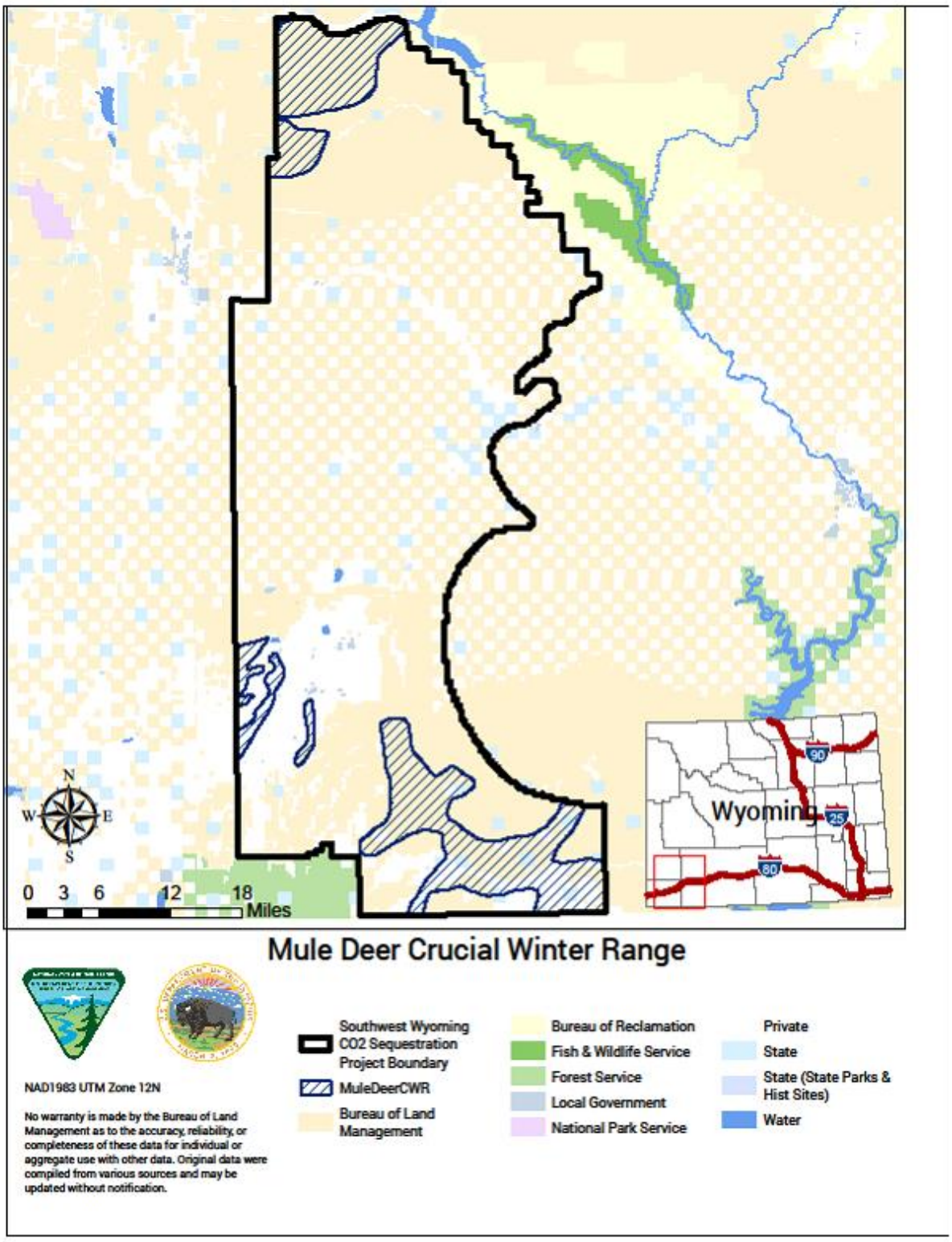
Appendix 2 – Maps



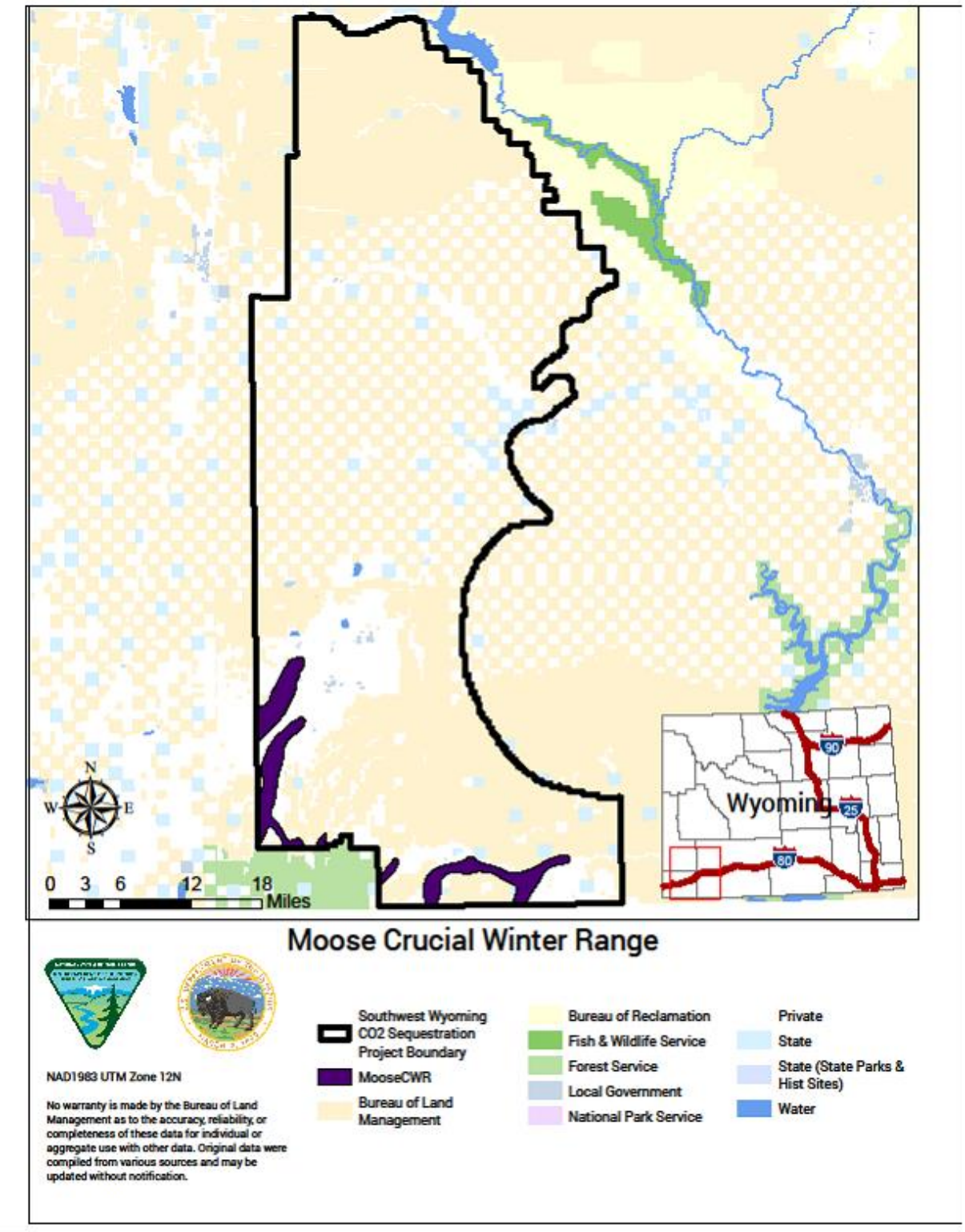
Map 3.1 and 3.2. Map showing General and Priority Habitat Management Areas for Greater Sage-Grouse.



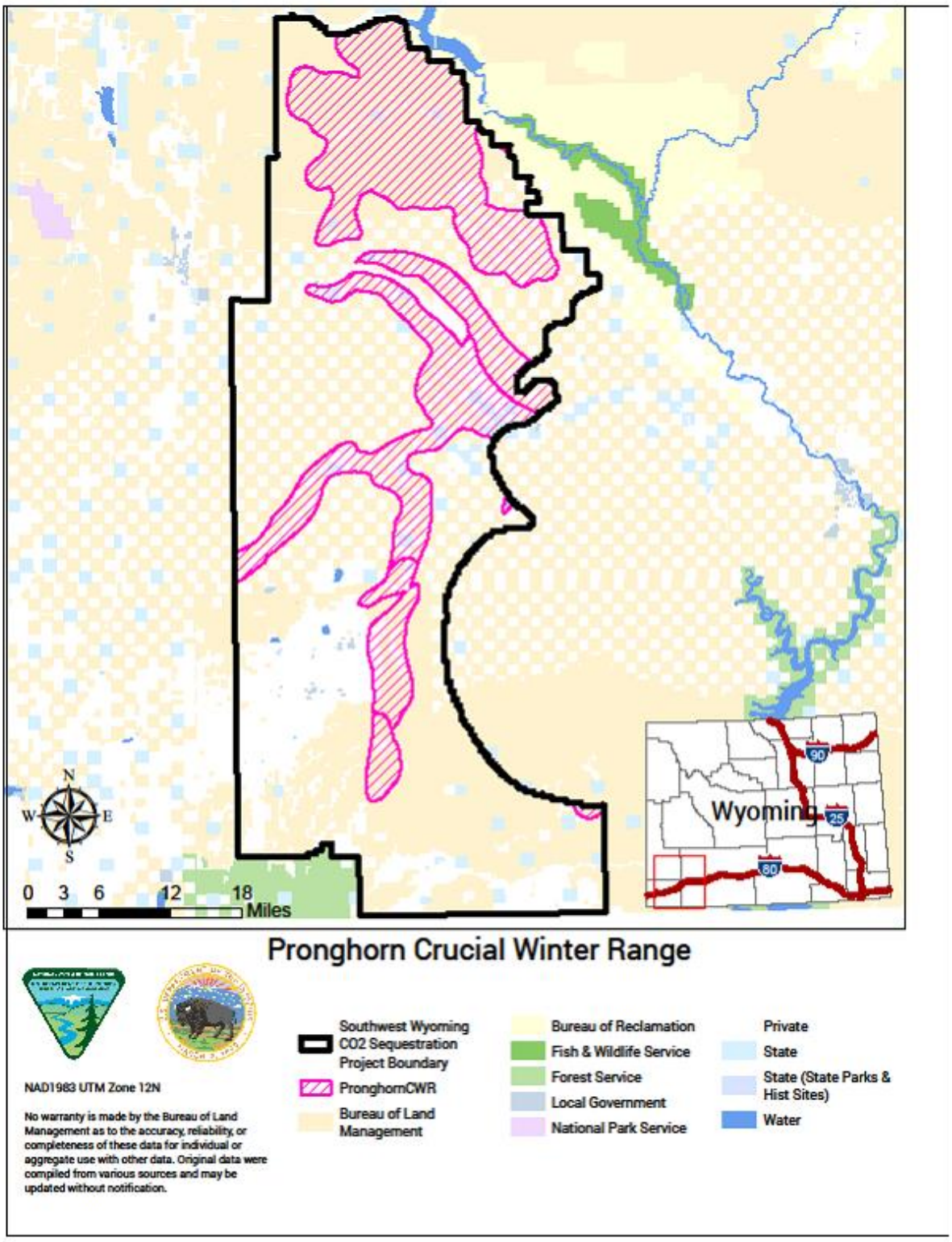
Map 3.3.1. Map showing Elk Crucial Winter Range.



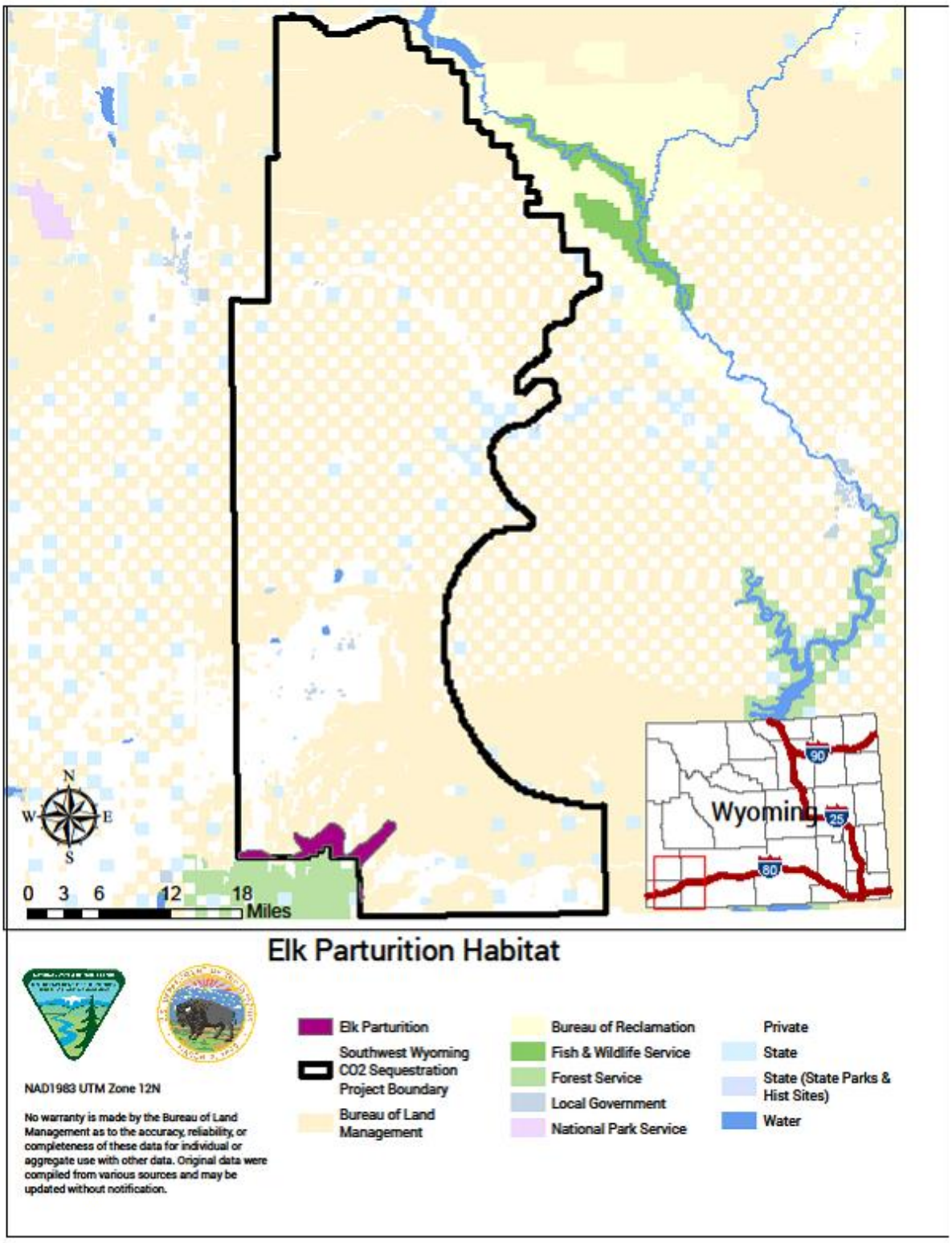
Map 3.3.2. Map showing Mule Deer Crucial Winter Range.



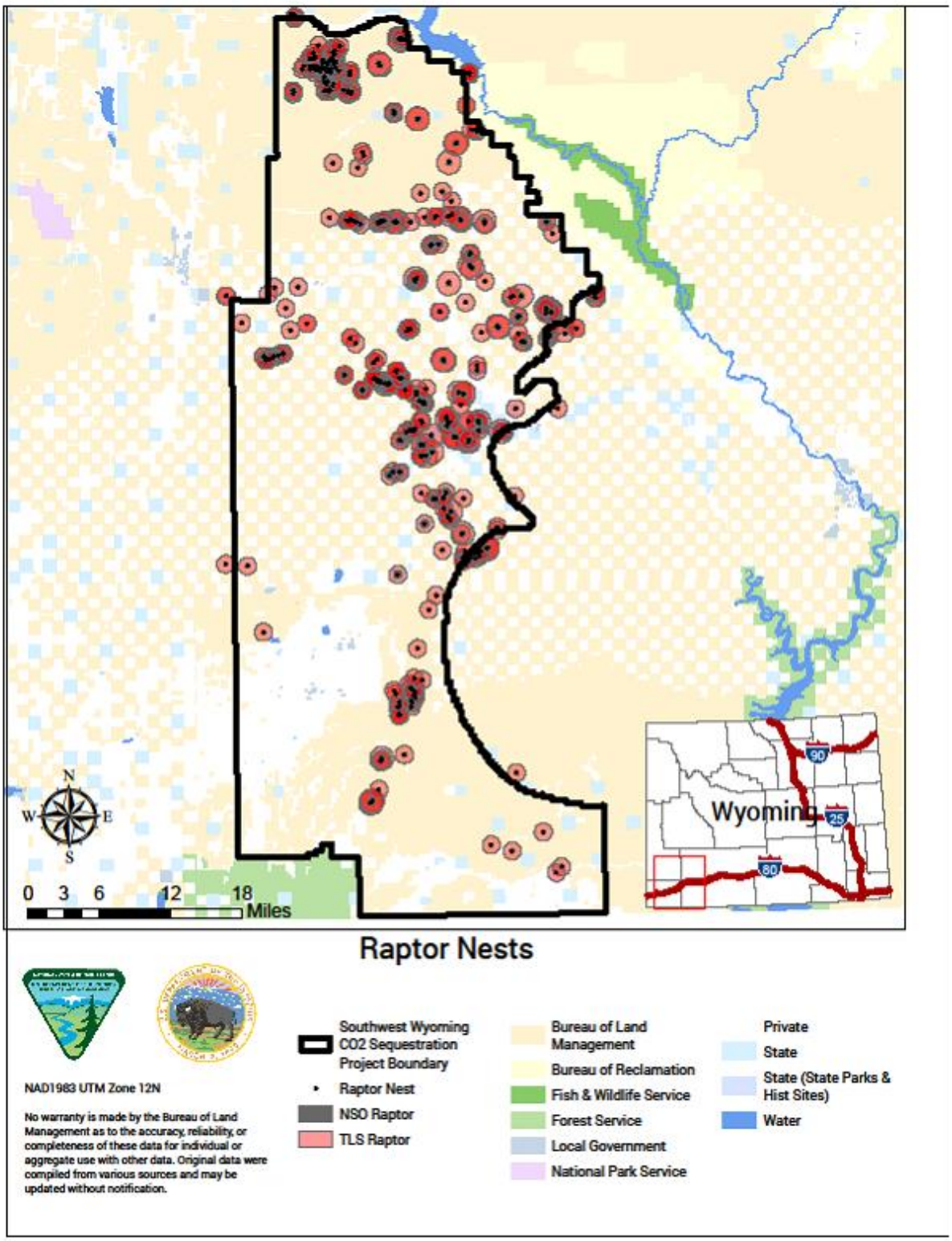
Map 3.3.3. Map showing Moose Crucial Winter Range.



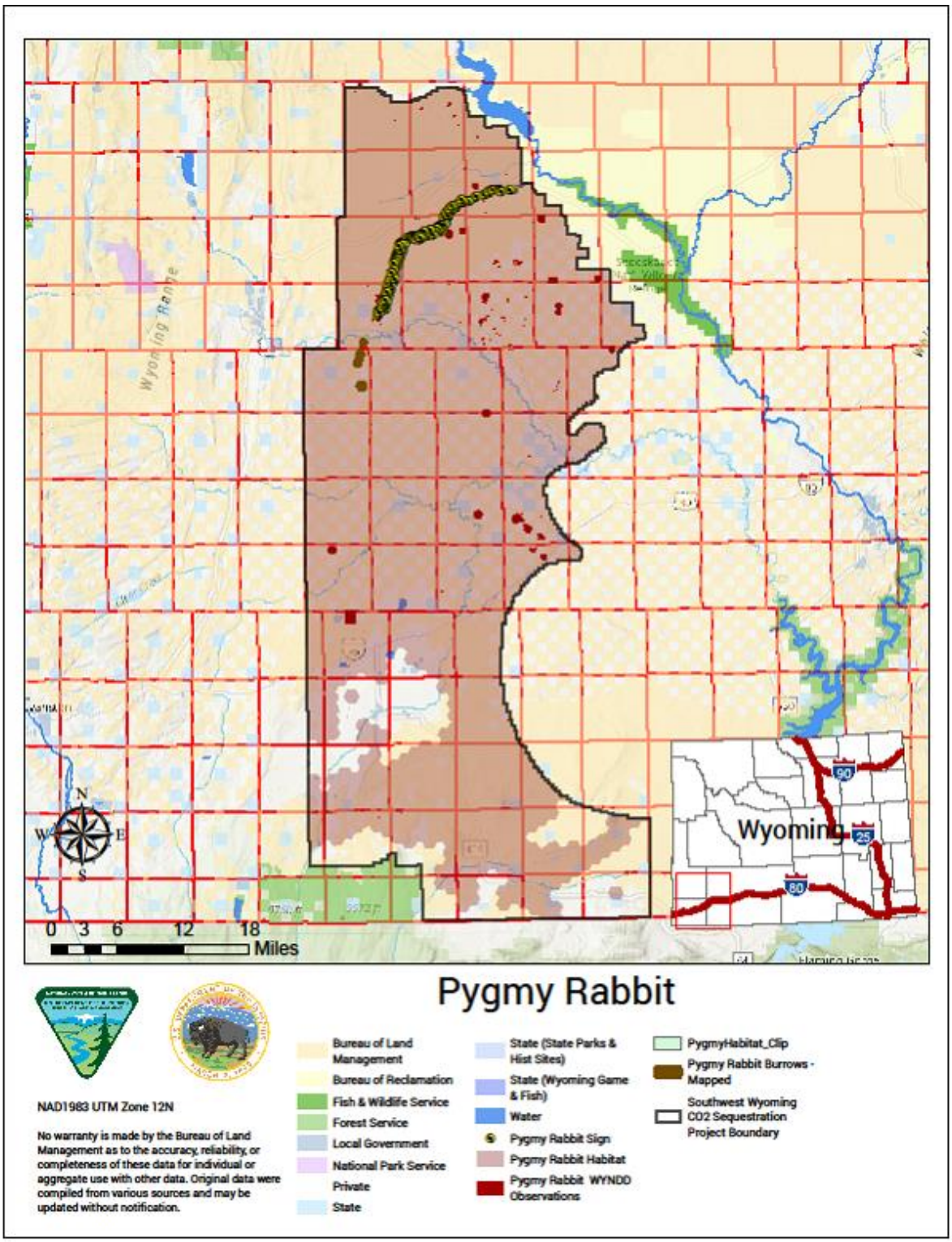
Map 3.3.4. Map showing Pronghorn Crucial Winter Range.



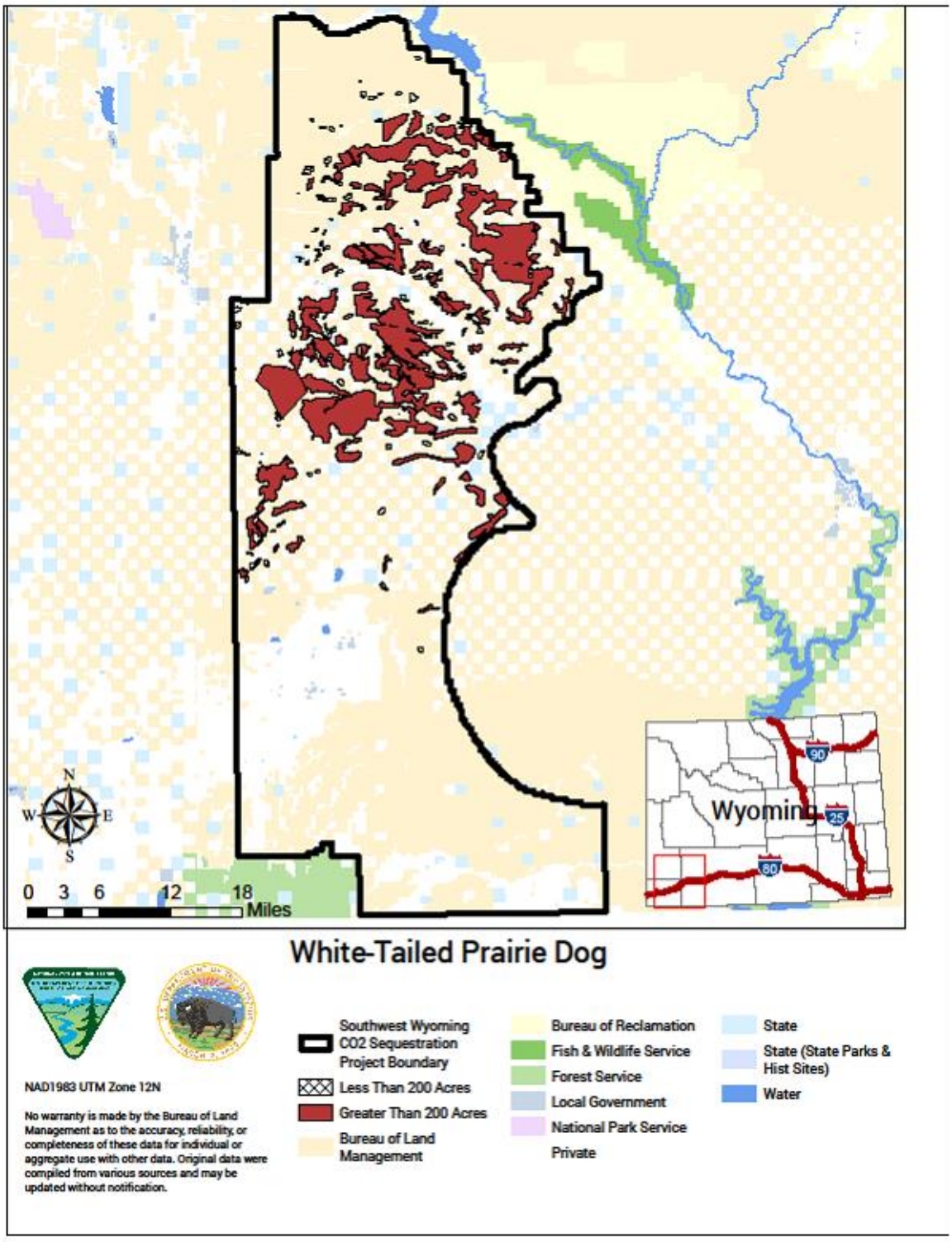
Map 3.4 Map showing Elk Parturition Habitat.



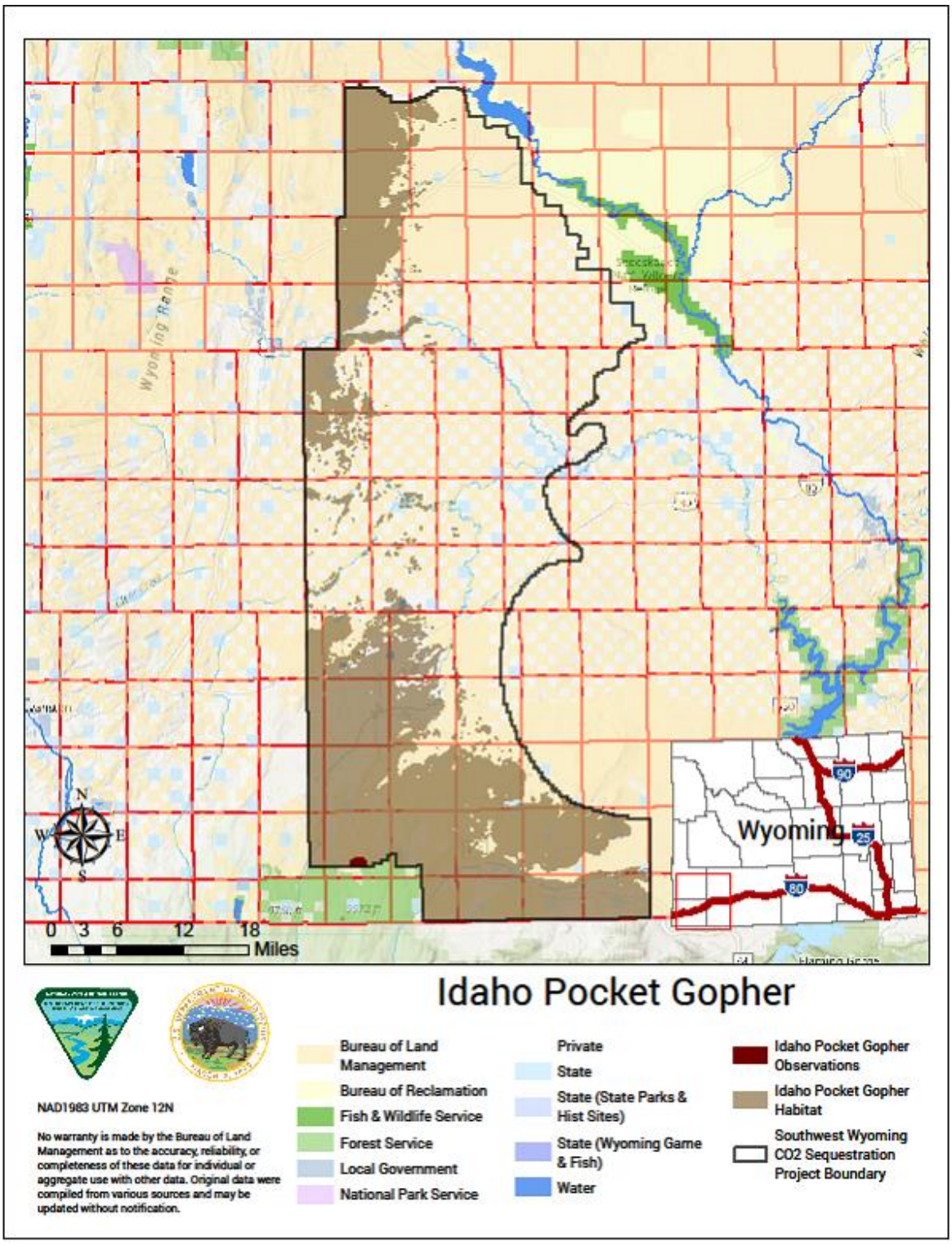
Map 3.5 Map showing Raptor Nests.



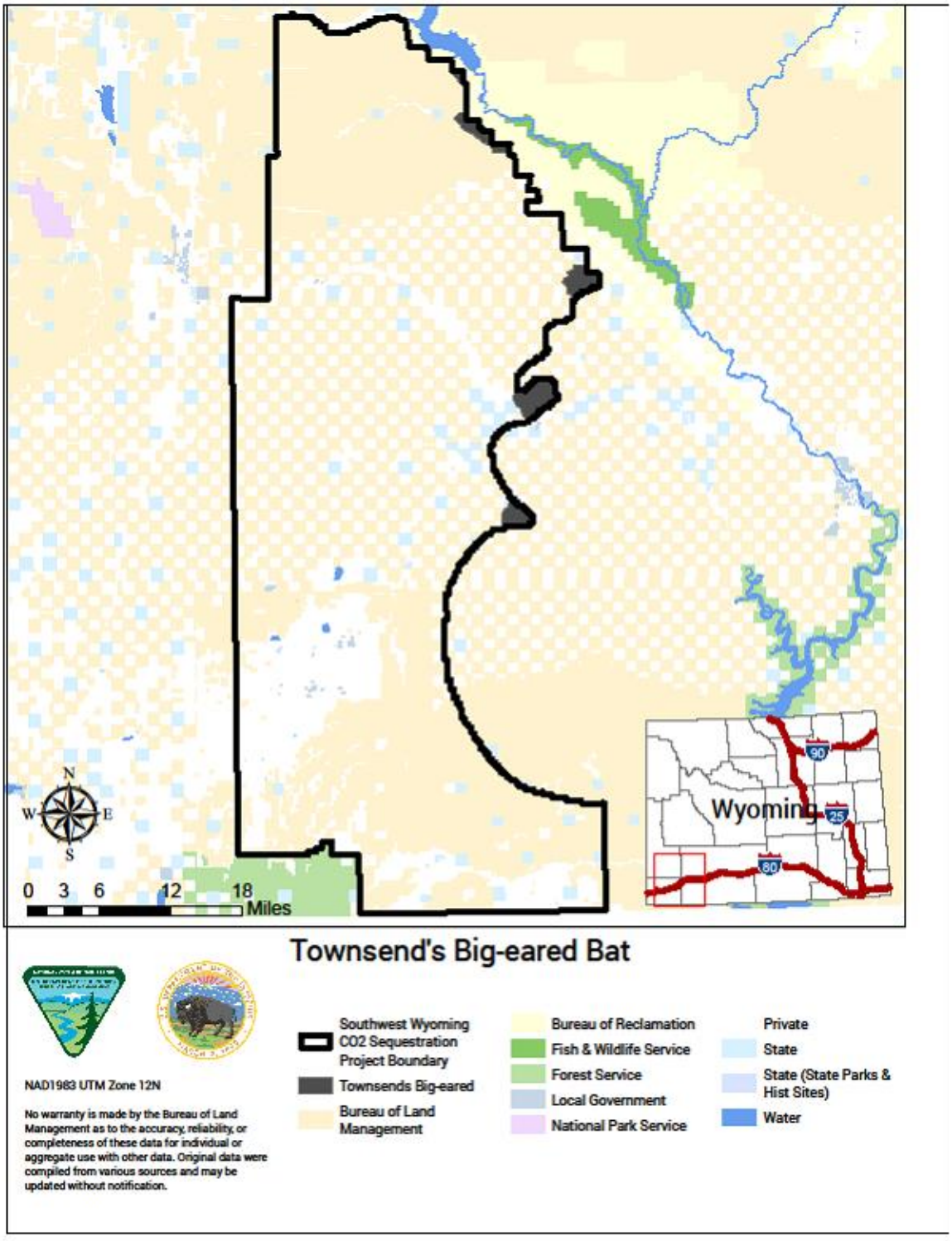
Map 3.6 Map showing Pygmy Rabbit.



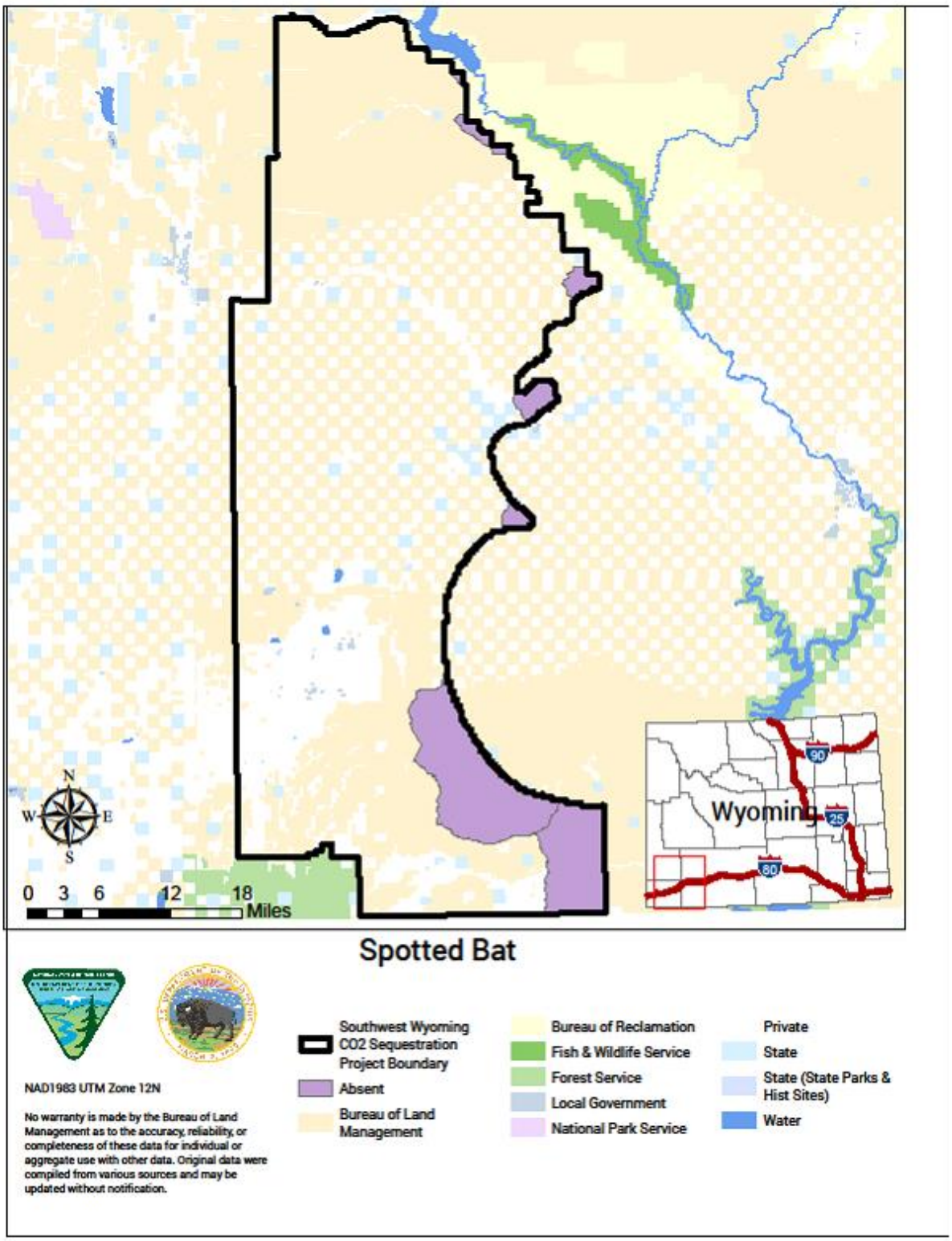
Map 3.7 Map showing White-tailed Prairie Dogs.



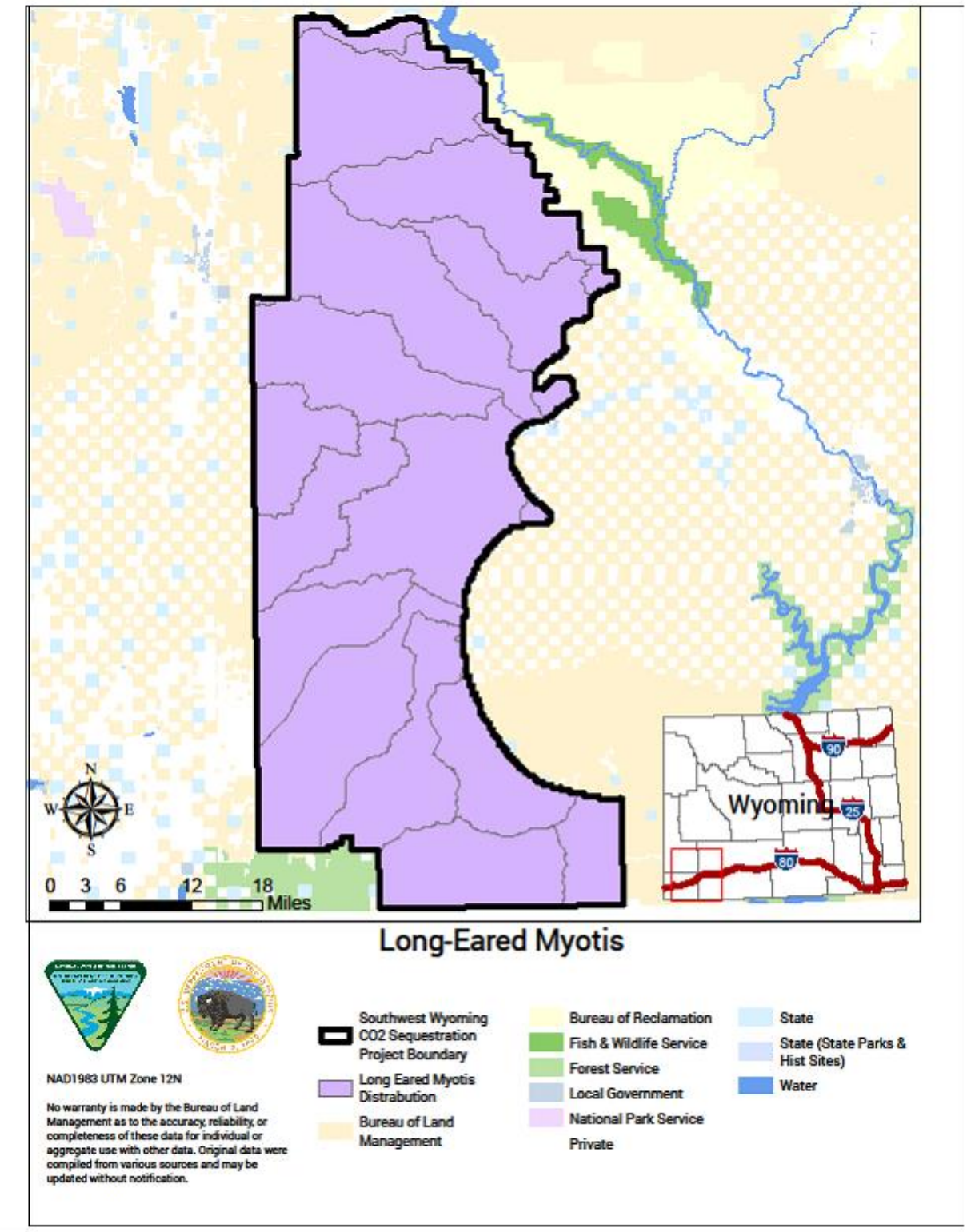
Map 3.8 Map showing Idaho Pocket Gopher.



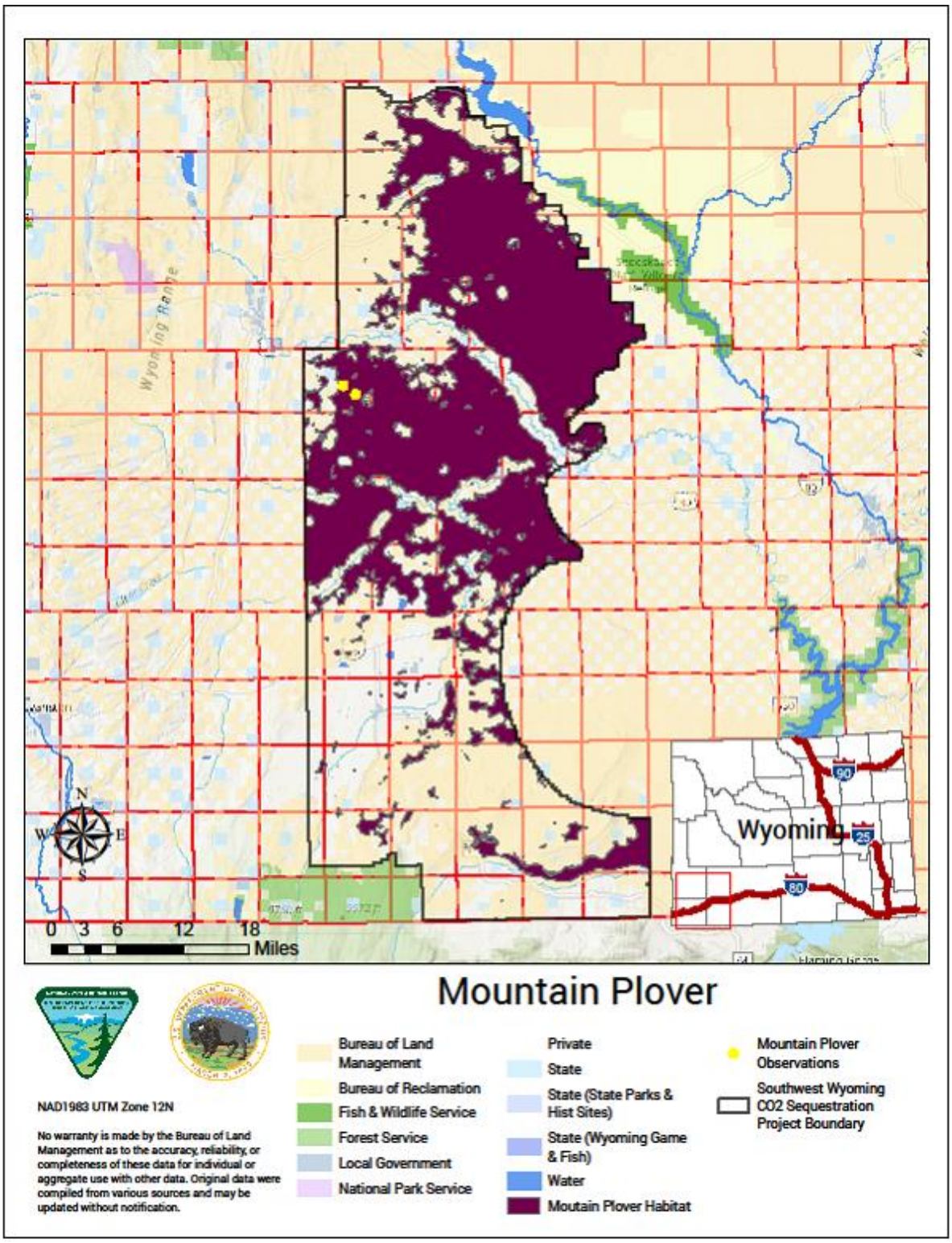
Map 3.9.1 Map showing BLM Sensitive Bats – Townsend Big-Eared Bat.



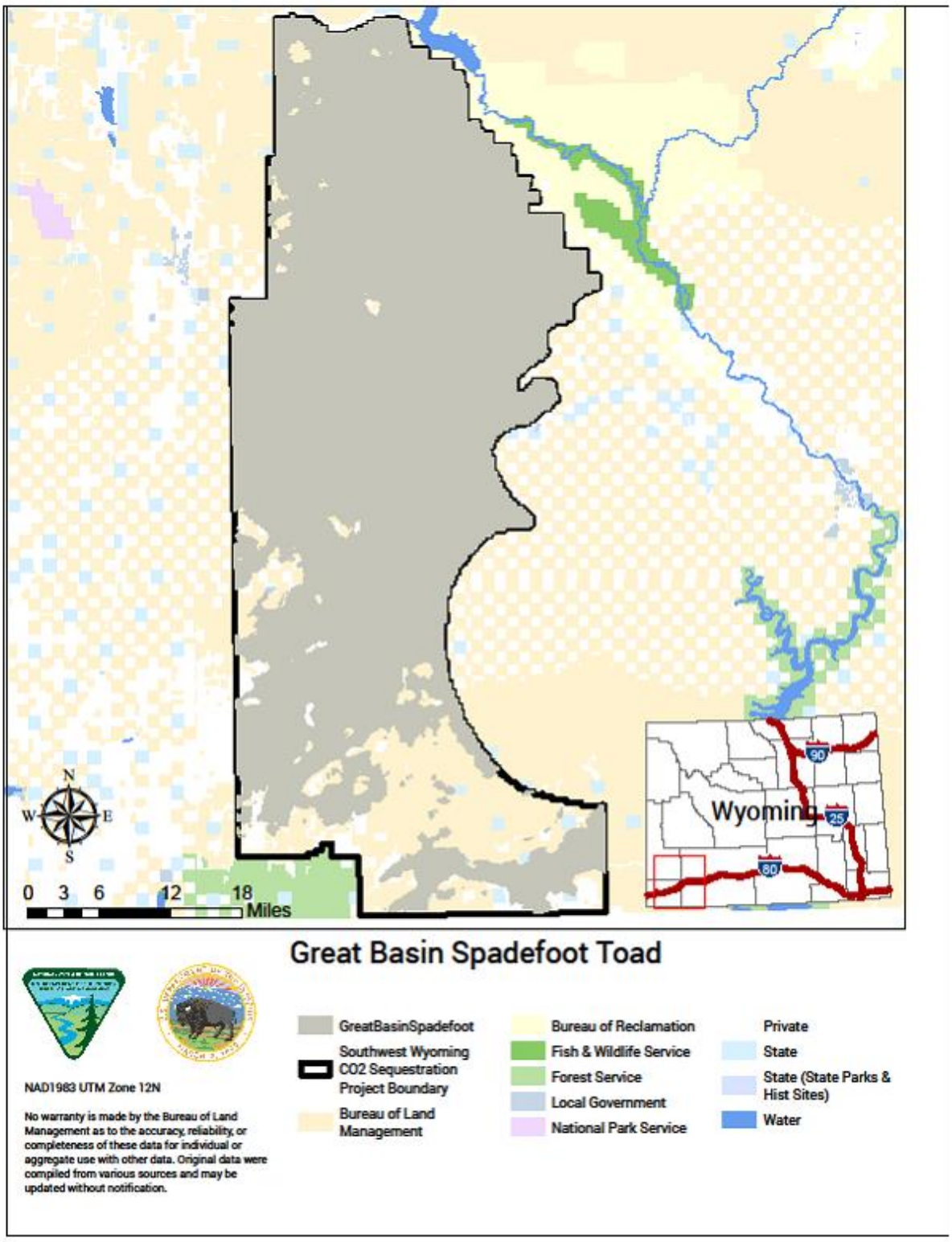
Map 3.9.2 Map showing BLM Sensitive Bats – Spotted Bat.



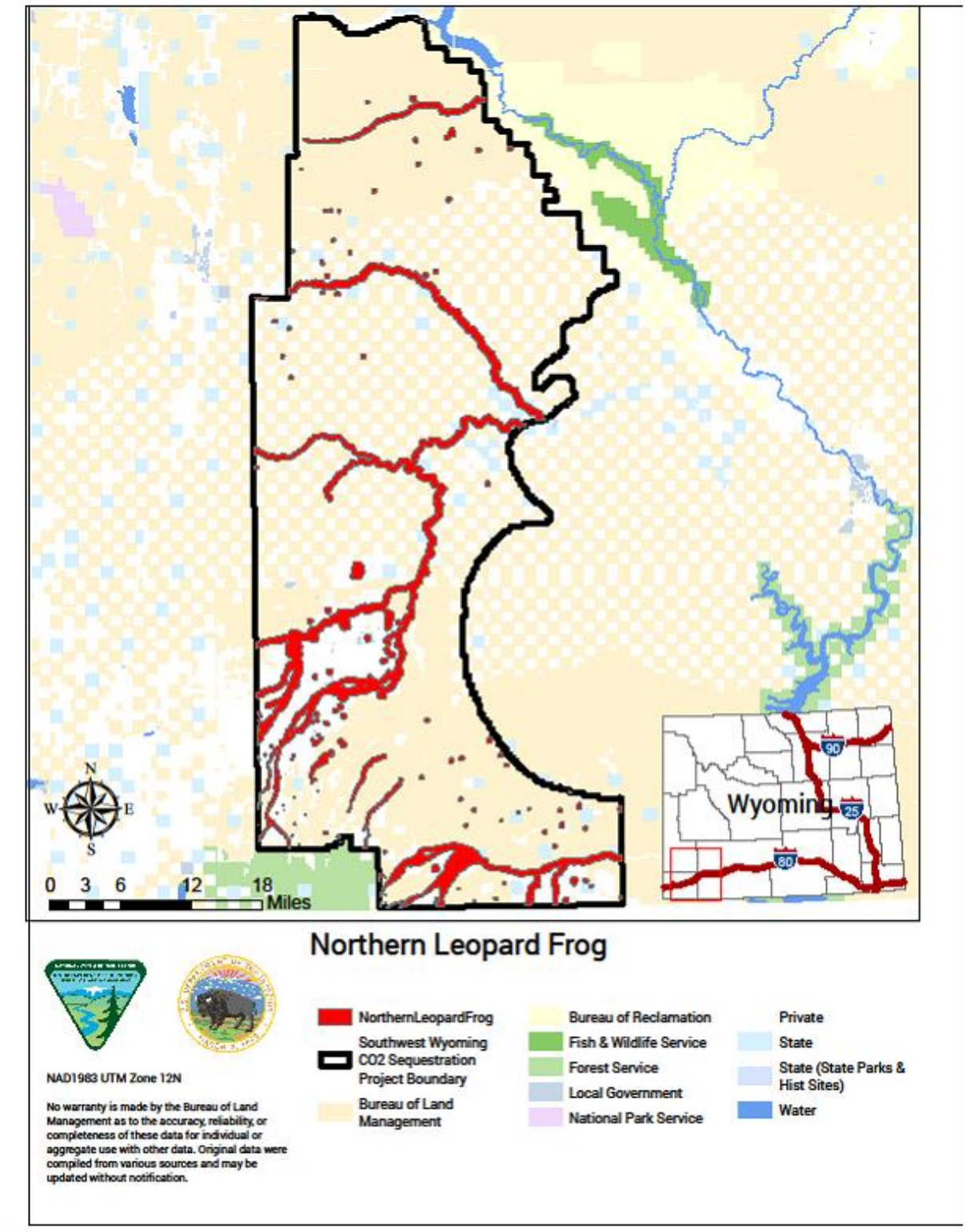
Map 3.9.3 Map showing BLM Sensitive Bats – Long-Eared Myotis.



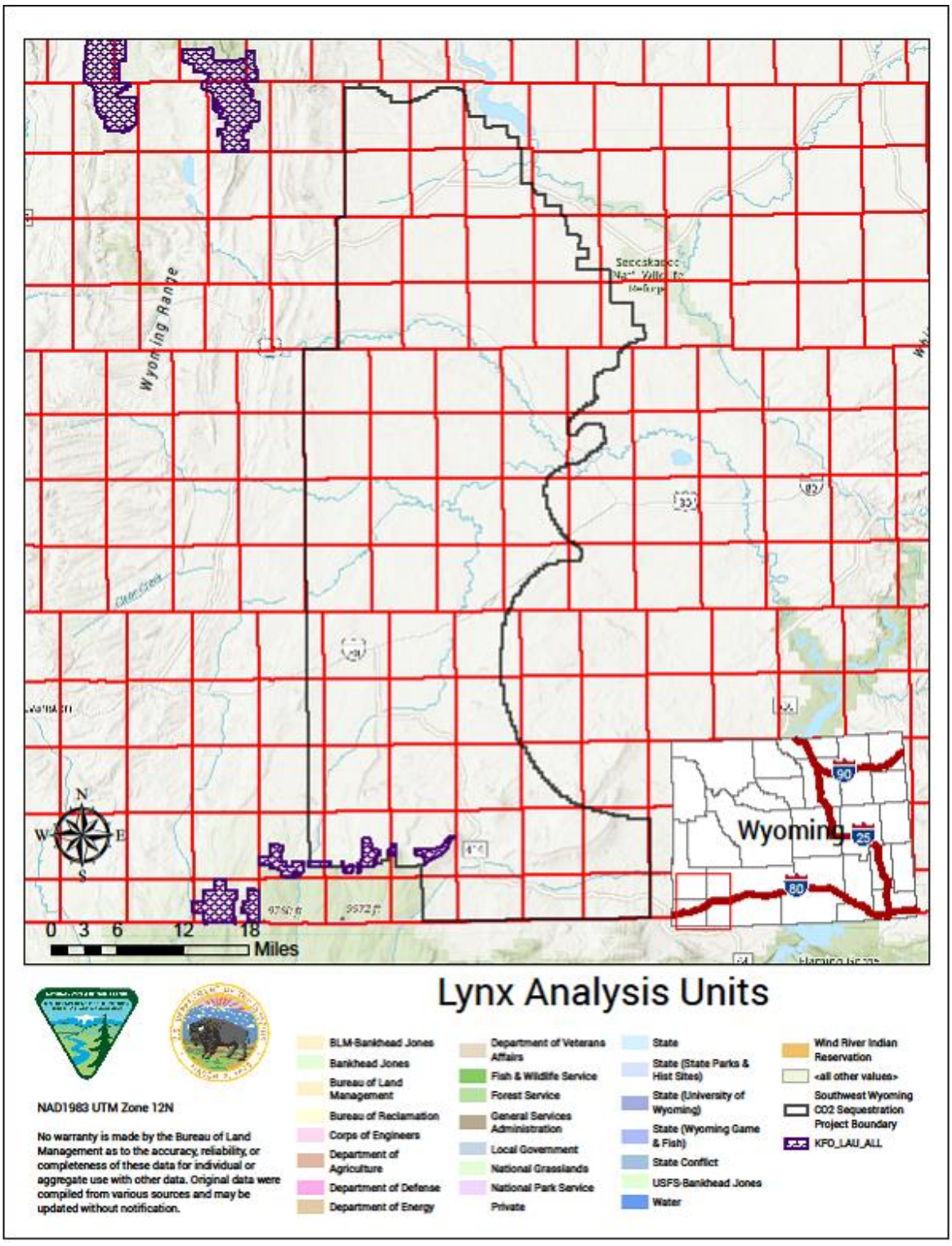
Map 3.11 Map showing Mountain Plover Habitat.



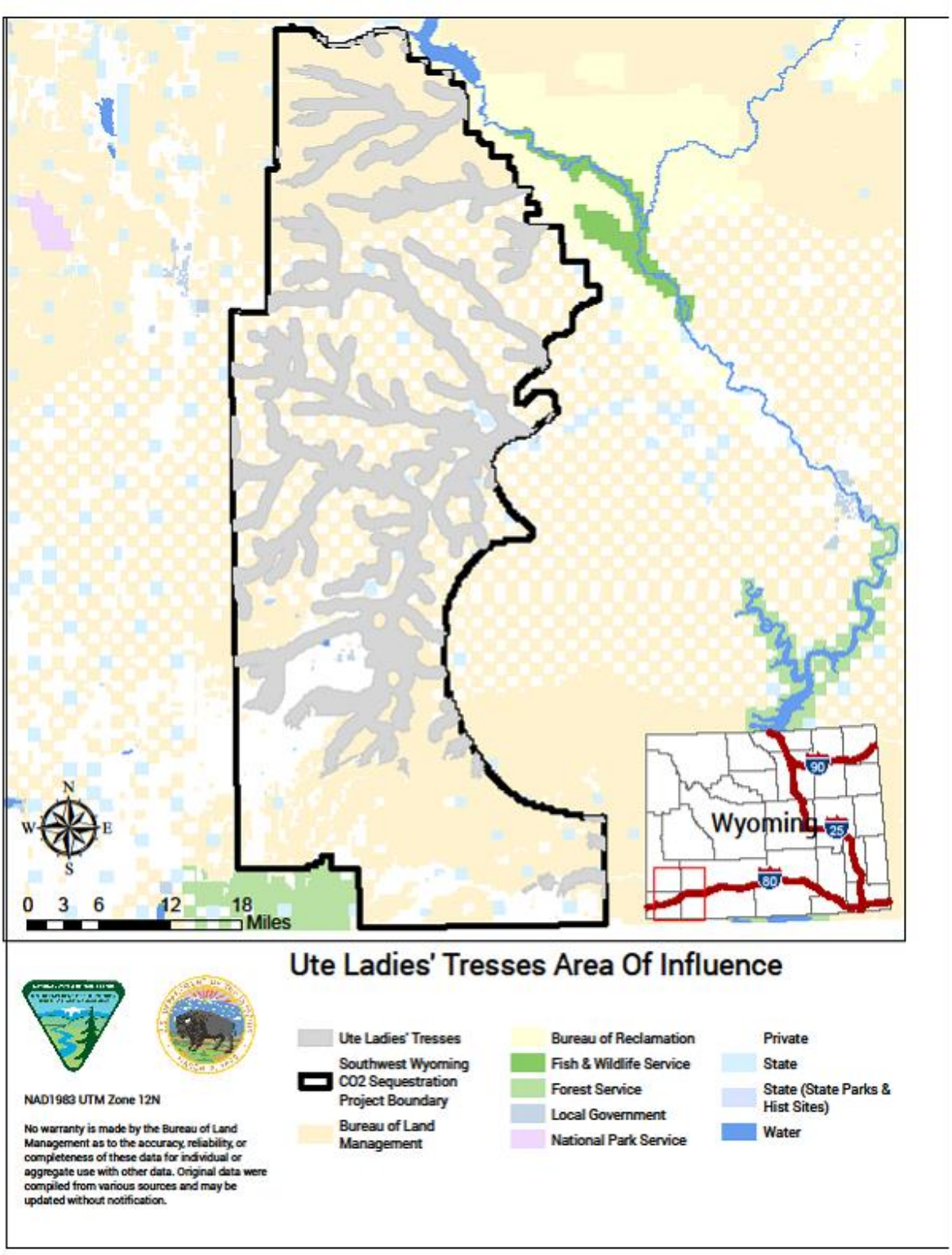
Map 3.12.1 Map showing Great Basin Spadefoot Toad Habitat.



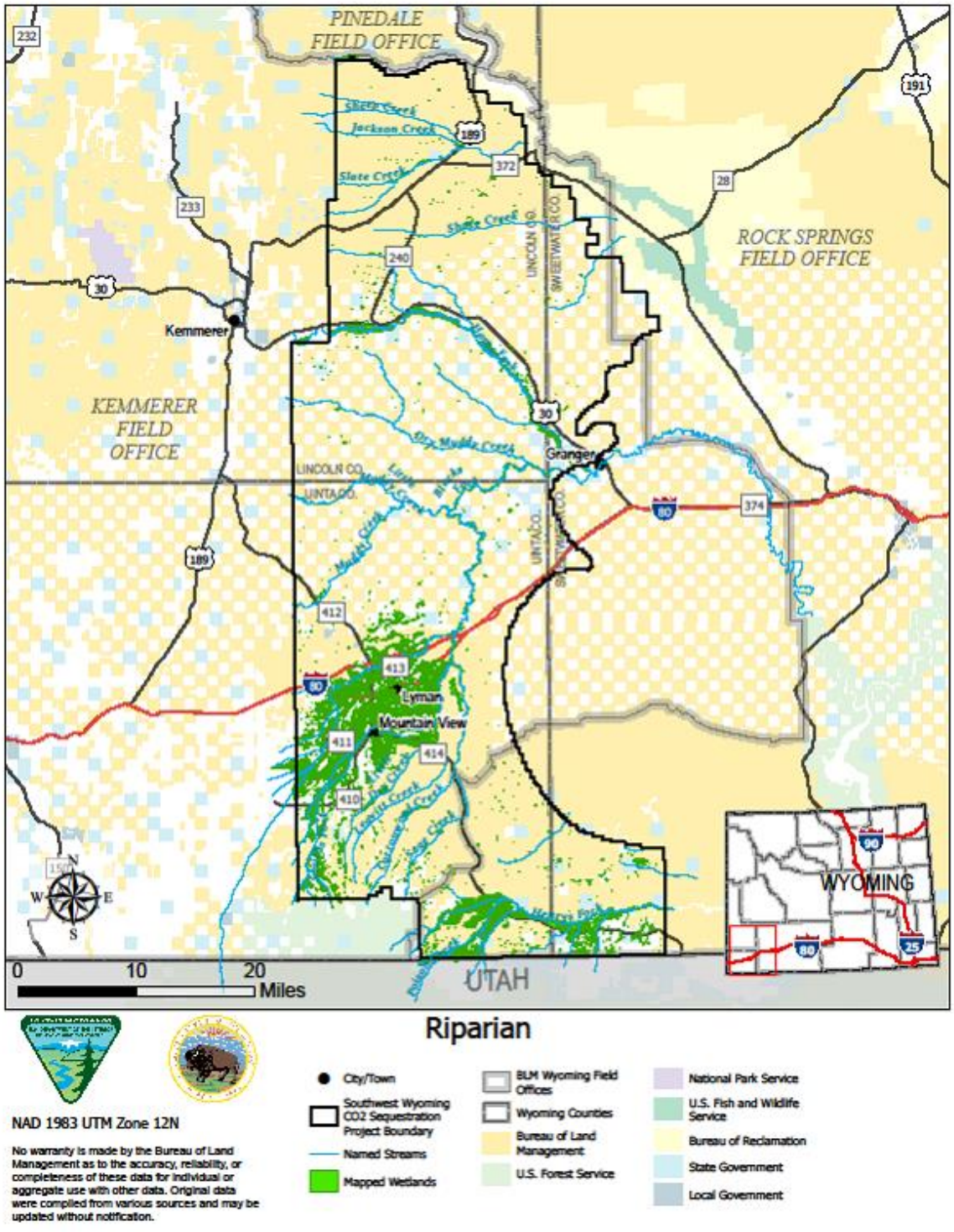
Map 3.12.1 Map showing Northern Leopard Frog Habitat.



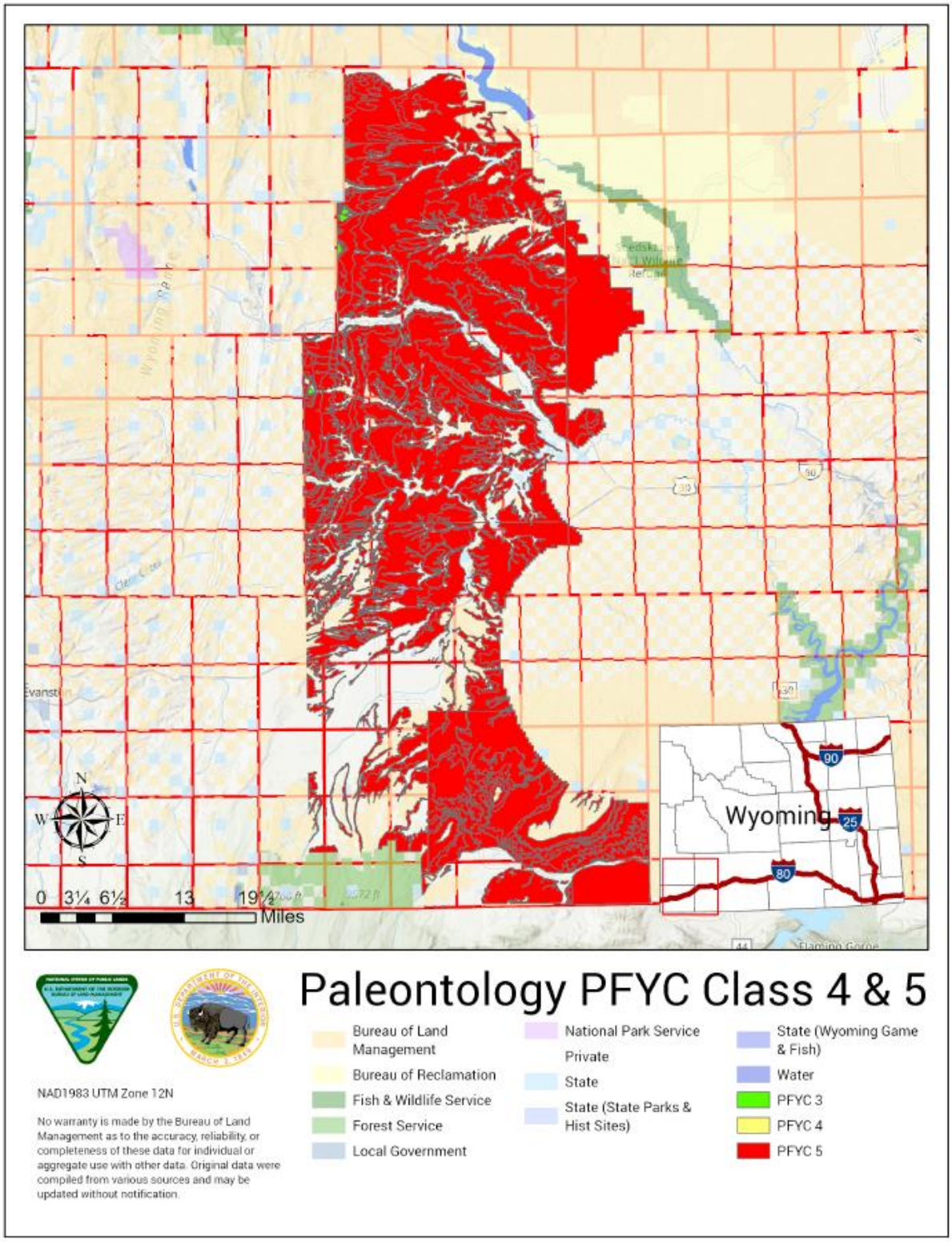
Map 3.13 Map showing Canada Lynx Habitat.



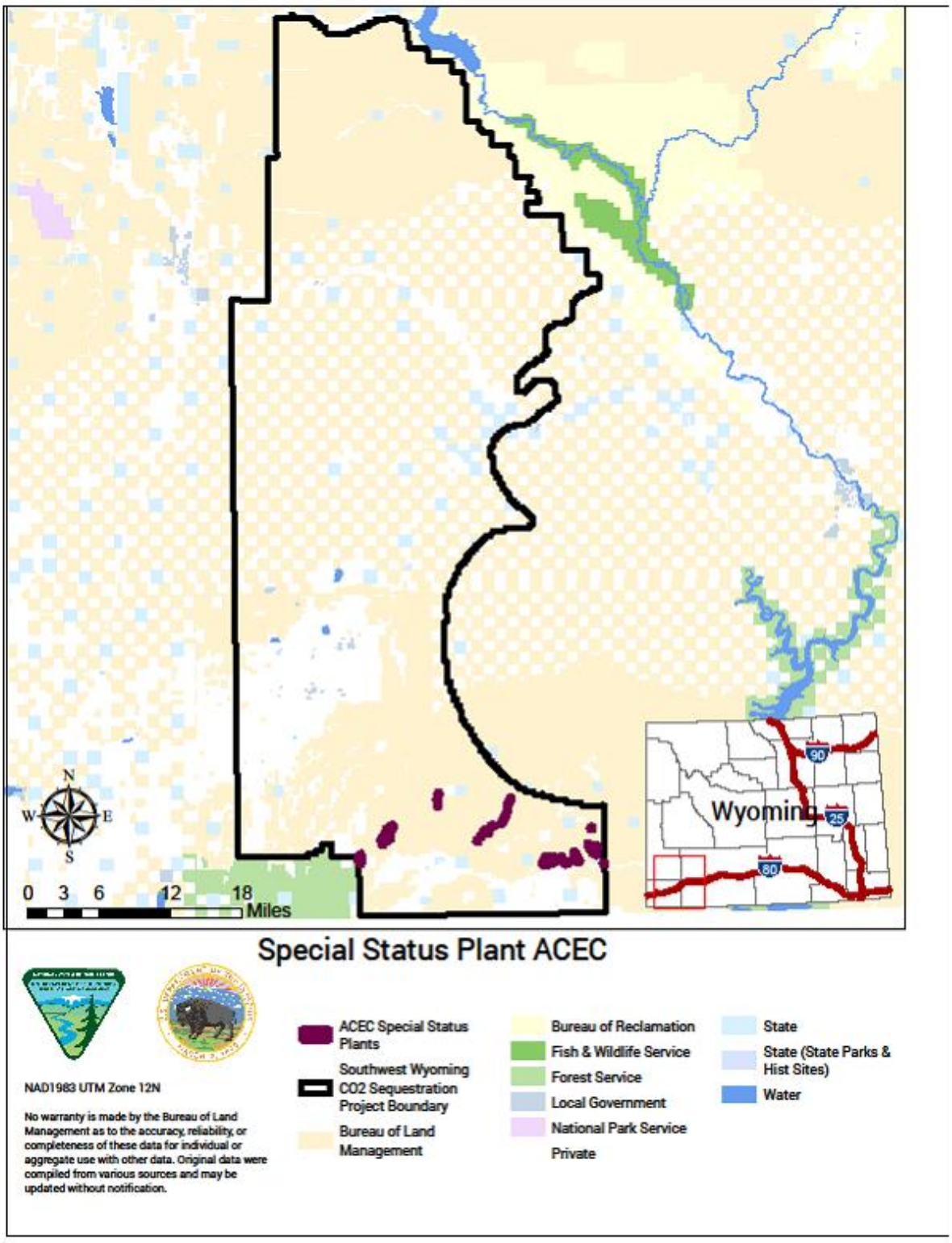
Map 3.15 Map showing Ute Ladies' Tresses Area of Influence Habitat.



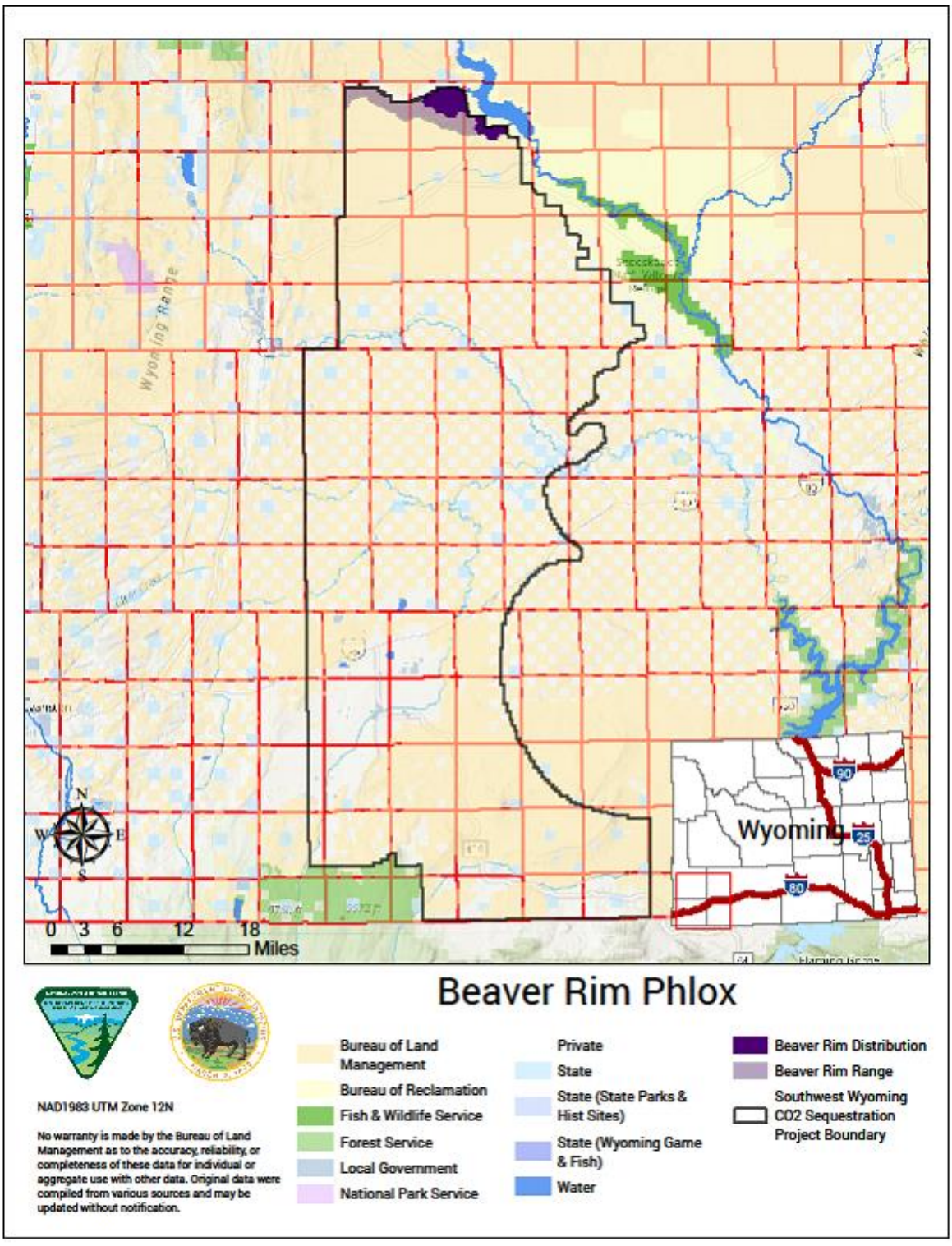
Map 3.16 Map showing Riparian areas.



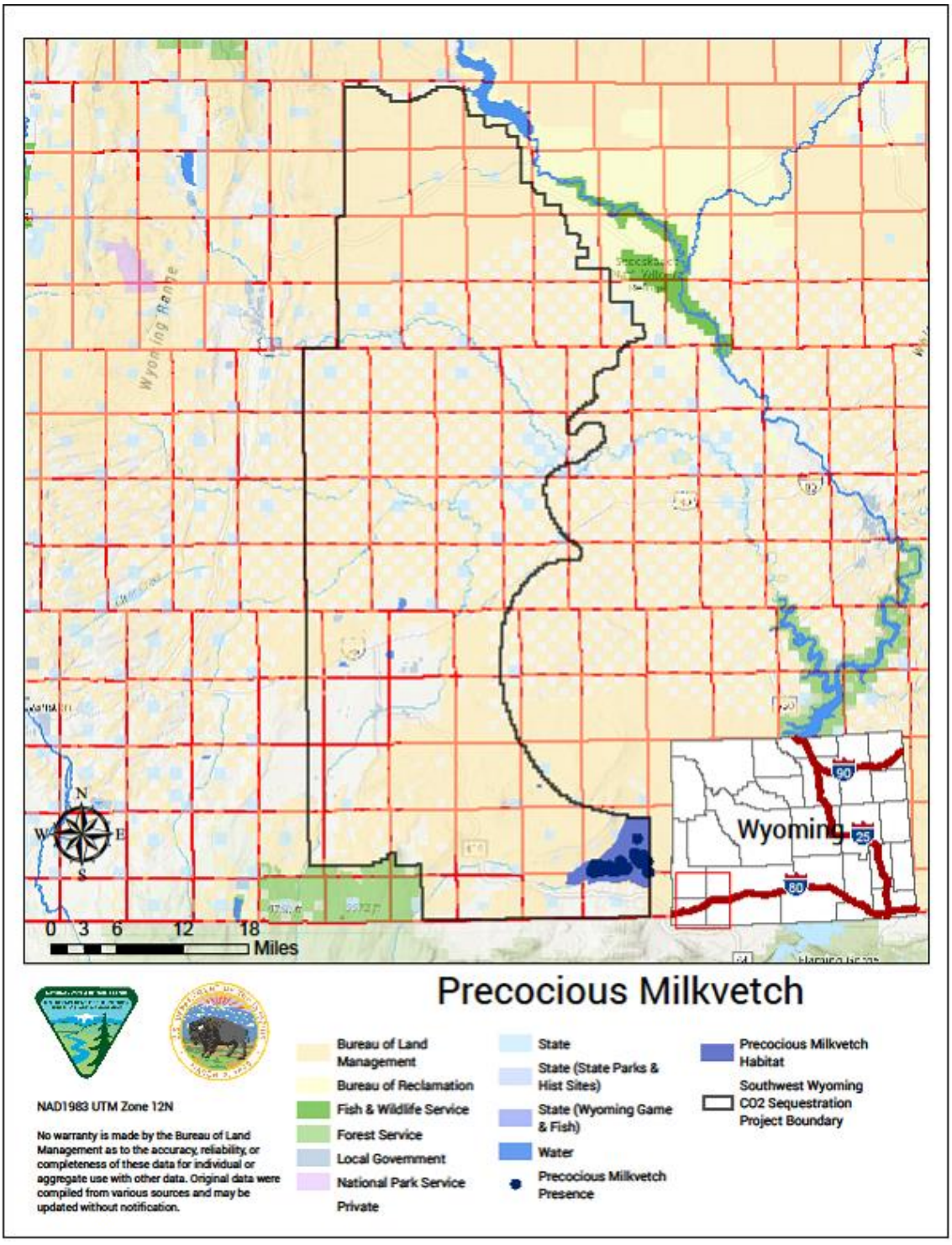
Map 3.17 Map showing PFYC Classes.



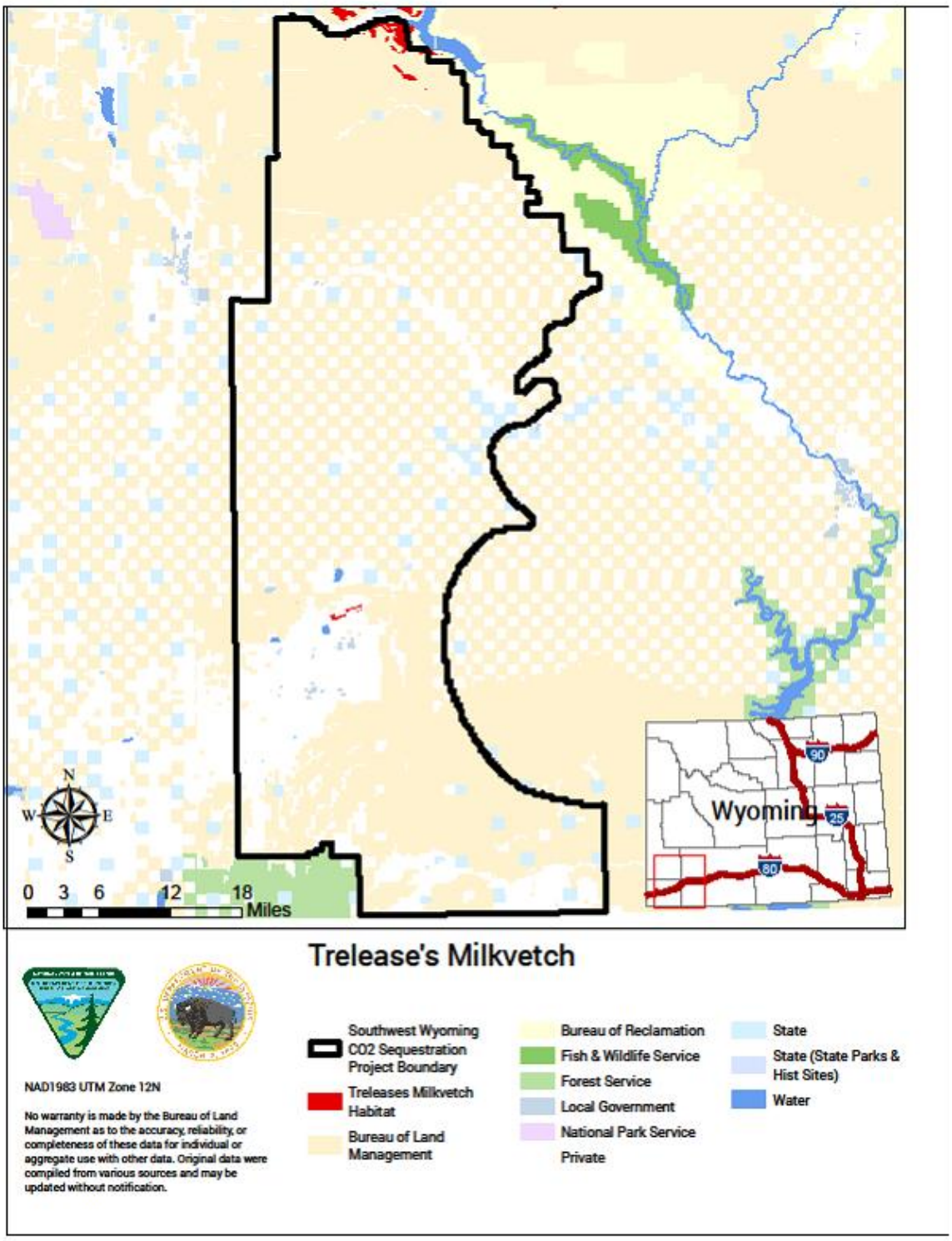
Map 3.19 Map showing Special Status Plant ACEC.



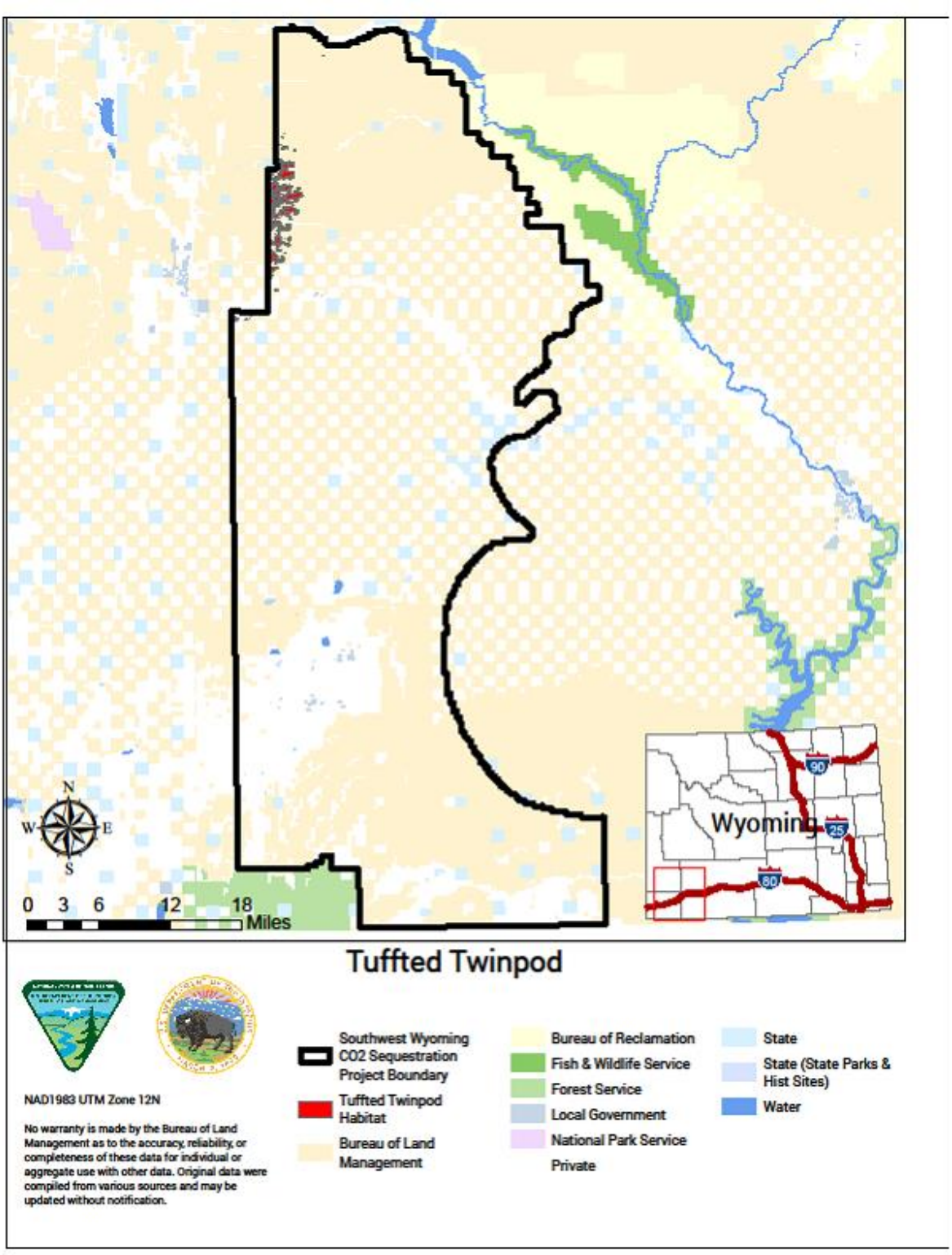
Map 3.20.1 Map showing Beaver Rim Phlox Habitat.



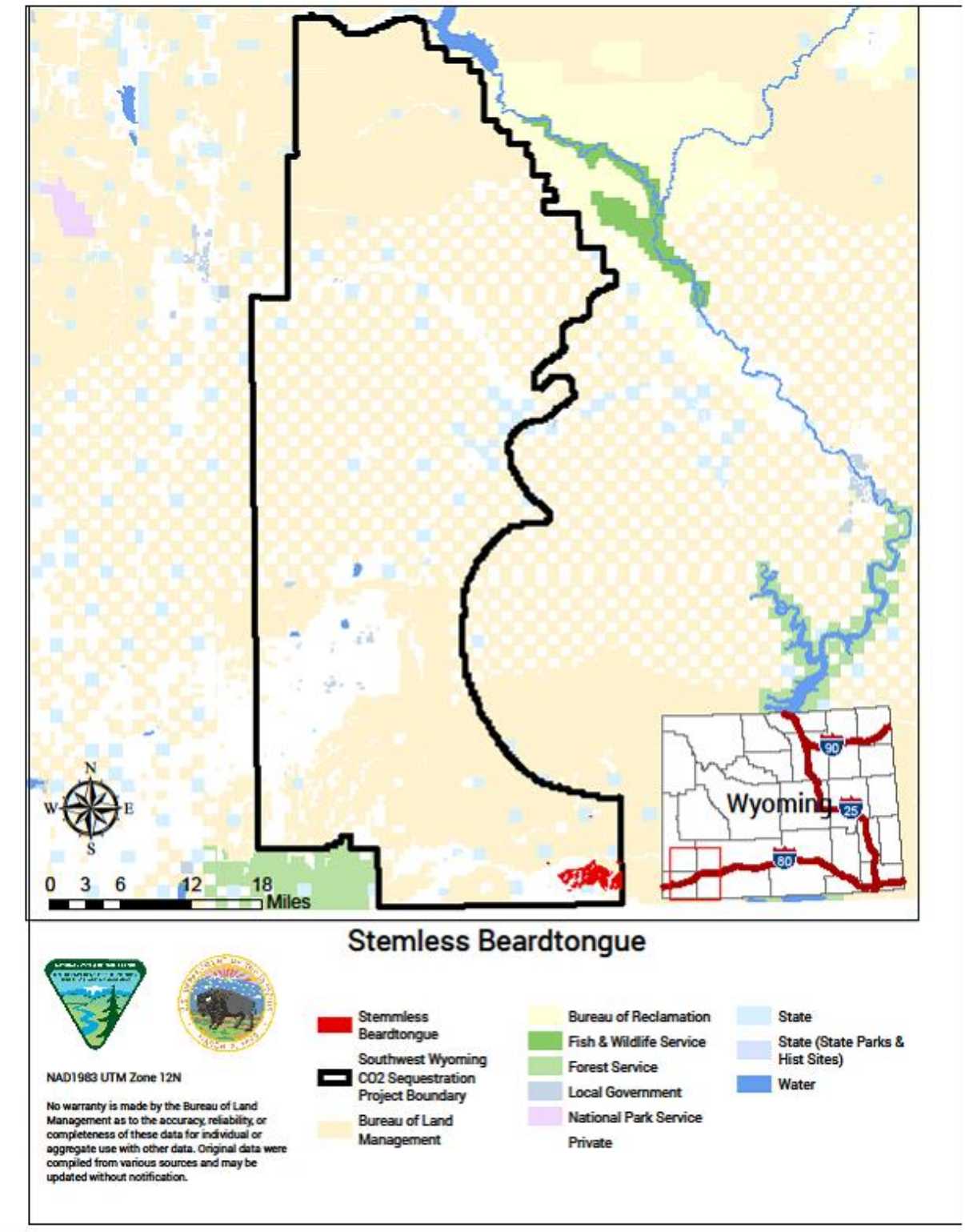
Map 3.20.2 Map showing Precocious Milkvetch Habitat.



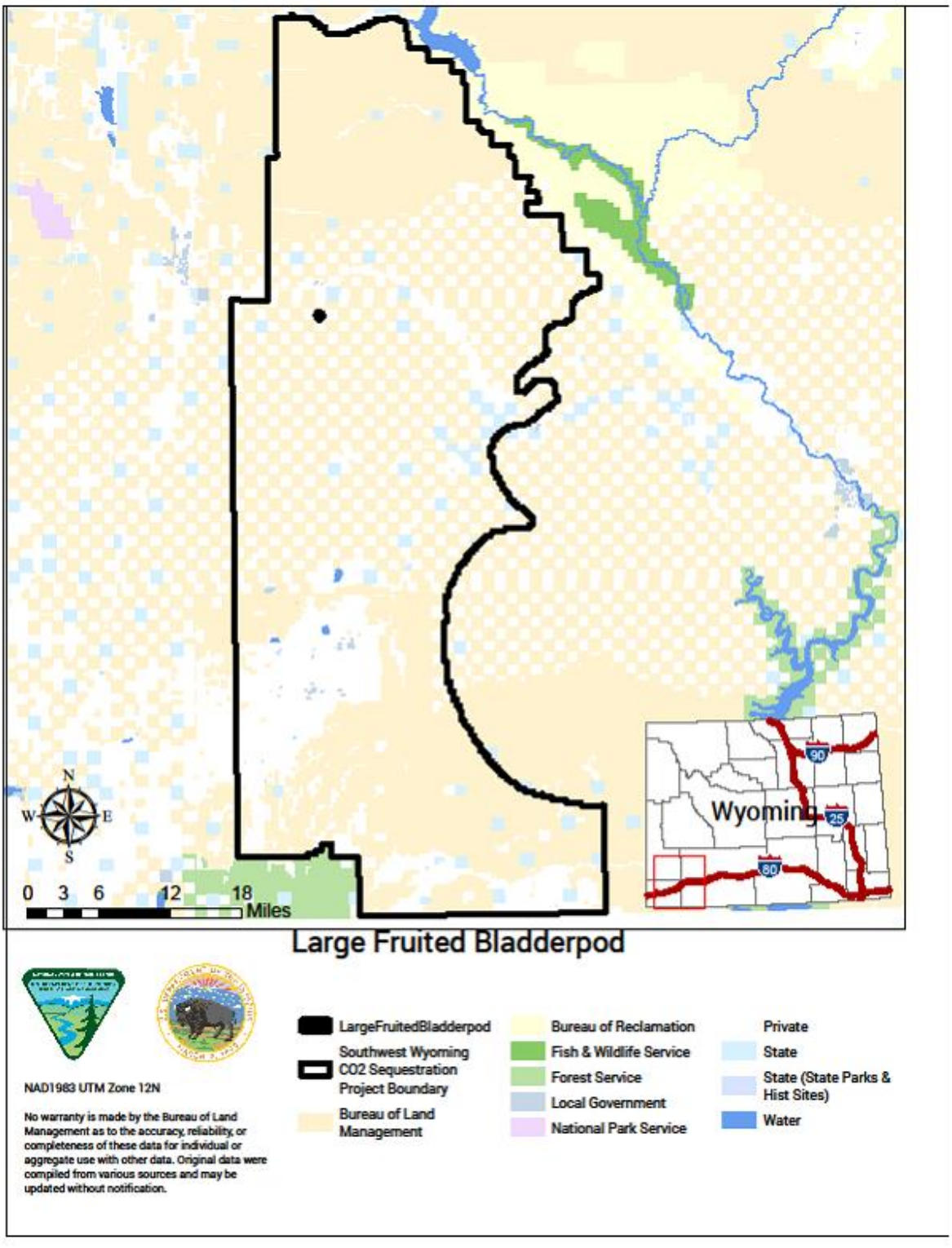
Map 3.20.3 Map showing Trelease's Milkvetch Habitat.



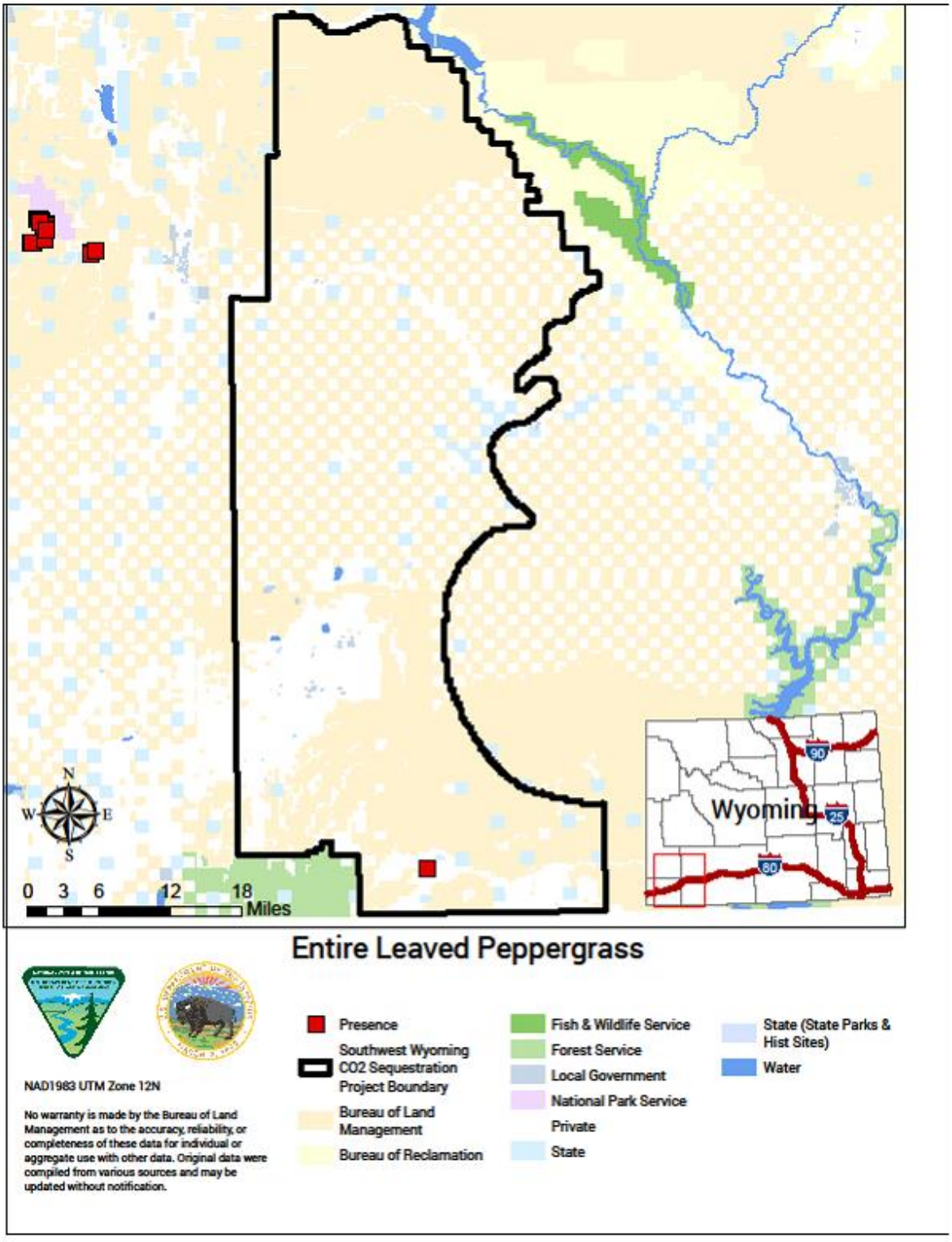
Map 3.20.4 Map showing Tufted Twinpod Habitat.



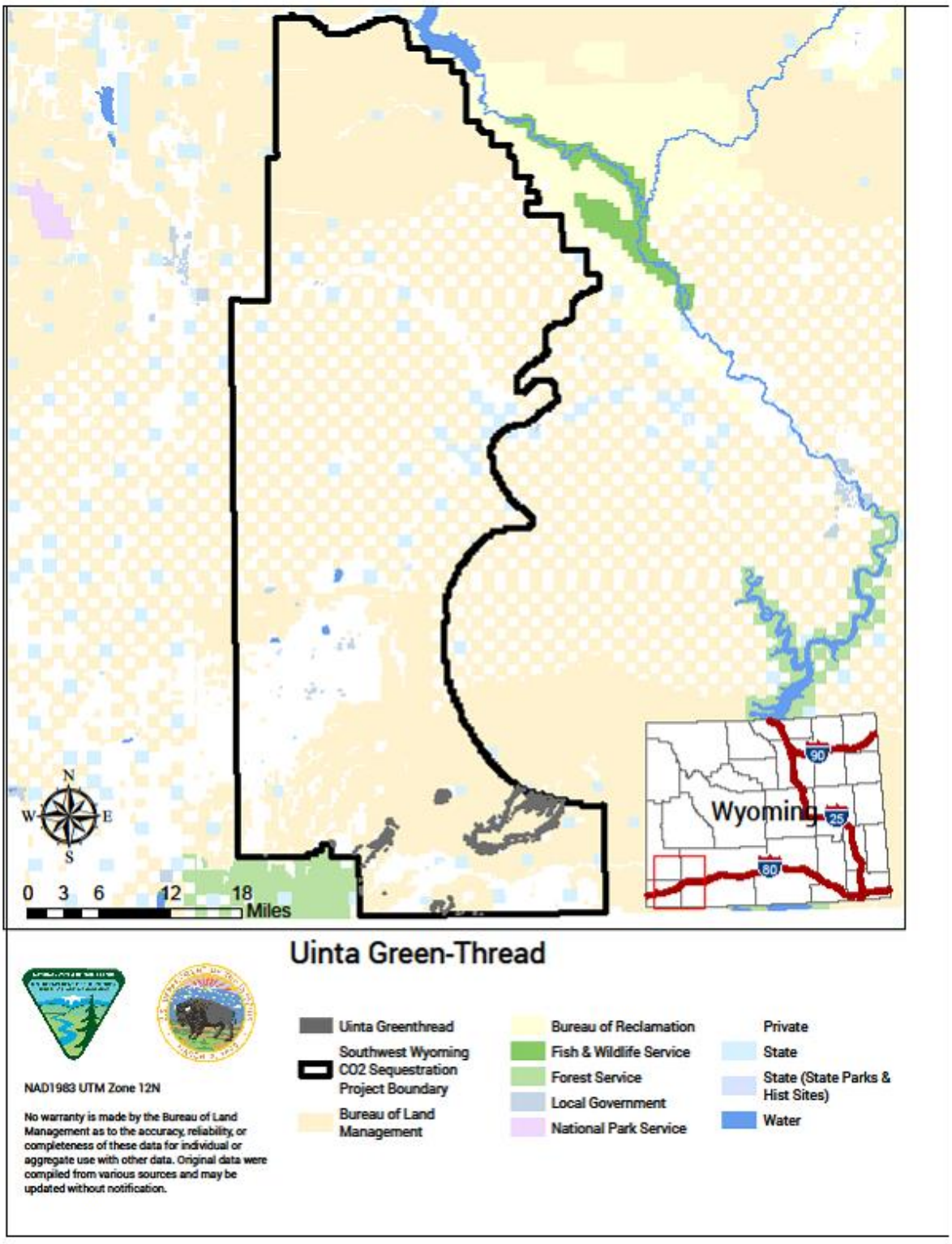
Map 3.20.5 Map showing Stemless Beard Tongue Habitat.



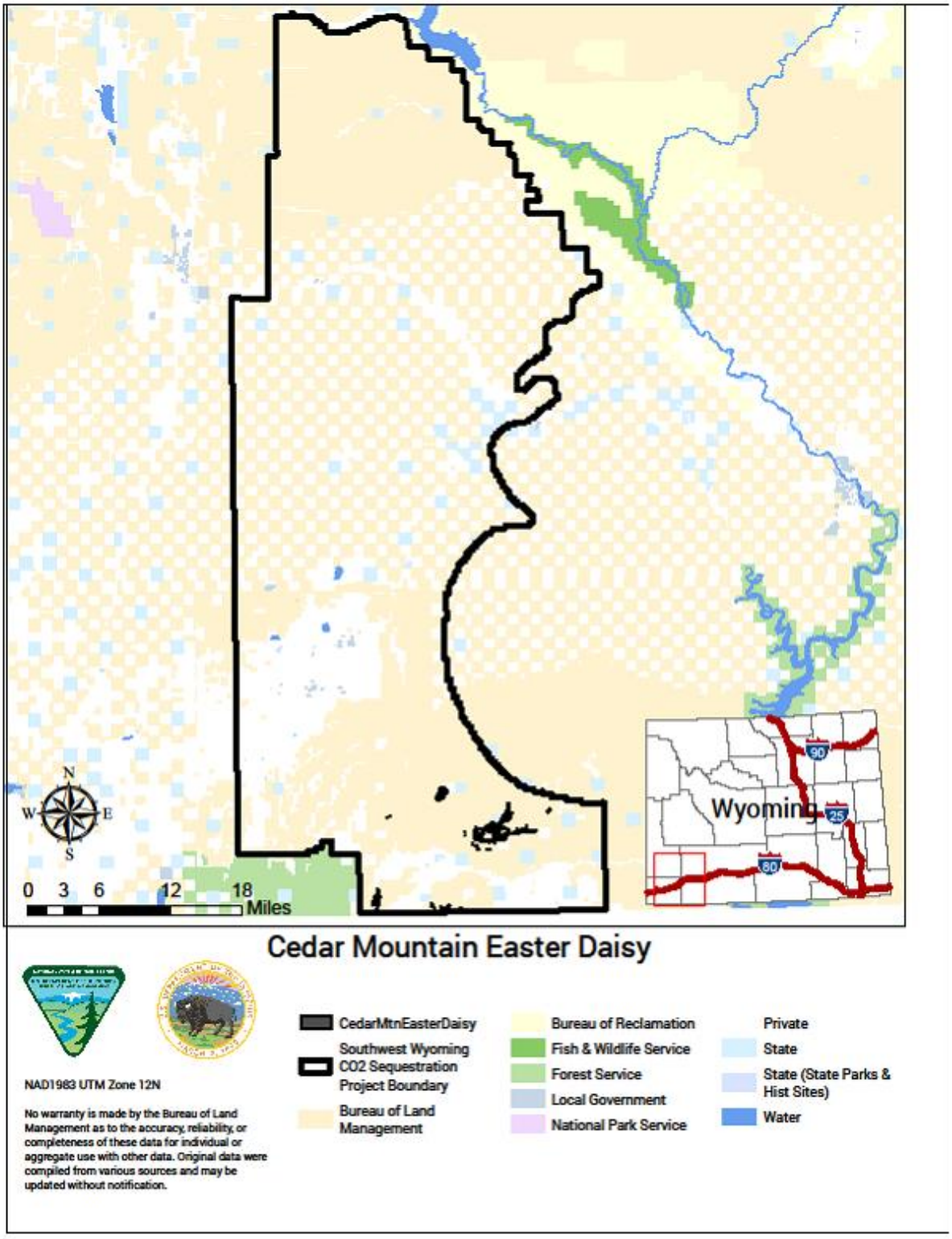
Map 3.20.6 Map showing Large-fruited Bladderpod Habitat.



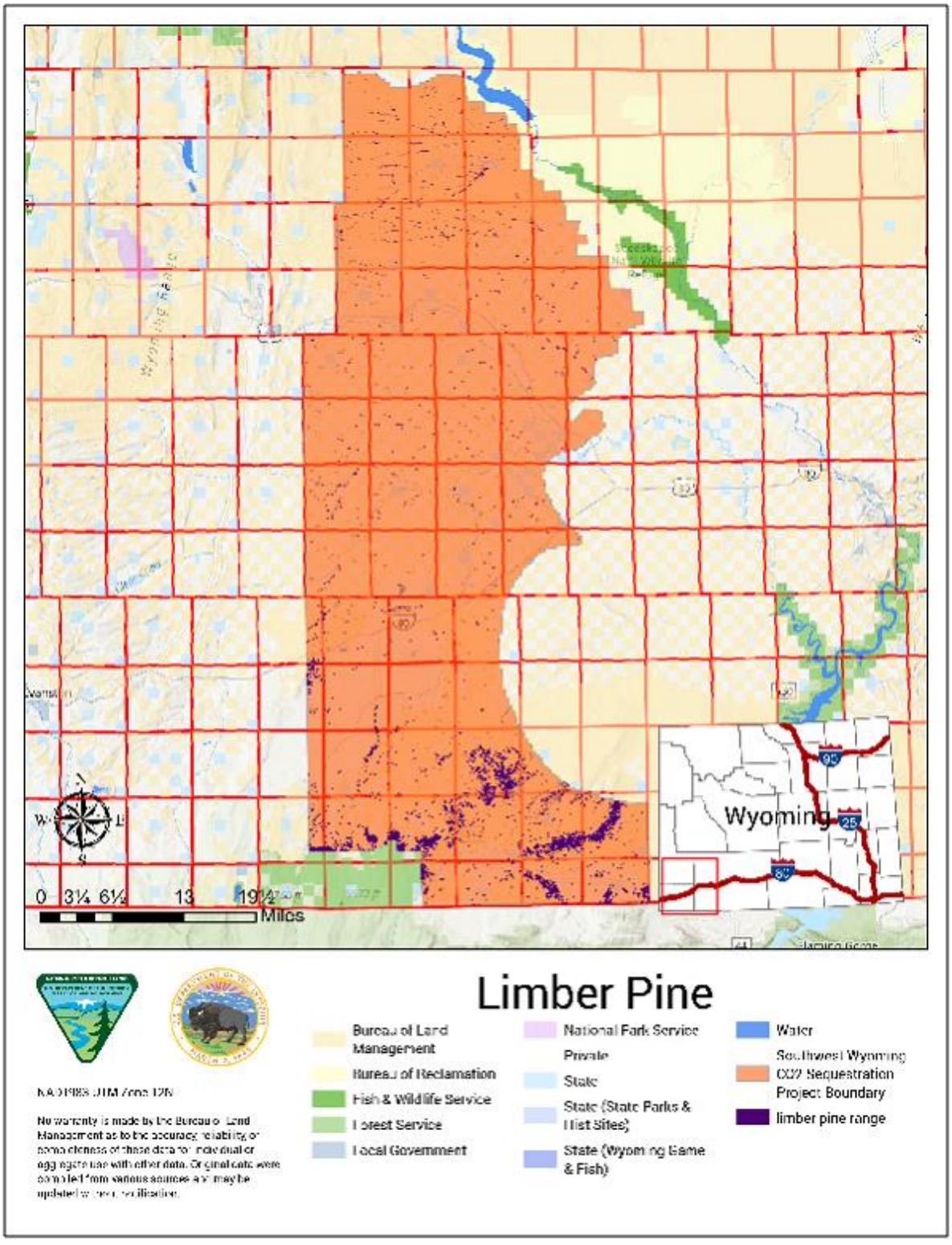
Map 3.20.7 Map showing Entire-leaved Peppergrass Habitat.



Map 3.20.8 Map showing Uinta Green-thread Habitat.

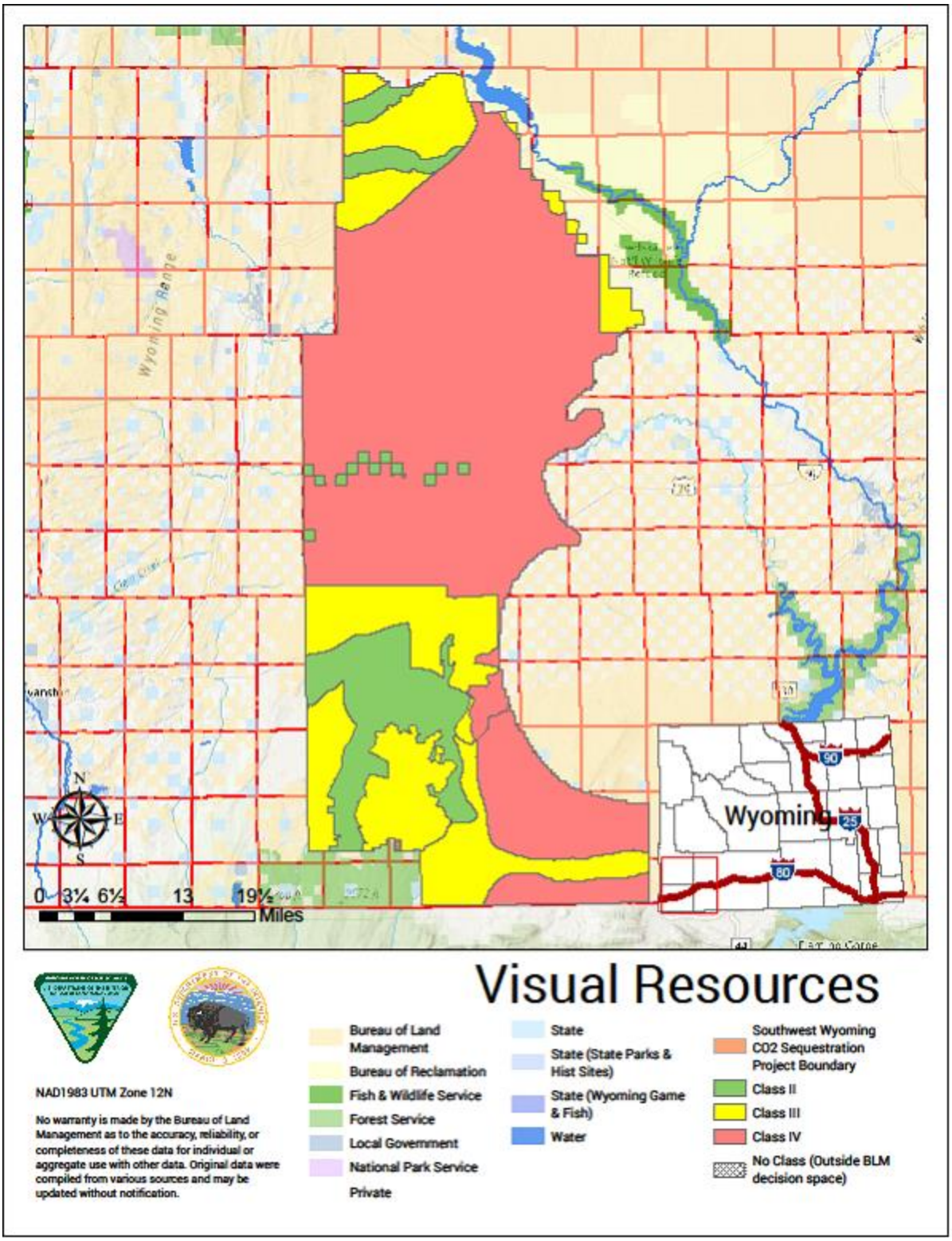


Map 3.20.9 Map showing Cedar Mountain Easter Daisy Habitat.

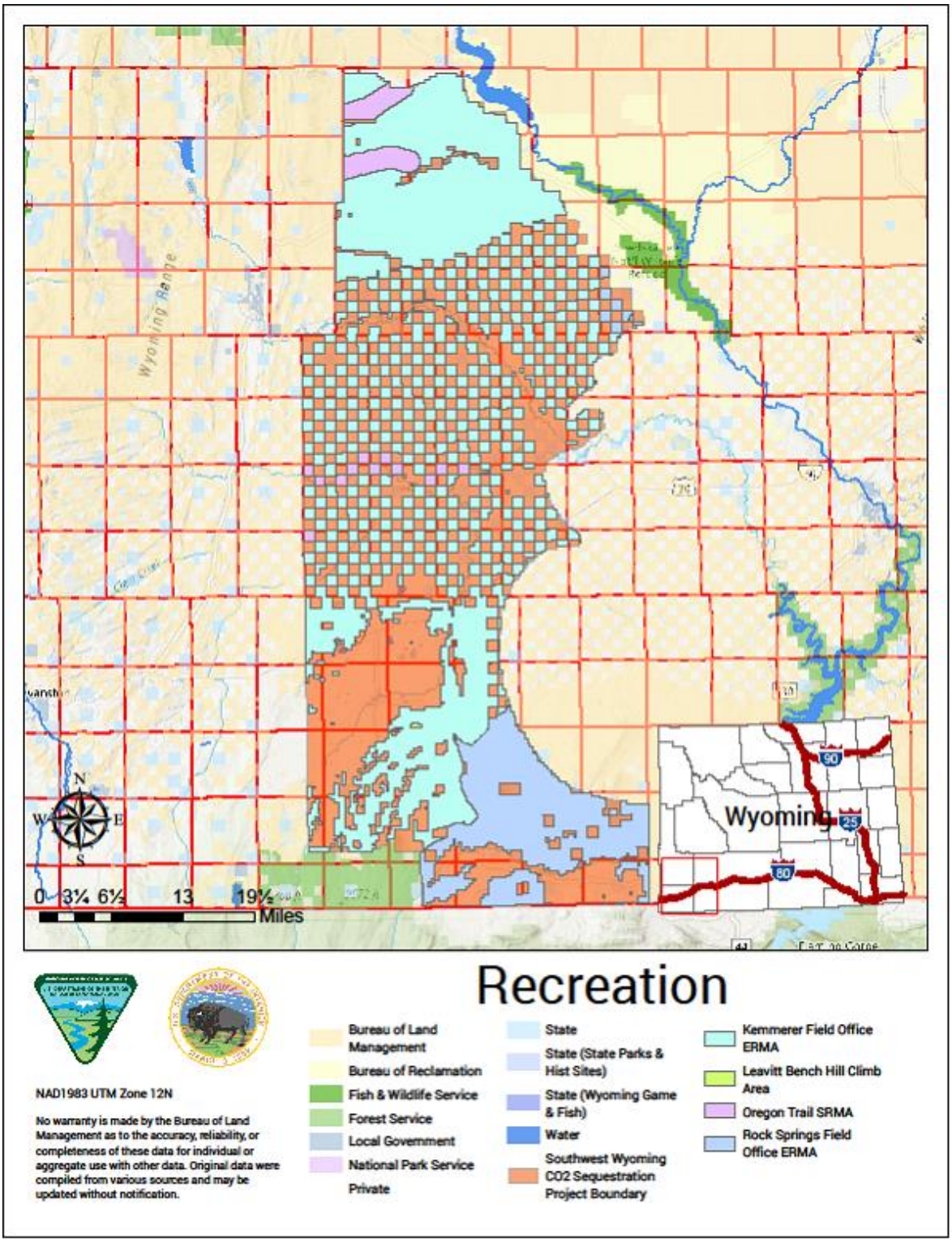


Map 3.20.10 Map showing "Potential" Limber Pine Forest.

Map 3.21 Map showing National Historic Trails.



Map 3.23 Map showing Visual Resources.



Map 3.24 Map showing Recreation.

Appendix 3 – Legal Land Description of the Proposed Project

Sixth Principal Meridian, Wyoming
T. 12 N., R. 110 W.,
sec. 6, lots 8, 10 and 11;
sec. 7, lots 5 thru 8;
sec. 18, lots 5 thru 8;
sec. 19, lots 7 and 8;
sec. 30, lot 4.

T. 13 N., R. 110 W.,
sec. 7, lots 5 thru 8;
sec. 18, lots 5 thru 8;
sec. 19, lots 5 thru 8;
sec. 30, lots 5 thru 8;
sec. 31, lots 5 thru 8.

T. 21 N., R. 110 W.,
sec. 6, all;
sec. 18, all;
sec. 20, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, N½NE¼, NW¼, and N½SW¼.

T. 12 N., R. 111 W.,
sec. 1, lot 8, SW¼NE¼, SE¼NW¼, NE¼SW¼, S½SW¼, and SE¼;
sec. 2, lots 5, 7, 8, 9, and 10, and S½;
sec. 3, lots 7, 8, 11, and 12, S½SW¼, and SE¼;
sec. 6, lots 8, 11, 12, and 13, W½NE¼, and E½NW¼;
sec. 10, lots 1, 2, 3, 6, and 9, NW¼NE¼, E½NW¼, and E½SW¼;
sec. 12, N½ and SE¼;
sec. 13, E½;
sec. 15, lot 1;
sec. 18, lot 11;
sec. 20, lot 9;
sec. 23, lot 6;
sec. 24, E½NE¼ and S½;
sec. 25, lots 1 thru 4;
sec. 26, lots 1 and 2;
sec. 27, lots 1 thru 4;
sec. 28, lot 4.

T. 13 N., R. 111 W.,
sec. 2, SW¼SW¼;
sec. 3, S½SE¼;
sec. 4, W½SW¼;
sec. 5, SW¼NE¼, S½NW¼, and S½;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, lots 1 and 2, W½NW¼, and N½SE¼;
sec. 10, lots 1, 3 and 4, NE¼, NW¼SW¼, and N½SE¼;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, lots 1, 6, 7, 8, and 9, W½SW¼, SE¼SW¼, and S½SE¼;
sec. 15, lots 3 and 4, and E½SE¼;
sec. 16, lots 1 thru 4, W½;
sec. 17, all;
sec. 18, all;
sec. 19, lots 5 thru 8, and E½NE¼, E½SW¼;
sec. 20, E½;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, N½, SW¼, N½SE¼, and SW¼SE¼;
sec. 33, all;
sec. 34, N½, SW¼, N½SE¼, and SW¼SE¼;
sec. 35, lots 1, 2 and 3, NE¼, NW¼, NE¼SW¼, and N½SE¼.

T. 14 N., R. 111 W.,
sec. 31, lot 8.

T. 17 N., R. 111 W.,
sec. 6, lots 2 thru 7, S½NE¼, SE¼NW¼, E½SW¼, and SE¼;
sec. 8, W½NW¼.

T. 19 N., R. 111W.,
sec. 6, lots 1 thru 6, S½NE¼, SE¼NW¼, and E½SW¼;

sec. 8, NE¼, SE¼NW¼, and S½;
sec. 10, W½NW¼, SE¼NW¼, and SW¼;
sec. 16, all;
sec. 18, all;
sec. 20, N½;
sec. 30, lot 1, N½NE¼ and NE¼NW¼.

T. 20 N., R. 111 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 14, NW¼;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 28, W½NE¼, W½, and SE¼;
sec. 30, all;
sec. 32, lots 1 thru 3, N½, N½SW¼, and N½SE¼.

T. 21 N., R. 111 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 22 N., R. 111 W.,
sec. 4, lots 6 thru 8, SW¼NE¼, S½NW¼, and S½;
sec. 5, all;
sec. 6, all;

sec. 7, lots 5 thru 7, NE¼, E½NW¼, NE¼SW¼, and N½SE¼;
sec. 16, all;
sec. 18, lots 5 thru 7, NE¼, E½NW¼, NE¼SW¼, and N½SE¼;
sec. 20, all;
sec. 22, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all.

T. 23 N., R. 111 W.,
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, W½.

T. 12 N., R. 112 W.,
sec. 1, lots 5 thru 7, N½NE¼, SW¼NE¼, NW¼, N½SW¼, and SW¼SW¼;
sec. 2, all;
sec. 3, all;
sec. 4, lots 8 and 9, N½, and N½SE¼;
sec. 5, lots 5 thru 12, NE¼, and E½NW¼;
sec. 6, lots 8 thru 11;
sec. 7, all;
sec. 8, lots 2 thru 4, SW¼NE¼, W½NW¼, SE¼NW¼, SW¼, and SE¼;
sec. 9, lots 4 and 5;
sec. 10, lots 1 thru 5, and NE¼NE¼;
sec. 11, lots 1 thru 7, and N½NW¼;
sec. 12, lots 1 and 2;
sec. 13, lot 4;
sec. 16, lots 3 thru 7, W½NW¼, SE¼NW¼, and SW¼;
sec. 17, all;
sec. 19, all;
sec. 20, all;
sec. 21, W½;
sec. 27, lot 4;
sec. 28, lots 1 thru 4;
sec. 29, lots 1 thru 4;
sec. 30, lots 1 and 2.

T. 13 N., R. 112 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;

sec. 5, all;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, E½;
sec. 16, W½;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, N½, W½SW¼, and SE¼SE¼;
sec. 24, N½, SW¼SW¼, and SE¼;
sec. 25, all;
sec. 26, all;
sec. 27, N½NW¼;
sec. 28, W½NE¼, W½, and SE¼;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all.

T. 14 N., R. 112 W.,
sec. 6, lots 9 thru 11, and 13, SE¼NE¼, and E½SE¼;
sec. 7, all;
sec. 8, W½NW¼, SE¼NW¼, SW¼, and W½SE¼;
sec. 17, W½NE¼, SE¼NE¼, W½, and SE¼;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, SW¼NE¼, W½, and SE¼;
sec. 22, SW¼SW¼;
sec. 26, SW¼SW¼;
sec. 27, S½NE¼, W½, and SE¼;
sec. 28, all;

sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, W½NE¼, SE¼NE¼, W½, and SE¼.

T. 17 N., R. 112 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, N½;
sec. 16, N½ and SW¼SW¼;
sec. 18, all;
sec. 20, N½, SW¼, N½SE¼, and SW¼SE¼;
sec. 30, all.

T. 18 N., R. 112 W.,
sec. 4, lots 1 thru 4 and S½NE¼, S½NW¼;
sec. 6, lots 1 thru 5, SE¼NW¼ and S½NE¼;
sec. 10, W½NE¼, W½, and SE¼;
sec. 14, SW¼SW¼;
sec. 18, NW¼SE¼;
sec. 20, all;
sec. 22, all;
sec. 26, W½NE¼, SE¼NE¼, W½, and SE¼;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all.

T. 19 N., R. 112 W.,
sec. 2, all;
sec. 6, all;
sec. 8, all;
sec. 10, N½NE¼ and SE¼NE¼;
sec. 12, all;
sec. 18, all;
sec. 20, all;
sec. 28, all;
sec. 30, all;
sec. 32, all.

T. 20 N., R. 112 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 20, SE¼NE¼, SW¼SW¼, and NE¼SE¼;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, E½NE¼, NW¼NE¼, NE¼NW¼, and E½SE¼;
sec. 30, all;
sec. 32, W½NE¼, W½, and W½SE¼;
sec. 34, all;
sec. 36, all.

T. 21 N., R. 112 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, N½, NE¼SW¼, and SE¼;
sec. 34, all;
sec. 36, all.

T. 22 N., R. 112 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;

sec. 5, all;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, N½NE¼ and N½NW¼;
sec. 15, N½, N½SW¼, SW¼SW¼, and N½SE¼;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, N½NE¼, N½NW¼, SW¼NW¼, and NW¼SW¼;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 29, NW¼NW¼;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 23 N., R. 112 W.,
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, all;
sec. 7, lots 6 thru 10, 12, 15, 16, NE¼, and SW¼SE¼;
sec. 8, N½, N½SW¼, SE¼SW¼, and SE¼;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 14, all;
sec. 15, all;
sec. 17, SW¼NW¼ and S½;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;

sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 24 N., R. 112 W.,
sec. 18, lots 1 thru 4, E½NW¼, and E½SW¼;
sec. 19, all;
sec. 20, NW¼ and S½;
sec. 27, S½NE¼, S½NW¼ and S½;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all.

T. 12 N., R. 113 W.,
sec. 1, SE¼SW¼ and S½SE¼;
sec. 5, SW¼NE¼, S½NW¼, and W½SW¼;
sec. 6, SE¼NE¼ and SE¼;
sec. 7, lots 2 thru 11, W½NE¼, E½NW¼, NE¼SW¼, and N½SE¼;
sec. 8, lots 1, 2, 7, and 8, N½SW¼, and NW¼SE¼;
sec. 10, lots 1 and 8, E½SW¼, and SE¼;
sec. 11, S½NE¼ and S½;
sec. 12, all;
sec. 13, W½;
sec. 14, all;
sec. 15, all;
sec. 17, NW¼NW¼;
sec. 18, lots 1 and 2, NE¼, and E½NW¼;
sec. 21, lots 2, 3 and 4, NE¼, SE¼NW¼, NE¼SW¼, and N½SE¼;
sec. 22, all;

sec. 23, all;
sec. 24, all.

T. 13 N., R. 113 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, all
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, N½, N½SW¼, SE¼SW¼, and SE¼;
sec. 27, lots 4 and 5, NE¼, E½NW¼, and NE¼SE¼;
sec. 28, N½, N½SW¼, and NW¼SE¼;
sec. 29, N½, N½SW¼, SE¼SW¼, N½SE¼, and SW¼SE¼;
sec. 30, lots 1 thru 3, NE¼, NE¼NW¼, N½SE¼, and SW¼SE¼;
sec. 35, NE¼NE¼.

T. 14 N., R. 113 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, all;
sec. 7, all;
sec. 8, all;

sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, lots 1 thru 4, W½NE¼, E½NW¼, E½SW¼, and W½SE¼;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all.

T. 15 N., 113 W.,
sec. 2, lot 4, SW¼NW¼ and SW¼;
sec. 3, lots 1 thru 4;
sec. 4, all;
sec. 5, all;
sec. 7, lots 1 thru 4 and E½NE¼ and E½SE¼;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 14, SW¼NE¼, W½ and W½SE¼;
sec. 15, lots 1 thru 4;
sec. 16; all
sec. 17, all;
sec. 18, lots 1 thru 4, E½NE¼, E½NW¼, E½SW¼, and E½SE¼;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;

sec. 23, E½SE¼;
sec. 24, SW¼SW¼;
sec. 25, W½NW¼, SE¼NW¼, SW¼, and SW¼SE¼;
sec. 26, all;
sec. 27, lots 1 thru 4 and E½SE½;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, W½NE¼, W½, SE¼.

T. 16 N., R. 113 W.,
sec. 2, lots 1 thru 4, SW¼NE¼, S½NW¼, SW¼, and W½SE¼;
sec. 4, all;
sec. 5, lots 1 thru 4;
sec. 6, lots 1 thru 5, 8, 11, 12, 13, 14, SE¼NE¼, and NE¼SE¼;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 14, W½;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 26, W½NW¼ and W½SW¼;
sec. 28, all;
sec. 29, all;
sec. 30, lots 3 and 4, NE¼, E½NW¼, E½SW¼, and SE¼;
sec. 31, lots 1 and 2, NE¼, E½NW¼, NE¼SW¼, N½SE¼, and SE¼SE¼;
sec. 32, all;
sec. 33, all;
sec. 34, all.

T. 17 N., R. 113 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;

sec. 8, all;
sec. 10, NE¼ and S½;
sec. 12, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, W½;
sec. 30, all;
sec. 32, all;
sec. 34, all
sec. 36, all.

T. 18 N., R. 113 W.,
sec. 2, lots 1 thru 4, S½NE¼. S½NW¼, S½SW¼ and S½SE¼;
sec. 4, all;
sec. 6, all;
sec. 8, N½NE¼, SW¼NE¼, NW¼, SW¼, and NW¼SE¼;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, N½, SW¼, and W½SE¼;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all.

T. 19 N., R. 113 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;

sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all.

T. 20 N., R. 113 W.,
sec. 2, lot 1 and NE¼SE¼;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 21 N., R. 113 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, lots 1 thru 7;
sec. 18, all;
sec. 20, lots 1 thru 4 and 6 thru 10;
sec. 22, lots 1, 2, and 5, NE¼, and N½NW¼;
sec. 24, all;
sec. 26, lots 3 thru 6, W½SW¼, and SE¼SW¼;
sec. 28, all;
sec. 30, lots 1 thru 4, and 6 thru 9, E½NE¼, and N½SE¼;
sec. 32, all;
sec. 34, all;
sec. 36, lots 5 thru 7.

T. 22 N., R. 113 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, lots 1 thru 3, E½NE¼, NW¼, N½SW¼, and N½SE¼;
sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, lots 1 thru 4, NE¼, W½NW¼, NE¼SW¼, and N½SE¼;
sec. 32, all;
sec. 33, N½NE¼ and N½NW¼;
sec. 34, all;
sec. 35, N½NE¼ and N½NW¼;
sec. 36, all.

T. 23 N., R. 113 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 8, all;

sec. 9, all;
sec. 10, all;
sec. 11, lots 1 thru 4, NW¼, and S½;
sec. 12, lots 1 thru 10, and 12, and W½NE¼;
sec. 13, all;
sec. 14, lots 1, 2, 4, E½NE¼, NE¼NW¼, SE¼SW¼, and SE¼;
sec. 15, lots 2 thru 7 and 9;
sec. 16, lots 1 thru 4, N½, N½SW¼ and N½SE¼;
sec. 17, all;
sec. 20, lots 1 thru 9, and 11 and 12, NW¼NE¼, NE¼NW¼, and SE¼SE¼;
sec. 21, lots 3, 4, and 9 thru 12, SE¼NE¼, and S½
sec. 22, lots 2 thru 4, and 6, S½NE¼, S½NW¼, and S½;
sec. 23, lot 1, NE¼, NE¼NW¼, S½NW¼, and S½;
sec. 24, all;
sec. 25, all;
sec. 26, al
sec. 27, all;
sec. 28, all;
sec. 29, lots 2 thru 4, NE¼, E½NW¼, E½SW¼, and SE¼;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 24 N., R. 113 W.,
sec. 1, lots 2 thru 5 and S½SW¼;
sec. 2, lots 3 and 4, and S½;
sec. 3, S½SW¼ and SE¼;
sec. 8, lots 4 and 7, E½SW¼, and SE¼;
sec. 9, lot 1, NE¼NE¼, S½NE¼, S½NW¼, S½;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;

sec. 26, all;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 12 N., R. 114 W.,
sec. 2, lot 4;
sec. 3, all;
sec. 4, lot 1, SE¼NE¼ and E½SE¼;
sec. 9, lots 4 and 5, E½NE¼, and NE¼SE¼;
sec. 10, lots 1, 2, 7, and 8, NE¼, NW¼, N½SW¼, and NW¼SE¼;
sec. 11, lots 1 thru 8, S½NE¼, and N½SE¼;
sec. 12, lots 1 thru 8, S½NE¼, S½NW¼, N½SW¼ and N½SE¼;
sec. 13, all;
sec. 14, all;
sec. 15, NE¼NE¼, S½NE¼, W½, and SE¼;
sec. 22, N½, N½SW¼, SW¼SW¼, and NW¼SE¼;
sec. 23, NE¼ and N½NW¼;
sec. 24, N½NW¼ and SW¼NW¼;
sec. 28, lot 1.

T. 13 N., R. 114 W.,
sec. 1, all;
sec. 2, all;
sec. 3, lots 1 thru 4, S½NE¼, S½NW¼, and SE¼;
sec. 4, lots 1 thru 4, S½NE¼, S½NW¼, SW¼, and W½SE¼;
sec. 5, all;
sec. 6, lots 3 thru 7, SE¼NW¼, and E½SE¼;
sec. 7, lots 1 thru 3, N½NE¼, SE¼NE¼, E½NW¼, NE¼SE¼, and S½SE¼;
sec. 8, N½, SW¼, N½SE¼, and SW¼SE¼;
sec. 9, NW¼NE¼, N½NW¼, SW¼NW¼, and NW¼SW¼;
sec. 10, E½ and NE¼NW¼;
sec. 11, all;
sec. 12, all;
sec. 13, N½, N½SW¼, SE¼SW¼, and SE¼;
sec. 14, all;
sec. 15, E½;
sec. 16, SE¼NW¼ and E½SW¼;
sec. 17, W½NE¼, W½, and W½SE¼;
sec. 18, lot 1, SE¼SW¼, and S½SE¼;

sec. 19, lots 1 thru 4, E½NW¼ and E½SW¼;
sec. 21, S½NE¼, E½NW¼, E½SW¼, and SE¼;
sec. 22, NE¼, S½NW¼, SW¼, and SE¼;
sec. 23, S½SW¼ and S½SE¼;
sec. 24, NE¼, E½NW¼, NE¼SW¼, S½SW¼, and SE¼;
sec. 25, W½NE¼ and W½;
sec. 26, all;
sec. 27, all;
sec. 33, E½NE¼ and E½SE¼;
sec. 34, W½NW¼ and W½SW¼;
sec. 35, NE¼, E½NW¼ and E½SW¼.

T. 14 N., R. 114 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, lots 2, 5 thru 7, SE¼NE¼, E½SW¼, and SE¼;
sec. 7, all;
sec. 8, all;
sec. 9, NE¼, NW¼, N½SW¼, SW¼SW¼, and NW¼SE¼;
sec. 10, all;
sec. 11, N½NE¼, N½NW¼, SW¼NW¼, and W½SW¼;
sec. 12, E½, E½NW¼ and E½SW¼;
sec. 13, all;
sec. 14, S½NE¼, W½NW¼, SE¼NW¼, and S½;
sec. 15, all;
sec. 16, NE¼, SE¼NW¼, and S½;
sec. 17, N½NE¼, SW¼NE¼, W½, and SE¼;
sec. 18, all;
sec. 19, lots 1, 3 and 4, E½NE¼, SW¼NE¼, E½SW¼, and SE¼;
sec. 20, N½, SW¼ and NE¼SE¼;
sec. 21, N½NE¼, NW¼, SE¼SW¼, and SE¼;
sec. 22, NE¼, N½NW¼, and S½;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, NE¼, NE¼NW¼, S½NW¼, and S½;
sec. 29, SE¼NE¼, N½NW¼, SW¼NW¼, W½SW¼, and SE¼SW¼;
sec. 30, all;
sec. 31, lots 1 thru 4, N½NE¼, E½NW¼and E½SW¼;
sec. 32, E½NE¼, W½NW¼, E½SW¼, and SE¼;

sec. 33, all;
sec. 34, all;
sec. 35, W½NW¼, NW¼SW¼, and S½SE¼;
sec. 36, all.

T. 15 N., R. 114 W.,
sec. 1, lots 3 and 4, S½NE¼, S½NW¼ and S½;
sec. 2, lot 1;
sec. 12, all;
sec. 13, all;
sec. 14, E½NE¼ and E½SE¼;
sec. 23, E½NE¼ and SE¼SE¼;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, NE¼, NE¼NW¼, S½NW¼, and S½;
sec. 28, S½NE¼, S½NW¼ and S½;
sec. 29, all;
sec. 30, SE¼SE¼;
sec. 31, lots 3 and 4, NE¼, E½NW¼, E½SW¼, and N½SE¼;
sec. 32, N½, N½SW¼, SE¼SW¼, and SE¼;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 16 N., R. 114 W.,
sec. 1, lots 1 thru 4, 9, and 10, and N½SW¼;
sec. 2, lots 1 thru 4 and l9 thru 12, N½SW¼, and N½SE¼;
sec. 3, lots 1 thru 4 and l9 thru 12, S½NE¼, S½NW¼, N½SW¼, and N½SE¼;
sec. 4, lots 1 thru 4 and l9 thru 12, S½NE¼, S½NW¼, N½SW¼, and N½SE¼;
sec. 5, lots 1 thru 4 and l9 thru 12, N½SW¼, and N½SE¼;
sec. 6, lots 1 thru 4;
sec. 7, lots 1 thru 4, NE¼, E½NW¼, and E½SW¼;
sec. 8, NW¼;
sec. 10, N½NE¼;
sec. 11, S½NE¼, S¼NW¼ and S½;
sec. 12, SW¼NE¼, W½, W½SE¼, and SE¼SE¼;
sec. 13, N½, SW¼ and E½SE¼;
sec. 14, all;
sec. 15, E½NE¼, SW¼NE¼, N½SE¼, SE¼SE¼;
sec. 18, N½NE¼;
sec. 22, E½NE¼;
sec. 23, W½NW¼ and SE¼NW¼;
sec. 24, E½NE¼, N½NW¼, SE¼SW¼, and SE¼;

sec. 25, W½NE¼, E½NW¼ and SW¼;
sec. 26, E½SE¼;
sec. 28, NW¼NW¼;
sec. 35, E½NE¼ and NE¼SE¼;
sec. 36, W½.

T. 17 N., R. 114 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 28, E½
sec. 30, all.

T. 18 N., R. 114 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, NW¼NW¼ and SE¼SE¼;
sec. 12, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 19 N., R. 114 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;

sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 20 N., R. 114 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 21 N., R. 114 W.,
sec. 1, lots 1 thru 4;
sec. 2, all;
sec. 3, lots 1 thru 4, SW¼NE¼, S½NW¼, N½SW¼, and NW¼SE¼;
sec. 4, all;
sec. 5, lots 1 thru 4, S½NE¼, S½NW¼, N½SW¼and N½SE¼;
sec. 6, all;
sec. 7, lot 1 and NE¼NW¼;
sec. 8, all;

sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 25, lots 1, 2, and 4;
sec. 26, lots 1 thru 4, 6, and 10;
sec. 27, lots 2 and 3;
sec. 28, lots 1 thru 7, N½NE¼, and NE¼NW¼;
sec. 30, lots 1 thru 4, NE¼, E½NW¼and E½SW¼;
sec. 32, S½NE¼, S½NW¼ and S½;
sec. 34, lots 1 thru 6, E½SW¼, and SE¼.

T. 22 N., R. 114 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, all;
sec. 6, lots 1 thru 7, S½NE¼, SE¼NW¼, NE¼SW¼, and SE¼;
sec. 7, NE¼, SE¼NW¼, E½SW¼, SE¼;
sec. 8, NE¼, W½NW¼, SE¼NW¼, and S½;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, lots 1, 2, 5, and 6, NE¼, N½NW¼, and NE¼SE¼;
sec. 27, lots 1 thru 8, N½NE¼and N½NW¼;
sec. 28, lots 1 thru 4 and 6 thru 9, and N½NE¼;
sec. 29, lots 1, 2, 6, and 7, NW¼NE¼, NE¼NW¼, NE¼SW¼, S½SW¼and S½SE¼;

sec. 30, lots 1, 2 and 5 thru 10, SE¼SW¼, and S½SE¼;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all.

T. 23 N., R. 114 W.,
sec. 1, all;
sec. 2, all;
sec. 3, all;
sec. 4, all;
sec. 5, lots 1 thru 4, S½NE¼, SW¼NW¼, W½SW¼, SE¼SW¼, and SE¼;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, all;
sec. 12, all;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, N½, N½SW¼, SW¼SW¼, and NW¼SE¼;
sec. 25, S½NE¼, NW¼NW¼, S½;
sec. 26, N½NE¼, SW¼NE¼, NW¼, and S½;
sec. 27, all;
sec. 28, all;
sec. 29, all;
sec. 30, all;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 35, all.

T. 24 N., R. 114 W.,
sec. 3, lots 15, 16, 17, 19, 20 and SW¼SW¼;
sec. 4, lots 11 thru 14, and S½;
sec. 5, lots 12 thru 16, and S½;
sec. 6, lots 16 thru 21, E½SW¼, and SW¼;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, all;
sec. 11, lots 1 thru 5, W½SW¼, SE¼SW¼, and S½SE¼;
sec. 12, lots 1 thru 5, S½SW¼, and SW¼SE¼;
sec. 13, all;
sec. 14, all;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, all;
sec. 19, all;
sec. 20, all;
sec. 21, all;
sec. 22, all;
sec. 23, all;
sec. 24, all;
sec. 25, all;
sec. 26, all;
sec. 27, all;
sec. 28, N½, S½SW¼ and S½SE¼;
sec. 29, N½, S½SW¼ and S½SE¼;
sec. 30, lots 5, 6, and 8, NE¼, E½NW¼, SE¼SW¼ and S½SE¼;
sec. 31, all;
sec. 32, all;
sec. 33, all;
sec. 34, all;
sec. 35, all;
sec. 36, all.

T. 13 N., R. 115 W.,
sec. 1, lots 1 thru 4, S½NE¼, S½NW¼, and W½SW¼;
sec. 2, all;
sec. 3, lots 1 and 4, SE¼NE¼, SW¼NW¼, NW¼SW¼, NE¼SE¼, and S½SE¼;
sec. 4, lot 2, SW¼NE¼, and SE¼;
sec. 5, lots 1 thru 4, S½NE¼, S½NW¼, and SE¼;
sec. 6, lot 1;
sec. 8, E½,
sec. 9, NE¼, E½NW¼, and E½SE¼;

sec. 10, E½NE¼ and S½;
sec. 11, N½, SW¼ and W½SE¼;
sec. 12, NE¼, W½NW¼, E½SW¼, and SE¼;
sec. 13, NE¼, E½NW¼, NE¼SW¼, S½SW¼, and N½SE¼;
sec. 14, W½NE¼, NW¼, W½SW¼;
sec. 15, all;
sec. 16, E½NE¼, S½SW¼;
sec. 17, all;
sec. 20, N½NE¼, SE¼NE¼, NW¼, and S½SW¼;
sec. 21, all;
sec. 22, all;
sec. 23, NE¼NE¼, W½NW¼, and S½;
sec. 24, N½NW¼ and E½SE¼;
sec. 26, NW¼NE¼, W½ and NW¼SE¼;
sec. 27, NE¼, NE¼NW¼, NE¼SW¼, S½SW¼, and SE¼;
sec. 28, W½NE¼, NW¼, E½SW¼, and SE¼;
sec. 29, SE¼NE¼, E½NW¼, and W½SE¼;
sec. 30, lots 3 and 4, SE¼NE¼, and E½SW¼.

T. 14 N., R. 115 W.,
sec. 1, SE¼SE¼;
sec. 11, E½NE¼, E½SW¼, N½SE¼, and SW¼SE¼;
sec. 12, all;
sec. 13, N½NW¼, SW¼NW¼, S½SW¼, NE¼SE¼, and S½SE¼;
sec. 14, W½ and NW¼SE¼;
sec. 15, N½SE¼ and SE¼SE¼;
sec. 20, SE¼SE¼;
sec. 22, SE¼NE¼, NE¼SW¼, and SE¼SE¼;
sec. 23, NE¼NE¼, S½NE¼, NW¼NW¼, NE¼SW¼, S½SW¼, and SE¼;
sec. 24, all;
sec. 25, E½NE¼, NW¼NW¼, SE¼SW¼, and NE¼SE¼;
sec. 26, N½, SW¼, and NW¼SE¼;
sec. 27, NE¼ and S½;
sec. 28, SE¼NE¼ and E½SE¼;
sec. 29, E½NE¼, NE¼NW¼, S½SW¼, and E½SE¼;
sec. 31, S½SE¼;
sec. 32, W½;
sec. 33, N½SE¼ and SW¼SE¼;
sec. 34, W½NE¼, SE¼NW¼, NE¼SW¼, and NW¼SE¼;
sec. 35, E½NW¼, E½SW¼ and W½SE¼;
sec. 36, W½NE¼, NE¼NW¼, SE¼SW¼, and SE¼.

T. 15 N., R. 115 W.,
sec. 5, lots 4 and 5 and SE¼SW¼
sec. 7, lots 2;

sec. 31, SE¼NE¼.

T. 16 N., R. 115 W.,
sec. 1, lots 1 thru 4;
sec. 2, all;
sec. 3 lots 1 thru 4;
sec. 4, all;
sec. 5, lots 1 thru 4;
sec. 6, all;
sec. 7, all;
sec. 8, all;
sec. 9, all;
sec. 10, N½, SW¼, W½W½SE¼, S½NE¼SW¼SE¼, SE¼SW¼SE¼, E½E½SE¼, S½NW¼SE¼SE¼ and SW¼SE¼SE¼;
sec. 11, S½NW¼ and SW¼;
sec. 12, NE¼, NE¼NW¼, E½SW¼, and SE¼;
sec. 13, NW¼NE¼;
sec. 14, SW¼NW¼;
sec. 15, all;
sec. 16, all;
sec. 17, all;
sec. 18, lots 1 and 4, N½NE¼, NE¼NW¼, SE¼SW¼, S½SE¼;
sec. 19, all;
sec. 20, lots 1, 2 and 4, N½, N½SW¼, and N½SE¼;
sec. 21, all;
sec. 22, NW¼;
sec. 28, N½NE¼, SW¼NE¼, NW¼, NE¼SW¼, and NW¼SE¼;
sec. 29, lots 1 thru 4 and 6 thru 8, and NW¼NE¼;
sec. 30, all;
sec. 31, lot 4;
sec. 32, lot 1.

T. 17 N., R. 115 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, N½ and SW¼;
sec. 22, all;
sec. 24, all;

sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 18 N., R. 115 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 19 N., R. 115 W.,
sec. 2, all;
sec. 4, all;
sec. 6, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 16, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;

sec. 36, all.

T. 20 N., R. 115 W.,
sec. 2, all;
sec. 4, all;
sec. 8, all;
sec. 10, all;
sec. 12, all;
sec. 14, all;
sec. 18, all;
sec. 20, all;
sec. 22, all;
sec. 24, all;
sec. 26, all;
sec. 28, all;
sec. 30, all;
sec. 32, all;
sec. 34, all;
sec. 36, all.

T. 13 N., R. 116 W.,
sec. 1, lot 2, SW¼NE¼, SE¼NW¼, and SW¼;
sec. 2, lot 2;
sec. 11, E½NE¼ and SE¼;
sec. 12, NW¼NE¼, NW¼, N½SW¼, SW¼SW¼, and W½SE¼;
sec. 13, W½NE¼, NW¼NW¼, and W½SW¼;
sec. 14, E½;
sec. 23, NE¼ and S½SE¼;
sec. 25, S½;
sec. 26, SE¼.

T. 14 N., R. 116 W.,
sec. 35, E½;
sec. 36, NW¼NW¼.

T. 15 N., R. 116 W.,
sec. 1, lot 4, SW¼NW¼ and W½SW¼;
sec. 2, lots 1 and 2, S½NE¼ and SE¼;
sec. 11, NW¼NE¼ and NW¼SE¼;
sec. 12, NW¼NE¼, SE¼NE¼ and NE¼NW¼;
sec. 23, SE¼SE¼;
sec. 25, N½NW¼ and SW¼NW¼;
sec. 26, E½NE¼.

T. 16 N., R. 116 W.,

sec. 1, lots 1 thru 4;
sec. 2, lots 1, 2, 5, 6, 11, and 12, S½NE¼, and N½SE¼;
sec. 11, E½;
sec. 12, all;
sec. 13, all;
sec. 14, E½;
sec. 23, E½;
sec. 24, all;
sec. 25, N½, N½SW¼, SE¼SW¼, and SE¼;
sec. 26, E½;
sec. 35, NE¼ and NW¼SE¼;
sec. 36, S½SE¼.

Appendix 4 – Proposed Right-of Way-Stipulations

Standard

1. The Holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the Holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) In excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
2. The Holder is responsible for informing all persons associated with this project that they shall be subject to prosecution for intentionally damaging, altering, excavating, or removing any archeological, historical, or vertebrate fossil objects or sites. If archeological, historical, or vertebrate fossil materials are discovered, the Holder is to suspend all operations that further disturb such materials immediately and contact the Authorized Officer. Operations are not to resume until written authorization to proceed is issued by the Authorized Officer (BLM 8100.02.E; Title 16 U.S.C. § 470aa-470mm).
3. The Holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the plan of development which was approved and made part of the grant on (add date). Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be on the right-of-way area during construction, operation, and termination. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

Pore Space Stipulations

1. The Holder must avoid interference with any operations authorized under the Mineral Leasing Act of 1920 (MLA), as amended, and prevent damage to all other potentially recoverable mineral resources and other surface and subsurface authorized uses.
2. Locations of CO_2 sequestration wells that penetrate structural closure along the Moxa arch or within the WY Thrust Belt should be evaluated for the presence of hydrocarbons and helium within the targeted injection formation(s) before injection of CO_2 begins. AO may request results of the evaluations for each well at the time of

drilling.

Notice to Proceed (NTP)

1. The Holder shall not initiate any construction, drilling, injection, or other activities on the right-of-way without the prior written authorization of the authorized officer. Such authorization shall be a written notice to proceed issued by the authorized officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.
    i. The Holder must submit the Class VI well authorization(s) to inject from the Wyoming Department of Environmental Quality to the BLM authorized officer with their request for BLM approval of the NTP.
2. The authorized officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

Bonding

1. A bond, acceptable to the authorized officer, shall be furnished by the Holder before a notice to proceed is issued or at such earlier date as may be specified by the authorized officer.

Mitigation Measures/Conditions of Approval

Greater Sage-Grouse General Habitat

1. Surface occupancy and surface disturbing activities would be prohibited or restricted within a 0.25-mile radius of the perimeter of occupied sage-grouse leks within GHMA.
2. Avoid human activity between 8pm and 8 am from March 1 to May 15 within 0.25 miles of the perimeter of occupied greater sage-grouse leks.

Greater Sage-Grouse Priority Habitat

1. Surface disturbing and/or disruptive activities would be prohibited from March 15 to June 30 to protect sage-grouse nesting and early brood rearing habitats within 2 miles of the perimeter of any occupied lek within GHMA.
2. Construction activity and surface disturbance would be prohibited during the periods of March 15 – June 30 for the protection of Greater Sage-grouse PHMA habitat. Any exceptions to this requirement must have prior written approval from the authorized officer.
3. Surface disturbing and disruptive activities would be restricted to 1 disturbance per 640-acre average or less than 5% disturbance in PHMA.
4. Surface occupancy and surface disturbing activities would be prohibited or restricted within a 0.6-mile radius of the perimeter of occupied sage-grouse leks within PHMA.
5. Avoid human activity between 8pm and 8 am from March 1 to May 15 within 0.25 miles of the perimeter of occupied greater sage-grouse leks.

Big Game Crucial Winter Range Habitat

1. Construction activity and surface disturbance would be prohibited during the periods of November 15 – April 30 for the protection of big game crucial winter range habitat. Any exceptions to this requirement must have prior written approval from the authorized officer.

Elk Parturition Habitat

1. Construction activity and surface disturbance would be prohibited during the periods of May 1- June 30 to protect elk parturition. Any exceptions to this requirement must have prior written approval from the authorized officer.

Raptor Nesting

1. Construction activity and surface disturbance would be prohibited during the periods of February 1 – July 31 for the protection of nesting raptors. Any exceptions to this requirement must have prior written approval from the authorized officer.
2. Construction activity and surface disturbance would be prohibited during the periods of April 1 – September 10 for the protection of burrowing owls. Any exceptions to this requirement must have prior written approval from the authorized officer.

Pygmy Rabbit

1. Pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied pygmy rabbit habitat.

White-tailed Prairie Dogs

1. To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied white-tailed prairie dog habitat. Surface disturbance and disruptive activities in occupied white-tailed prairie dog colonies or complexes of 200 acres or greater would be prohibited.

Idaho Pocket Gopher

1. To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. Surface disturbing activities will be avoided in occupied Idaho pocket gopher habitat.

BLM Sensitive Bats

1. Pre-construction surveys and avoidance of habitat where possible would help reduce impacts to bat species.

Migratory Birds

1. Pre-construction surveys and avoidance of habitat where possible would help reduce impacts to migratory bird species.

Mountain Plover

1. To minimize impacts described above, pre-construction surveys would be required in areas of proposed development. No surface occupancy or surface disturbing activities would occur between April 10 to July 10 to protect mountain plover breeding and nesting habitat.

BLM Sensitive Species - Amphibians

1. Impacts would be reduced by prohibiting surface disturbance within 500 feet of surface water and/or riparian areas.

Paleontological Resources

1. (Construction Monitor) A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will be on site at all times during construction. Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

2. (Open Trench Inspection) A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will inspect the open pipeline trench after construction and before the pipeline is placed into the trench. Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

3. (Spot Check) A certified paleontologist who meets or exceeds the qualification standards recommended by the Secretary of the Interior will be on site at all times during construction and shall inspect any bedrock exposed during surface disturbing activities (such as the construction of the reserve pit, well pad, access road, etc). Any paleontological materials located during construction will be reported to the authorized officer. Procedures for determining significance and/or effect will be established at that time. Cost of any further paleontological work will be borne by the holder.

BLM Special Status Plant Species ACEC

1. Known locations of the plants would be protected under ACEC designations and restrictions to surface disturbing activities, which would minimize any impacts to special status plant species from the project.

BLM Special Status Plants

1. Pre-construction surveys would be required in areas of sensitive plant species habitat. Surface disturbing activities will be avoided in occupied sensitive plant species populations.

Appendix 5 – Public Scoping Comments

Submission ID/Type	Name	Substantive	Concern/Issue	Response
SWWyomingCO2-1-500337171	Scared by the climate crisis	N	Nonspecific general support for the project	
SWWyomingCO2-1-500338082	Kathy& Ken Scott	N	Nonspecific general opposition to the project	
SWWyomingCO2-1-500338126	Britton Liedtke	N	Nonspecific general support for the project	
SWWyomingCO2-1-500338425	Ranie Lynds, Wyoming State Geological Survey	Y	Comments concerning oil, gas and helium.	See the summary of the RMG report.
SWWyomingCO2-1-500338525	Concerned citizen	N	Nonspecific general support for the project	
SWWyomingCO2-1-500338660	Not Provided	N	Statement neither in direct support or opposition to the project.	
SWWyomingCO2-1-500338708	Richard Spotts	N	No specific issues related to the project were raised. Commenter is concerned on many BLM practices as a whole, all unrelated to this project.	
SWWyomingCO2-1-500338739	Robert F. Rockey, Frontier Carbon Solutions, LLC		Concerns about overlapping ROWs with Frontier's Proposal	
SWWyomingCO2-1-500338758	Jennifer Zygmunt, Wyoming DEQ	Y	Wyoming DEQ requests to participate as a cooperating agency for the. DEQ also notes that Class VI wells are permitted by the state.	BLM notes in section 2.0 of the EA that the BLM is just authorizing a pore space ROW and that DEQ permits Class VI injection wells.
SWWyomingCO2-1-500338761	Wyoming Coalition of Local Governments	Y	The Coalition of Local governments concerns are, impacts to resource development, impacts to water quality/Class VI well permitting, private land owner surface/pore space	As stated in the section 2.0 Proposed Action and Alternatives, the BLM's ROW authorization would only provide for use of the subsurface BLM-administered federal pore

			rights, and cumulative impacts.	space within the project area, and not State of Wyoming or private surface or subsurface pore space. Additionally section 2.0 it explains that approval from the State of Wyoming Department of Environmental Quality, not BLM, is needed for the permitting of Class VI wells. Cumulative impacts for each resource impacted are analyzed in detail under the section 3.0 Affected Environment/Environmental Effects under each resource subsection.
Mail	Lane Allred	N	Nonspecific general support for the project	
Email	Will Schultz, WGFD	N	WGFD has no concerns with the current proposal. Seeks to provide input if surface disturbance is proposed in the future.	