

**APPENDIX H
BIOLOGICAL OPINION**



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
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Cheyenne, Wyoming 82009

SEP 12 2013

In Reply Refer To:
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Memorandum

To: State Director, Bureau of Land Management, Wyoming State Office, Cheyenne, Wyoming

From: Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming 

Subject: Biological Opinion and Conference Opinion for the Gateway West Transmission Line Right-of-Way Project—Converse, Natrona, Carbon, Sweetwater, Uinta, and Lincoln Counties, Wyoming; and Bear Lake, Franklin, Bannock, Oneida, Power, Cassia, Twin Falls, Minidoka, Blaine, Lincoln, Jerome, Gooding, Owyhee, Elmore, Ada, and Canyon Counties, Idaho

Enclosed are the U.S. Fish and Wildlife Service's (Service) concurrence, final Biological Opinion (BO), and final Conference Opinion (CO) for the Bureau of Land Management's (Bureau) determinations of effects on species pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA; 50 CFR §402.13 and §402.14), for the proposed Gateway West Transmission Line Right-of-Way Project (Project). The Bureau is the lead Federal agency for this Project, and the following cooperating Federal agencies are included under the Bureau's section 7 consultation for the Project: U.S. Department of Agriculture Forest Service (Caribou-Targhee, Medicine Bow-Routt, and Sawtooth National Forests); National Park Service (National Trails Office, Minidoka National Historic Site, Hagerman Fossil Beds National Monument, Fossil Butte National Monument, Craters of the Moon National Monument and Preserve, and the City of Rocks National Reserve); U.S. Fish and Wildlife Service (Seedskaadee and Cokeville Meadows National Wildlife Refuges); the U.S. Army Corps of Engineers; and the Bureau of Indian Affairs.

This correspondence has three parts: (1) informal consultation for "no effect" and "not likely to adversely affect" determinations; (2) a BO for potential adverse effects associated with depletions from the Colorado and Platte River Basins; and (3) an attached CO for the proposed slickspot peppergrass and its proposed critical habitat. The informal consultation and BO contained in this letter and the attached CO were prepared in accordance with section 7 of the

ESA based on our review of the proposed action, as described in your March 2013 Biological Assessment (BA), as amended, and the anticipated effects of the action on proposed and listed species. The BA addresses only the route selected as the preferred alternative by the Bureau, including the construction and operations of about 990 miles of new 230-kilovolt (kV) and 500-kV electric transmission lines in 10 segments, from the Windstar Substation at Glenrock, Wyoming to the Hemingway Substation just west of Melba, Idaho. The Project includes permanent and temporary access roads, laydown and staging areas, three substations, expansions or modifications of nine extant substations, and construction or installation of communications systems, optical fiber regeneration stations, and substation distribution supply lines. The design of the electric transmission line includes self-supported steel H-frame 230-kV structures and lattice steel 500-kV structures. A full description of the Project can be found in the attached CO.

In a memo dated April 30, 2013, received by the Service on April 30, the Bureau requested formal consultation on the determination under section 7 of the ESA that the proposed project is likely to adversely affect the endangered bonytail chub (*Gila elegans*) and its designated critical habitat, Colorado pikeminnow (*Ptychocheilus lucius*) and its designated critical habitat, humpback chub (*G. cypha*) and its designated critical habitat, razorback sucker (*Xyrauchen texanus*) and its designated critical habitat, and whooping crane (*Grus americana*) and its designated critical habitat, the least tern (*Sterna [Sternula] antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and the threatened Western prairie fringed orchid (*Platanthera praeclara*), and piping plover (*Charadrius melodius*).

The Project proponents may withdraw water from both the Colorado River and Platte River Basins. The Project proponents are currently unable to identify all of the future withdrawal locations and the precise amounts of water to be used from each location. It is possible that some potential sources may already be addressed by existing consultations (e.g. some municipal systems); however, for purposes of this consultation, we assume all water used will be new depletions as the sources are unknown. The action, therefore, includes the consumptive use from the Colorado River system of up to 78.12881 acre-feet of water during the 50-year projected lifespan of the Project that results in an average annual depletion of 1.562576 acre-feet per year. The action also includes the consumptive use from the Platte River Basin system of up to 101.2383 acre-feet of water during the 50-year projected lifespan of the Project that results in an average annual depletion of approximately 2.024766 acre-feet per year.

The Bureau additionally determined that the Project is likely to adversely affect the slickspot peppergrass (*Lepidium papilliferum*) and its proposed critical habitat. Our CO concludes that the proposed Project will not jeopardize the survival and recovery of the slickspot peppergrass, a species proposed for listing as endangered under the ESA, and will not destroy or adversely modify its proposed critical habitat. The complete administrative record of all documents and correspondence concerning this consultation is on file in the Wyoming Ecological Services Field Office. Should the species become listed or critical habitat become designated prior to the end of the 50-year permitted term of the Project, the Bureau may ask the Service to confirm this CO for effects of the proposed Project on slickspot peppergrass and its proposed critical habitat. This request must be in writing.

The Bureau determined that the Project may affect but is not likely to adversely affect the endangered Banbury Springs limpet (*Lanx sp.*) and Bruneau hot springsnail (*Pyrgulopsis bruneauensis*), the threatened Canada lynx (*Lynx canadensis*), grizzly bear (*Ursus arctos*), Preble's meadow jumping mouse (*Zapus hudsonius spp. preblei*), Bliss Rapids snail (*Taylorconcha serpenticola*), and Ute ladies'-tresses (*Spiranthes diluvialis*). The Bureau also determined that the proposed Project is not likely to adversely affect designated critical habitat for the bull trout (*Salvelinus confluentus*) and requested our concurrence with this determination. Based on the information included in the final BA, we concur that this Project may affect but is not likely to adversely affect these species and their designated critical habitat.

The black-footed ferret (*Mustela nigripes*) was also analyzed within the BA, including the experimental/non-essential populations and the endangered populations that have been block-cleared from the state of Wyoming. The Service released a memo on March 6, 2013, block-clearing the state of Wyoming for the presence of wild ferrets, stating that the "likelihood of even a small, fragmented ferret population persisting appears very low indeed," and that "black-footed ferret populations have not rebounded as prairie dog complexes have begun to expand." Therefore, the BA states that wild, free-ranging endangered black-footed ferrets outside of the experimental/non-essential populations would not be impacted by this project. While it is important to submit your determination of Project effects to our office, the ESA does not require Service concurrence on "no effect" determinations; however, based on our memo of March 6, 2013, stating that there are no wild, free-ranging black-footed ferrets in Wyoming, we agree that this Project will not impact wild, free-ranging black-footed ferrets. With regard to the experimental/non-essential populations of black-footed ferrets, we concur that this Project may affect but is not likely to adversely affect populations of this species based on the information included in the final BA.

The Bureau also determined that 11 species under the Service's jurisdiction do not occur in action area of the proposed Project: the northern Idaho ground squirrel (*Spermophilus brunneus brunneus*), the southern Selkirk Mountains population of woodland caribou (*Rangifer tarandus caribou*), the bull trout, the Kendall warm springs dace (*Rhinichthys osculus thermalis*), the Kootenai River population of white sturgeon (*Acipenser transmontanus*), the Wyoming toad (*Bufo baxteri*), the Colorado butterfly plant (*Guara neomexicana ssp. Coloradensis*), the Desert yellowhead (*Yermo xanthocephalus*), the McFarlane's four o'clock (*Mirabilis macfarlanei*), the Spalding's catchfly (*Silene spaldingii*), and the Water howellia (*Howellia aquatilis*). The Bureau additionally analyzed the endangered blowout penstemon (*Penstemon haydenii*) in the BA. While it is important to submit your determination of Project effects to our office, the ESA does not require Service concurrence on "no effect" determinations. The Service acknowledges these determinations.

Consultation History

The Service and the Bureau (including the Bureau's consultant, TetraTech) had numerous communications and coordination in the development of the final BA. An overview of consultation history associated with the proposed Project is provided below.

April 28, 2008: The Bureau Project Leader and Project consultants provided an overview of the proposed Project to the Idaho Bureau Boise District and Twin Falls

- Level 1 Teams and received technical assistance on species to consider as well as the section 7 process.
- October 8, 2009 The Service's decision to list slickspot peppergrass as threatened under the ESA was published in the Federal Register.
- November 30, 2009 The Service completed formal consultation for the Jarbidge Resource Management Plan (RMP), the Kuna Management Framework Plan (MFP), the Cascade RMP, and the Snake River Birds of Prey National Conservation Area RMP on the effects of land use plan programs on slickspot peppergrass (14420-2010-F-0019), which included the Gateway West Transmission Line Project area.
- December 7, 2009 The Service's decision to list slickspot peppergrass as threatened became effective.
- July 2, 2010: Informal consultation between the Service and the Bureau was completed for the Gateway West Geotechnical Drilling Project (refer to ES-61411/WY10I0304 for the history associated with that consultation).
- April 25, 2012: Project consultants provided an update on the proposed Project to the Idaho Bureau Boise District Level I Team and received technical assistance on updated species to consider in section 7 analyses as well as the section 7 process.
- June 6, 2012: The Bureau, Project consultants, Project proponents, and the Service participated in a conference call regarding section 7 needs for the Project, including the incorporation of conservation measures from the 2009 Conservation Agreement between the Bureau and the Service for slickspot peppergrass. The Bureau and the Service agreed that formal section 7 consultation will be required to address the effects of Segment 8 of the proposed Project on slickspot peppergrass and its proposed critical habitat.
- August 8, 2012: The United States District Court for the District of Idaho ordered that the final rule listing slickspot peppergrass as a threatened species under the ESA be vacated and remanded for further consideration consistent with the court's decision. The Service considered the remand of the listing decision to revert the species to its 2002 status under the ESA (proposed for listing as endangered).
- August 20, 2012: The Service provided the Bureau with informal review comments on a preliminary draft of the Gateway West Transmission Line Project biological assessment.
- January 23, 2013: The Bureau provided the Service with an updated draft biological assessment for review and comment.
- January 30, 2013: The Service provided the Bureau and Project consultants with review comments, including the need to address the effects of the proposed project on slickspot peppergrass and its proposed critical habitat.

- March 14, 2013: The Project consultants provided the Service with an updated draft biological assessment with Service comments incorporated to ensure all Service comments had been adequately addressed regarding slickspot peppergrass.
- March 22 & 25, 2013: The Service requested additional information be incorporated into the updated draft biological assessment.
- March 29, 2013: The Bureau provided the Service with a final draft biological assessment with Service comments incorporated to ensure all Service comments had been adequately addressed.
- April 2, 2013: The Service provided final comments on the final draft biological assessment.
- April 30, 2013: The Service received a request for formal consultation from the Bureau on the proposed Gateway West Transmission Line Project.
- May 14, 2013: The Bureau provided the Service with Errata to Biological Assessment regarding water depletions from the Colorado and Platte River basins.
- May 14, 2013: The Service notified the Bureau that adequate information had been provided to initiate formal consultation on the proposed Project.
- May 24, 2013: The Bureau sent the Service a memo requesting that all Federal cooperating agencies on the Project be included in section 7 consultation.
- August 1, 2013: The Bureau met with the Service regarding the effects of depletions from the Colorado and Platte River basins on designated critical habitat.
- August 14, 2013: The Bureau provided the Service with a 2nd Errata to the Biological Assessment correcting effects determinations for designated critical habitats of the Colorado River fishes and the Platte River Species.
- August 14, 2013: The Service provided the Bureau with the draft biological opinion and conference opinion for review and comment.
- August 28, 2013: The Bureau provided the Service with Bureau comments on the draft biological opinion and conference opinion, which were incorporated into the final opinions, as appropriate.

Informal Consultations

Canada Lynx

The Bureau determined that the Project may affect, but is not likely to adversely affect the Canada lynx because the Project will not cross or impact lynx analysis units, is not expected to substantially impact the lynx's prey base, or result in long-term impedance to movement. Therefore, due to the Project's avoidance of important lynx habitat and protective measures included in the BA, the Service concurs that the Project may affect, but is not likely to adversely affect the Canada lynx.

Grizzly Bear

The Bureau determined that the Project may affect, but is not likely to adversely affect the grizzly bear because the Project falls within the Yellowstone distinct population segment, though no lands would be impacted within the primary conservation area. No grizzly bears occur along or near the proposed route, and it is unlikely that dispersing bears would occur within the action area because the proposed route does not cross suitable habitat for the species; therefore, the Service concurs that the Project may affect, but is not likely to adversely affect the grizzly bear.

Preble's Meadow Jumping Mouse

The Bureau determined that the Project may affect but is not likely to adversely affect the Preble's meadow jumping mouse as: (1) it is unlikely that the species would occur within the Project area; (2) pre-construction surveys will be performed in areas determined to provide suitable habitat for this species in Converse County, Wyoming; and (3) Project micro-siting will be utilized to avoid areas occupied by Preble's. Therefore, because the Project does not pass through the range for this species, the implementation of pre-construction surveys, and the avoidance of any identified occupied habitat for this species, the Service concurs that the Project may affect, but is not likely to adversely affect the Preble's meadow jumping mouse.

Listed Snake River Snails (Bliss Rapids Snail, Banbury Springs Limpet, and Snake River Physa) and the Bruneau Hot Springsnail

Service concurrences with the Bureau's "not likely to adversely affect" determinations for the three listed Snake River snails and the Bruneau hot springsnail, inclusive of project design features to avoid or minimize effects on these species, are based on the following rationale.

- Water withdrawals during Project construction from the Snake River system (which includes the Bruneau River), springs, or from the underlying thermal aquifer that feeds area hot springs may impact habitat for listed Snake River snails and the Bruneau hot springsnail. As water will be purchased to cover any needed water withdrawals from the Snake River system, water levels are not expected to decrease relative to baseline levels in the Snake or Bruneau Rivers due to this Project. In addition, no Project-related water withdrawals from springs along the Snake or Bruneau Rivers will occur, nor will water be taken from existing wells that may currently draw water from the Snake or Bruneau

River's thermal aquifers. Therefore, Project-related effects to the water levels of the Snake and Bruneau Rivers, as well as to the water level and flow of cold and hot spring habitats, are expected to be insignificant¹.

- Individual snails could be crushed if personnel, vehicles, or equipment enter the water during transmission line construction, maintenance, or decommissioning activities where the transmission line bisects areas where listed snails occur. However, the Project will not cross through the recovery area of the Banbury Springs limpet or the Bruneau hot springsnail; these snail species will not be directly affected by Project construction, maintenance, or decommissioning.
- The transmission line project bisects the recovery areas of the Bliss Rapids snail and the Snake River physa snail. However, in areas where the transmission line will cross these species' recovery areas, the Snake River and associated spring habitats will be spanned, with no direct impacts expected to occur to these listed snails or their aquatic habitats. In addition, no construction work will occur and no towers will be installed within aquatic habitats that contain listed Snake River snails as well as the Bruneau hot springsnail.
- Disturbance at sites where the Snake River will be spanned by the Project will be limited to removal of individual trees that are of sufficient height that they could interfere with the transmission lines. The potential removal of individual trees along the mainstem of the Snake River at three sites (RM 541.5, RM 573.5, and RM 624.0) is not expected to result in substantial increases in stream temperatures due to the limited extent of existing vegetation present. In addition, the large width and water volume of the Snake River result in a low influence of streambank vegetation on water temperature. Therefore, potential effects on listed snails due to individual tree removal associated with the Project are expected to be insignificant.
- Project-related disturbance in upland areas upstream of rivers and springs occupied by listed snails could generate sediment that may enter the water, potentially burying individual snails, eggs, and food sources. In addition, exposure to spills of hazardous materials such as petroleum products and herbicides associated with work occurring outside of aquatic habitats may result in injury to or mortality of individual listed snails and degradation of water quality. The risk of Project-generated sediment or hazardous materials entering the Snake River, the Bruneau River, or associated springs will be insignificant through use of the following Project design measures.
 - Approved sediment and erosion control Best Management Practices (BMPs) will be installed and maintained until disturbed areas meet final stabilization criteria.
 - Temporary BMPs will be used to control erosion and sediment at staging areas (equipment storage yards, fly yards, lay down areas) and substations.
 - Damaged temporary erosion and sediment control structures will be repaired in accordance with the Project's Stormwater Pollution Prevention Plan (SWPPP).
 - Upon completion of construction, permanent erosion and sediment BMPs will be

¹ As defined in the Endangered Species Consultation Handbook (USFWS and NMFS 1998, p. xvi), insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects.

installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs.

- Construction industry standard practices and BMPs will be used for spill prevention and containment.
 - Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.
 - If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill. Absorbent materials will be applied to the spill area. Contaminated materials will be excavated and temporarily placed on and covered by plastic sheeting in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged.
 - If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.
 - For spills in standing water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water.
 - Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.
 - Only herbicides approved by the land management agency as safe to use in aquatic environments will be used within 100 feet of sensitive aquatic resources.
- Project design features will be applied on all lands, regardless of ownership.
 - If snails are discovered outside of their currently known ranges and in the vicinity of Project activity, all requirements of the ESA will apply, including cessation of work, notification of the Service, and possible re-initiation of consultation.

Using the design features specified for special status aquatic animals and riparian and aquatic habitats, the proposed action will either have no effect or effects will be discountable² or insignificant to listed snails. As described above, instream activities may impact listed snail species through direct injury or mortality of individuals. Additional section 7 consultation will be required for any instream activities that may occur in areas known or suspected of supporting listed snails, and in drainages that flow directly into waterways upstream of sites that support these species.

Ute Ladies'-tresses

The Bureau determined that the Project may affect, but is not likely to adversely affect the Ute ladies'-tresses because no plants were identified during three years of surveys in areas of suitable habitat where the proponents were allowed to perform surveys, and because the Project alignment will be modified and routed to avoid areas of suitable habitat where surveys were not allowed. Indirect effects of hydrology alterations and the spread of invasive weeds may occur

² As defined in the Endangered Species Consultation Handbook (USFWS and NMFS 1998, pp. xv-xvi), discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not expect discountable effects to occur.

due to the project. However, protective measures implemented during Project design, construction, and operations would minimize those potential effects. Therefore, the Service concurs that the Project may affect, but is not likely to adversely affect the Ute ladies'-tresses.

Nonessential, Experimental Population of Black-footed Ferret

The Bureau determined that that Project may affect, but is not likely to adversely affect the nonessential, experimental population of the black-footed ferret because Project impacts to the species would be minimized through micrositing the Project to avoid active burrows identified prior to construction. Project design features that avoid and minimize impacts on black-footed ferrets will additionally be implemented during design, construction, and operations of the Project, including avoiding Project siting within large prairie dog towns and maintaining safe driving speeds along access roads. Therefore, the Service concurs that the Project may affect, but is not likely to adversely affect the experimental, nonessential population of black-footed ferret.

Designated Critical Habitat for Bull Trout

Service concurrence with the Bureau's "not likely to adversely affect" determination for designated critical habitat for bull trout, inclusive of project design features to avoid or minimize effects on primary constituent elements (PCEs) of critical habitat, is based on the following rationale.

- No construction work will occur and no towers or roads will be installed within bull trout critical habitat. Towers will be placed outside of the riparian area along the Bruneau River in vegetation classified as disturbed sagebrush.
- Project-related effects on PCEs of bull trout critical habitat could include sedimentation from erosion and contamination from spills of hazardous materials associated with work occurring outside of critical habitat. However, the risk of Project-generated sediment or hazardous materials entering the Bruneau River will be insignificant through use of project design features. Project design features to avoid or minimize effects on PCEs 1, 2, 3, 4, and 8 of bull trout critical habitat due to sediment and/or hazardous materials entering aquatic habitats are described above in the Snake River Snails and Bruneau Hot Springsnail section.
- Riparian vegetation removal will be limited to individual trees that are of sufficient height that they could interfere with the transmission lines. It is anticipated that very few trees along the Bruneau River within the Project area are of sufficient height that they will require removal. In addition, the few individual trees that may be removed along the Bruneau River are not expected to result in measurable changes in the Riparian Habitat Conservation Area associated with PCEs 1, 3, 5, 7, and 8 of bull trout critical habitat. Therefore, potential effects on PCEs of bull trout critical habitat due to Project-related individual tree removal are expected to be insignificant.
- Project design features will be applied on all lands, regardless of ownership, further reducing the risk of adverse effects to PCEs of bull trout critical habitat

Formal Consultation

A detailed description of the proposed action and the action area can be found in the CO. The Project proponents will use water from both the Colorado River and Platte River Basins. Consultation is not required if the water is obtained from sources with existing consultations (e.g., municipal); however, the Project proponents are currently unable to identify all of the future withdrawal locations and the precise amounts of water to be used from each location. If all water used for this Project is from withdrawals that have previously consulted, then there would be no new effect from the water being used for this Project. However, for purposes of this BO, all water is assumed to have had no prior consultation. Therefore, the action includes the potential consumptive use from the Colorado River system of up to 78.12881 acre-feet of water during the 50-year projected lifespan of the Project, which results in an average annual depletion of 1.562576 acre-feet per year. The action also includes the consumptive use from the Platte River Basin system of up to 101.2383 acre-feet of water during the 50-year projected lifespan of the Project, which results in an average annual depletion of approximately 2.024766 acre-feet per year. The BOs are based on templates that tier to existing programmatic biological opinions for the Colorado River and Platte River.

Colorado River Fish Species

The four federally endangered fish species of the upper Colorado River Basin include the endangered bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*). A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative to avoid jeopardy to the endangered fish by depletions from the Upper Colorado River.

In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (Plan), which identifies actions currently believed to be required to recover the endangered fish in the most expeditious manner in the Upper Colorado River Basin.

A part of the Recovery Program was the requirement that if a project was going to result in a depletion, a depletion fee would be paid to help support the Recovery Program. On July 5, 1994, the Service issued a biological opinion determining that the fee for depletions of 100 acre-feet or less would no longer be required. This was based on the premise that the Recovery Program has made sufficient progress to be considered the reasonable and prudent alternative avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat by depletions of 100 acre-feet or less. Therefore, **the depletion fee for this Project is waived.**

We concur that the proposed project may affect and is likely to adversely affect the four federally endangered fishes of the Upper Colorado River Basin and their designated critical habitat due solely to the associated 1.562576 acre-feet average annual water depletion over the 50-year life of the Project. However, we conclude that the Recovery Program adequately addresses effects to the species. No additional conservation measures are needed to reduce impacts from the proposed action.

Permits or other documents authorizing specific projects, which result in depletions, should state that the Bureau retains discretionary authority over each project for the purpose of endangered species consultation. If the Recovery Program is unable to implement the Plan in a timely manner, reinitiation of section 7 consultation may be required so that a new reasonable and prudent alternative can be developed by the Service.

Platte River Species

The federally listed species within the Platte River Basin include the whooping crane (*Grus americana*), interior least tern (*Sterna [Sternula] antillarum*), northern Great Plains population of the piping plover (*Charadrius melodus*), pallid sturgeon (*Scaphirhynchus albus*).

Platte River Depletions

In accordance with the streamlined section 7 consultation process under the Platte River Recovery Implementation Program (PRRIP), the completion of a Platte River Recovery Agreement (Agreement) with the State of Wyoming may be necessary for this Project prior to preparing a biological opinion. On April 30, 2013, we received a letter dated April 18, from the Wyoming State Engineer's Office, indicating the Project is an existing depletion and the Project does not require an Agreement to be covered under the PRRIP. Therefore, we are able to proceed with the review of the BA and complete this BO.

We understand that sources for the water to be used out of the North Platte River basin have not been determined. The State Engineer's Office has stated in a letter dated April 18, 2013, that once the source of water through the temporary water use agreements and/or non-hydrologically connected groundwater wells is identified, mitigation will be determined unnecessary as there will be no new depletions of water within the North Platte River basin associated with the Project.

Background

On June 16, 2006, the Service issued a programmatic biological opinion (PBO) for the PRRIP and water-related activities³ affecting flow volume and timing in the central and lower reaches of

³ The term "water-related activities" means activities and aspects of activities that (1) occur in the Platte River basin upstream of the confluence of the Loup River with the Platte River; and (2) may affect Platte River flow quantity or timing, including, but not limited to, water diversion, storage and use activities, and land use activities. Changes in temperature and sediment transport will be considered impacts of a "water related activity" to the extent that such changes are caused by activities affecting flow quantity or timing. Impacts of "water related activities" do not

the Platte River in Nebraska. The action area for the PBO included the Platte River basin upstream of the confluence with the Loup River in Nebraska and the mainstem of the Platte River downstream of the Loup River confluence. The Federal action addressed by the PBO included the following:

- 1) Funding and implementation of the PRRIP for 13 years, the anticipated first stage of the PRRIP; and
- 2) Continued operation of existing and certain new water-related activities⁴ including, but not limited to, Reclamation and Service projects that are (or may become) dependent on the PRRIP for ESA compliance during the first 13-year stage of the PRRIP for their effects on the target species⁵, whooping crane critical habitat, and other federally listed species⁶ that rely on central and lower Platte River habitats.

The PBO established a two-tiered consultation process for future Federal actions on existing and new water-related activities subject to section 7(a)(2) of the ESA, with issuance of the PBO being Tier 1 and all subsequent site-specific project analyses constituting Tier 2 consultations covered by the PBO. Under this tiered consultation process, the Service will produce tiered biological opinions when it is determined that future Federal actions are “likely to adversely affect” federally listed species and/or designated critical habitat in the PRRIP action area and the project is covered by the PBO. If necessary, the biological opinions will also consider potential effects to other listed species and critical habitat affected by the Federal action that were not within the scope of the Tier 1 PBO (e.g., direct or indirect effects to listed species occurring outside of the PRRIP action area).

Although the water depletive effects of this Federal action to central and lower Platte River species have been addressed in the PBO, when “no effect”, or “may affect, but is not likely to adversely affect” determinations are made on a site-specific basis for the target species in Nebraska, the Service will review these determinations and provide written concurrence where appropriate. Upon receipt of written concurrence, section 7(a)(2) consultation will be considered completed for those Federal actions.

Water-related activities requiring Federal approval will be reviewed by the Service to determine if (1) those activities comply with the definition of existing water-related activities and/or (2)

include those components of land use activities or discharges of pollutants that do not affect flow quantity or timing.

⁴ “Existing water related activities” include surface water or hydrologically connected groundwater activities implemented on or before July 1, 1997. “New water-related activities” include new surface water or hydrologically connected groundwater activities including both new projects and expansion of existing projects, both those subject to and not subject to section 7(a)(2) of the ESA, which may affect the quantity or timing of water reaching the associated habitats and which are implemented after July 1, 1997.

⁵ The “target species” are the endangered whooping crane (*Grus americana*), the endangered interior least tern (*Sternula antillarum*), the endangered pallid sturgeon (*Scaphirynchus albus*), and the threatened northern Great Plains population of the piping plover (*Charadrius melodus*).

⁶ Other listed species present in the central and lower Platte River include the western prairie fringed orchid (*Platanthera praeclara*), the American burying beetle (*Nicrophorus americanus*), and the Eskimo curlew (*Numenius borealis*). The bald eagle (*Haliaeetus leucocephalus*) was listed as threatened when the PBO was written.

proposed new water-related activities are covered by the applicable State or the Federal depletions plan. The Service has determined that the Project meets the above criteria and, therefore, this Tier 2 biological opinion regarding the effects of the Project on the target species, whooping crane critical habitat, or western prairie fringed orchid in the central and lower Platte River can tier from the PBO.

Consultation History

Table II-1 of the PBO (pages 21-23) contains a list of species and critical habitat in the action area, their status, and the Service's determination of the effects of the Federal action analyzed in the PBO.

The Service determined in the Tier 1 PBO that the Federal action, including the continued operation of existing and certain new water-related activities, may adversely affect, but would not likely jeopardize the continued existence of the federally endangered interior population of the least tern, whooping crane, and pallid sturgeon, or the federally threatened northern Great Plains population of the piping plover, western prairie fringed orchid, and bald eagle in the central and lower Platte River. Furthermore, the Service determined that the Federal action, including the continued operation of existing and certain new water-related activities, was not likely to destroy or adversely modify designated critical habitat for the whooping crane. The bald eagle was subsequently removed from the federal endangered species list on August 8, 2007. Bald eagles continue to be protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. For more information on bald eagles, see the Service's webpage at: <http://www.fws.gov/midwest/eagle/recovery/biologue.html>.

The effects of the continued operation of existing and certain new water-related activities on the remaining species and critical habitats listed in Table II-1 of the PBO were beyond the scope of the PBO and were not considered.

The Service has reviewed the information contained in the BA submitted by your office on April 30, 2013 as well as the information received from the Wyoming State Engineer's Office on April 18, 2013. We concur with your determinations of "likely to adversely affect" for the endangered whooping crane and its designated critical habitat, interior least tern, and pallid sturgeon, and the threatened northern Great Plains population of the piping plover and threatened western prairie fringed orchid in the central and lower Platte River in Nebraska.

Scope of the Tier 2 Biological Opinion

The Project is a component of "the continued operation of existing and certain new water-related activities" needing a Federal action evaluated in the Tier 1 PBO. Flow-related effects of the Federal action are consistent with the scope and the determination of effects in the PBO. Because the applicants have elected to participate in the PRRIP, ESA compliance for flow-related effects to federally listed endangered and threatened species and designated critical habitat from the Project is provided to the extent described in the Tier 1 PBO.

This BO applies to the Project's effects to listed endangered and threatened species and designated critical habitat as described in the PBO for the first thirteen years of the PRRIP (i.e., the anticipated duration of the first PRRIP increment).

Description of the Federal Action

A detailed description of the Project can be found in the CO. The applicant has stated that they will require the consumptive use from the Platte River Basin system of up to 101.2383 acre-feet of water during the 50-year projected lifespan of the Project, which results in approximately 2.024766 acre-feet per year. The source of the water to be used for the Project has yet to be determined.

Status of the Species

Species descriptions, life histories, population dynamics, status and distributions, are fully described in the PBO on pages 76-156 for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid, and are hereby incorporated by reference. On August 8, 2007, the bald eagle was removed from the Federal endangered species list. Climate change is not explicitly identified in the Tier 1 PBO as a potential threat, except for whooping crane.

The terms "climate" and "climate change" are defined by the Intergovernmental Panel on Climate Change (IPCC). "Climate" refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007b, p. 78). The term "climate change" thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007b, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007b, pp. 8-14, 18-19).

Changes in temperature and/or precipitation patterns will influence the status of the Platte River ecosystem. These changes may contribute to threats that have already been identified and discussed for the interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid in the Tier I PBO.

Environmental Baseline

The Environmental Baseline sections for the Platte River and for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid, as well as whooping crane critical habitat are described on pages 157 to 219 of the Tier 1 PBO, and are hereby incorporated by reference. The Tier 1 PBO concluded that although climate change has been identified as a contributor to the baseline, human activities are the biggest influence on the baseline. For the duration of this consultation, 13 years, human activities are expected to continue to be the major influence on the functionality of the action area for listed species and

critical habitat. Since issuance of the Tier 1 PBO, there have been no substantial changes in the status of the target species or designated critical habitat other than the bald eagle delisting previously mentioned.

Effects of the Action

The Tier 1 PBO did not address climate change in the Effects of the Action section, as human activities (upstream storage, diversion, and distribution of the river's flow) are the most important drivers of change that adversely affect species habitat in the action area. Since issuance of the Tier 1 PBO, our analyses under the ESA include consideration of ongoing and projected changes in climate. In our analyses, we used our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change. Actions that are undertaken to improve the river ecology and habitats for listed species not only address human activities, but also contribute to listed species and whooping crane critical habitat resiliency to climate change.

Based on analysis of the information provided in your BA for the Project, the Service and the Wyoming State Engineer's Office concluded that the proposed Federal action will result in an existing depletion to the Platte River system above the Loup River confluence. These depletions are associated with the Project. As an existing water-related activity, we have determined that the flow-related adverse effects of the Project are consistent with those evaluated in the Tier 1 PBO for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid.

Cumulative Effects

Cumulative effects include the effects of future State, local, or private (non-Federal) actions that are reasonably certain to occur in the action area considered in this BO. A non-Federal action is "reasonably certain" to occur if the action requires the approval of a State or local resource or land-control agency, such agencies have approved the action, and the project is ready to proceed. Other indicators which may also support such a "reasonably certain to occur" determination include whether: (a) the project sponsors provide assurance that the action will proceed; (b) contracting has been initiated; (c) State or local planning agencies indicate that grant of authority for the action is imminent; or (d) where historic data have demonstrated an established trend, that trend may be forecast into the future as reasonably certain to occur. These indicators must show more than the possibility that the non-Federal project will occur; they must demonstrate with reasonable certainty that it will occur. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA and would be consulted on at a later time.

Cumulative effects are described on pages 194 to 300 of the Tier 1 PBO, and are hereby incorporated by reference. There have been no substantial changes in cumulative effects since the issuance of the PBO. Since the Tier 1 PBO was issued, there have been no substantial changes in the status of cumulative effects.

Conclusions

The Service concludes that the Project is consistent with the Tier 1 PBO for effects to listed species and critical habitat addressed in the Tier 1 PBO. After reviewing site-specific information, including: (1) the scope of the Federal action, (2) the environmental baseline, (3) the status of the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid in the central and lower Platte River and their potential occurrence within the Project area, (4) the effects of the Project, and (5) any cumulative effects, it is the Service's opinion that the Project, as described, is not likely to jeopardize the continued existence of the federally endangered whooping crane, interior least tern, and pallid sturgeon, or the federally threatened northern Great Plains population of the piping plover, or western prairie fringed orchid. The Federal action is also not likely to destroy or adversely modify designated critical habitat for the whooping crane.

Incidental Take Statement

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct, and applies to individual members of a listed species. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Sections 7(b)(4) and 7(o)(2) of the ESA do not apply to the incidental take of federally listed plant species (e.g., Colorado butterfly plant, Ute ladies' tresses orchid, and western prairie fringed orchid). However, limited protection of listed plants from take is provided to the extent that ESA prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on non-federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law. Such laws vary from state to state.

The Department of the Interior, acting through the Service and Bureau of Reclamation, is implementing all pertinent Reasonable and Prudent Measures and implementing Terms and Conditions stipulated in the Tier 1 PBO Incidental Take Statement (pages 309-326 of the PBO), which will minimize the anticipated incidental take of federally listed species. In instances where the amount or extent of incidental take outlined in the Tier 1 PBO is exceeded or the amount or extent of incidental take for other listed species is exceeded, the specific PRRIP action(s) causing such take shall be subject to reinitiation expeditiously.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information. Conservation recommendations are provided in the PBO (pages 328-329) and are hereby incorporated by reference.

Closing Statement

Any person or entity undertaking a water-related activity that receives Federal funding or a Federal authorization and which relies on the PRRIP as a component of its ESA compliance in section 7 consultation must agree: (1) to the inclusion in its Federal funding or authorization documents of reopening authority, including reopening authority to accommodate reinitiation upon the circumstances described in section IV.E. of the Program document, which addresses Program termination; and (2) to request appropriate amendments from the Federal action agency as needed to conform its funding or authorization to any PRRIP adjustments negotiated among the three states and the Department of the Interior, including specifically new requirements, if any, at the end of the first PRRIP increment and any subsequent PRRIP increments. The Service believes that the PRRIP should not provide ESA compliance for any water-related activity for which the funding or authorization document does not conform to any PRRIP adjustments (Program Document, section VI).

Reinitiation of consultation over the Project will not be required at the end of the first 13-years of the PRRIP provided a subsequent Program increment or first increment Program extension is adopted pursuant to appropriate ESA and National Environmental Policy Act (NEPA) compliance procedures, and, for a subsequent increment, the effects of the Project are covered under a Tier 1 PBO for that increment addressing continued operation of previously consulted-on water-related activities. Requests for reinitiation or questions regarding reinitiation should be directed to the Service's Wyoming Field Office at the letterhead address above.

Conclusion

If the Service reviews the action and finds that there have been no significant changes in the Project that could warrant a reanalysis of effects, the Service may confirm this CO for slickspot peppergrass as our part of our BO, and no further section 7 consultation for the species or its critical habitat will be necessary.

This concludes formal consultation on the actions outlined in the April 30, 2013, request for the Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this BO; or (4) a new species is listed or critical habitat designated that may be affected by the

action. In instances where the amount or extent of incidental take is exceeded, the specific action(s) causing such take shall be subject to reinitiation expeditiously.

Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Julie Reeves of our office at (307) 772-2374, extension 232, for questions regarding Wyoming species addressed in this BO. If you have questions concerning Idaho species addressed in the informal consultation section above or in the attached CO, please contact Barbara Chaney at (208) 378-5259 in our Idaho office.

Attachment (Conference Opinion for slickspot peppergrass)

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CONFERENCE OPINION
FOR THE
GATEWAY WEST TRANSMISSION LINE RIGHT-OF-WAY PROJECT
06E13000-2013-F-0033



U.S. FISH AND WILDLIFE SERVICE
WYOMING FISH AND WILDLIFE OFFICE
CHEYENNE, WYOMING

Supervisor _____

Date _____

[Handwritten Signature]
9-12-13

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1. BACKGROUND

1.1 Introduction

The U.S. Fish and Wildlife Service (Service) has prepared this conference opinion (CO) of the effects of the proposed Gateway West Transmission Line Right-of-Way Project (Project) on *Lepidium papilliferum* (slickspot peppergrass). In a letter dated and received by the Service on April 30, 2013, the Bureau of Land Management (Bureau) submitted a biological assessment (BA) requesting formal consultation with the Service under section 7 of the Endangered Species Act (ESA) of 1973, as amended, for its proposal to authorize the action. The Bureau determined that the proposed action is likely to adversely affect the Colorado pikeminnow (*Ptychocheilus lucius*) and its designated critical habitat, the razorback sucker (*Xyrauchen texanus*) and its designated critical habitat, the bonytail chub (*Gila elegans*) and its designated critical habitat, the humpback chub (*Gila cypha*) and its designated critical habitat, the interior least tern (*Sterna antillarum athalassos*), the piping plover (*Charadrius melodus*), the whooping crane (*Grus americana*) and its designated critical habitat, the pallid sturgeon (*Scaphirhynchus albus*), *Platanthera praeclara* (western prairie fringed orchid), and slickspot peppergrass and its proposed critical habitat. Formal consultation for the federally listed species and their designated critical habitats in the Colorado River and Platte River basins is addressed in the biological opinion (BO) for this Project.

The Bureau determined that the Project may affect, but is not likely to adversely affect the endangered Banbury Springs limpet (*Lanx sp.*) and Bruneau hot springsnail (*Pyrgulopsis bruneauensis*), the threatened Canada lynx (*Lynx canadensis*), grizzly bear (*Ursus arctos*), Preble's meadow jumping mouse (*Zapus hudsonius spp. preblei*), Bull trout (*Salvelinus confluentus*) and its critical habitat, Bliss Rapids snail (*Taylorconcha serpenticola*), and Ute ladies'-tresses (*Spiranthes diluvialis*). Informal consultation for these federally listed species is addressed in the BO for this Project.

The black-footed ferret (*Mustela nigripes*) was also analyzed within the BA, including the experimental/non-essential populations and the endangered populations that have been block-cleared from the state of Wyoming. In addition, the Bureau determined that eleven species under the Service's jurisdiction do not occur in action area of the proposed Project: the northern Idaho ground squirrel (*Spermophilus brunneus brunneus*), the southern Selkirk Mountains population of woodland caribou (*Rangifer tarandus caribou*), the bull trout, the Kendall warm springs dace (*Rhinichthys osculus thermalis*), the Kootenai River population of white sturgeon (*Acipenser transmontanus*), the Wyoming toad (*Bufo baxteri*), *Guara neomexicana ssp. coloradensis* (Colorado butterfly plant), *Yermo xanthocephalus* (desert yellowhead), *Mirabilis macfarlanei* (McFarlane's four o'clock), *Silene spaldingii* (Spalding's catchfly), and *Howellia aquatilis* (water howellia). The Bureau additionally analyzed the endangered blowout penstemon (*Penstemon haydenii*) in this BA, and while it is important to submit your determination of Project effects to our office, the ESA does not require Service concurrence on "no effect" determinations. The Service acknowledges these determinations.

This CO addresses the effects of the proposed Project on slickspot peppergrass, a species proposed for listing under the Act, and its proposed critical habitat. As described in this CO, and based on the BA (USBLM 2013a, entire) developed by the Bureau, the Service has concluded that the action, as proposed, is not likely to jeopardize the continued existence of slickspot peppergrass or destroy or adversely modify its proposed critical habitat.

1.2 Consultation History

The Service and the Bureau (including the Bureau's consultant, TetraTech) have had numerous communications and coordination in the development of the final Assessment. We provided a letter of concurrence on the associated Gateway West Geotechnical Drilling Project on July 2, 2010 (refer to ES-61411/WY10I0304 for the history associated with that consultation). An overview of consultation history associated with the proposed Project is provided below.

- April 28, 2008: The Bureau Project Leader and Project consultants provided an overview of the proposed Project to the Idaho BLM Boise District and Twin Falls Level 1 Teams and received technical assistance on species to consider as well as the section 7 process.
- October 8, 2009 The Service's decision to list slickspot peppergrass as threatened under the Act was published in the Federal Register.
- November 30, 2009 The Service completed formal consultation for the Jarbidge Resource Management Plan (RMP), the Kuna Management Framework Plan (MFP), the Cascade RMP, and the Snake River Birds of Prey National Conservation Area RMP on the effects of land use plan programs on slickspot peppergrass (14420-2010-F-0019), which included the Gateway West Transmission Line Project area.
- December 7, 2009 The Service's decision to list slickspot peppergrass as threatened became effective.
- July 2, 2010: Informal consultation between the Service and the Bureau was completed for the Gateway West Geotechnical Drilling Project (ES-61411/WY10I0304).
- April 25, 2012: Project consultants provided an update on the proposed Project to the Idaho BLM Boise District Level 1 Team and received technical assistance on updated species to consider in section 7 analyses as well as the section 7 process.
- June 6, 2012: The Bureau, Project consultants, Project proponents, and the Service participated in a conference call regarding section 7 needs for the Project, including the incorporation of conservation measures from the 2009 Conservation Agreement between the Bureau and the Service for slickspot peppergrass. The Bureau and the Service agreed that formal section 7 consultation will be required to address the effects of Segment 8 of the proposed Project on slickspot peppergrass and its proposed critical habitat.

- August 8, 2012: The United States District Court for the District of Idaho ordered that the final rule listing slickspot peppergrass as a threatened species under the Act be vacated and remanded for further consideration consistent with the court's decision. The Service considered the remand of the listing decision to revert the species to its 2002 status under the Act (proposed for listing as endangered).
- August 20, 2012: The Service provided the Bureau with informal review comments on a preliminary draft of the Gateway West Transmission Line Project biological assessment.
- January 23, 2013: The Bureau provided the Service with an updated draft biological assessment for review and comment.
- January 30, 2013: The Service provided the Bureau and Project consultants with review comments, including the need to address the effects of the proposed project on slickspot peppergrass and its proposed critical habitat.
- March 14, 2013: The Project consultants provided the Service with an updated draft biological assessment with Service comments incorporated to ensure all Service comments had been adequately addressed regarding slickspot peppergrass.
- March 22 & 25, 2013: The Service requested additional information be incorporated into the updated draft biological assessment.
- March 29, 2013: The Bureau provided the Service with a final draft biological assessment with Service comments incorporated to ensure all Service comments had been adequately addressed.
- April 2, 2013: The Service provided final comments on the final draft biological assessment.
- April 30, 2013: The Service received a request for formal consultation from the Bureau on the proposed Gateway West Transmission Line Project.
- May 14, 2013: The Bureau provided the Service with Errata to Biological Assessment regarding water depletions from the Colorado and Platte River basins.
- May 14, 2013: The Service notified the Bureau that adequate information had been provided to initiate formal consultation on the proposed Project.
- May 24, 2013: The Bureau provided the Service with a memo requesting that all cooperating agencies on the Project be included in section 7 consultation.
- August 1, 2013: The Bureau met with the Service regarding the effects of depletions from the Colorado and Platte River basins on designated critical habitat.
- August 14, 2013: The Service provided the Bureau with the draft Opinion for review and comment.
- August 28, 2013: The Bureau provided the Service with Bureau and applicant comments on the draft Opinion, which were incorporated into the final Opinion, as appropriate.

2. CONFERENCE OPINION

2.1 Description of the Proposed Action

This section describes the proposed Federal action, including any measures that may avoid, minimize, or mitigate adverse effects to listed species or critical habitat, and the extent of the geographic area affected by the action (i.e., the action area). The term “action” is defined in the implementing regulations for section 7 as “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas.” The term “action area” is defined in the regulations as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.”

2.1.1 Proposed Action

On May 7, 2007, Idaho Power Company and Rocky Mountain Power (the Proponents) applied to the Bureau for a right-of-way (ROW) grant to use public lands for portions of the Project. An Environmental Assessment (EA) and Environmental Impact Statement (EIS) have been prepared for this Project, and were incorporated into the BA by reference. The aboveground transmission line will supplement existing transmission lines to relieve existing congestion, capacity, and reliability constraints in the electric transmission grid, allowing for the delivery of up to 1,500 megawatts of energy. The Project will primarily serve future needs in Utah and Idaho.

The Project’s construction is expected to begin after the Record of Decision is released in 2015, and be complete by December 2021, with multiple contractors working concurrently on the separate line segments and substations of the Project in order to meet the planned in-services dates. The last segment of the initial phase between Windstar and Populus will be completed by 2018. The second phase will extend from Populus to Hemingway with the last segment completed by the end of 2021.

The Federal action under consideration is the Bureau’s approval of the proposed ROW grant for the construction and operation of an electric transmission system from the Windstar Substation at Glenrock, Wyoming to the Hemingway Substation just west of Melba and approximately 30 miles southwest of Boise, Idaho (Figure 1). Although routes and structure alternatives for the Project have been proposed, only the route and alternatives preferred by the Bureau were analyzed in the Assessment. The proposed ROW grant includes the following Proponent actions:

- Construction and operations of about 990 miles of new 230-kilovolt (kV) and 500-kV electric transmission lines in 10 segments, from Segment 1W at the eastern end in Wyoming to Segment 10 in Idaho;
- Construction of permanent and temporary access roads;
- Construction of permanent and temporary laydown and staging areas;
- Construction of three substations;
- Expansions or modifications of nine existing substations; and
- Construction or installation of other associated facilities including communication systems, optical fiber regeneration stations, and substation distribution supply lines.

The Project will be supported by two types of transmission structures: steel H-frame 230-kV structures and single 500-kV lattice steel towers. The installation of these structures requires preparation of each site, including vegetation removal and grading in order to obtain a relatively flat surface (necessary for the operation of the large cranes used to install the structures). Clearing individual structure sites will be done using a bulldozer to blade the required area, which will be moved to staging areas by flatbed trucks along existing access roads. For construction laydown, tower assembly, and tower erection, areas measuring approximately 250 feet by 250 feet for each single-circuit 500-kV structure and 150 feet by 125 feet for each 230-kV structure will be required.

The 230-kV steel H-frames will be made of self-weathering steel. The average distance between H-frame structures will be approximately 700 feet. Typically, the 230-kV single-circuit H-frame structures will have pole lengths ranging between 70 and 100 feet. Embedment depths (for pole placements) are typically 10 percent of the pole length plus 2 feet (in the case of this Project, ranging from 9 to 12 feet). The structure heights above ground vary from 60 to 90 feet.

The 500-kV lattice steel towers will be fabricated with galvanized steel treated to produce a dulled finish. The average distance between 500-kV towers will be 1,200 to 1,300 feet. Structure heights will vary depending on terrain and the requirement to maintain minimum conductor clearances from the ground (i.e., clearance requirement between the transmission line and the ground is at least 100 feet and clearance requirement between the line and any vegetation is at least 50 feet; see Appendix B of the final EIS). The 500-kV towers will vary in height from 145 to 180 feet. Each permanent (for the 50-year life of the Project) foundations will be approximately 46 by 41 feet (0.043 acre).

2.1.2 Action Area

The total length of the proposed, Bureau preferred route of the transmission line is about 990 miles on private, state, and Federal lands. The route is located in Converse, Natrona, Carbon, Sweetwater, Uinta, and Lincoln Counties in Wyoming; and Bear Lake, Franklin, Bannock, Oneida, Power, Cassia, Twin Falls, Minidoka, Blaine, Lincoln, Jerome, Gooding, Owyhee, Elmore, Ada, and Canyon Counties in Idaho (Figure 1).

The action area must include all areas where any direct and indirect effects to the environment may be documented regardless of the presence or absence of a listed species (50 Code of Federal Regulations [CFR] §402.02). Therefore, the Bureau determined that the action area includes the ROW; access roads (both new roads and existing roads requiring improvement); substations (both proposed substations and existing substations requiring expansion); and yards for material storage, helicopter operations, and other purposes; and a 0.5-mile buffer around these areas. Although certain listed species occurring in the Colorado River and Platte River basins downstream of the Wyoming portions of the Project do not occur within the Project area, they are included in the action area due to impacts from Project-related water withdrawals, because depletions from these Basins result in a may affect, likely to adversely affect determination for these species and their designated critical habitat.



Figure 1. Gateway West Transmission Line Proposed Action – Bureau Preferred Route

Once the towers are assembled and in place, the conductors and the overhead ground wires will be strung. This is generally accomplished using a helicopter, but may be conducted from the ground if an access road that travels directly between towers is available or constructed. All areas not needed for normal transmission line maintenance, including fire and personnel safety clearance areas, will be graded following construction to blend as closely as possible with the natural contours and revegetated as required (see USBLM 2013b, Appendix B, which contains the Proponents' Plan of Development [POD], inclusive of the Reclamation Plan, post-construction monitoring plan, and criteria to be used to assess revegetation/restoration success).

The Project will include three new substations and expansions or modifications at nine existing substations. Construction of the proposed Anticline, Aeolus, and Cedar Hill Substations will be needed to electrically connect the new transmission line segments, and will total approximately 294 acres of new development. Expansions of the yards at the Windstar, Heward, Jim Bridger, Populus, Borah, and Midpoint Substations will be required in order to accommodate the new line, and will total approximately 170 acres of new development. Modifications at the Dave Johnston Power Plant, Shirley Basin, and Hemingway Substations will also be required to accommodate the new line; however, no additional disturbance acreage will be needed.

A communication system is required to control the transmission line and manage the flow of electricity. The backbone of this proposed communication system is a fiber optic wire contained within one of the overhead grounding wires that will be carried along the length of the transmission system. The fiber optic signal needs to be "boosted" or regenerated about every 55 miles along the system, which requires an optical signal regeneration station. Thirteen optical fiber regeneration stations are required as part of the Project (USBLM 2013b, Appendix B, pp. B-15 - B-16). An optical fiber regeneration station may be housed within a substation control house in those cases where a substation is located along or near the final transmission route at an appropriate milepost; otherwise, land must be obtained or additional area requested. Optical fiber regeneration stations will consist of a building 12 by 32 by 9 feet tall, a fenced yard, access road, and distribution power supply from the local distribution system. They will occupy a 100-foot by 100-foot cleared area, with a fenced area of 75 feet by 75 feet. They are typically built as close to the transmission line as land use and physical features allow (See USBLM 2013b, Appendix B, "Transmission Line and Substation Components" section for more details about the optical fiber regeneration stations).

The Project will require vehicular access to each structure during construction and periodically for inspection and live-line maintenance for the life of the Project (50 years). New access roads or improvements to existing access roads will be constructed using a bulldozer or grader, followed by a roller to compact and smooth the ground. Front-end loaders will be used to move the soil locally or off site. Typically, access to the transmission line ROW and tower sites requires a 14-foot-wide travel way for straight sections of road and a 16- to 20-foot-wide travel way at corners to facilitate safe movement of equipment and vehicles. Impacts to wetlands and riparian habitat will be avoided to the extent practicable, but where access roads cross these areas, construction will disturb, on average, about 26 feet for the simpler crossings, and up to 50 feet where permanent culverts will be installed. Wherever possible, new access roads will be constructed within the proposed transmission line ROW or existing roads will be used. In other cases, new access roads will be constructed between the proposed transmission line ROW and

existing roads. Erosion control and sedimentation measures such as water bars, culverts, sediment basins, or perimeter control will be installed as required to minimize erosion on all lands, regardless of ownership, during and subsequent to construction of the Project. Roads retained for operations will be seeded with a native grass mix and allowed to revegetate. For normal maintenance activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation. For non-routine maintenance that requires access by larger vehicles, the full width of the access road (14 to 20 feet) may be used. Access roads would be repaired as necessary but not be routinely graded. Vegetation such as taller shrubs and trees that may interfere with the safe operation of equipment will be managed on a cyclical basis. A total of 872.9 miles of new roads will be constructed, and 914.6 miles of existing roads will be improved.

Areas used during construction but not needed during Project operation, for example staging areas, temporary roads, and fly yards, will be restored to their previous condition through reclamation procedures. Reclamation goals will include the replacement and stabilization of previously-existing vegetation, soil stabilization, and weed control. Methods used will include:

- stripping, stockpiling, and re-applying topsoil material at temporarily disturbed areas to restore soil horizons, use the existing seedbank, and establish surface conditions that will allow for the rapid re-establishment of vegetative cover;
- restore previously existing drainage patterns, minimize surface erosion and sedimentation, and facilitate plant establishment; and
- conducting post-construction weed monitoring for 3 years (see USBLM 2013b, Appendix B for more information on Project reclamation).

To ensure prompt restoration of vegetation following disturbance and to minimize the spread of weeds, the following environmental protection measure (EPM) will apply on all lands, regardless of ownership:

- OM-15 To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Proponents will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified "noxious weed free" and seed mix will be agreed to in advance by the landowner or land managing agency.

Operations and maintenance activities will include transmission line patrols, climbing inspections, tower and wire maintenance, insulator washing in selected areas as needed, and access roads repairs. The Proponents will keep necessary work areas around structures clear of vegetation and will limit the height of vegetation along the ROW. Periodic inspection and maintenance of each of the substations and communications facilities is also a key part of operating and maintaining the electrical system.

Impacts from construction on listed fish, plant, and wildlife species will include habitat removal, fragmentation, and alteration; ecological changes such as changes in predator or prey densities; noise and visual disturbance to foraging, breeding, and migrating animals; increased sedimentation in waterbodies; trampling; and vehicle collisions. Impacts from operations on listed fish, plant, and wildlife species will include noise and visual disturbance from project

personnel and other human presence in the action area (action area defined in Section 2.1.1 above), habitat fragmentation, alteration of hydrological regimes, spread of invasive plants, potential alterations to the local fire regime (due to project-related ignitions as well as increased extent of invasive weeds increasing the rate and intensity of fire regimes), blockage of stream passage for fish, and reductions in large woody debris input in streams and on the forest floor. These impacts will be minimized or avoided through EPMs and best management practices (BMPs). For example, typical practices to prevent fires during construction and maintenance/repair activities include brush clearing prior to work, stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing "fire behavior" training to all pertinent personnel, keeping vehicles on or within designated roads or work areas, and providing fire suppression equipment and emergency notification numbers at each construction site (USBLM 2013b, pp. B-79 – B-80). The EPMs and BMPs are listed in Section 5 of the Assessment (USBLM 2013a, pp. 107-111), and in Table 2.7-1 of the FEIS (USBLM 2013b, pp. 2-143 – 2-177).

Revegetated and restored areas will be monitored for 3 years to ensure that successful revegetation occurs, and to identify areas where additional measures will be required if successful revegetation/restoration does not occur (see USBLM 2013b, pp. 2-153 - 2-155, Table 2.7-1, REC-1 through REC-15 and REC-17). Due to low annual precipitation within the Project area and the susceptibility for invasive plant infestations, this level of restoration effort was not deemed sufficient on federally managed lands, however, and thus the following measures will be required on federally managed lands (as well as State managed and privately owned lands in Wyoming; see USBLM 2013b, p. 2-158, Table 2.7-1):

- VEG-8 Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by Proponents only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years post-construction conditions are not equivalent to or better than pre-construction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the project, then Proponents will not be required to treat noxious weeds for more than three years.

The permitted life of the Project will be 50 years. The Assessment included the construction of the Project, the 50-year permitted life of the Project, as well as the 10 years it is estimated to take for substantial site rehabilitation following decommissioning. Impacts resulting from decommissioning will be identical to those described for construction, such as habitat removal, fragmentation, and alteration; ecological changes such as changes in predator or prey densities; noise and visual disturbance to foraging, breeding, and migrating animals; increased sedimentation in waterbodies; trampling; and vehicle collisions.

2.2 Analytical Framework for the Jeopardy and Adverse Modification Determinations

2.2.1 Jeopardy Determination

In accordance with policy and regulation, the jeopardy analysis in this CO relies on four components:

1. The *Status of the Species*, which evaluates slickspot peppergrass rangewide condition, the factors responsible for that condition, and its survival and recovery needs.
2. The *Environmental Baseline*, which evaluates the condition of slickspot peppergrass in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of slickspot peppergrass.
3. The *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on slickspot peppergrass.
4. *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on slickspot peppergrass.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of slickspot peppergrass current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of slickspot peppergrass in the wild.

The jeopardy analysis in this CO places an emphasis on consideration of the rangewide survival and recovery needs of slickspot peppergrass and the role of the action area in the survival and recovery of slickspot peppergrass as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

2.2.2 Adverse Modification Determination

This CO does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this CO relies on four components:

1. The *Status of Critical Habitat*, which evaluates the rangewide condition of proposed critical habitat for slickspot peppergrass in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall.
2. The *Environmental Baseline*, which evaluates the condition of the proposed critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area.

3. The *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected proposed critical habitat units.
4. *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected proposed critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on slickspot peppergrass proposed critical habitat are evaluated in the context of the rangewide condition of the proposed critical habitat, taking into account any cumulative effects, to determine if the proposed critical habitat rangewide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for slickspot peppergrass.

The analysis in this CO places an emphasis on using the intended rangewide recovery function of slickspot peppergrass proposed critical habitat and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

2.3 Status of the Species and Proposed Critical Habitat

This section presents information about the regulatory, biological and ecological status of slickspot peppergrass that provides context for evaluating the significance of probable effects caused by the proposed action.

2.3.1 Slickspot Peppergrass

2.3.1.1 Listing Status

Effective December 7, 2009, slickspot peppergrass was listed as threatened under the Act (74 FR 52014–52064, October 8, 2009, p. 52014). However, on August 8, 2012, the United States District Court for the District of Idaho ordered that the final rule listing slickspot peppergrass as a threatened species under the Act, be vacated and remanded for further consideration consistent with the court's decision. At this time, the Service is still awaiting legal advice on the interpretation of this decision. Until we receive further legal guidance, we are considering slickspot peppergrass to be a species proposed for listing as endangered under the Act. During this interim period, the Bureau is choosing to conference for actions that may affect slickspot peppergrass under section 7 of the Act to ensure conservation of the species and adherence to the 2013 Conservation Agreement for slickspot peppergrass between our agencies (USBLM and USFWS 2013, entire).

2.3.1.2 Species Description

Slickspot peppergrass is an intricately branched, tap-rooted plant, averaging 2 to 8 inches (in.) high, but occasionally reaching up to 16 in. high. Leaves and stems are covered with fine, soft

hairs, and the leaves are divided into linear segments. Flowers are numerous, 0.11 to 0.15 in. in diameter, white, and four-petaled. Fruits (siliques) are 0.10 to 0.15 in. across, round in outline, flattened, and two-seeded (Moseley 1994, pp. 3, 4; Holmgren *et al.* 2005, p. 260). The species is monocarpic (it flowers once and then dies) and displays two different life history strategies—an annual form and a biennial form. The annual form reproduces by flowering and setting seed in its first year and dies within one growing season. The biennial life form initiates growth in the first year as a vegetative rosette but does not flower and produce seed until the second growing season. Biennial rosettes must survive generally dry summer conditions, and consequently many of the biennial rosettes die before flowering and producing seed. The number of prior-year rosettes is positively correlated with the number of reproductive plants present the following year (ICDC 2008, p. 9; Unnasch 2008, p. 14; Sullivan and Nations 2009, p. 44). The proportion of annuals versus biennials in a population can vary greatly (Meyer *et al.* 2005, p. 15), but in general, annuals appear to outnumber biennials (Moseley 1994, p. 12).

2.3.1.3 Life History

Seed Production

Depending on an individual plant's vigor, the effectiveness of its pollination, and whether it is functioning as an annual or a biennial, each slickspot peppergrass plant produces varying numbers of seeds (Quinney 1998, pp. 15, 17). Biennial plants normally produce many more seeds than annual plants (Meyer *et al.* 2005, p. 15). Average seed output for annual plants at the Orchard Combat Training Center¹ (OCTC) was 125 seeds per plant in 1993 and 46 seeds per plant in 1994. In contrast, seed production of biennials at this site in 1993 and 1994 averaged 787 and 105 seeds per plant, respectively (Meyer *et al.* 2005, p. 16). Based on data collected from a 4-year demography study on the OCTC, survivorship of the annual form of slickspot peppergrass was demonstrated to be higher than survivorship of biennials (Meyer *et al.* 2005, p. 16). Meyer *et al.* (2005, p. 21) hypothesize that the reproductive strategy of slickspot peppergrass is a plastic response, meaning that larger plants will flower and produce seed in their first season, whereas smaller plants that stand less chance of successfully setting seed in their first season will delay reproduction until the following year. Thus, the biennial life form is maintained, despite the higher risk of mortality.

Like many short-lived plants growing in arid environments, above-ground numbers of slickspot peppergrass individuals can fluctuate widely from year to year, depending on seasonal precipitation patterns (Mancuso and Moseley 1998, p. 1; Meyer *et al.* 2005, pp. 4, 12, 15; Palazzo *et al.* 2005, p. 9; Menke and Kaye 2006a, p. 8; Menke and Kaye 2006b, pp. 10, 11; Sullivan and Nations 2009, p. 44). Mancuso and Moseley (1998, p. 1) note that sites with thousands of above-ground plants one year may have none the next, and vice versa.

Above-ground plants represent only a portion of the population; the seed bank (a reserve of dormant seeds generally found in the soil) contributes the other portion and in many years, constitutes the majority of the population (Mancuso and Moseley 1998, p. 1). Seed banks are

¹ The Idaho Army National Guard's Orchard Combat Training Center (OCTC) was previously known as the Orchard Training Area (OTA).

adaptations for survival in a “risky environment” because they buffer a species from stochastic (random) impacts, such as lack of soil moisture (Baskin and Baskin 2001, p. 160).

Seed Viability and Germination

The seeds of slickspot peppergrass are found primarily within the slickspot microsites where the plants are found (Meyer and Allen 2005, pp. 5–6). Slickspots, also known as mini-playas or natric (high sodium content) sites, are visually distinct openings in the sagebrush-steppe created by unusual soil conditions characterized by significantly greater sodium and clay content relative to the surrounding area (Moseley 1994, p. 7). The vast majority of slickspot peppergrass seeds in slickspots have been located near the soil surface, with lower numbers of seeds located in deeper soils (Meyer *et al.* 2005, p. 19; Palazzo *et al.* 2005, p. 3). Slickspot peppergrass seeds have been found in slickspots even if no above-ground plants are present (Meyer *et al.* 2005, p. 22; Palazzo *et al.* 2005, p. 10). When above-ground plants are present, flowering usually occurs in late April and May, fruit set occurs in June, and the seeds are released in late June or early July. Seeds produced in a given year are dormant for at least a year before any germination takes place. Following this year of dormancy, approximately 6 percent of the initially viable seeds produced in a given year germinate annually (Meyer *et al.* 2005, pp. 17–18). When combined with an average annual 3 percent loss of seed viability, approximately 9 percent of the original seed cohort per year is lost after the first year. Thus, after 12 years, all seeds in a given cohort will likely have either died or germinated, resulting in a maximum estimated longevity of 12 years for seeds in the seed bank (Meyer *et al.* 2005, p. 18).

Billinge and Robertson (2008, pp. 1005–1006) report that both small and large slickspot peppergrass populations share similar spatial structure, and that spatial structuring within its unique microsite slickspot habitats suggests that both pollen dispersal and seed dispersal are low for this species and occur over short distances (Robertson *et al.* 2006a, p. 3; Billinge and Robertson 2008, pp. 1005–1006). Dispersal and seed dormancy modeling of desert annual plants predicts that plants with long-range dispersal will have few dormancy mechanisms and quick germination (Venable and Lawlor 1980, p. 272). Contrary to this prediction, however, slickspot peppergrass has delayed germination (Meyer *et al.* 2005, pp. 17–18), and, therefore, according to the model, may not disperse long distances. The primary seed dispersal mechanism for slickspot peppergrass is not known (Robertson and Ulappa 2004, p. 1708), although viable seeds have been found outside of slickspots, indicating that some seed dispersal is occurring beyond slickspot habitat (Palazzo *et al.* 2005, p. 10). Additionally, beginning in mid-July, entire dried-up biennial plants and some larger annual plants have been observed to break off at the base and are blown by the wind (Stillman, pers. obs., as reported in Robertson *et al.* 2006b, p. 44). This tumbleweed-like action may have historically resulted in occasional long-distance seed dispersal (Robertson *et al.* 2006b, p. 44). Ants are not considered a likely disperser despite harvesting an average of 32 percent of fruits across six sites (Robertson and White 2007, p. 11) and harvesting up to 90 percent of slickspot peppergrass seeds on the ground (White and Robertson 2009, p. 511).

Slickspot peppergrass seeds located near the soil surface show higher rates of germination and viability (Meyer and Allen 2005, pp. 6–8; Palazzo *et al.* 2005, p.10) and the greatest seedling emergence success rate (Meyer and Allen 2005, pp. 6–8). Viable seeds were more abundant and had greater germination rates from the upper 2 in. of soil (Palazzo *et al.* 2005, pp. 8, 10), while Meyer and Allen (2005, pp. 6–8) observed the upper 0.08 in. as optimal for germination. Deep

burial of slickspot peppergrass seeds (average depths greater than 5.5 in.) can entomb viable seeds and may preserve them beyond the 12-year period previously assumed as the maximum period of viability for slickspot peppergrass seeds (Meyer and Allen 2005, pp. 6, 9). However, seeds buried at such depth, even if they remain viable, are unlikely to regain the surface for successful germination. The effects of environmental factors, such as wildfire, on slickspot peppergrass seed dormancy and viability are unknown although slickspot peppergrass abundance is reduced in burned areas.

Pollination

Slickspot peppergrass is primarily an outcrossing species requiring pollen from separate plants for more successful fruit production and has a low seed set in the absence of insect pollinators (Robertson 2003, p. 5; Robertson and Klemash 2003, p. 339; Robertson and Ulappa 2004, p. 1707; Billinge and Robertson 2008, pp. 1005–1006). Slickspot peppergrass is able to self-pollinate, with a selfing rate (rate of self-pollination) of 12 to 18 percent (Billinge 2006, p. 40; Robertson *et al.* 2006a, p. 40). In pollination experiments where researchers moved pollen from one plant to another, fruit production was higher when pollen from distant sources was used (4 to 12.4 miles (mi)) between patches of plants) than when pollen from plants within the same patch was used (246 to 330 feet (ft)) between plants within the same patch) (Robertson and Ulappa 2004, p. 1705; Robertson *et al.* 2006a, p. 3).

Fruits produced from fertilized flowers reach full size approximately two weeks after pollination (Robertson and Ulappa 2004, p. 1706). Each fruit typically bears two seeds that drop to the ground when the fruit dehisces (splits open) in midsummer (Billinge and Robertson 2008, p. 1003).

Known slickspot peppergrass insect pollinators include several families of bees (Hymenoptera), including Apidae, Halictidae, Sphecidae, and Vespidae; beetles (Coleoptera), including Dermestidae, Meloidae, and Melyridae; flies (Diptera), including Bombyliidae, Syrphidae, and Tachinidae; and others (Robertson and Klemash 2003, p. 336; Robertson *et al.* 2006b, p. 6). In slickspot peppergrass insect pollinator studies conducted at three study sites, seed set was not limited by the number of pollinators at any study site (Robertson *et al.* 2004, p. 14). Studies have shown a strong positive correlation between insect diversity and the number of slickspot peppergrass plants flowering at a site (Robertson and Hannon 2003, p. 8). Measuring fruit set per visit revealed considerable variability in the effectiveness of pollination by different types of insects, ranging from 0 percent in dermestid beetles to 85 percent in honeybees (*Apis mellifera*) (Robertson *et al.* 2006b, p. 15).

Population Dynamics

Due to its occupancy of patchily distributed slickspots, the habitat of slickspot peppergrass is somewhat naturally fragmented. However, large-scale fragmentation can pose problems for slickspot peppergrass by creating barriers in the landscape that prevent effective genetic exchange between populations. Seed dispersal for slickspot peppergrass likely occurs only over very short distances; thus, pollinators and pollen dispersal are the primary means for reproductive and genetic exchange between slickspot peppergrass sites (Robertson and Ulappa 2004, pp. 1705, 1708; Stillman *et al.* 2005, pp. 1, 6–8).

Research indicates that seeds generated by the pollen of nearby plants have reduced viability, and that slickspot peppergrass seed viability increases as the distance to the contributing pollination source increases (Robertson and Ulappa 2004, pp. 1705, 1708). The ability to exchange pollen with distant populations is therefore an advantage for slickspot peppergrass. Barriers or too much distance between slickspots and pollinating insect habitats can reduce the effective range of insects important to slickspot peppergrass pollination (Robertson *et al.* 2004, pp. 2–4). Barriers can include agricultural fields, urban development, and large areas of annual and perennial grass monocultures that do not support diversity and suitable floral resources such as nectar or edible pollen for pollinators. Slickspot peppergrass habitats separated by distances greater than the effective range of available pollinating insects (about 0.6 mi. as described in Colket and Robertson *in litt.* 2006, p. 1) are at a genetic disadvantage and may become vulnerable to the effects of loss of genetic diversity (Stillman *et al.* 2005, pp. 1, 6–8) and a reduction in seed production (Robertson *et al.* 2004, p. 1705). A genetic analysis of slickspot peppergrass suggested that populations in the Snake River Plain and Owyhee Plateau “may have reduced genetic diversity” (Larson *et al.* 2006, p. 1).²

Many of the remaining occurrences of slickspot peppergrass, particularly in the Snake River Plain near urban centers, are restricted to small, remnant patches of suitable sagebrush-steppe habitat. When last surveyed, 31 of the 80 element occurrences (EOs; 39 percent) each had fewer than 50 plants (Colket *et al.* 2006, Tables 1–13). Many of these small, remnant EOs exist within habitat that is degraded. Small slickspot peppergrass populations have likely persisted due to their long-lived seed bank, but the potential risk of depleting each population’s seed bank with no new genetic input makes the persistence of these small populations uncertain. Providing suitable nesting and foraging habitats for the species’ insect pollinators is important for maintaining slickspot peppergrass genetic diversity. Small populations are vulnerable to relatively minor environmental disturbances such as wildfire, herbicide drift, and nonnative plant invasions (Given 1994, pp. 66–67) and are subject to the loss of genetic diversity from genetic drift and inbreeding (Ellstrand and Elam 1993, pp. 217–237). Populations with lowered genetic diversity are more prone to extirpation (Barrett and Kohn 1991, pp. 4, 28). Smaller populations generally have lower genetic diversity, and lower genetic diversity may lead to even smaller populations by decreasing the species’ ability to adapt, thereby increasing the probability of population extinction (Newman and Pilson 1997, p. 360).

Fragmentation (either by development or wildfires) has occurred in 62 of 79 EOs (15 of 16 on the Boise Foothills, 35 of 42 on the Snake River Plain, and 12 of 21 on the Owyhee Plateau), and within 0.31 mi in 78 of the 79 EOs (all except one on the Owyhee Plateau) (Cole 2009, threats table).³ Additionally, several development projects are planned within slickspot peppergrass occupied range that would contribute to further large-scale fragmentation of its habitat, potentially resulting in decreased viability of populations through decreased seed production,

² The Boise Foothills were not analyzed separately in this study.

³ Habitat information is known for 79 of the 80 extant EOs; habitat information is not known for 1 EO on the Snake River Plain.

reduced genetic diversity, and increased inherent vulnerability of small populations to extirpation.

2.3.1.4 Status and Distribution

The range of slickspot peppergrass is restricted to the volcanic plains of southwest Idaho, occurring primarily in the Snake River Plain and its adjacent northern foothills, with a single disjunct population on the Owyhee Plateau (Figure 2). The plant occurs at elevations ranging from approximately 2,200 to 5,400 ft in Ada, Canyon, Gem, Elmore, Payette, and Owyhee Counties (Moseley 1994, pp. 3–9). Based on differences in topography, soil, and relative abundance, we have divided the extant slickspot peppergrass populations into three physiographic regions: the Boise Foothills, the Snake River Plain, and the Owyhee Plateau. The nature and severity of factors affecting the species also vary between the three physiographic regions for the purposes of analysis. For example, urban and rural development, agriculture, and infrastructure development has been substantial in the sagebrush-steppe habitat of the Boise Foothills and the Snake River Plain regions, while very little of these types of development have occurred within the Owyhee Plateau region.

As of February 2009, there were 80 extant EOs in the three physiographic regions that collectively comprise approximately 15,801 ac of total area broadly occupied by slickspot peppergrass (Cole 2009, threats table). The Idaho Fish and Wildlife Information System (IFWIS, 2013, entire) includes updated information on individual EOs due to more precise site mapping and results of additional surveys conducted since the 2009 listing. These updated IFWIS data indicate that there are 106 extant slickspot peppergrass EOs and subEOs⁴ totaling about 15,810 acres rangewide. The area actually occupied by slickspot peppergrass is a small fraction of this total rangewide acreage since slickspots occupy only a small percentage of the landscape, and slickspot peppergrass occupies only a fraction of those slickspots (Air Force 2002, p. 9). Table 1 presents distribution, land ownership and management information for all slickspot peppergrass EOs, in total and by region. The majority of slickspot peppergrass sites are located on Federal lands; most of these Federal lands are administered by the Bureau.

Habitat Characteristics

The biological soil crust, also known as a microbiotic crust or cryptogamic crust, is one component of quality habitat for slickspot peppergrass. Such crusts are commonly found in semiarid and arid ecosystems and are formed by living organisms, primarily bryophytes, lichens, algae, and cyanobacteria, that bind together surface soil particles (Moseley 1994, p. 9; Johnston 1997, p. 4). Microbiotic crusts play an important role in stabilizing the soil and preventing erosion, increasing the availability of nitrogen and other nutrients in the soil and regulating water infiltration and evaporation levels (Johnston 1997, pp. 8–10). In addition, an intact crust appears to aid in preventing the establishment of invasive plants (Brooks and Pyke 2001, p. 4 and

⁴ Metapopulation EO 16, which is located in the Owyhee physiographic region, is represented in this total by its 19 individual subEOs. If only extant EOs are considered, a total of 88 extant EOs are described by IFWIS as of January 2013.

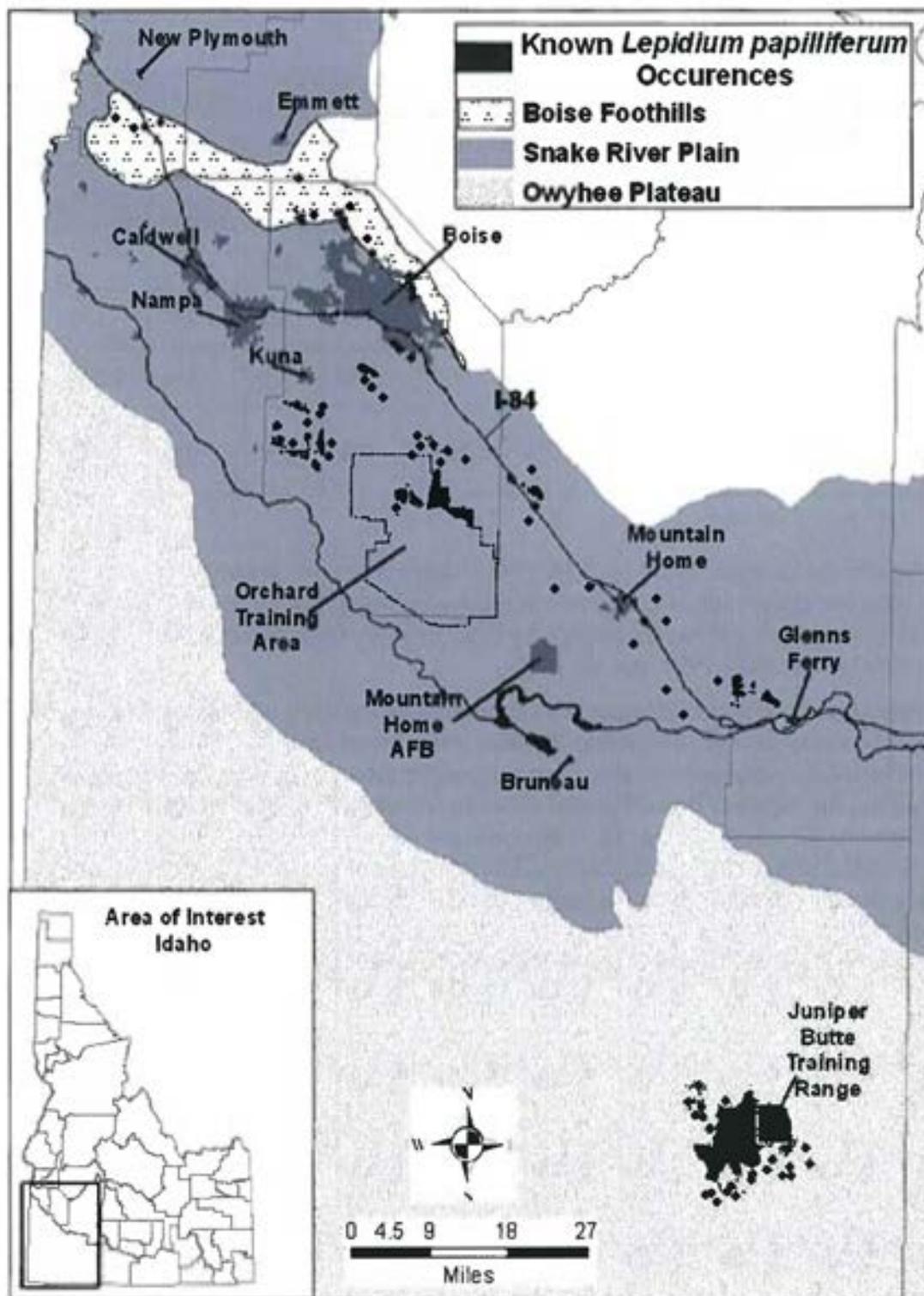


Figure 2. The range of *Lepidium papilliferum* (slickspot peppergrass) in southwest Idaho, showing its distribution in the Snake River Plain, Boise Foothills, and Owyhee Plateau.

Table 1. Distribution and landownership of slickspot peppergrass extant Element Occurrences (EOs)/SubEOs⁵ by physiographic region (IFWIS 2013). All areas are estimates and may not total exactly due to rounding.

Physiographic Region	Slickspot Peppergrass EOs/subEOs		Federal		State		Private		Total	
	Number	Percent (%)	Acres	Percent (%)	Acres	Percent (%)	Acres	Percent (%)	Acres	Percent (%)
Snake River Plain	47	44%	11,079	70%	1,368 ⁶	9%	528	3%	12,975	82%
Boise Foothills	18	17%	74	0%	0	0%	65	0%	139	1%
Owyhee Plateau	41 ⁷	39%	2,563	16%	133 ⁸	1%	0	0%	2,696	17%
All Extant EOs/ SubEOs	106	100%	13,716	87%	1,501	9%	592	4%	15,810	100%

references therein; Serpe *et al.* 2006, pp. 174, 176). These crusts are sensitive to disturbances that disrupt crust integrity, such as compression due to livestock trampling or off highway vehicle (OHV) use and are subject to damage by fire; recovery from disturbance is possible but occurs very slowly (Johnston 1997, pp. 10–11).

Slickspot peppergrass occurs in slickspot habitat microsites scattered within the greater semiarid sagebrush-steppe ecosystem of southwestern Idaho. On a broad scale, the Snake River Plain and the Owyhee Plateau physiographic regions are volcanic in nature and underlain by Tertiary basalt or rhyolite; the adjacent Boise Foothill sites are underlain by Pliocene/Quaternary lacustrine deposits (Moseley 1994, p. 8). Slickspots are visually distinct openings characterized by natric soils and distinct clay layers; they tend to be highly reflective and relatively light in color, making them easy to detect on the landscape (Fisher *et al.* 1996, p. 3). Slickspots are distinguished from the surrounding sagebrush matrix as having the following characteristics: microsites where water pools when rain falls (Fisher *et al.* 1996, pp. 2, 4); sparse native

⁵ SubEOs are only designated for metapopulation EO 16, which is located in the Owyhee Plateau physiographic region.

⁶ Of these 1,368 acres of State land located within the Snake River Plain physiographic region, about 1,269 acres (93 percent) are managed under the Orchard Combat Training Center's INRMP.

⁷ EO 16, which is located in the Owyhee physiographic region, is represented by its 19 individual subEOs in the extant EO/SubEO total. If only extant EOs are considered, a total of 88 extant EOs are described by IFWIS as of January 2013.

⁸ Of these 133 acres of State land located within the Owyhee Plateau physiographic region, about 76 acres (57 percent) are located within subEO 704 and are managed under the Mountain Home Air Force Base's INRMP.

vegetation, distinct soil layers with a columnar or prismatic structure, higher alkalinity and clay content, and natric properties (Fisher *et al.* 1996, pp. 15–16; Meyer and Allen 2005, pp. 3–5, 8; Palazzo *et al.* 2008, p. 378); and reduced levels of organic matter and nutrients due to lower biomass production (Meyer and Quinney 1993, pp. 3, 6; Fisher *et al.* 1996, p. 4). Fisher *et al.* (1996, p. 11) describe slickspots as having a “smooth, panlike surface” that is structureless and slowly permeable when wet, moderately hard and cracked when dry. Although the low permeability of slickspots appears to help hold moisture (Moseley 1994, p. 8), once the thin crust dries out, slickspot peppergrass seedling survival depends on its ability to extend its taproot into the argillic horizon (soil layer with high clay content) to extract moisture from the deeper natric zone (Fisher *et al.* 1996, p. 13).

How long slickspots take to form is unknown, but is hypothesized to take several thousands of years (Nettleton and Peterson 1983, p. 193; Seronko 2006, *in litt.* p. 2). Climate conditions that allowed slickspot formation in southwestern Idaho are thought to have occurred during a wetter Pleistocene period. Holocene additions of wind-carried salts (often loess deposits) produced the natric soils characteristic of slickspots (Nettleton and Peterson 1983, p. 191; Seronko 2006, *in litt.*, p. 2). Several hundred years may be necessary to alter or lose slickspots through natural climate change or severe natural erosion (Seronko 2006, *in litt.* p. 2). However, some researchers hypothesize that new slickspots are no longer being created given current climatic conditions (Nettleton and Peterson 1983, pp. 166, 191, 206). As slickspots in southwest Idaho appear to have formed during the Pleistocene and current climate conditions may not allow for the formation of new slickspots, the loss of slickspot microsites appears to be permanent.

Some slickspots subjected to past light disturbance may be capable of reforming (Seronko 2006, *in litt.* p.2). However, disturbances that alter the physical properties of the soil layers, such as deep disturbance and the addition of organic matter, may lead to the destruction and permanent loss of slickspots. For example, deep soil tilling and adding organic matter and gypsum have been recommended for eliminating slickspots from agricultural lands in Idaho (Peterson 1919, p. 11; Rasmussen *et al.* 1972, p. 142). Slickspot soils are especially susceptible to mechanical disturbances when wet (Rengasamy *et al.* 1984, p. 63; Seronko 2004, *in litt.* pp. 1–2). Such disturbances disrupt the soil layers important to slickspot peppergrass seed germination and seedling growth and alter hydrological function. Meyer and Allen (2005, p. 9) suggest that if sufficient time passes following the disturbance of slickspot soil layers, the slickspot soil layers may regain their pre-disturbance configuration yet not support the species. Thus, while the slickspot appears to have regained its former character, some essential component required to sustain the life history requirements of slickspot peppergrass has apparently been lost, or the active seed bank is no longer present.

Most slickspots are between 10 and 20 square feet (ft²) in size although some are as large as 109 ft² (Mancuso *et al.* 1998, p. 1). Slickspots cover a relatively small cumulative area within the larger sagebrush-steppe matrix, and only a small percentage of slickspots are known to be occupied by slickspot peppergrass.

Slickspot peppergrass has infrequently been documented outside of slickspots on disturbed soils, such as along graded roadsides and badger mounds. These are rare observations and the vast majority of plants documented over the past 19 years of surveys and monitoring for the species were within slickspot microsite habitats (USFWS 2006, p. 20). For example, in 2002, a complete census of an 11,070-ac area recorded approximately 56,500 slickspots (Air Force 2003

in litt., p. 15), of which approximately 2,450 (about 4.0 percent) were occupied by slickspot peppergrass plants (Bashore, pers. comm. 2003, p. 1). Of the approximately 11,300 slickspot peppergrass plants documented during the survey effort, only 11 plants (less than 1 percent) were documented outside of slickspots (Air Force 2002, summary attachment).

Not all potential slickspot peppergrass habitats in southwest Idaho have been surveyed, and additional slickspot peppergrass sites may be found outside of areas known to be occupied. Recent modeling was completed to develop a high-quality, predictive-distribution model of slickspot peppergrass to identify potential habitat (Colket 2008, p. 1). The Bureau defines potential habitat as areas within the known range of slickspot peppergrass that have certain general soil and elevation characteristics that indicate the potential for the area to support slickspot peppergrass although the presence of slickspots or the plant is unknown (USBLM 2009, p. B-2). Although surveys were conducted in 2008 in some areas identified as previously unsurveyed habitat with potential to contain the species, these surveys did not result in any new locations of the species (Colket 2008, pp. 4-6). Slickspot peppergrass has also been surveyed for in eastern Oregon, but the species has never been found there (Findley 2003 *in litt.*, p. 1). We have no historical records indicating that slickspot peppergrass has ever been found anywhere outside of its present range in southwestern Idaho.

The Idaho Natural Heritage Program (INHP) uses an EO ranking system for assessing the status of slickspot peppergrass. This system ranks slickspot peppergrass occurrences based on measures of habitat quality and species abundance. EO ranks are useful for assessing estimated viability or probability of persistence and helping prioritize conservation planning or actions (NatureServe 2002). The ranks are defined as follows (Colket *et al.* 2006, pp. 3-4):

- A-Rank—
 - SIZE: Greater than 1,000 detectable genets (clonal colony).
 - CONDITION: Native plant community is intact with trace introduced plant species cover. Slickspots have zero or trace introduced weed cover and/or livestock disturbance. Zero or few minor anthropogenic disturbances are present. EO is unburned.
 - LANDSCAPE CONTEXT: Surrounding landscape less than 0.6 mi away has not been fragmented by agricultural lands, residential or commercial development, introduced annual grasslands, or drill seeding projects.
- B-Rank—
 - SIZE: 400-999 detectable genets.
 - CONDITION: Native plant community is intact with low introduced plant species cover. Slickspots have low introduced weed cover and/or livestock disturbance. Zero or few minor anthropogenic disturbances present. EO is predominantly unburned.
 - LANDSCAPE CONTEXT: Surrounding landscape less than 0.6 mi away is minimally to partially fragmented by agricultural lands, residential or commercial development, introduced annual grasslands, or drill seeding projects.
- C-Rank—
 - SIZE: 50-399 detectable genets.
 - CONDITION: Native plant community is partially intact with low-to-moderate introduced plant species cover. Slickspots have low-to-moderate introduced weed

- cover and/or livestock disturbance. Few or several minimally to moderately severe anthropogenic disturbances are evident. EO has partially burned. Portions of EO may have been drill seeded, but slickspots are largely intact.
- LANDSCAPE CONTEXT: Surrounding landscape less than 0.6 mi away is partially to predominantly fragmented by agricultural lands, residential or commercial development, introduced annual grasslands, or drill seeding projects.
 - D-Rank—
 - SIZE: 1–49 detectable genets.
 - CONDITION: Few components of the native plant community remain and introduced plant species cover is high. Slickspots have high introduced weed cover and/or livestock disturbance. Few or several moderately severe anthropogenic disturbances are evident. EO has been predominantly to completely burned. Portions of EO may have been drill seeded, and slickspot soils have been altered by drill seeding.
 - LANDSCAPE CONTEXT: Surrounding landscape less than 0.6 mi away is moderately to completely fragmented by agricultural lands, residential or commercial development, introduced annual grasslands, or drill seeding projects.
 - E-Rank (Extant)—
 - EO has been verified extant (existing), but population size, condition, and landscape context have not been assessed.
 - F-Rank (Failed to find)—
 - EO has been surveyed by experienced individuals who failed to find any slickspot peppergrass individuals, despite searching under conditions appropriate for the element at a location where it was previously recorded. Only one visit is required for this rank designation, but the survey should cover the entire extent of the EO. The F-rank was first standardized by NatureServe (2002) and not implemented for slickspot peppergrass before 2006.
 - H-Rank (Historical)⁹—
 - An EO that has not been observed since 1970. These are historical EOs indicating where slickspot peppergrass was reported, often based on older herbarium records. Locations associated with these herbarium records are typically geographically vague and may be simply indicated by the name of a town.
 - X-Rank (Extirpated)—
 - EO has been extirpated. Extirpation is based on: 1) agricultural conversion, commercial or residential development, or other documented habitat destruction where slickspot peppergrass has been previously recorded, or 2) when an EO has consistently received an F-rank five times within a 12-year time period.

⁹ No G-rank exists in the INHP EO ranking system for slickspot peppergrass.

- X?-Rank (Probably Extirpated)—
 - EO has probably been extirpated. The “?” qualifier is used with the most appropriate rank (i.e. X?) if there is incomplete information on the EO size, condition, and/or landscape context factors.

As of February 2009, the INHP ranked 80 extant EO records for slickspot peppergrass based on habitat quality and abundance (Cole 2009, threats table). As described above, updated 2013 information available from the IFWIS indicates that there are 106 extant slickspot peppergrass EOs/subEOs totaling about 15,810 acres rangewide. No A-ranked EOs for slickspot peppergrass currently exist. The most common rangewide EO ranks for slickspot peppergrass are C and D. EO ranks also vary by physiographic region. A little more than one-half of the extant EO area in the Boise Foothills region is C-ranked. Approximately three-quarters of the total EO area in the Snake River Plain is B-ranked. The majority of B-ranked EO acreage rangewide occurs on the Idaho Army National Guard (IDARNG) OCTC. The majority of the total EO area in the Owyhee Plateau physiographic region is also B-ranked. In addition, nine EOs are ranked as X or X?, and seven EOs are ranked as H.

Population Trends

Extreme variability in annual plant counts makes detecting significant population trends in slickspot peppergrass difficult. However, the best scientific and commercial evidence available collected over the past 18 years from the rough census areas on the OCTC shows a significant downward density trend in the abundance of slickspot peppergrass plants during the past two decades (74 FR 52025, October 8, 2009). Furthermore, we believe it is reasonable to infer that this negative trend may be similar or possibly even greater rangewide in areas outside the high-quality habitat of the OCTC, and this trend appears to be independent of any precipitation trend.

Uncertainties associated with both the data and the model, used by Sullivan and Nations (2009) in their analysis of slickspot peppergrass density and abundance on the OCTC over time, preclude our ability to project future population trends for slickspot peppergrass. These uncertainties include, but are not limited to, great annual variability in plant numbers; the confounding influence of the long-lived seed bank; complications associated with annual variability in both precipitation and temperature; and inconsistent results between the special-use plots and the rough census areas on the OCTC (see Sullivan and Nations 2009, pp. 28–33 for an explanation of these two OCTC survey methodologies). The evaluation by Sullivan and Nations (2009, pp. 1–278) was based on a simple model of slickspot peppergrass abundance or density as a linear function of time and intended only to discern whether there was any general population trend (74 FR 52025, October 8, 2009). The authors acknowledge that the dynamics are complicated, and note their model is not intended to describe (nor explain) the details of the temporal pattern of abundance or density of slickspot peppergrass (Sullivan and Nations 2009, p. 38). In addition, we do not have any models for slickspot peppergrass based on multivariate analyses, which would simultaneously consider additional variables such as precipitation to potentially allow for the prediction of abundance or density of slickspot peppergrass over time based on projected conditions. As stated in our listing rule, although the available descriptive model is helpful for interpreting the population information available to date and indicates that slickspot peppergrass has likely been trending downward for all of the reasons outlined above, it

would be inappropriate to rely on this model to predict any future population trajectory for slickspot peppergrass (74 FR 52025, October 8, 2009).

2.3.1.5 Previous Consultations and Conservation Efforts

The Service has completed several consultations under section 7 of the Act for programs and individual actions located in the vicinity of the proposed Project. Some of these were completed as letters of concurrence/conference reports [Normal Fire Emergency Stabilization and Rehabilitation Plan (USFWS 2006a, *in litt.*, entire); Noxious Weed Management Plan (USFWS 2006b, *in litt.*, entire)] as they were determined to be unlikely to adversely affect listed/proposed species, including slickspot peppergrass. Following listing of the species in 2009, conference reports for slickspot peppergrass were converted to letters of concurrence, at the request of the Bureau, to ensure continued compliance under section 7 of the Act (USFWS 2009, *in litt.*, entire). The Service has also completed formal consultations with the Bureau on the Morley Nelson Snake River Birds of Prey National Conservation Area Resource Management Plan (RMP), the Kuna Management Framework Plan (MFP), and the Jarbidge RMP, which provide management direction for that portion of the Project area that contains slickspot peppergrass (USFWS 2009, entire). Individual actions with section 7 consultation/conference completed include Bureau ongoing livestock grazing actions (14220-201-F-0025; USFWS 2010, entire), Bureau ongoing rights-of-way, military training, and mineral materials authorization actions (14420-2011-F-0035; USFWS 2011a, entire), emergency conference on effects of 2011 and 2012 wildfire suppression actions on the Bureau's Boise District (01EIFW00-2012-EF-0073; USFWS 2012a, entire and 01EIFW00-2013-FE-0103; USFWS 2013a, entire), reauthorization of livestock grazing activities on the Mountain Home Subunit Allotment #00813 (01EIFW00-2012-F-0183; USFWS 2012b, entire), and reauthorization of the existing Williams Northwest Pipeline Right-of-Way (01EIFW00-2013-FC-0040; USFWS 2012c, entire). For actions that are underway, standing concurrences and consultations will remain in effect as long as the actions are carried out as proposed and no new information surfaces to indicate the species will be affected in unanticipated ways.

As described above, the Service and Bureau have entered into a Conservation Agreement (CA) committing to implement conservation measures for slickspot peppergrass to avoid or minimize effects associated with implementing Bureau actions planned under the standards and guidelines of their LUPs (USBLM and USFWS 2013, entire). The current 2013 CA represents the second update of the original CA, which was signed in 2006 (USBLM and USFWS 2006, entire) and first updated in 2009 (USBLM and USFWS 2009, entire). The conservation measures and associated implementation actions for ongoing Bureau LUP programs provide overall guidance for avoiding or minimizing direct and indirect effects to the habitat of slickspot peppergrass and restoring and maintaining that habitat. Conservation measures and implementation actions for slickspot peppergrass include conducting species inventories on Bureau lands, exchanging location information with agency partners, completing site-specific section 7 consultation on both ongoing and new actions, and avoiding or minimizing potential adverse impacts of site-specific projects covered under LUP programs. Site-specific implementation and effectiveness monitoring, including annual reporting requirements, will also be completed to track progress toward achieving conservation objectives. All conservation measures in the CA will be implemented until such time that new LUPs or amendments are approved with completed consultations and signed Records of Decision. The CA provides goals for inventories of

slickspot peppergrass as well as direction for completing section 7 consultations on all ongoing and proposed activities on Bureau lands that may affect this species.

As described above, the Bureau is also implementing conservation measures defined in the Candidate Conservation Agreement (CCA) signed between the State of Idaho, the Bureau, the IDARNG, and nongovernmental cooperators (private landowners who also hold livestock grazing permits on Bureau lands) (State of Idaho *et al.* 2003, entire and 2006, entire). The majority of the individual conservation efforts being implemented for slickspot peppergrass that are applicable to individual projects are contained in the CCA, which was originally drafted in 2003 and updated in 2006. The CCA represents an important milestone in the cooperative conservation of slickspot peppergrass given its rangewide scope and coordinated management across lands managed by Federal agencies and the State of Idaho. The CCA includes rangewide efforts that are intended to address the need to maintain and enhance slickspot peppergrass habitat; reduce intensity, frequency, and size of natural- and human-caused wildfires; minimize loss of habitat associated with wildfire-suppression activities; reduce the potential of nonnative plant species invasion from wildfire; minimize habitat loss associated with rehabilitation and restoration techniques; minimize the establishment of invasive nonnative species; minimize habitat loss or degradation from OHV use; mitigate the negative effects of military training and other associated activities on the OCTC, an Idaho Army National Guard training area on Bureau land; and minimize the impact of ground disturbances caused by livestock penetrating trampling¹⁰ when soils are saturated (State of Idaho *et al.* 2006, p. 3).

As a signatory of the CCA (State of Idaho *et al.* 2003, 2006), the Bureau is the primary land management agency responsible for implementing conservation actions for slickspot peppergrass on their lands. Implementing the conservation measures in the CCA represents a major commitment on behalf of the Bureau, which has management authority for the majority of the range where slickspot peppergrass occurs (i.e., 74 percent of the total Element Occurrence [EO] area [about 11,768 ac] and partial-to-entire management authority for 94 of the 106 extant EOs/subEOs comprising the current population of this species occur on lands administered by the Bureau). The Bureau also has the lead for implementing CCA-derived conservation measures that were appropriate for LUP-level programs that were included in the original CA between the Service and the Bureau (USBLM and USFWS 2006, entire) to avoid or minimize the adverse impacts of implementing Bureau LUPs on slickspot peppergrass.

Although the majority of the conservation measures identified in the CCA have been implemented to date, relatively few of these measures have been determined at this time to be measurably effective for conserving slickspot peppergrass. For example, many of the implemented measures include conducting surveys, monitoring, or providing for public outreach and education, which have limited direct or long-term conservation benefits to the species. With the exception of several conservation efforts implemented at the OCTC that have been successful in controlling wildfire effects on slickspot peppergrass habitats, many of the remaining

¹⁰ Penetrating trampling is defined by the CCA as breaking through the restrictive layer (i.e., the middle layer of slickspot soil that supports slickspot peppergrass, as described by Meyer and Allen 2005, p. 3) under the silt surface area of a slickspot during saturated conditions (State of Idaho *et al.* 2006, p. 9).

conservation efforts and adaptive management provisions identified in the CCA have not been implemented over a long enough period of time to demonstrate their effectiveness in reducing threats to the species. Furthermore, the conservation measures identified in the CCA are concentrated on slickspot peppergrass EOs. While this focus is helpful, effectively controlling the most significant threats to slickspot peppergrass (wildfire and invasive nonnative plant species) requires efforts that extend well beyond the boundaries of the EOs since these threats are naturally expansive and occur throughout the Great Basin. We recognize the conservation efforts identified in the CCA have a conservation benefit for slickspot peppergrass, but rangewide their effectiveness in reducing or eliminating the most significant threats to the species has not been demonstrated at this time.

Conservation measures identified for slickspot peppergrass are either specific measures designed to reduce impacts to the species and its habitat at the local level, or general measures designed to improve the ecological condition of native sagebrush-steppe vegetation at a landscape scale, inclusive of areas supporting slickspot peppergrass. Specific measures include management actions such as varying the timing or season of livestock grazing or trailing and moving water or supplements away from EOs. General measures include management actions designed to maintain or increase native forb and grass cover, protect sagebrush through fire protection or suppression, and restore degraded habitats to improve connectivity between sites. General conservation measures and implementation actions within the CA include direction to prioritize slickspot peppergrass EOs for fire protection and weed control across the range of the species. For example, the CA indicates that fire suppression efforts will be conducted, as possible, to protect slickspot peppergrass habitat; protecting slickspot peppergrass habitat will be a high priority. The Bureau will also promote diversity, richness, and health of native plant communities to support pollinators and habitat for slickspot peppergrass, including conducting weed control activities compatible with slickspot peppergrass conservation. The Service expects the Bureau's continued implementation of these general conservation measures will reduce effects from wildfire and nonnative invasive plants across the range of the species, including within the Project area.

2.3.1.6 Conservation Needs

Although recovery planning has not been completed for slickspot peppergrass, the Service anticipates that providing for its survival and recovery will entail reducing the threats that are the basis for its being listed: habitat loss, degradation, and fragmentation primarily caused by increased fire frequencies and the invasion of exotic plants; lack of sufficient gene flow between populations; and reduced viability of seed banks. The Service anticipates that the following factors will be important for survival and recovery of the species:

- Protection, restoration, and maintenance of suitable habitat conditions for all life stages of slickspot peppergrass;
- Reduction and mitigation of negative effects caused by increased fire frequencies and invasive nonnative plants on slickspot peppergrass;
- Establishment of vegetation management goals and objectives that are compatible with slickspot peppergrass recovery;
- Identification of what is necessary to conserve genetic diversity and gene flow among populations of slickspot peppergrass; and monitoring to ensure that this diversity and gene flow are being maintained;

- Implementation of an adaptive management based research and monitoring program that uses feedback from implemented, site-specific recovery tasks to implement and evaluate slickspot peppergrass recovery activities;
- Use of all available conservation programs and regulations to protect and conserve slickspot peppergrass and sagebrush-steppe habitats, including slickspot microsites; and
- Development of a management area-based recovery program that relies on adaptive management to implement and revise, as appropriate, recovery actions for slickspot peppergrass.

Slickspot peppergrass survival and recovery depends on maintaining and enhancing Wyoming big sagebrush-steppe habitat and the slickspot microsites located within this ecosystem in southwestern Idaho. The long-term conservation of slickspot peppergrass is dependent upon the maintenance or improvement of ecological function of the higher quality (C- through A-ranked) EOs rangewide, including maintaining or improving connectivity within and between EOs, which may involve the maintenance or enhancement of currently lower ranked EOs (D- through F-ranked) as necessary to facilitate pollinator activity; the maintenance of genetic diversity; and limiting the establishment of invasive nonnative plant species.

Key to maintaining quality habitat includes preserving existing Wyoming big sagebrush stands by avoiding or minimizing adverse effects of wildfire and invasive nonnative plants, such as cheatgrass and *Taeniatherum caput-medusae* (medusahead). The Service has identified the modified wildfire regime in the Great Basin and subsequent proliferation of invasive nonnative plants as the primary threats to slickspot peppergrass. Adequate resources should be made available to reduce the wildfire risk in remaining sagebrush stands, and efforts to maintain and restore native shrubs, grasses, forbs, and biological soil crust should be identified as a priority in areas that have burned in or nearby slickspot peppergrass population strongholds. Plant species that may invade slickspots and compete with slickspot peppergrass should be avoided for use in emergency stabilization and rehabilitation or habitat restoration seedings in areas that support slickspot peppergrass and its habitat. Native forb cover should be maintained or restored to levels that would encourage diverse insect pollinators available for slickspot peppergrass seed production. Activities that could cause direct plant mortality should be minimized. Ground disturbance that could cause decreased suitability of microsites to support slickspot peppergrass should be avoided or minimized. When soils are saturated, ground disturbing activities should be minimized to reduce the likelihood of directly affecting plants and burying seeds too deep to successfully germinate and emerge. Conservation measures should be implemented to mitigate the effect of actions that create conditions conducive to invasive nonnative plants within and adjacent to slickspot habitat.

Secondary threats, such as commercial and residential development, seed predation by Owyhee harvester ants (*Pogonomyrmex salinus*), habitat fragmentation and isolation, and climate change, were identified in the Federal Register notice for listing of slickspot peppergrass as factors that could impact slickspot peppergrass throughout a significant portion of its range. Other factors, including livestock grazing, fire rehabilitation activities, military training, and recreational use, were discussed as not having significant impacts that would lead to slickspot peppergrass becoming endangered in the foreseeable future. However, both secondary threats and these other factors have been identified as aggravating degraded habitat conditions caused by the modified wildfire regime and associated invasion of nonnative plants. While not identified as rangewide

issues, secondary threats and other factors may adversely affect individual slickspot peppergrass plants at the physiographic regional or local level. In areas containing high-quality sagebrush-steppe habitats, conservation measures should be implemented to avoid or minimize the impacts of habitat loss on slickspot peppergrass. Actions that could degrade slickspots to the point that they can no longer provide the essential functions to support slickspot peppergrass should be avoided as losing habitat represents a permanent loss for the species. Using pesticides near EOs should also be minimized to avoid impacts to individual slickspot peppergrass plants or insect pollinators.

Slickspot peppergrass survival and recovery depends on maintaining and enhancing Wyoming big sagebrush-steppe habitat and the slickspot microsites located within this ecosystem in southwestern Idaho. The long-term conservation of slickspot peppergrass is dependent upon the maintenance or improvement of ecological function of the higher quality (C- through A-ranked) EOs rangewide, including maintaining or improving connectivity within and between EOs, which may involve the maintenance or enhancement of currently lower ranked EOs (D- through F-ranked) as necessary to facilitate pollinator activity; the maintenance of genetic diversity; and limiting the establishment of invasive nonnative plant species.

For purposes of this jeopardy analysis, the maintenance or improvement of medium-to-high conservation value EOs (i.e., those currently ranked C through B by INHP, and including any EOs that may be A-ranked in the future) will be an important component of the rangewide conservation strategy for slickspot peppergrass. We anticipate the enhancement of higher-quality EOs will effectively offset the relatively low contribution made by the lower-ranked EOs of lesser conservation value to the species. In general, small populations of slickspot peppergrass in degraded and fragmented habitat are at high risk of extirpation and are unlikely to significantly contribute to the conservation of the species.

The anticipated beneficial and adverse effects of the Gateway West Transmission Line ROW Project form the basis for our determination as to whether this action is expected to maintain, reduce, or improve the current conservation value of the affected area for slickspot peppergrass. Conservation measures designed to reduce wildfire threats and competition from invasive nonnative plants are expected to be especially important for the survival and recovery of slickspot peppergrass.

Effects of Climate Change on Slickspot Peppergrass Survival and Recovery Needs

Warmer temperature regimes associated with global climate change represent another potentially significant risk factor for slickspot peppergrass. Researchers confirmed “experimentally in an intact ecosystem that elevated carbon dioxide may enhance the invasive success of *Bromus* spp. in arid ecosystems,” and suggest that this enhanced success will then expose these areas to accelerated fire cycles (Smith *et al.* 2000, p. 81). Chambers and Pellant (2008, p. 32) also suggest that higher carbon dioxide levels are likely increasing cheatgrass fuel loads due to increased productivity, with a resulting increase in fire frequency and extent. Based on the best available information, we therefore expect continuing production of atmospheric carbon dioxide at or above current levels, as predicted, to increase the threat posed to slickspot peppergrass by cheatgrass and from more frequent, expansive, and severe wildfires (Smith *et al.* 1987, p. 143; Smith *et al.* 2000, p. 81; Brown *et al.* 2004, p. 384; Neilson *et al.* 2005, pp. 150, 156; Chambers and Pellant 2008, pp. 31-32). Thus, under current climate-change projections, we anticipate

future climatic conditions will favor further invasion by cheatgrass, fire frequency is likely to continue to increase, and the extent and severity of fires may also increase.

Current projections for the Pacific Northwest region are that precipitation will increase in the winter but decrease in the summer months (Karl et al. 2009, p. 135). The survivorship of slickspot peppergrass rosettes to flower the following spring is favored by greater summer precipitation (Meyer et al. 2005, p. 15; CH2MHill 2007, p. 14; Sullivan and Nations 2009, pp. 33, 41), and increased winter precipitation appears to decrease survivorship (Meyer et al. 2005, pp. 15-16; Sullivan and Nations 2009, pp. 39, 43-44). As the projected rainfall pattern under climate change would follow the opposite pattern, this alteration in seasonal precipitation could result in decreased survivorship of slickspot peppergrass. Alterations in precipitation patterns, however, are more uncertain than predicted changes in temperature for the Great Basin region (Neilson et al. 2005, p. 153).

The consequences of climate change, if current projections are realized, are therefore likely to exacerbate the existing primary threats—modified wildfire regime and invasive nonnative plants, particularly cheatgrass—to slickspot peppergrass conservation. Because the Intergovernmental Panel on Climate Change (IPCC) projects changes to the global climate system in the twenty-first century will likely be greater than those observed in the twentieth century (IPCC 2007, p. 45), we anticipate that these effects will continue and likely increase into the future. Due to the uncertainty associated with climate change projections, we did not consider climate change in and of itself to represent a significant rangewide threat to slickspot peppergrass in our listing decision. However, we acknowledge that climate change will likely play a potentially important supporting role in intensifying the most significant current threats to the species in the foreseeable future. The severity and scope of the primary threats of changing wildfire regime and invasive nonnative plants to slickspot peppergrass are likely to be magnified, depending on the realized outcome of climate change. Habitat conservation and restoration efforts are likely to be further complicated by these climatic changes. Additional conservation measures may be needed to mitigate the effects of habitat degradation that are aggravated by climate change. For a more detailed discussion of climate change and slickspot peppergrass, refer to the final listing rule (74 FR 52014, October 8, 2009).

2.3.2 Slickspot Peppergrass Proposed Critical Habitat

2.3.2.1 Legal Status

Critical habitat was proposed for slickspot peppergrass on May 10, 2011. Due to the current uncertainty on the status of the species under the Act subsequent to the August 2012 court decision, the future date of final critical habitat designation for slickspot peppergrass is unknown.

2.3.2.2 Conservation Role and Description of Critical Habitat

The conservation role of slickspot peppergrass critical habitat is to support the various life history needs and provide for the conservation of the species (76 FR 27190). Four Critical Habitat Units (CHUs) encompassing a combined total of 57,756 acres within Ada, Elmore, Payette, and Owyhee Counties have been identified as being important to the survival and recovery of slickspot peppergrass. All CHUs currently proposed as critical habitat are located

within the geographical area occupied by slickspot peppergrass at the time of listing, and are currently occupied by the species. These units proposed as critical habitat contain the physical and biological features essential to the conservation of slickspot peppergrass.

Primary constituent elements (PCEs) include physical and biological features of designated or proposed critical habitat essential to the conservation of the species, including, but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species [Act §3(5)(A)(i), 50 CFR §424.12(b)]. In determining which areas to propose as critical habitat, the Service considered the physical and biological features that are essential to the conservation of slickspot peppergrass and that may require special management considerations or protection. These features are the PCEs laid out in the appropriate quantity and spatial arrangement for conservation of the species. The PCEs of slickspot peppergrass proposed critical habitat are:

PCE 1. Ecologically-functional microsites or “slickspots” that are characterized by:

- A high sodium and clay content, and a three-layer soil horization sequence, which allows for successful seed germination, seedling growth, and maintenance of the seed bank. The surface horizon consists of a thin, silty, vesicular, pored (small cavity) layer that forms a physical crust (the silt layer). The subsoil horizon is a restrictive clay layer with an abrupt (referring to an abrupt change in texture) boundary with the surface layer, that is natric or natric-like in properties (a type of argillic (clay-based) horizon with distinct structural and chemical features) (the restrictive layer). The second argillic subsoil layer (that is less distinct than the upper argillic horizon) retains moisture through part of the year (the moist clay layer); and
- Sparse vegetation with low to moderate introduced invasive nonnative plant species cover.

PCE 2. Relatively-intact native *Artemisia tridentata* ssp. *wyomingensis* (Wyoming big sagebrush) vegetation assemblages, represented by native bunchgrasses, shrubs, and forbs, within 250 m (820 ft) of slickspot peppergrass element occurrences to protect slickspots and slickspot peppergrass from disturbance from wildfire, slow the invasion of slickspots by nonnative species and native harvester ants, and provide the habitats needed by slickspot peppergrass’ pollinators.

PCE 3. A diversity of native plants whose blooming times overlap to provide pollinator species with sufficient flowers for foraging throughout the seasons and to provide nesting and egg-laying sites; appropriate nesting materials; and sheltered, undisturbed places for hibernation and overwintering of pollinator species. In order for genetic exchange of slickspot peppergrass to occur, pollinators must be able to move freely between slickspots. Alternative pollen and nectar sources (other plant species within the surrounding sagebrush vegetation) are needed to support pollinators during times when slickspot peppergrass is not flowering, when distances between slickspots are large, and in years when slickspot peppergrass is not a prolific flowerer.

PCE 4. Sufficient pollinators for successful fruit and seed production, particularly pollinator species of the sphecid and vespid wasp families, species of the bombyliid and tachnid fly

families, honeybees, and halictid bee species, most of which are solitary insects that nest outside of slickspots in the surrounding sagebrush-steppe vegetation, both in the ground and within the vegetation.

The space for individual and population growth is provided by PCEs 1, 2, and 3; the need for food, water, air, light, minerals, or other physiological requirements is provided by PCEs 1 and 2; the need for cover and shelter is met by PCEs 1 and 2; sites for reproduction, germination, and seed dispersal are provided by PCEs 1, 2, 3, and 4; and habitat free from disturbance is met by PCE 2 (76 FR 27191).

Activities that cause adverse effects to critical habitat are evaluated to determine if they are likely to “destroy or adversely modify” critical habitat by no longer serving the intended conservation role for the species or retaining those PCEs that relate to the ability of the area to at least periodically support the species. Activities that may destroy or adversely modify critical habitat are those that alter the PCEs to such an extent that the conservation value of critical habitat is appreciatively reduced. The Service’s evaluation must be conducted at the scale of the entire critical habitat area designated, unless otherwise stated in the final critical habitat rule (USFWS and NMFS 1998, pp. 4-39). Thus, proposed critical habitat for slickspot peppergrass is evaluated at the scale of the entire area proposed for designation, which includes the four CHUs described above. All four CHUs contain features or areas essential to the conservation of slickspot peppergrass. Therefore, if a proposed or ongoing action would alter the physical or biological features of proposed critical habitat to the extent that appreciably reduces the conservation function of one or more critical habitat units for slickspot peppergrass, a finding of adverse modification for the entire proposed critical habitat area may be warranted.

2.3.2.3 Current Rangewide Condition of Species Critical Habitat

The condition of slickspot peppergrass proposed critical habitat varies across its range from poor to good. While some areas contain intact sagebrush steppe habitat, other areas have been fragmented by wildfires and both unseeded and seeded invasive nonnative plants such as cheatgrass and *Agropyron cristatum* (crested wheatgrass). The modified wildfire regime and spread of invasive nonnative plants continues to degrade slickspot microsites and associated sagebrush steppe habitat across the range of slickspot peppergrass (76 FR 27186).

Many factors have impacted slickspot peppergrass and its habitat, and continue to do so. Among the factors that contribute to degraded PCEs, those which appear to be particularly significant and have resulted in degraded habitat conditions within areas proposed for critical habitat designation are as follows:

- **Current Wildfire Regime (i.e., increasing frequency, size, and duration).** The result of this altered wildfire regime has been the conversion of vast areas of the former sagebrush-steppe ecosystem to nonnative annual grasslands (USGS 1999, *in litt.*, pp. 1–9), resulting in loss reduction in cover of sagebrush, native grasses, and native forbs available for insect pollinator foraging and/or shelter. Frequent wildfires can also promote soil erosion and sedimentation (Bunting et al. 2003, p. 82) in arid environments such as the sagebrush-steppe ecosystem. Increased sedimentation can result in a silt layer that is too thick for optimal slickspot peppergrass germination (Meyer and Allen 2005, pp. 6–7). The altered wildfire regime is one of the primary causes of reduced quality of PCEs 1, 2, 3, and 4 of proposed critical habitat for slickspot peppergrass.

- **Invasive Nonnative Plant Species.** Invasive, nonnative plants can alter various attributes of ecosystems including geomorphology, wildfire regime, hydrology, microclimate, nutrient cycle, and productivity (for a summary see Dukes and Mooney 2003, entire). Additionally, these invasive nonnative plants can negatively affect native plants, including rare plants like slickspot peppergrass, through competitive exclusion, niche displacement, hybridization, and competition for pollinators; examples of these negative effects are widespread among different taxa, locations, and ecosystems (D'Antonio and Vitousek 1992, pp. 63–87; Olson 1999, p. 5; Mooney and Cleland 2001, p. 1). Recent analyses have revealed a significant, negative association between the presence of weedy species and the abundance or density of slickspot peppergrass, to the point that the species peppergrass may be excluded from slickspots (Sullivan and Nations 2009, pp. 109–112). Although the specific mechanisms are not well understood, some of these plants, such as *Agropyrum cristatum* (crested wheatgrass) and cheatgrass, are strong competitors in this arid environment for such limited resources as moisture, which tends to be concentrated in slickspots (Pyke and Archer 1991, p. 4; Moseley 1994, p. 8; Lesica and DeLuca 1998, p. 4), at least in the subsurface soils (Fisher et al. 1996, pp. 13–16). Invasive nonnative plants are one of the primary causes of reduced quality of PCEs 1, 2, 3, and 4 of proposed critical habitat for slickspot peppergrass.
- **Habitat Loss and Fragmentation due to Agricultural and Urban Development.** Residential and agricultural development can affect slickspot peppergrass and slickspot habitat through habitat conversion, increased nonnative plant invasions, increased off road vehicle use, increased wildfire, changes to insect populations, and increased fragmentation. Utility lines, such as electrical transmission and gas lines, as well as roads, also fragment slickspot peppergrass occupied areas and act as corridors for nonnative plant invasions. Habitat fragmentation and loss due to development has resulted in localized reduced quality of PCEs 1, 2, 3, and 4 of proposed critical habitat for slickspot peppergrass.
- **Livestock Grazing.** Livestock trampling of water-saturated slickspot soils that breaks through the restrictive layer (referred to as “penetrating trampling” (State of Idaho et al. 2006, p. 9)) has the potential to alter the soil structure and the functionality of slickspots (Rengasamy et al. 1984, p. 63; Seronko 2004, *in litt.*). Penetrating trampling that occurs when slickspots are wet also has the potential to affect the seed bank for slickspot peppergrass by pushing the seeds below a depth where they can germinate (i.e., below 3 cm (1.5 in.)) (Meyer and Allen 2005, pp. 9–10; Meyer et al. 2006, pp. 891, 901–902). Livestock grazing may also locally reduce native forb cover available for insect pollinators. In contrast, with careful management, livestock grazing may be used as a tool to select for certain native species, or even to control cheatgrass (Frost and Launchbaugh 2003, p. 43). Therefore, livestock grazing may result in localized reductions in the quality of PCEs 1, 2, 3, and 4; current livestock management (including continued implementation of conservation measures to avoid or minimize impacts) is not considered to pose a significant threat to proposed critical habitat of slickspot peppergrass.

Other factors that may result in localized reduced quality of proposed critical habitat PCEs include rangeland revegetation projects, wildfire management practices, and recreational use.

Effects of Climate Change on Proposed Critical Habitat for Slickspot Peppergrass

Similar to potential effects of climate change on the species, we also recognize that climate change may cause changes in slickspot peppergrass proposed critical habitat. As previously described, under projected future temperature conditions, the cover of sagebrush in the Great Basin region is anticipated to be dramatically reduced (Neilson et al. 2005, p. 154). Warmer temperatures and greater concentrations of atmospheric carbon dioxide create conditions favorable to cheatgrass, and perpetuate the positive feedback cycle between annual grasses and fire frequency that poses a significant threat to the sagebrush habitat (Chambers and Pellant 2008, p. 32; Karl et al. 2009, p. 83) where slickspot peppergrass occurs.

The direct, long-term impact from climate change to the critical habitat of slickspot peppergrass is yet to be determined. As discussed above, we anticipate that future climatic conditions will favor further invasion by cheatgrass, that fire frequency will continue to increase, and that the extent and severity of fires may increase as well, further changing the species composition of southwest Idaho's sagebrush-steppe habitat. Over a period of decades, climate change may directly threaten the integrity of the essential physical or biological features described in PCEs 1, 2, 3, and 4. Climate change may exacerbate habitat degradation impacts both physically (i.e., degradation or loss of slickspot microsites) and biologically (i.e., reduction of insect pollinators due to habitat degradation as well as increased competition with invasive nonnative plants). Protecting slickspot peppergrass strongholds and remaining intact sagebrush steppe habitat from the effects of the modified wildfire regime and associated spread of invasive nonnative plants as well as ensuring connectivity among populations are important considerations in addressing the potential impacts of climate change.

2.3.2.4 Previous Conference on the Effects of Actions on Slickspot Peppergrass Proposed Critical Habitat

Ongoing or proposed actions with formal conference completed for slickspot peppergrass proposed critical habitat include emergency conference on effects of 2011 and 2012 wildfire suppression actions on the Bureau's Boise District (01EIFW00-2012-EF-0073; USFWS 2012a, entire and 01EIFW00-2013-FE-0103; USFWS 2013, entire), Bureau authorization of rights-of-way associated with the M3 Development in northwest Ada County (14420-2011-F-0148; USFWS 2011b, entire); reauthorization of livestock grazing activities on the Mountain Home Subunit Allotment #00813 (01EIFW00-2012-F-0183; USFWS 2012b, entire), and reauthorization of the existing Williams Northwest Pipeline Right-of-Way (01EIFW00-2013-FC-0040; USFWS 2012c, entire). As described in section 2.3.1.5 above, section 7 consultation/conference has occurred on the effects of multiple actions and plans on the species itself. It is anticipated that section 7 conference or consultation, as appropriate, will be completed regarding the potential effects of additional ongoing and new actions on proposed and designated critical habitat for slickspot peppergrass. Section 7 conference and consultation are expected to include some actions that may degrade the environmental baseline over the short-term in many cases. However, existing conservation measures are intended to minimize habitat degradation for the species; these conservation measures also are expected to minimize short-term impacts to PCEs of slickspot peppergrass critical habitat.

2.4 Environmental Baseline of the Action Area

This section assesses the effects of past and ongoing human and natural factors that have led to the current status of the species, its habitat and ecosystem in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have already undergone section 7 consultations or conference, and the impacts of state and private actions which are contemporaneous with this conference.

2.4.1 Slickspot Peppergrass

2.4.1.1 Status of Slickspot Peppergrass in the Action Area

The Project crosses the Snake River Plain physiographic region, and includes portions of slickspot peppergrass Management Areas (MA) 6 (Kuna), 8A and 8B (Orchard), and 9 (Mountain Home). Eleven known slickspot peppergrass EOs are found within the action area, five of which will be crossed by Segment 8 of the Project: B-ranked EO 30; C-ranked EOs 24, 31, and 104; and F-ranked EO 42 (Table 2). Six of the eleven EOs located within the action area but not crossed by the Project are C-ranked, one is D-ranked, and two EOs are F-ranked. While about 509 acres of EOs are located within the action area, the portions of the five EOs that the Project footprint overlaps total only about three of those 509 EO acres (Table 2). No EOs are documented as being present in Segment 9 of the Project.

Table 2. Acres of Known Occurrences of Slickspot Peppergrass within the Action Area and Crossed by the Project Footprint, by Element Occurrence^{1/}

EO Number	EO Rank ^{2/}	Acres Within Action Area	Acres Within Project Footprint ^{3/}
15	D	47.0	--
18	C	21.8	--
24	C	90.4	1.7
25	C	14.9	--
30	B	156.8	<0.01
31	C	71.5	1.3
42	F	2.1	0.03
51	BD	3.6	--
54	F	0.5	--
72	C	19.4	--
104	C	80.6	0.2
	Total	508.6	3.2

1/ All known occurrences within the action area and crossed by the Project footprint occur along Segment 8.

2/ Only acres of extant EOs included in table; extirpated occurrences not included.

3/ Note that in non-forested areas (such as within habitat categories for slickspot peppergrass), vegetation clearing will only occur within the Project footprint area; vegetation clearing across the entire Project ROW area will only occur in forested vegetation communities.

The Project footprint will be located within about 2 acres of the 90 acre C-ranked EO 24 (about 2 percent of the total EO 24 acreage), 0.01 acres of the 676 acre B-ranked EO 30 (less than 0.01 percent of the total EO 30 acreage), about 1 acre of the 71 acre C-ranked EO 31 (about 2 percent

of the total EO 31 acreage), 0.03 acres of the 2 acre F-ranked EO 42 (about 2 percent of the total EO 42 acreage), and 0.2 acres of the 91 acre C-ranked EO 104 (0.2 percent of the total EO 104 acreage). Table 3 shows slickspot peppergrass plant numbers observed in HIP monitoring transects within these 5 EOs over the 8 years of available HIP monitoring data. A portion of EO 18 and EOs 30, 42, and 54 showed consistently low plant numbers within the ten slickspots monitored on HIP transects across all years of HIP data collection. Plant numbers appear to be moderate for the remaining nine EOs, with plant numbers fluctuating between years, which are likely due to environmental factors such as variation in spring precipitation levels.

Table 3. Total Slickspot Peppergrass Plants Observed on HIP Monitoring Transects for Element Occurrences in the Action Area of the Gateway West Transmission Line Project (compiled from Kinter et al. 2012, Appendix L.)

EO (HIP Transect Number)	Year							
	2004	2005	2006	2007	2008	2009	2010	2011
15 (015)	49	37	20	108	417	932	158	3
18 (018A)	581-780	653	33	336	391	86	4,660	192
18 (018B)	332	498	298	923	1,585	454	3,622	1,744
18 (019A)	0	0	0	0	1	0	1	0
24 (024)*	386-634	171	42	0	170	83	596	104
25 (025)	1,002- 1,449	455	42	112	375	248	1,453	120
30 (030B)*	1	6	2	3	5	0	0	0
31 (031)*	5	59	42	458	388	242	51	0
42 (042)*	No data	0	0	0	0	0	0	0
51 (051A)	175-224	860	65	2	315	91	45	26
51 (051B)	18	60	25	4	20	7	3	3
54 (054)	No data	0	0	0	0	0	0	0
62 (062)	No data	297	9	0	19	8	16	11
72 (072B)	98	295	172	388	437	143	35	0
72 (072C)	218	195	21	45	115	38	14	0
104 (072A)*	728-927	480	13	5	170	10	61	0

BOLD* = EOs located within the Project footprint of the Gateway West Transmission Line Project ROW

Habitat

Occupied habitat¹¹ and slickspot peppergrass habitat will be crossed by Segment 8 of the Project. The Bureau defines occupied habitat as including both slickspot peppergrass EOs as well as a 0.5

¹¹ Three habitat categories are used by the Bureau for slickspot peppergrass: occupied habitat, slickspot peppergrass habitat, and potential habitat. See Attachment A of this document for the Bureau's definitions of these habitat categories.

mile pollinator buffer that surrounds EOs. No occupied habitat or slickspot peppergrass habitat is documented to be present in Segment 9 of the Project. However, potential habitat will be crossed by both Segments 8 and 9 (Figure 3, 4, 5, and 6). Approximately 11,109 acres of occupied habitat occur within the action area and about 501 acres of occupied habitat are located within the Project footprint. Table 4 displays the acres of occupied habitat for slickspot peppergrass, by associated EO, that are located within Segment 8 of the Project.

Table 4. Acres of Occupied Habitat for Slickspot Peppergrass within the Action Area and the Project Footprint of the Gateway West Transmission Line Project^{1/}

EO Number	EO Rank ^{2/}	Occupied Habitat Acres Within Action Area	Occupied Habitat Acres Within Project Footprint ^{3/}
15	D	623.7	26.0
18	C	661.7	34.3
24	C	2,643.9	137.3
25	C	913.5	79.5
30	B	1,266.6	7.2
31	C	975.0	35.4
42	F	592.5	34.9
51	BD	767.7	2.6
54	F	326.3	4.6
62	C	176.2	--
72	C	914.4	59.2
104	C	1,123.8	79.9
105	D	123.5	--
	Total	11,108.8	500.9

1/ All acres of occupied habitat within the action area and within the Project footprint occur along Segment 8.

2/ EO Rank Definitions: See Habitat Characteristics section above.

3/ Note that in non-forested areas (such as within habitat categories for slickspot peppergrass), vegetation clearing will only occur within the Project footprint area; vegetation clearing across the entire Project ROW area will only occur in forested vegetation communities.

Approximately 20,879 acres of slickspot peppergrass habitat and 49,415 acres of potential habitat occur within the action area. About 515 acres of slickspot peppergrass habitat and 816 acres of potential habitat for slickspot peppergrass occur within the Project footprint (Table 5). Additional surveys will be needed to determine whether these areas contain new populations of slickspot peppergrass as well as whether potential habitat areas crossed by the Project contain slickspot microsites.

Table 5. Acres of Potential Habitat and Slickspot Peppergrass Habitat within the Action Area and Project Footprint of the Gateway West Transmission Line Project.

Segment	Habitat Category ^{1/}			
	Potential Habitat		Slickspot Peppergrass Habitat	
	Action Area (Acres)	Project Footprint (Acres)	Action Area (Acres)	Project Footprint (Acres)
Segment 8	20,034.0	382.6	20,878.5	515.4
Segment 9	29,380.8	433.0	-	-
Total^{2/}	49,414.8	815.6	20,878.5	515.4

^{1/} Three habitat categories are used by the Bureau for slickspot peppergrass: occupied habitat, slickspot peppergrass habitat, and potential habitat. See Attachment A of this document for definitions of these habitat categories.

^{2/} Note that in non-forested areas (such as within habitat categories for slickspot peppergrass), vegetation clearing will only occur within the Project footprint area; vegetation clearing across the entire Project ROW area will only occur in forested vegetation communities.

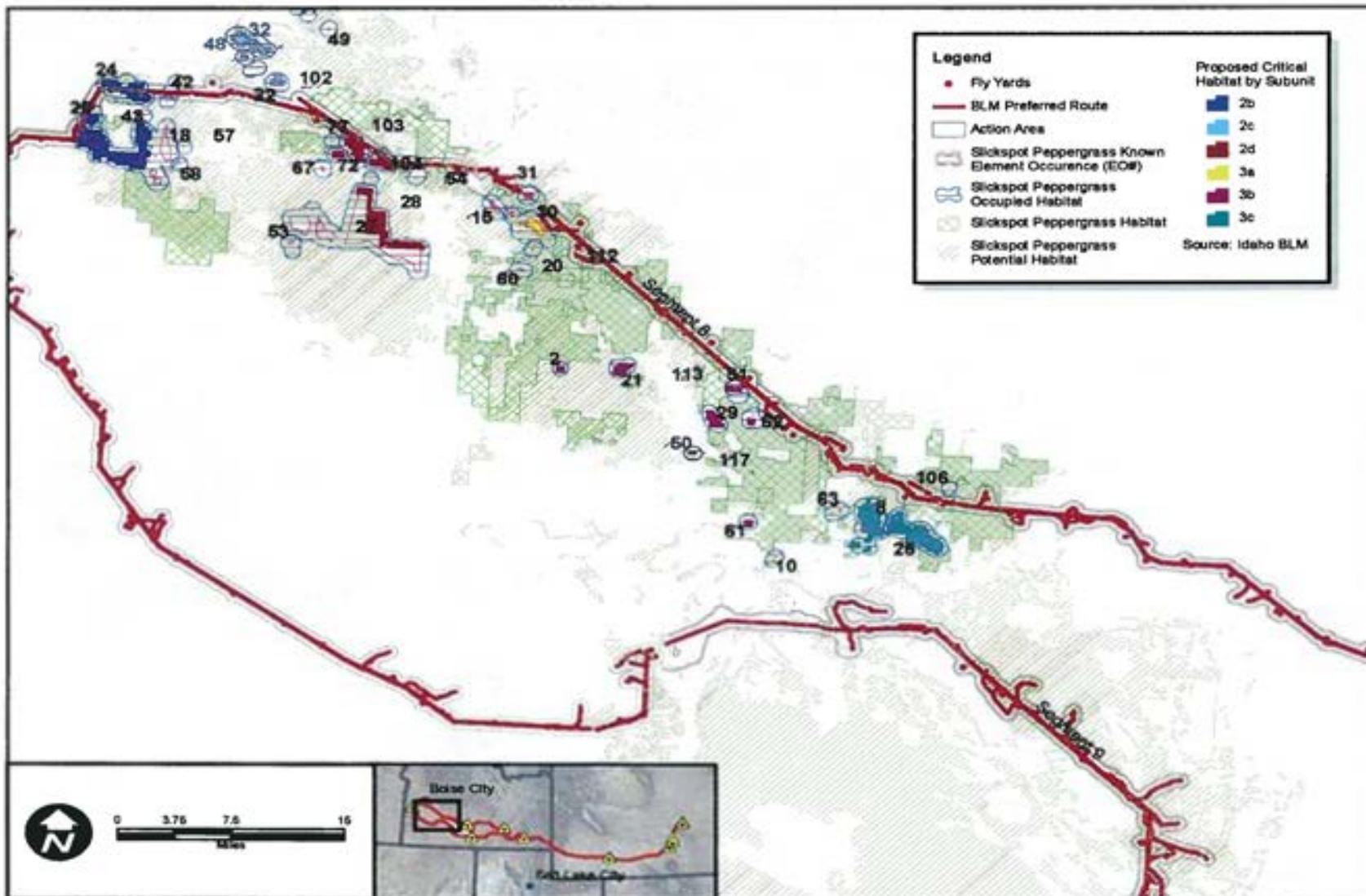


Figure 3. Slickspot Peppergrass Proposed Critical Habitat, Occupied Habitat, and Potential Habitat in relation to the Gateway West Transmission Line ROW Project.

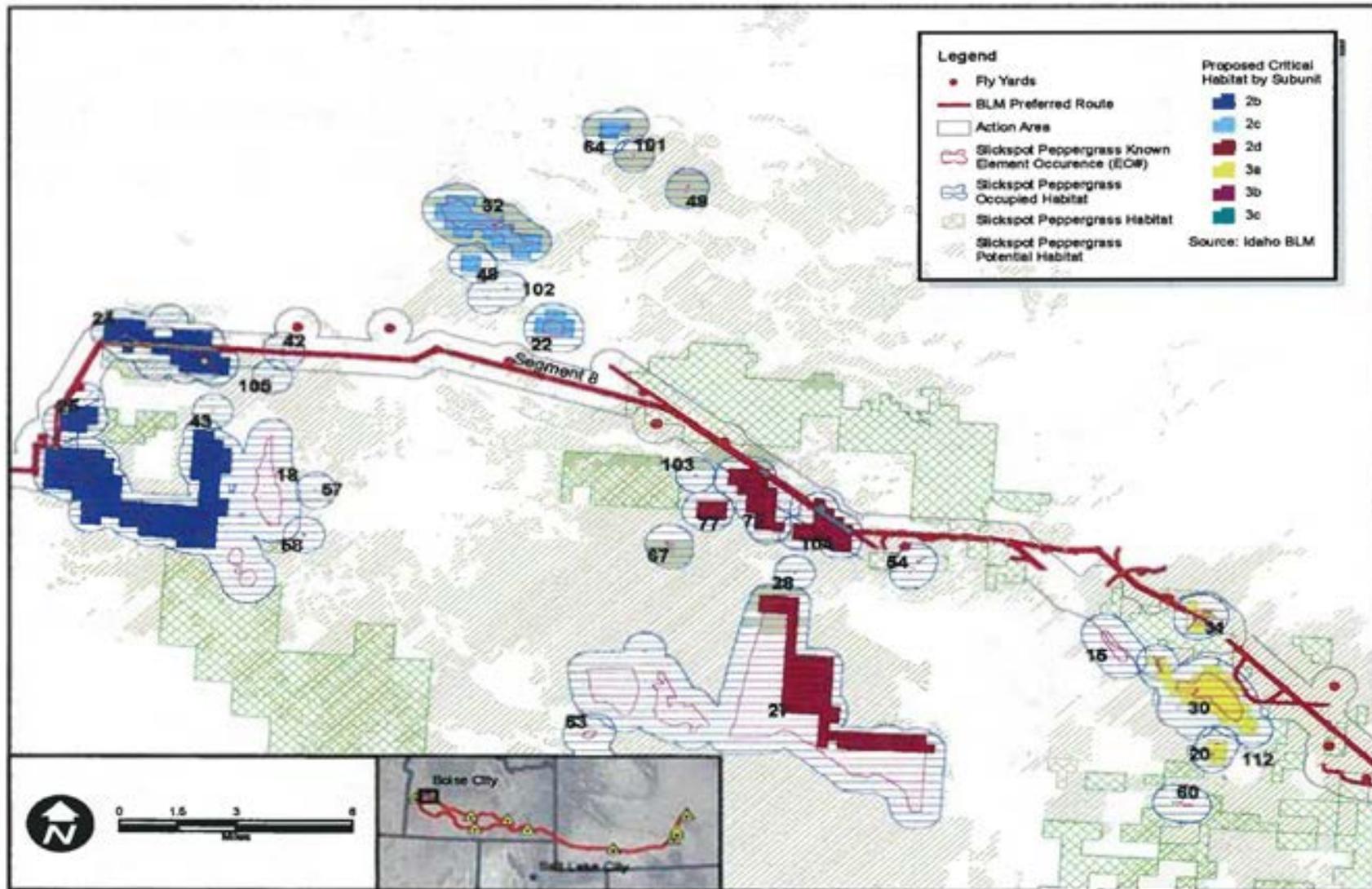


Figure 4. Slickspot Peppergrass Proposed Critical Habitat, Occupied Habitat, and Potential Habitat in the northwestern portion of Segment 8 of the Gateway West Transmission Line ROW Project.

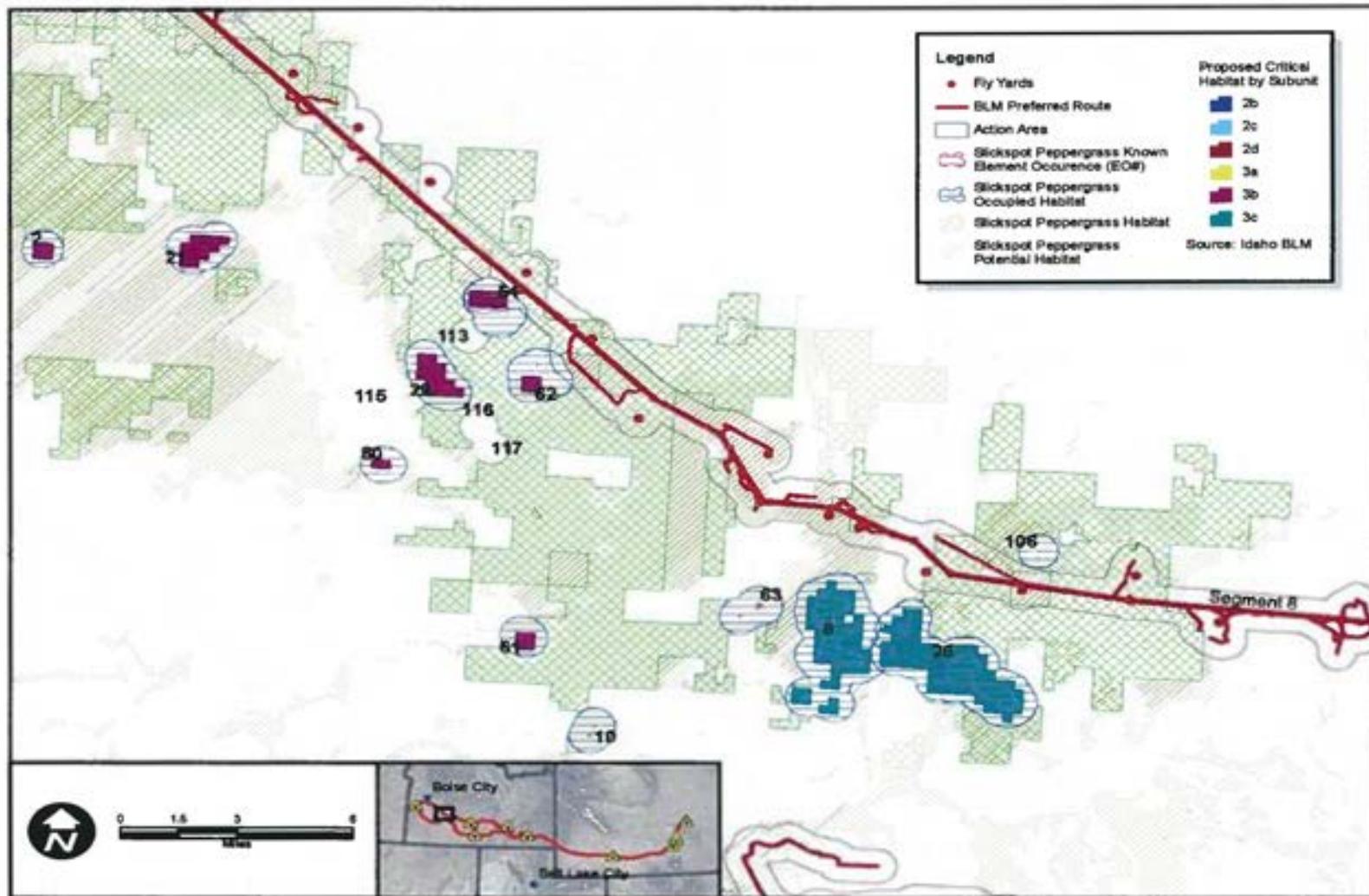


Figure 5. Slickspot Peppergrass Proposed Critical Habitat, Occupied Habitat, and Potential Habitat in the southeastern portion of Segment 8 of the Gateway West Transmission Line ROW Project.

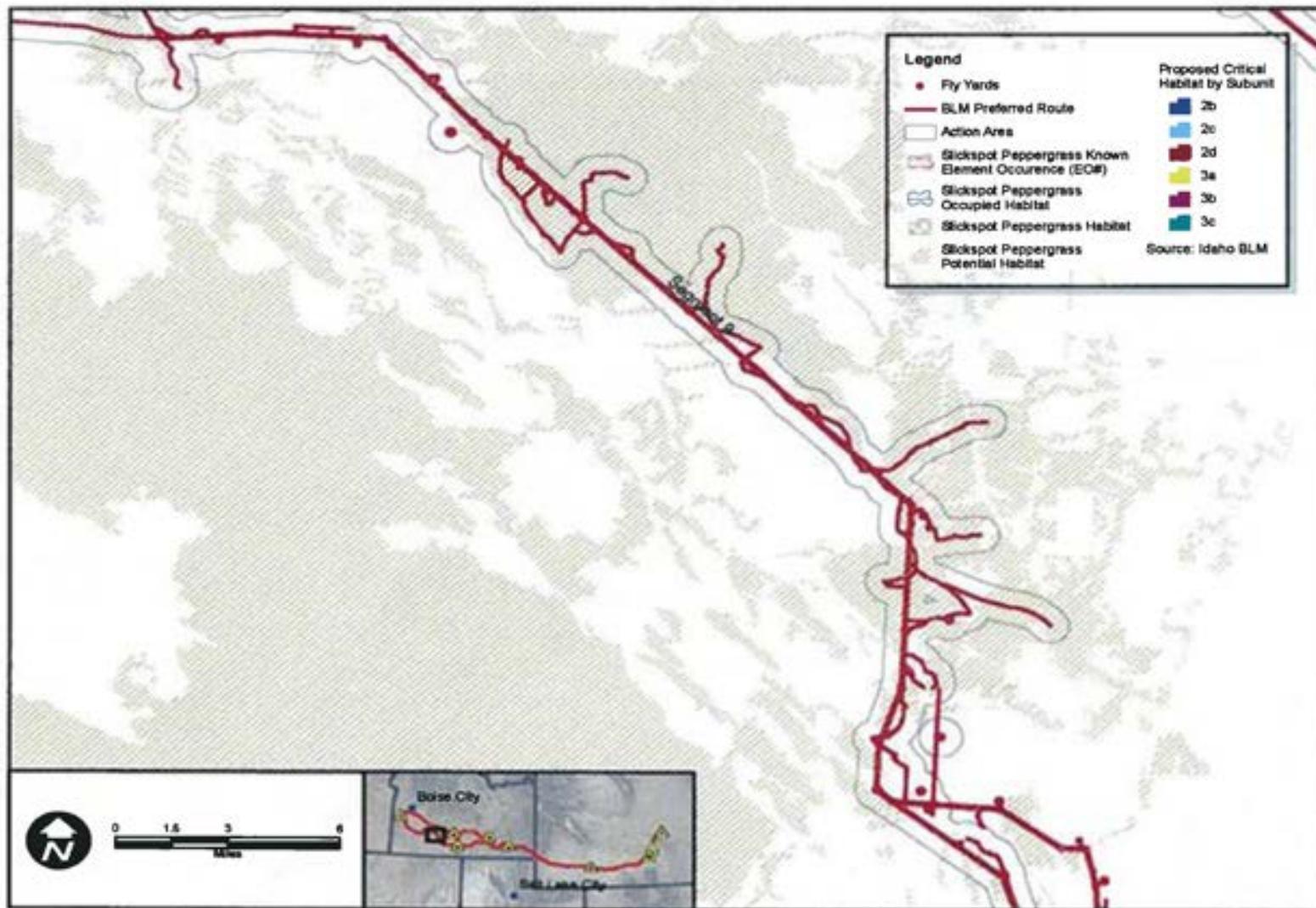


Figure 6. Slickspot Peppergrass Potential Habitat in Segment 9 of the Gateway West Transmission Line ROW Project.

2.4.1.2 Factors Affecting the Species in the Action Area

Habitat Integrity and Population Monitoring Data

Monitoring data for slickspot peppergrass have been collected since the late 1990s (Colket 2006, p. 3). Habitat Integrity and Population (HIP) monitoring protocol was developed in 2004 to monitor and assess slickspot peppergrass abundance, habitat integrity, and disturbance, for the purpose of evaluating and improving management actions implemented by the CCA (Colket 2006, p. 3). This monitoring protocol replaced the previously used habitat integrity index (HII) monitoring protocol. Between 2004 and 2005, 79 permanent HIP transects were established within slickspot peppergrass EOs and various attributes, such as slickspot peppergrass abundance, habitat condition, and disturbance, have been measured annually within and in the vicinity of the ten permanently marked slickspot microsites monitored on these transects (Colket 2006, entire; Kinter et al. 2012, entire).

Table 6 displays the HIP transects and CCA Management Areas associated with known occurrences or occupied habitat of slickspot peppergrass that occur within the action area and could be potentially impacted by Project activities. Data from these HIP transects are used in effects analyses for the proposed Project.

Table 6. HIP Transects and Associated EOs and Management Areas within the Action Area that May be Affected by the Gateway West Transmission Line Project

Management Area	HIP Transect Number	EO Number/ (Rank) ^{1/}
MA 6 (Kuna)	018A; 018B; 019A	18 (C)
	024	24 (C)
	025	25 (C)
	042	42 (F)
MA 8A (Orchard)	015	15 (D)
	030B	30 (B)
	031	31 (C)
MA 8B (Orchard)	054	54 (F)
	072B; 072C	72 (C)
	072A	104 (C)
MA 9 (Mountain Home)	051A; 051B	51 (BD)
	062	62 (C)
N/A ^{2/}	N/A	105 (D)

1/ EO Rank Definitions: See Habitat Characteristics section above.

2/ No Management Area or HIP monitoring transect is currently associated with EO 105. Monitoring data for EO 42, a nearby EO, are used to characterize baseline conditions for EO 105 in this analysis.

HIP monitoring data characterizing the baseline conditions of slickspot peppergrass occurrences and occupied habitat from 2004 through 2011 are described in Table 3 above as well as in Tables in the Assessment (USBLM 2013a, pp. 66-67). Additional data on slickspot habitat attributes (e.g., ground disturbance, condition of native vegetation) have been collected for HIP transects. Summaries of the baseline conditions of these parameters, as well as the potential effects of the Project on baseline conditions within occupied habitat in the action area, are described below.

Threats to slickspot peppergrass in the vicinity of the proposed Project area include wildfire, invasive nonnative plants, fire rehabilitation activities, herbicide and pesticide use, development, recreation, fragmentation, and livestock use. These threats are described below.

Wildfire

The Service considers the modified wildfire regime along with associated invasive nonnative plants to be the primary threats to slickspot peppergrass within the action area as well as across the range of the species. Increases in human habitation and activity in the rangelands of southern Idaho have contributed to the increase in wildfire starts in recent years. Proximity to urban areas and roads can be an important causal factor associated with wildfire ignitions (Kalabokidis *et al.* 2002, p. 6; Brooks *et al.* 2004, p. 3; Romero-Calcerrada *et al.* 2008, p. 351; Syphard *et al.* 2008, pp. 610–611). Future frequency and intensity of wildfires and subsequent spread of invasive nonnative plants will be a key factor in whether slickspot peppergrass will persist within the action area as well as rangewide.

Invasive Nonnative Plants

Invasive nonnative plants, including noxious weeds, can reduce the quality of slickspot peppergrass habitat. Cheatgrass, an invasive nonnative annual grass that often dominates the understory of slickspot peppergrass habitat, can impact slickspot peppergrass via direct loss (e.g. plant competition) as well as indirect population declines from habitat loss (e.g. modification of the sagebrush-steppe ecosystem and/or increased wildfire return interval).

As described above, the Service considers invasive nonnative plants along with the modified wildfire regime to be the primary threats to the slickspot peppergrass within the Project action area as well as across the range of the species. Future distribution and density of invasive nonnative plants within the Project action area will be a key factor in whether the slickspot peppergrass will persist in the vicinity of the Project.

Recreation

Increasing development places additional off-site demands on adjacent or nearby public lands, especially from a recreational perspective. The demand for easily accessible recreation areas in general and OHV use areas in particular will continue to increase as the population in southern Idaho increases. Recreational activities such as OHV use, equestrian use, firearm discharge, hunting, and hiking can lead to negative impacts to slickspot peppergrass. OHV, equestrian, and hiking can impact slickspot peppergrass via direct mortality (e.g. trampling) and indirect population decline from habitat loss (e.g., soil crust disturbance). Recreationists may also have an indirect effect on slickspot peppergrass via increases in the spread of nonnative annual grasses (e.g. cheatgrass seed dispersal, soil disturbance) or wildfire ignition through disposal of cigarettes, firearm discharge, vehicle heat ignition, fireworks, or other careless or intentional ignition sources. These factors will place additional demands on slickspot peppergrass and its habitat and may lead to further degradation of slickspot peppergrass habitat across its range.

The Service considers recreation to currently pose a lower threat to slickspot peppergrass rangewide that is not as severe as the threats posed by the modified wildfire regime and invasive nonnative plant species. Threats associated with recreation are greatest in the Boise Foothills physiographic region, and decrease with increasing distance from populated areas. However, threats associated with recreation have the potential to increase in both the Boise Foothills and

Snake River Plain physiographic regions over time as the demand for open space for recreational use increases with associated population growth in southern Idaho.

Habitat Fragmentation and Isolation of Small Populations

Due to its occupancy of patchily distributed slickspots, the habitat of the slickspot peppergrass is somewhat naturally fragmented. Fragmentation at a larger scale, however, can pose problems for slickspot peppergrass by creating barriers in the landscape that prevent effective genetic exchange between populations. Seed dispersal for slickspot peppergrass likely occurs only over very short distances; thus, pollinators and pollen dispersal are the primary means for reproductive and genetic exchange between slickspot peppergrass sites (Robertson and Ulappa 2004, pp. 1705, 1708; Stillman *et al.* 2005, pp. 1, 6-8). Research indicates that seeds generated by the pollination of nearby plants have reduced viability, and that slickspot peppergrass seed viability increases as the distance to the contributing pollination source increases (Robertson and Ulappa 2004, pp. 1705, 1708). The ability to exchange pollen with distant populations is therefore an advantage for slickspot peppergrass. Barriers or too much distance between slickspots and pollinating insect habitats can reduce the effective range of insects important to slickspot peppergrass pollination (Robertson *et al.* 2004, pp. 2-4). Barriers can include agricultural fields, urban development, and large areas of annual and perennial grass monocultures that do not support diverse floral resources that provide adequate nectar or edible pollen for pollinators. Slickspot peppergrass habitats separated by distances greater than the effective range of available pollinating insects (about 0.6 mi. as described in Colket and Robertson 2006, *in litt.* p. 1) are at a genetic disadvantage, and may become vulnerable to the effects of loss of genetic diversity (Stillman *et al.* 2005, pp. 1, 6-8) and a reduction in seed production (Robertson *et al.* 2004, p. 1705). A genetic analysis of slickspot peppergrass suggested that populations in the Snake River Plain and the Owyhee Plateau "may have reduced genetic diversity" (Larson *et al.* 2006, p. 17; note the Boise Foothills were not analyzed separately in this study).

Many of the remaining occurrences of slickspot peppergrass, particularly in the Snake River Plain near urban centers, are restricted to small, remnant patches of suitable sagebrush-steppe habitat. When last surveyed, 31 EOs (37 percent) each had fewer than 50 plants during years of average or greater than average rainfall (Colket *et al.* 2006, Tables 1-13). Many of these small remnant EOs exist within habitat that is degraded by the factors identified above. Small slickspot peppergrass populations have likely persisted due to their long-lived seed bank, but the potential risk of depletion of each population's seed bank with no new genetic input makes the persistence of these small populations uncertain. Providing suitable habitat for the species' insect pollinators is important for maintaining slickspot peppergrass genetic diversity. Small populations are vulnerable to relatively minor environmental disturbances such as wildfire, herbicide drift, and nonnative plant invasions (Given 1994, pp. 66-67), and are subject to the loss of genetic diversity from genetic drift and inbreeding (Ellstrand and Elam 1993, pp. 217-237). Populations with lowered genetic diversity are more prone to local extinction (Barrett and Kohn 1991, pp. 4, 28). Smaller populations generally have lower genetic diversity, and lower genetic diversity may in turn lead to even smaller populations by decreasing the species' ability to adapt, thereby increasing the probability of population extinction (Newman and Pilson 1997, p. 360).

Even though slickspot peppergrass occurs in naturally patchy microsite habitats, the increasing degree of fragmentation produced by wildfires and development may result in the separation of

populations beyond the distance that its insect pollinators are capable of traveling. Genetic exchange in slickspot peppergrass is achieved through either seed dispersal or insect-mediated pollination, and plants that receive pollen from more distant sources demonstrate greater reproductive success in terms of seed production. As all indications are that seeds are dispersed over only a very small distance and insect pollinators are also limited in their dispersal capabilities, habitat fragmentation and isolation of populations poses a threat to slickspot peppergrass in terms of decreased reproductive success (lower seed set), reduced genetic variability, and greater local extinction risk. For these reasons, the Service considers habitat fragmentation resulting from wildfires and development to pose a moderate degree of threat to slickspot peppergrass. We consider this threat to be significant, but not as severe as the threats posed by the modified wildfire regime and invasive nonnative plant species. The threat of habitat fragmentation and isolation of small populations is pervasive throughout the range of slickspot peppergrass.

Livestock Grazing

Livestock use has the potential to result in both positive and negative effects on slickspot peppergrass and its habitat. Impacts vary with stocking rate and season of use. Potential positive effects that livestock grazing may have on slickspot peppergrass include herbivory of invasive nonnative plants and the associated lower risk of wildfire through fine fuel reduction and reduced competition with understory native plants (Pellant 1996, p. 6). The potential negative direct effects of livestock grazing on slickspot peppergrass include trampling of plants leading to direct mortality of individuals or indirect impacts such as altering habitat conditions to be more conducive to invasive nonnative plants such as cheatgrass (Reisner et al. 2013, pp. 9-10). Analyses of the best available information have concluded that impacts from current livestock use tend to be localized and are probably not a significant threat to the species rangewide (USFWS 2010, pp. 41-45).

Environmental Baseline Condition in the Project Area

Slickspot peppergrass habitat fragmentation levels within the Project action area are determined by shrub cover, which is an indicator of fire occurrence within the past 15 to 25 year period. The Assessment states that habitat fragmentation is widespread across the Project area, and much of this habitat fragmentation is due to past wildfires (USBLM 2013a, p. A-6). About 718 acres within the action area have burned in Segment 8 between 2009 and 2012. Similarly, about 1,373 acres burned in Segment 9 between 2009 and 2012 (USBLM 2013b, Table D-6-7). Shrub cover in the Project area has been reduced by these and other past wildfires. Although pockets of shrubs in both potential habitat and occupied habitat occur within the Project action area, much of the area that was historically shrubland has been converted to an exotic annual grassland dominated by cheatgrass. Replacement of shrub cover in the Project action area is expected to be slow, particularly since the dominance of cheatgrass has increased the risk of future wildfire. However, assuming no additional fires occur in the Project action area, recovery of Wyoming big sagebrush shrub cover in the area may take up to 50 to 120 years (Baker 2006, p. 181).

The condition of native vegetation in the Project area is degraded and sparse. Small pockets of sagebrush and *Poa secunda* (Sandberg bluegrass) exist. In addition, sparsely distributed, intact communities of *Aristida purpurea* (purple threeawn) exist in good condition on steeper, south-facing slopes within the Project action area. Native forb cover is low. Invasive nonnative species are prevalent and widespread over the majority of the Project area.

HIP data show that slickspot microsites in the vicinity of the Project are have varying levels of unseeded invasive nonnative plant cover (Kinter et al. 2012, Appendix I and L). Levels of unseeded invasive nonnative plant cover in slickspots vary from low to moderate as documented in EO 51 (less than 2 percent unseeded invasive nonnative plant cover in most years of monitoring) to high as documented in EOs 24 and 42 (over 45 percent unseeded invasive nonnative plant cover in the most years of monitoring). The majority of unseeded invasive nonnative plant cover within slickspot microsites in the Project action area is composed of cheatgrass. HIP transects with high percent cover of unseeded invasive nonnative plant cover are also characterized as being burned, which is typical of the wildfire cheatgrass cycle within the Wyoming sagebrush steppe ecosystem. All HIP transects in the vicinity of the Project show minimal levels of seeded invasive nonnative plant cover, with most transect showing 0 percent cover of seeded nonnative plant species over all eight years of monitoring (Kinter et al. 2012, Appendix I and L, as shown in USBLM 2013a, p. 67).

Although cheatgrass is the dominant plant in the understory throughout the majority of the Project action area, medusahead and tall tumble mustard are also present. These invasive nonnative plants also pose a threat to slickspot peppergrass through competition for resources as well as providing fine fuels that increase the risk of future wildfires. Noxious weeds such as *Chondrilla juncea* (rush skeletonweed) and *Cardaria draba* (whiteweed) are found across much of the Four Rivers Field Office, and also likely occur within Segments 8 and 9 of the Project (USBLM 2013b, Table D.8-1).

Slickspot microsites in the Project area are described as having moderate quality for slickspot peppergrass associated with levels of ground disturbance, with higher quality slickspots observed within remnant Wyoming big sagebrush communities and lower quality slickspots observed in annual grassland areas in the Project area dominated by cheatgrass. Slickspots in areas with residual native vegetation exhibit lower invasive nonnative plant cover and higher biological soil crust cover (USBLM 2013a, p. A-6). Thirteen of the 16 HIP monitoring transects associated with EOs in the Project action area had greater than 40 percent biological soil crust cover in at least one year of the up to 8 years of available HIP data (Kinter et al. 2012, Appendix I and L).

The Assessment states that few of the slickspots observed in the Project ROW demonstrated the cryptogamic crusts characteristic of pristine slickspots (USBLM 2013a, p. A-7). Slickspot microsites in degraded habitat areas lacked a late seral cryptogamic crust and consisted of a moderate to high proportion of bare soil; the Assessment states that this lack of crust is most likely attributable to wildfire as opposed to aeolian or fluvial deposition (USBLM 2013a, p. A-5). Areas dominated by invasive nonnative annual plants (such as cheatgrass) are typically characterized by low biological soil crust cover (Belnap *et al.* 2001, p. 47). As much of the Project action area is dominated by exotic annuals, including cheatgrass, biological soil crust cover is expected to be low in the majority of the Project area in relation to HIP monitoring transects for EOs located in remnant sagebrush patches. In addition, Owyhee harvester ants, which are an active and efficient slickspot peppergrass seed predator (White and Robertson 2009, p. 511), are likely to occur throughout the Project area, particularly in areas with little or no remaining shrub cover.

Livestock grazing has likely resulted in some level of localized degradation of slickspot peppergrass habitat in the Project action area via the mechanisms described in the Livestock Grazing section above. Low to moderate hoof print cover within slickspot microsites has been

observed in Project area HIP transects over the 8 years of available monitoring data (Kinter et al. 2012, Appendix I and L). In addition, low levels of litter and livestock feces cover have been documented in slickspots within the HIP transects. Slickspot peppergrass conservation measures in the 2013 Conservation Agreement between the Bureau and the Service are expected to continue to reduce but not eliminate localized damage to individual slickspot peppergrass plants, slickspot microsites, and remnant native vegetation. As effects from livestock grazing are typically localized, livestock grazing currently poses a lower level threat to slickspot peppergrass within the Project area than wildfire and invasive nonnative plants.

Besides livestock-related soil compaction and trampling, observed ground disturbance within slickspot microsites in the Project area included ant mound and badger burrow establishment and wildfires/invasive plant species encroachment. Ground disturbance both within and outside of slickspot microsites can be significant in areas where the Project is located along existing roads. In areas more distant from existing roads, ground disturbance is typically associated with wildfire and livestock grazing.

Overall, habitat in the vicinity of EOs in the Project area has been impacted by past wildfires and the associated spread of invasive nonnative plants, including cheatgrass. The modified wildfire regime and invasive nonnative plants are described above as primary threats to slickspot peppergrass. Current levels of ground disturbance in the Project action area also provide additional sites available for further spread of invasive nonnative plants. The current low quality habitat condition of the Project area for slickspot peppergrass due to past wildfires and high cheatgrass cover in the area could affect the ability of the Project area to support slickspot peppergrass in the future. In addition, the effects of the modified wildfire regime and the introduction and spread of invasive nonnative plants on slickspot peppergrass may be amplified by the predicted effects of climate change.

2.4.2 Slickspot Peppergrass Proposed Critical Habitat

2.4.2.1 Status of Slickspot Peppergrass Proposed Critical Habitat in the Action Area

Two Critical Habitat Units (Units 2 and 3) of proposed critical habitat are located near Segment 8 of the Project. Approximately 4.3 miles of Segment 8 would cross through proposed critical habitat for slickspot peppergrass (Figures 3 and 4). Approximately 4,379 acres of proposed critical habitat occur within the action area, the majority of which (approximately 51 percent) is within Subunit 2b (Table 7). These 4,379 acres represent about 8 percent of the total acreage of proposed critical habitat rangewide (57,756 acres). No proposed critical habitat is associated with Segment 9.

Table 7. Acres of Proposed Critical Habitat within the Action Area

Critical Habitat Subunit	Acres of Proposed Critical Habitat ^{1/}
2b	2,243.4
2d	934.9
3a	883.5
3b	317.0
Total	4,378.8

^{1/} All acres of proposed critical habitat within the action area occur along Segment 8.

Approximately 94 acres of proposed critical habitat (about 86 acres in Subunits 2b and 2d of Unit 2 and about 8 acres in Subunits 3a and 3b of Unit 3) occur within the Project footprint (Table 8). This 94 acre area represents about 0.6 percent of the 16,162 acreage of Subunits 2b, 2d, 3a, and 3b combined, about 0.3 percent of the 27,171 acres of proposed critical habitat within Units 2 and 3 combined, and about 0.2 percent of the proposed critical habitat acreage for the slickspot peppergrass rangewide (57,756 acres).

These approximately 94 acres are associated with nine EOs. As described above, EO 30 and EO 51 associated with this proposed critical habitat are categorized by INHP as B-ranked and BD-ranked, respectively. The remaining EOs associated with this proposed critical habitat (EOs 18, 24, 25, 31, 62, 72, 104) are C-ranked. As described above, habitat in the vicinity of these nine EOs has been impacted by past wildfires and associated spread of invasive nonnative plants, including cheatgrass. The lowered habitat quality in the area may affect the ability of the Project action area to support slickspot peppergrass in the future independent of future proposed actions.

Table 8. Acres of Proposed Critical Habitat within the Project Footprint

Project Segment and Component ^{1/}	Critical Habitat Subunit (Acres)				Total by Project Component
	2b	2d	3a	3b	
Segment 8					
Crossing	--	0.03	--	--	0.03
Deadend Pulling – 500kV (1-SC)	3.8	6.9	--	--	10.7
Existing Road - Improved	11.4	4.3	6.0	2.1	23.8
Fly Yard	12.4	11.8	--	--	24.2
New Road	2.4	3.7	--	--	6.1
Pad – 500kV	16.6	8.6	--	--	25.2
Pulling-Tensioning – 500kV (1-SC)	3.7	--	--	--	3.7
Total by Subunit	50.3	35.3	6.0	2.1	93.7

^{1/} Note that in non-forested areas (such as within proposed critical habitat for slickspot peppergrass), vegetation clearing will only occur within the Project footprint area; vegetation clearing across the entire Project ROW area will only occur in forested vegetation communities.

2.4.2.2 Factors Affecting Slickspot Peppergrass Proposed Critical Habitat in the Action Area

Of the four PCEs identified for slickspot peppergrass proposed critical habitat (i.e., functional slickspot microsites, intact native sagebrush habitat, habitat diversity to support insect pollinators, and adequate insect pollinators present), all occur to some degree within the action area. Ongoing threats to PCEs include modified wildfire regime, invasive nonnative plants, development, recreation, habitat fragmentation, and livestock use. These same factors affecting the PCEs of proposed critical habitat have been previously described in detail for the species in section 2.4.1.2 above. The primary threats of modified wildfire regime and invasive nonnative plants have significantly impacted the functionality of PCEs of proposed critical habitat within the action area, and may continue to impact critical habitat PCEs in the future.

Data used to determine the current condition of slickspot microsites and habitat in the action area surrounding occupied slickspots included HIP monitoring data (Colket 2009, entire; Kinter *et al.* 2012, Appendix I and L). The Assessment rated slickspot microsites (PCE 1), intact sagebrush steppe habitat (PCE 2), the presence of habitat components required by insect pollinators (PCE 3), and the presence of insect pollinators (PCE 4) as being in low quality condition (Table 9). Although the entire acreage of the Project within proposed critical habitat is also located within the 0.5 mile pollinator buffer surrounding EOs, the habitat condition for insect pollinators in the area is categorized as low quality due to the low cover of native forbs present and the predominance of invasive nonnative plants such as cheatgrass throughout the Project area. For additional details on the Environmental Baseline conditions within the proposed Project action area for both the slickspot peppergrass and proposed critical habitat, see pages 59-69 and Attachment A of the Assessment (USBLM 2013a, Attachment A) as well as the Appendix of this Opinion.

Table 9. Current Condition of Primary Constituent Elements for Slickspot Peppergrass Proposed Critical Habitat within the Action Area.

PCE ¹	Corresponding Pathway Indicators ²	Current Quality Ranking of Pathway Indicators ²	Quality Ranking of PCE (L, M, H)
1	A-1	L	L
	A-2	M	
	A-3	L	
2	B-1	L	L
	B-2	L	
	B-3	L	
	B-4	L	
	B-5	L	
3	B-3	L	L
	B-5	L	
4	B-1	L	L
	B-2	L	
	B-3	L	
	B-5	L	
Summary of Overall Status of PCE Baseline within the Action Area			L

¹ PCE 1 = Ecologically functional slickspots; PCE 2 = relatively intact native Wyoming big sagebrush vegetation; PCE 3 = a diversity of native plants; PCE 4 = sufficient pollinators for successful fruit and seed production.

² Described in Appendix A, PCE/Pathway Indicator Crosswalk for Slickspot Peppergrass Table in the Assessment (L = low quality, M = moderate quality, H = high quality).

2.5 Effects of the Proposed Action

The “Effects of the Proposed Action” section considers the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action. These effects are considered along with the environmental baseline and the predicted cumulative effects to determine the overall effects to the species. Direct effects are defined as those that result from the proposed action and directly or immediately impact the species or its habitat. Indirect effects are those that are caused by, or will result from, the proposed action and are later in time, but still reasonably certain to occur. An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation.

2.5.1 Overview of the Effects of the Action Analyses

In analyzing the effects of the Project on slickspot peppergrass and its proposed critical habitat, the Bureau used *A Framework to Assist in Making Endangered Species Act Determinations of Effect for Slickspot Peppergrass* (*Lepidium papilliferum*) (Framework) (USFWS 2013b, entire). The Framework is a tool developed to assist Federal agencies when working with the Service to assess

effects of their actions on slickspot peppergrass. The Framework was developed based on the species' life history, ecological requirements, and threats. Using the Framework includes providing a description of baseline conditions for the species and its habitat in the action area and changes in conditions for the species resulting from the action. Since slickspot peppergrass is a desert annual, emphasis is placed on the condition of the habitat rather than on the number of plants present in a given year. Populations of desert annuals change drastically in response to annual weather conditions; therefore, habitat condition is a much better long-term measure of the annual plants' potential ecological health (Elzinga et al. 1998, p. 55). The Framework is intended for analyzing an individual action's potential effects on the species and may be applied to ongoing and proposed actions. The Framework consists for three major components: (1) a Matrix of Pathways and Indicators, (2) a Checklist of Diagnostics, and (3) a Dichotomous Key of Effects Determinations.

To complete the effects analyses, the Bureau applied the Matrix of Pathways and Indicators from the Framework to review both the baseline conditions and the effects of the Project on slickspot peppergrass and its proposed critical habitat. This matrix considers indicators that reflect resource characteristics and their condition that are described as a quality ranking. The actual matrices generated by this analysis process are provided in the Assessment (USBLM 2013a, pp. A-2 – A-9) as well as in the Appendix to this CO. The Framework matrix categorizes a series of habitat quality indicators both within and outside of slickspots for the Project. High, moderate, and low quality rankings of habitat represent points on a gradation of habitats rather than absolute thresholds for habitat quality. While habitat quality may be categorized as low for a particular habitat quality indicator, in a given year slickspot peppergrass plant abundance at associated EOs may be high due to other environmental variables, such as precipitation.

As previously described, slickspot peppergrass survival and recovery is dependent on maintaining and enhancing Wyoming big sagebrush-steppe habitat and the slickspot microsites located within this ecosystem in southern Idaho. The long-term conservation of slickspot peppergrass is dependent upon the maintenance or improvement of ecological function of the higher quality (C- through A-ranked) EOs rangewide, including maintaining or improving the connectivity within and between EOs which may involve the maintenance or enhancement of currently lower ranked EOs (D- through F-ranked), as necessary to facilitate pollinator activity; the maintenance of genetic diversity; and limiting the establishment of invasive nonnative plant species. As described in the "Conservation Needs" section above, the Service used the State of Idaho's INHP EO rankings to characterize the conservation value of the action area considered in this document. These INHP criteria address population size of the EO, habitat condition within the EO, and the landscape condition of the area surrounding the EO. As in previous section 7 documents, when multiple EOs of varying INHP ranks are located within an action area, the conservation value of the entire action area is categorized based on the highest ranked EO located within the action area. Once the conservation value of an action is identified, effects of the action are examined to determine whether the action is expected to increase, maintain, or decrease the current conservation value of the action area over time. For analyses presented in this CO, the Project action area has been categorized as having high conservation value for slickspot peppergrass since it contains an EO that is B-ranked.

The indicators and quality rankings used to determine the effects of the Project on slickspot peppergrass are based on best available science. We acknowledge that information gaps and disagreement exist with respect to the available information on slickspot peppergrass; however, in accordance with Service policy, the best information available was used to develop this CO. Page 1-6 of the *Endangered Species Consultation Handbook* states that "Where significant data gaps exist

there are two options: (1) if the action agency concurs, extend the due date of the biological opinion until sufficient information is developed for a more complete analysis; or (2) develop the biological opinion with the available information giving the benefit of the doubt to the species." Researching the effects of various management actions to gather missing effects data on a plant with a seed bank cohort that is viable for up to 12 years would likely delay this conference for many years. Thus, the Service has provided the benefit of the doubt to slickspot peppergrass with respect to data gaps regarding the potential effects of the Project considered in this analysis. Therefore, if there is a reasonable possibility that a Project-related adverse impact could occur to a single slickspot peppergrass plant or seed, a "may affect, likely to adversely affect" determination would be appropriate.

The Project is described as having "localized effects" on slickspot peppergrass. Localized effects are those that are anticipated to occur within a relatively small area in relation to the acreage of habitat categories for slickspot peppergrass located within the Project action area. Because the species and its habitat as well as PCEs of proposed critical habitat are often patchy in their distribution and the intensity of effects varies across the Project action area, it is not expected that impacts caused by the Project will occur at the same level of intensity or on every portion of habitat within the Project action area. Localized effects are not expected to impact slickspot peppergrass to the extent that the conservation value of an action area to the continued survival and recovery of slickspot peppergrass is likely substantively reduced over the term of the action.

2.5.2 Slickspot Peppergrass

2.5.2.1 Direct and Indirect Effects of the Proposed Action

All forms of development, inclusive of infrastructure ROWs, can affect slickspot peppergrass and slickspot habitat, whether directly or indirectly, through habitat conversion (resulting in direct loss of individuals and permanent loss of habitat), or through habitat degradation and fragmentation as a result of consequent increased invasive nonnative plant distribution, increased wildfires, and changes to insect pollinator populations (ILPG 1999, *in litt.* pp. 1–3; Robertson and White 2007, pp. 7, 13). Effects of construction, operation, maintenance, and decommissioning of the proposed Gateway West Transmission Line Project on slickspot peppergrass and its habitat are as follows.

Direct Loss of or Damage to Individual Plants (Including Seeds)

The most direct impact of development and its associated infrastructure is the outright loss of slickspot peppergrass populations due to habitat conversion, such as when habitat occupied by slickspot peppergrass is converted to a residential development, an agricultural field, or a road, resulting in the permanent loss of plant populations and habitat. The Project has the potential to directly remove or damage slickspot peppergrass plants where a portion of the Project footprint within Segment 8 crosses a total area of about 3 acres of 5 extant EOs (B-ranked EO 30; C-ranked EOs 24, 31, and 104; and F-ranked EO 42). The Project also crosses areas with no previous slickspot peppergrass surveys (about 383 acres of potential habitat in Segment 8 and about 433 acres of potential habitat in Segment 9) and areas with inadequate surveys (about 515 acres of slickspot peppergrass habitat in Segment 8) to determine slickspot peppergrass and/or slickspot microsite presence. Slickspot peppergrass plants or seeds may be present in slickspot microsites located within these unsurveyed or previously inadequately surveyed portions of the

Project area. Therefore, any plants that may be located in the Project footprint within slickspot peppergrass habitat or potential habitat also may be directly lost or damaged during Project construction, maintenance, or decommissioning activities.

Direct loss of or damage to individual slickspot peppergrass plants may occur by being crushed by equipment or vehicles or trampled by workers during construction, maintenance, or decommissioning activities. Plants or habitat may also be impacted by being buried during Project-related digging or other earth-moving activities. However, direct impacts to individual plants will be avoided to the extent possible through the completion of preconstruction surveys for slickspot peppergrass and slickspot microsites within potential habitat and slickspot peppergrass habitat prior to construction activities; if slickspots are found, the area will be considered occupied. Environmental monitors will mark slickspot microsites and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in occupied habitat, slickspot peppergrass habitat, and potential habitat on all lands, regardless of ownership. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspot microsites found by the environmental monitor, although there may be instances where localized slickspot density and configuration in a construction area may not allow for avoidance of all slickspot microsites. Where feasible, micrositeing of project facilities shall avoid direct impacts to identified populations; construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho Conservation Data Center data, even if aboveground plants are not observed by the environmental monitor. In addition, no overland travel or vegetation clearing would be conducted within slickspot microsites, and no topsoil would be stored in slickspots. However, the possibility remains that slickspot peppergrass and slickspot microsites may be impacted by construction activities.

Operation of the proposed Project is not expected to result in direct loss of or damage to slickspot peppergrass plants. Because construction will avoid slickspots and slickspot microsites, it is expected that maintenance and decommissioning activities (including stockpiling of soil and staging of equipment) will also avoid slickspot microsites, to the extent possible, as maintenance and decommissioning will be primarily located within previously disturbed areas. Emergency maintenance may occur anytime year round (Bureau 2013b, Appendix B pp. B-79 – B-80), including periods when slickspot soils may be saturated; therefore, localized impacts to slickspot peppergrass may occur during emergency maintenance activities to restore power. During localized maintenance or decommissioning activities, some individual plants may be impacted by equipment or vehicles, or seeds may be buried into the ground too deep for successful germination. Due to use of EPMs that require preconstruction surveys and require avoidance of slickspot microsites and slickspot peppergrass plants to the extent possible, direct loss of or damage to individual plants (including seeds) is expected to be minimal. However, some localized impacts to individual slickspot microsites may occur due to slickspot microsite density and configuration in relation to construction site or maintenance location needs. Because it may not be possible to avoid all slickspot microsites (and the plants or seeds they may contain) in localized areas, some adverse effects to slickspot peppergrass associated with Project construction, maintenance, and decommissioning may occur.

Ground Disturbance

As described above, Project construction, maintenance, or decommissioning-related ground disturbance may result in loss of or damage to slickspot peppergrass plants. Disturbed soils may bury individual slickspot peppergrass plants or bury slickspot peppergrass seeds too deep for successful seedling emergence, particularly when ground disturbance occurs near EOs crossed by the Project. In addition, construction-, maintenance-, or decommissioning-disturbed soil that subsequently moves into slickspot microsites may reduce slickspot suitability or function for slickspot peppergrass. Ground disturbance associated with transmission line construction and maintenance may also result in dust generation, which has the potential to affect slickspot peppergrass and its habitat. Operation of the transmission line is not expected to result in ground disturbance; therefore, impacts from Project operations-related ground disturbance will not occur.

Impacts to slickspot peppergrass and slickspot microsites will be avoided to the extent possible by avoiding construction activities within 50 feet of slickspot microsites. No overland travel or vegetation clearing would be conducted within slickspots, and no topsoil would be stored in slickspots. Plants and slickspots found during pre-construction surveys will be marked and avoided by 50 feet on all lands, regardless of ownership. Because construction will avoid slickspots and slickspot microsites, it is expected that maintenance and decommissioning activities (including stockpiling of soil and staging of equipment) will also avoid slickspot microsites, to the extent possible, as maintenance and decommissioning will likely occur within previously disturbed portions of the Project ROW. However, as described above, emergency maintenance activities in localized areas to restore power may result in additional ground disturbance, as these activities may occur anytime year round (Bureau 2013b, Appendix B pp. B-79 – B-80), including periods when slickspot soils may be saturated. During localized maintenance activities, some individual slickspot microsites may be impacted by equipment or vehicles, particularly when soils are wet.

Impacts to nearby slickspot microsites from localized transmission line maintenance excavation are expected to be minimal since existing or reestablished vegetation is expected to filter sediment in undisturbed portions of the Project ROW and outside the ROW. Effects from Project-related soil movement during maintenance activities are also expected to be minor as maintenance-related excavations are expected to be the infrequent and limited in area, although in some cases it may not be possible to avoid all slickspot microsites (and the plants or seeds they may contain) in localized areas. Some localized impacts from Project-related ground disturbance to individual slickspot microsites may occur due to slickspot microsite density and configuration in relation to construction, maintenance, or decommissioning location needs. Therefore, some localized adverse effects to slickspot peppergrass from Project-related ground disturbance associated with construction, maintenance, and decommissioning activities will occur.

Depending on field conditions, construction, maintenance, and decommissioning activities (such as excavation) as well as travel along roads in the Project ROW by work crews and the public may create dust. Although not addressed in the Assessment as having effects on slickspot peppergrass, dust has the potential to affect the survival or reproduction of nearby slickspot peppergrass plants by covering floral parts and leaves or by impacting insect pollinators. A recent study found that, when controlling for plant size and distance, fruit set of a desert shrub in

Utah was negatively correlated with increasing levels of dust deposition on individual plants; dust deposition appeared to affect plant reproduction by disrupting pollination and altering the physiology of plants (Lewis, 2013, pp. 57, 119-120). As this shrub has a similar floral structure to slickspot peppergrass (both plant species are in the mustard family), effects of dust on slickspot peppergrass reproduction are expected to be similar. Therefore, depending on proximity of dust-generating activities to flowering slickspot peppergrass plants, Project-generated dust deposited on nearby slickspot peppergrass plants may reduce seed production, affecting the local seed bank. Dust may also directly impact insect pollinators of slickspot peppergrass by impacting respiration and digestion through clogging of spiracles or the digestive system (McCrea 1984, p. 11). Deposited dust also has the potential to change slickspot function or chemistry. The potential effects of dust generated from Project construction, maintenance, and decommissioning activities on individual slickspot peppergrass plants, slickspot microsites, and insect pollinators are expected to be reduced due to the use of water or other agents to minimize dust generation during Project construction. In addition, conservation measures such as seeding of all disturbed areas to establish 40 to 60 percent perennial plant cover will reduce the potential effects of Project-related dust generation and soil movement on slickspot peppergrass and its habitat over the long term. Also, habitat restoration seedings will use methods such as minimum-till drills or rangeland drills equipped with depth bands that minimize ground disturbance. However, some localized short-term adverse effects from Project-generated dust may occur, particularly in areas where construction, maintenance, and decommissioning activities occur near flowering slickspot peppergrass plants, slickspot microsites, or habitat important to insect pollinators.

Wildfire

Change in the natural fire regime (frequency, intensity, and patch size) has been identified as one of the two primary threats to slickspot peppergrass. Frequent wildfires have numerous negative consequences in the sagebrush-steppe system, which is adapted to much longer fire-return intervals, ultimately resulting in the conversion of the sagebrush community to nonnative annual grasslands with associated losses of native species diversity and natural ecological function. Frequent fire in the sagebrush-steppe ecosystem facilitates the spread and increased cover of invasive nonnative plants such as cheatgrass, which compete with slickspot peppergrass. Evidence suggests a significant negative association between wildfire and the abundance of the slickspot peppergrass (Sullivan and Nations 2009, pp. 114–118, 137).

Work crew use of construction, maintenance, and decommissioning access roads associated with the Project may inadvertently ignite fires. There is also a chance that wildfire ignitions may occur due to public use of the Project ROW roads. Equipment or vehicles may ignite fires when hot machinery comes into direct contact with fine fuels or by generating sparks when metal parts strike rocks. To minimize the risk of construction, maintenance, and decommissioning related fire ignitions, BMPs such as clearing brush prior to other work, stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing “fire behavior” training to all pertinent personnel, keeping vehicles on or within designated roads or work areas, and providing fire suppression equipment and emergency notification numbers at each construction site will be used (USBLM 2013b, Appendix B p. B-80). In addition, no open burning of construction trash or other open fires will be allowed (USBLM 2013b, p. N-3). Although BMPs reduce the probability of effects to slickspot peppergrass and its habitat from fire ignitions associated with Project activities, there remains

some risk that wildfire ignitions may occur due to public use of the transmission line ROW or during transmission line construction, maintenance, or decommissioning activities. Project-related wildfires may subsequently result in degraded vegetation conditions in the Project action area (see the "Invasive Nonnative Plants" section below). Therefore, construction, maintenance, and decommissioning of the transmission line are likely to adversely affect slickspot peppergrass and its habitat due to the potential for Project-related wildfire.

Transmission line operations can also result in wildfire ignitions (InterFire Online website, last accessed June 10, 2013). The ways in which electric transmission lines can start fires include:

- Electrical transformer malfunction or explosion, dropping flaming, sparking, or hot material onto fuels.
- Animals short-circuiting power lines or transmitter sites, then falling to the ground and spreading flames to ignite fuels.
- Fallen wires from wind or storm damage spark and ignite fuels.
- Arcing between conductors brought into accidental contact by high winds. When combustible vegetation comes in contact with the arcing, a fire can ignite.

With tens of thousands of miles of transmission and distribution lines on wildlands, the risk of ignition of a wildfire from transmission line operation is considerable and the effort to meet this risk and prevent wildfires from utility line ignition is substantial. Although transmission line related ignitions are relatively infrequent compared to other human caused fires, these fires tend to be larger and more difficult to control. The underlying mechanism that explains this difference seems to be that transmission line fire ignitions are more likely to occur under high wind conditions (Mitchell 2009, pp.1–2). Fire spread is also more rapid during high wind conditions, making the probability of successful suppression of transmission line ignited fires during windy conditions lower.

Fires ignited during high wind conditions in remote areas of the Project could spread over a substantial area before firefighters could arrive and begin suppression activities. Ignition of large rangeland wildfires increases the risk of slickspot peppergrass EOs burning and contributes to the subsequent spread and increased abundance of invasive nonnative plants such as cheatgrass. As both wildfire and invasive nonnative plants are the primary threats to the slickspot peppergrass, significant adverse effects to existing sagebrush steppe habitat and the slickspot peppergrass can occur if a wildfire is ignited from transmission line operations such as arcing of lines during high wind conditions or an animal short circuiting a substation site.

Bureau fire records for the Boise District between 1980 and 2009 have only shown a single fire totaling 13 acres within occupied habitat for slickspot peppergrass that has resulted from operations of a Bureau electrical transmission line ROW authorization. This fire was allegedly caused by the de-lamination of a power pole cross-arm (which fire investigators attribute to lack of maintenance). Based on the 19 years of Boise District fire history data, the incidence of wildfire ignitions related to operation of existing electric power ROWs have been low. However, there is still the potential for transmission line or substation fire ignitions that may impact slickspot peppergrass and its habitat (especially in more remote areas) over the 50-year permitted term of the Project. Therefore, the operation of electric power lines within Project area may adversely affect slickspot peppergrass due to transmission line-related wildfire ignitions.

In contrast, the Project may also provide some benefits to slickspot peppergrass with regard to wildfire. Two-track maintenance roads and bare soil areas associated with Project transmission line structures may act as fuel breaks, potentially limiting the spread of wildfire and the subsequent spread of invasive nonnative annual plants into burned areas. Project maintenance roads may also provide access in remote areas to allow for more rapid fire suppression, potentially decreasing the total size of wildfires. More effective fire suppression associated with Project roads and structures may result in fewer slickspot peppergrass plants and habitat being burned.

Removal of Native Vegetation

Native shrubs, grass, forbs, and biological soil crust are important habitat components for slickspot peppergrass and its insect pollinators. Removal of native vegetation in the Project footprint will occur during construction activities, with some additional localized vegetation removal possible during maintenance activities and decommissioning. Although the Project area is described as being dominated by invasive nonnative plants such as cheatgrass, it is anticipated that at least some of the vegetation removed for construction of the transmission line will include remnant native plants and biological soil crust cover, particularly in those portions of the Project footprint in Segment 8 that cross 3 acres of extant EOs and 501 acres of occupied habitat. It is also possible that remnant native vegetation may be removed during construction, maintenance, or decommissioning activities within the 515 acres of slickspot peppergrass habitat and 816 acres of potential habitat for slickspot peppergrass that are located within the Project footprint. As these areas have not been adequately surveyed for slickspot peppergrass, removal of native vegetation in the vicinity of slickspot microsites that contain the plant may affect the species.

For example, removal of native vegetation may affect slickspot peppergrass insect pollinators. Insects are the primary vector for pollination and genetic exchange for the slickspot peppergrass. Loss of native vegetation during Project construction has the potential to impact insect pollinator populations by removing specific food sources or habitats required for breeding or nesting (Kearns and Inouye 1997, p. 298; McIntyre and Hostetler 2001, p. 215; Zquette *et al.* 2005, pp. 117–118). Habitat isolation and fragmentation resulting from development may also impact the slickspot peppergrass by decreasing pollination from distant sources, possibly resulting in decreased reproductive potential (e.g., lower seed set) and reduced genetic diversity. Reductions in insect pollinators due to developments such as transmission lines could therefore potentially impact slickspot peppergrass reproductive success as well as contribute to reduced genetic variability, as the plant is dependent on insect pollination for successful reproduction and the transfer of genetic material between populations.

While localized removal of remnant native vegetation within the Project area is expected to occur, it will be limited to the extent possible. EPMs such as seeding of all temporarily disturbed areas to establish 40 to 60 percent perennial plant cover will reduce the potential impacts of Project-related removal of remnant native vegetation on slickspot peppergrass and its habitat. However, localized removal of remnant native shrubs, grass, forbs, and biological soil crust that may be present within Segments 8 and 9 of the transmission line ROW footprint during construction, maintenance, and decommissioning activities will likely result in adverse effects to slickspot peppergrass and its habitat, particularly the loss of remnant native forbs, which may affect insect pollinators. Operation of the transmission line is not expected to result in vegetation

clearing; therefore, impacts to slickspot peppergrass from vegetation clearing during Project operations will not occur.

Invasive Nonnative Plants

Transportation and utility corridors can increase the spread of nonnative invasive plants. Roads appear to create avenues for invasion of cheatgrass because there is generally a positive significant association between nonnative, disturbance-tolerant species such as cheatgrass and proximity to roads (Forman and Alexander 1998, p. 210; Gelbard and Belnap 2003, pp. 424-425, 430-431; Bradley and Mustard 2006, p. 1142). Invasive nonnative plants and noxious weed invasions can reduce the quality of slickspot peppergrass habitat. Cheatgrass, often a dominant nonnative annual grass in the understory of slickspot peppergrass habitat, can impact slickspot peppergrass via direct loss (e.g. plant competition) as well as indirect population declines from habitat loss (e.g. modification of the sagebrush-steppe ecosystem and/or increased wildfire return interval). With the spread of annual invasive plant species such as cheatgrass and medusahead, cover of fine fuels is expected to increase, which will subsequently increase the risk of ignition and spread of fire within and adjacent to the Project area. The conversion of sagebrush-steppe into annual grasslands, which typically results from a shortened fire regime interval, will further degrade the quality of habitat for slickspot peppergrass, which has been documented to have lower abundance in burned areas than in unburned areas (Sullivan and Nations 2009, p. 136).

Indirect impacts to slickspot peppergrass and its habitat may occur from the introduction and spread of invasive nonnative plants, including noxious weeds, associated with Project construction, maintenance, and decommissioning activities. The Project may contribute to the spread of invasive nonnative plants by (1) reducing native plant biomass and competition within the plant community during excavation or vehicle operation; (2) disrupting the soil surface and creating disturbed areas open to introduction of nonnative plants; and (3) physically transporting invasive nonnative plant seeds or propagules on vehicles and equipment. Although Segments 8 and 9 of the Project are currently dominated by exotic annual plants, some pockets of remnant native vegetation remain that may be lost or decreased in size due to Project-related disturbance and subsequent increased competition from invasive nonnative plants. Invasive nonnative plants may be introduced or may increase in density when soils are exposed during digging or other ground-disturbing activities. Invasive plants and noxious weeds may also be introduced and spread by vehicles during maintenance activities. Travel along existing maintenance roads and the transmission line ROW by construction, maintenance, or decommissioning work crews as well as by the general public may contribute to the dissemination and dispersal of noxious weeds and invasive exotic annual plants along the Project ROW. Project-related wildfires that may be ignited by construction, operation, maintenance, and decommissioning activities will also likely result in increased nonnative plant cover.

Increased cover of invasive nonnative plants may also impact insect pollinators of slickspot peppergrass. As described above, insects are the primary vector for pollination and genetic exchange for the slickspot peppergrass. Conversion of native vegetation to annual grasslands caused by ongoing development, conversion of lands to agriculture, and associated infrastructure (such as transmission lines and associated roads) may impact insect pollinator populations by removing specific food sources or habitats required for breeding or nesting (Kearns and Inouye 1997, p. 298; McIntyre and Hostetler 2001, p. 215; Zquette *et al.* 2005, pp. 117-118). Habitat isolation and fragmentation resulting from development may also impact slickspot peppergrass

by decreasing pollination from distant sources, possibly resulting in decreased reproductive potential (e.g., lower seed set) and reduced genetic diversity. Reductions in pollinators due to development could thus potentially impact slickspot peppergrass reproductive success as well as contribute to reduced genetic variability, as the plant is dependent on insect pollination for successful reproduction and the transfer of genetic material between populations.

The Project ROW is currently dominated by exotic annual plants (primarily cheatgrass). Indirect impacts from the spread of invasive nonnative plants will be reduced by Project BMPs that restrict vehicle travel associated with the transmission line construction and maintenance activities to designated roads, trails, and the right-of-way, and restricting construction and maintenance activities to within the existing ROW boundary. However, the potential for the dissemination and dispersal of noxious weeds and invasive exotic annuals along the ROW still exists. Spread of invasive nonnative plants will be minimized by the implementation of EPMS such as seeding disturbed areas with a native seed mix to expedite growth of native species and minimize or avoid introduction or further spread of invasive plant species. In addition, before beginning an operations and maintenance project on Federal or State land, the Proponents or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an offsite location (USBLM 2013b, Appendix B, p. Z-5).

Implementation of BMPs and EPMS will reduce potential impacts to the species; however, some localized adverse effects to slickspot peppergrass and its habitat associated with the spread or increased cover of invasive nonnative plants from the transmission line construction, operation, maintenance, and decommissioning are expected to occur. While the extent and effect of the action on the prevalence of nonnative annual and/or perennial plant cover is diminished as a result of the BMPs and EPMS, some localized adverse effects are reasonably likely to occur, resulting in further degraded vegetation conditions within and adjacent to the Project area. Invasive nonnative plant cover in localized areas is likely to increase to some degree due to Project-related ground disturbance and weed dispersal. Potential difficulties in successful establishment of seedlings may also result in localized increased invasive nonnative plant cover in the Project area. Therefore, Project-related increases in invasive nonnative plants are likely to adversely affect slickspot peppergrass and its habitat.

Summary of Potential Effects of the Action within the Action Area

Direct and indirect impacts on slickspot peppergrass from the Project could include crushing or trampling of plants, impacts to the seed bank, introduction or spread of invasive nonnative plants, damage to or physical destruction of slickspots, unintentional wildfire ignition, degradation of surrounding native sagebrush-steppe communities, fragmentation of populations, dust-related impacts to flowering plants or to slickspot microsites, and impacts on insect pollinators. Increases in invasive nonnative species cover may also result in increased fire risk, which may affect slickspot peppergrass individual plants and/or occupied habitat, slickspot peppergrass habitat, and potential habitat. Loss or degradation of native shrub and forb cover and/or biological soil crust cover in occupied habitat, slickspot peppergrass habitat, or potential habitat could also indirectly affect this species. However, the Project may provide some benefits to slickspot peppergrass and its habitat; two-track maintenance roads and bare soil areas

associated with Project transmission line structures could act as fuel breaks and may also provide fire fighters with improved access to remote areas, potentially reducing the extent of wildfires.

Because pre-construction surveys and EPMs designed to avoid impacts to slickspot peppergrass and slickspot microsites will be used, it is expected that potential impacts to the species and its habitat related to the Project will be substantially diminished within the action area. Effects to slickspot peppergrass and its habitat are generally limited to localized areas within and immediately adjacent to the Project ROW footprint, and are expected to diminish with increased distance from the ROW. However, some adverse effects to individual slickspot peppergrass plants and their habitat related to increases in invasive nonnative plant cover, unintentional Project-related fire ignitions, Project-generated dust and soil movement, and native vegetation removal are expected to occur.

The Project action area contains 11 extant EOs, including a total of 3 acres located within 5 extant EOs that are crossed by the ROW footprint (B-ranked EO 30; C-ranked EOs 24, 31, and 104; and F-ranked EO 42). The Project action area has a high conservation value for slickspot peppergrass due to the inclusion of B-ranked EO 30. While some Project-related adverse impacts may occur, the majority of effects are expected to be localized, and overall habitat quality conditions within habitat categories for slickspot peppergrass are not expected to significantly change within Project area. Changes in habitat quality within Segment 8 and Segment 9 of the Project are also expected to be minimized through use of BMPs as well as EPMs, including avoiding all slickspot microsites and slickspot peppergrass populations during construction activities to the extent possible, and implementing erosion and dust control measures. Because fire prevention and suppression BMPs will be used, the likelihood of Project-related fire starts that would burn off-site is considered low. While there is also the risk of operations-related fire ignitions that could result in a large wildfire, BMPs and EPMs as well as regular line maintenance will reduce the probability of this occurring. In addition, weed control activities are expected to address the spread of invasive nonnative plants associated with ground-disturbing activities. The risk of impacts to slickspot peppergrass is further reduced by the small total area of EOs located within the Project footprint (about 3 acres), and the use of pre-construction surveys to avoid impacts to individual plants and slickspot microsites. Use of BMPs and EPMs will minimize potential impacts to the species and its habitat; however, some Project-related adverse effects to slickspot peppergrass and its habitat will occur. As adverse impacts will be reduced due to BMPs and EPMs that avoid or minimize impacts to the species and its habitat, the Project is likely to maintain the current condition and conservation value of the action area for slickspot peppergrass over the permitted term of the action (50 years).

2.5.2.2 Effects of Interrelated or Interdependent Actions

No effects from interrelated or interdependent actions are anticipated.

2.5.3 Slickspot Peppergrass Proposed Critical Habitat

2.5.3.1 Direct and Indirect Effects of the Proposed Action

Direct and indirect effects on proposed critical habitat for slickspot peppergrass within the action area may result from Project construction, operation, maintenance, and decommissioning activities. Similar to effects to the species, direct and indirect effects could result from unintentional wildfire ignition, introduction or spread of invasive nonnative plants, damage to or

physical destruction of slickspots, degradation of surrounding native sagebrush-steppe communities, and impacts to insect pollinators. In addition, increases in invasive nonnative species cover may also result in increased wildfire risk over time. Effects of the Project on each of the four PCEs for slickspot peppergrass proposed critical habitat are as follows.

Ecologically Functional Slickspots (PCE 1)

Effects to slickspot microsites (PCE 1) associated with Project construction, operation, maintenance, and decommissioning activities are similar to effects to slickspot microsite habitats important to the species, which are discussed in detail above. As previously described, slickspot microsites will be avoided by 50 feet on all lands during construction activities, although there may be some areas where some individual slickspots can't be avoided. In addition, no overland travel or vegetation clearing will be conducted within slickspots, and no topsoil will be stored in slickspots. Dust deposition related effects to slickspot microsites will be minimized through use of water or other substances to minimize Project-related dust generation. Slickspot soils may be compacted if equipment or vehicles cannot avoid individual slickspot microsites; some slickspot microsites may be lost if they cannot be avoided during Project micrositing. Therefore, some adverse effects to individual slickspot microsites may occur.

As previously described, Project-related ground disturbance could result in the localized direct effects on slickspot microsites within proposed critical habitat. Slickspot microsites may be damaged through trampling damage to the slickspot soil structure and function and by the reduction of biological soil crust cover. Indirect impacts to slickspots may occur through increased nonnative invasive plant cover within slickspots associated with Project-related transport of invasive nonnative plant propagules and slickspot soil disturbance facilitating the spread of invasive nonnative plants into slickspot microsites. Project design features such as avoiding slickspot microsites to the extent possible during construction activities and limiting driving to designated roads and trails will minimize effects of ground disturbance on PCE 1. However, localized adverse effects to some slickspot microsites associated with Project activities are expected to occur.

Indirect impacts to slickspots may occur through generation of dust and soil movement associated with Project-related ground disturbance and vehicle travel. However, as described above for the species, effects due to soil movement and dust generation associated with ground disturbance and vehicle travel are expected to be minimal due to filtering of sediments by existing and restored vegetation in the undisturbed portion of the ROW as well as use of dust control measures. Therefore, effects of dust or sediment deposition within slickspot microsites are expected to be minimal, although some adverse effects to PCE 1 may occur.

As described above, about 4,379 acres of proposed critical habitat are located within the Project action area, which represents about 8 percent of the proposed critical habitat acreage for slickspot peppergrass rangewide (57,756 acres). Of these 4,379 acres, 94 acres are located within the proposed Project footprint. These 94 acres represent about 0.6 percent of the 16,162 acreage of Subunits 2b, 2d, 3a, and 3b combined, about 0.3 percent of the 27,171 acres of proposed critical habitat within Units 2 (Ada County) and 3 (Elmore County) combined, and about 0.2 percent of the proposed critical habitat acreage for slickspot peppergrass rangewide (57,756 acres). Not all individual slickspot microsites can be avoided by the Project so some localized adverse impacts to PCE 1 will occur. Due to the small portion of proposed critical habitat that may be impacted by the Project footprint relative to the total acreage of proposed

critical habitat subunits, units, and rangewide (less than 1 percent), the functionality of PCE 1 in Subunits 2b, 2d, 3a, and 3b, Units 2 and 3, and proposed critical habitat rangewide will not be reduced by the proposed Project.

Relatively Intact Native Wyoming Big Sagebrush (PCE 2)

Effects to big sagebrush stands (PCE 2) associated with Project construction, operation, maintenance, and decommissioning activities are similar to effects to sagebrush habitat important to the species, which are discussed in detail above. Given the current degraded condition of the habitat in Segments 8 and 9 of the Project ROW, impacts to PCE 2 will be primarily associated remnant stands of native Wyoming big sagebrush. Potential effects on remnant intact sagebrush habitat will include removal of remnant native plants, increases in invasive nonnative vegetation cover associated with Project-related ground disturbance, and introduction of invasive nonnative plant seed and propagules on vehicles and equipment. Project activities may impact remnant sagebrush steppe habitat by facilitating the spread of invasive nonnative plants (such as cheatgrass) associated with Project-related ground disturbance and vehicle use. Additionally, heat from vehicle or equipment operation as well as transmission line operations may result in fire ignitions and subsequent burns through the Project area, further facilitating potential increases in invasive nonnative plant cover within and adjacent to the Project ROW.

Project BMPs and EPMs such as restricting vehicle travel to designated roads and trails, cleaning equipment that will operate off-road or disturb the ground prior to entering Project construction sites, and seeding disturbed areas with perennials will reduce the risk of adverse effects to remnant intact sagebrush steppe habitat in the Project area. Within proposed critical habitat, impacts to PCEs, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. However, localized adverse effects to some remnant sagebrush steppe native vegetation associated with Project activities are likely to occur. Due to the small portion of proposed critical habitat that may be impacted by the Project footprint relative to the total acreage of proposed critical habitat subunits, units, and rangewide (less than 1 percent), overall the functionality of PCE 2 of proposed critical habitat in Subunits 2b, 2d, 3a, and 3b, Units 2 and 3, and proposed critical habitat rangewide will not be reduced by the proposed Project.

Diversity of Native Plants for Insect Pollinator Habitat Requirements (PCE 3)

Effects to native plant diversity (PCE 3) associated with Project activities are similar to effects to native plants important to the species, which are discussed in detail above. As previously discussed, the Project may reduce remnant native vegetation cover, including native forbs, through vegetation clearing associated with construction, maintenance, or decommissioning activities and the introduction and spread of invasive nonnative plants over time that directly compete with native shrubs, grasses, and forbs. Lack of forbs in occupied slickspot peppergrass habitat could constitute a barrier that reduces the effective range of insects important to slickspot peppergrass pollination (Robertson et al. 2004, pp. 2-4). Barriers to insect pollinators can include large areas of degraded sagebrush steppe habitat that do not support sufficient forb diversity necessary for insect pollinators to be available for slickspot peppergrass pollination.

Project BMPs and EPMs such as stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing "fire behavior" training to all pertinent personnel, keeping vehicles on or within designated roads or work areas, restricting vehicle travel to designated roads and trails, cleaning equipment that will

operate off-road or disturb the ground prior to entering Project construction sites, and seeding disturbed areas with perennials will reduce the risk of adverse effects to remnant intact sagebrush steppe habitat in the Project area. In addition, the Project ROW in Segments 8 and 9 is dominated by invasive nonnative plants (primarily cheatgrass) so the majority of the Project footprint area will not impact high quality insect pollinator habitat. Within proposed critical habitat, impacts to PCEs, such as remnant native sagebrush and forb areas (which are expected to support a greater diversity of insect pollinators), will be avoided to the extent practicable. However, localized adverse effects to some remnant sagebrush steppe native vegetation associated with Project activities are likely to occur. Although reduced by implementation of BMPs and EPMs, it is expected that Project activities in the ROW will result in localized adverse effects to remnant native habitat patches important to insect pollinators due to spread of invasive nonnative plants and unintended fire ignitions. Due to the small portion of proposed critical habitat that may be impacted by the Project footprint relative to the total acreage of proposed critical habitat subunits, units, and rangewide (less than 1 percent), overall the functionality of PCE 3 of proposed critical habitat in Subunits 2b, 2d, 3a, and 3b, Units 2 and 3, and proposed critical habitat rangewide will not be reduced by the proposed Project.

Sufficient Insect Pollinators for Successful Fruit and Seed Production (PCE 4)

Effects to insect pollinators (PCE 4) associated with Project activities are similar to effects to insect pollinators for the species. As described above, diversity and numbers of insect pollinators may be locally impacted through ground disturbance and vegetation removal during Project activities. Project-related ground disturbance and dust may result in localized adverse impacts to insect pollinators, such as mortality of insects that nest within the soil, including within slickspot microsites. In addition, cover of remnant native vegetation will be locally reduced by Project activities, reducing its availability for pollinator foraging or shelter. The area of ground disturbance associated with Project activities will be relatively small in relation to proposed critical habitat rangewide (94 acres of 57,756 acres). However, the Project ROW in Segments 8 and 9 is dominated by invasive nonnative plants (primarily cheatgrass) so the majority of the Project footprint area will not impact high quality insect pollinator habitat. Within proposed critical habitat, impacts to PCEs, such as remnant native sagebrush and forb areas (which are expected to support a greater diversity of insect pollinators), will be avoided to the extent practicable. Effects to PCE 4 will also be minimized by seeding disturbed areas with perennial species, by Project weed control activities, and by use of erosion and dust control measures. Although reduced by implementation of BMPs and EPMs as described above, it is expected that the Project will result in some localized adverse effects to insect pollinators. Due to the small portion of proposed critical habitat that may be impacted by the Project footprint (94 acres) relative to the total acreage of proposed critical habitat subunits, units, and rangewide (less than 1 percent), overall the functionality of PCE 4 of proposed critical habitat in Subunits 2b, 2d, 3a, and 3b, Units 2 and 3, and proposed critical habitat rangewide will not be reduced by the proposed Project.

Summary Description of Potential Effects of the Action within the Action Area

Effects to PCEs of proposed critical habitat for slickspot peppergrass are generally limited to localized areas within and immediately adjacent to the Project footprint, and are expected to diminish with increased distance from the Project footprint. While some localized effects are

likely to occur, Project BMPs and EPMs will substantially diminish Project-related effects on PCEs of proposed critical habitat for slickspot peppergrass. Because there is likely some modification of baseline conditions expected to occur over the course of the 50-year permitted term of the Project, some adverse effects to PCEs related to increased invasive nonnative plant cover and unintended fire ignitions are expected to occur in localized areas.

As described above for the species, factors that may affect PCEs of proposed critical habitat for slickspot peppergrass in the Project action area are related to Project construction, operations, maintenance, and decommissioning activities that may result in damage to or loss of some individual slickspot microsites that cannot be avoided, unintentional fire ignition, Project-generated dust and soil movement, removal of some remnant native vegetation, and the potential introduction or spread of invasive nonnative plants. Loss of or damage to some individual slickspot microsites will cause some localized adverse effects to PCE 1. Some localized adverse effects to PCEs 2, 3, and 4 of PCH are likely to occur associated with removal of remnant native vegetation, increased nonnative invasive plant cover, and unintended fire ignitions. In addition, dust and soil movement may result in localized effects to PCEs 1, 2, 3, and 4.

Effects to PCEs of proposed critical habitat within Segment 8 and Segment 9 of the Project are expected to be minimized through use of BMPs and EPMs, including avoiding all slickspot microsites during construction activities to the extent possible. Because fire prevention and suppression BMPs will be used, the likelihood of Project-related fire starts that would burn off-site is considered low. While there is also the risk of operations-related fire ignitions that could result in a large wildfire, fire prevention BMPs as well as regular line maintenance will reduce the probability of this occurring. In addition, weed control activities are expected to address the spread of invasive nonnative plants associated with ground-disturbing activities, reducing effects on PCEs 2 and 3. The risk of impacts to PCE 1 is reduced by the use of pre-construction surveys to avoid impacts to slickspot microsites. BMPs to control soil movement and dust will further reduce potential impacts to PCEs 1, 3, and 4. Although the use of BMPs and EPMs will minimize potential impacts to PCEs of proposed critical habitat, some Project-related adverse effects to PCEs will occur. As adverse impacts will be localized due to BMPs and EPMs that avoid or minimize impacts to PCEs, the Project is likely to maintain the current condition and conservation value of the action area for PCEs of proposed critical habitat over the permitted term of the action (50 years).

2.5.3.2 Effects of Interrelated or Interdependent Actions

No effects from interrelated or interdependent actions are anticipated.

2.6 Cumulative Effects

The implementing regulations for section 7 define cumulative effects to include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this CO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

2.6.1 Slickspot Peppergrass Cumulative Effects

Multiple wind-farms have been proposed on State and private lands within the assessed range of slickspot peppergrass, with a combined estimated footprint of 3,620 acres within the range of the species (USBLM 2013a, Table 3-17). In addition, livestock grazing and chemical treatments for weed or insect control that may directly or indirectly affect the slickspot peppergrass can occur on both State and private lands in the vicinity of the Project. Residential, commercial, industrial, and agricultural development and usage on non-Federal lands can affect slickspot peppergrass plants and habitat through crushing or trampling of plants, impacts to the seed bank, fragmentation of populations, introduction or spread of invasive nonnative plants, damage to or physical destruction of slickspots, impacts to insect pollinators, increased fire ignitions, fragmentation or degradation of native sagebrush-steppe communities, habitat conversion, increased OHV use, and dust-related impacts to flowering plants, insect pollinators, or slickspot microsites. Private lands bordering slickspot peppergrass habitat are increasingly being subdivided and developed for residential, commercial, and industrial purposes throughout the Treasure Valley area. The demand for easily accessible recreation areas in general and OHV use areas in particular, will continue to increase as the population increases.

The Service recognizes that some actions on non-Federal lands may have adverse effects on slickspot peppergrass at the individual plant or EO level. Non-Federal lands in the vicinity of the Project ROW may contain slickspot peppergrass and habitat components important to the species. About 2,093 acres (13 percent) of the 15,810 acres comprising the total EO acreage rangewide occurs on non-Federal lands (Table 1). Of these 2,093 acres, about 1,269 acres are managed under the OCTC's 2012 INRMP (1,269 acres) and about 76 acres are managed under the Mountain Home Air Force Base's 2012 INRMP. Management under these INRMPs provides a high level of conservation for slickspot peppergrass and its habitat relative to most non-Federal lands. The remaining 748 non-Federal acres constitute only 5 percent of the total area of the species rangewide; therefore, the Service expects that any cumulative effects occurring in the vicinity of the Project action area considered herein are not likely to significantly alter habitat conditions for slickspot peppergrass within the EOs affected by Bureau actions.

2.6.2 Slickspot Peppergrass Proposed Critical Habitat Cumulative Effects

Impacts from Project activities on PCEs of proposed critical habitat for slickspot peppergrass will add cumulatively to the impacts of future State, tribal, local or private actions that are reasonably certain to occur in the Project action area. As described above for the species, these actions include wind farms, livestock grazing, recreation, and development, along with associated increases in noxious weeds and invasive nonnative plants and risk of wildfire. The impacts of these future actions on PCEs of slickspot peppergrass proposed critical habitat will be the same as those described for slickspot peppergrass habitat above, and therefore are not repeated here.

The Service recognizes that some actions on non-Federal lands may have adverse effects on PCEs of proposed critical habitat for slickspot peppergrass. Non-Federal lands in the vicinity of the Project may contain PCEs of proposed critical habitat for the species. However, only about 6

percent of the total proposed critical habitat acreage rangewide occurs on non-Federal lands in proposed critical habitat subunits that are located in the Project action area [critical habitat Subunits 2b (321 acres on non-Federal land), 2d (2,438 acres on non-Federal land), 3a (595 acres on non-Federal land), and 3b (359 acres on non-Federal land)]. Therefore, similar to cumulative effects to the species and its habitat as described above, the Service expects that any cumulative effects occurring in the vicinity of the Project action area considered herein are not likely to significantly alter the functionality of PCEs of proposed critical habitat for slickspot peppergrass within Critical Habitat Units 2 and 3 or rangewide.

2.7 Conclusion

2.7.1 Slickspot Peppergrass Conclusion

The Service has reviewed the current status of slickspot peppergrass, the environmental baseline in the action area, effects of the proposed action, and cumulative effects, and it is our conclusion that the proposed action is not likely to jeopardize the continued existence of slickspot peppergrass. The Service reached this no-jeopardy determination on the basis that the effects of Project considered in this analysis, inclusive of Project BMPs and EPMs as well as applicable conservation measures set forth in the 2006 CA (as updated in 2009 and again in 2013), taken together with cumulative effects, are compatible with maintaining the ecological function of the higher quality (C- through A-ranked) EOs rangewide. As noted in the "Status of the Species" section of this document, the long-term conservation of slickspot peppergrass is likely to depend on the maintenance or improvement of ecological function of the higher quality (C- through A-ranked) EOs rangewide. This includes maintaining or improving the connectivity within and between EOs, which may involve maintaining or enhancing lower ranked EOs (D- through F-ranked), as necessary, to facilitate pollinator activity, maintain genetic diversity, and minimize the effects of activities that promote the establishment of invasive nonnative plant species and the modified wildfire regime in the sagebrush steppe ecosystem.

Factors that may affect slickspot peppergrass and its habitat in the Project action area related to Project construction, operations, maintenance, and decommissioning activities include occasional damage to or loss of individual slickspot peppergrass plants (including seeds) that cannot be avoided, damage to or loss of some individual slickspot microsites that cannot be avoided, unintentional fire ignition, Project-generated dust and soil movement, removal of some remnant native vegetation, and the potential introduction or spread of invasive nonnative plants. The BMPs and slickspot peppergrass EPMs being implemented by the Bureau in conjunction with the Project are either specific measures designed to reduce impacts to the species and its habitat at the local level, or general measures designed to improve the ecological condition of native sagebrush-steppe vegetation at a landscape scale. The specific measures include actions such as avoiding all slickspot microsites by 50 feet, to the extent practical, during construction activities; seeding disturbed areas with perennial species; restricting vehicles to designated roads and trails; use of low ground-disturbing equipment such as minimum-till drills during revegetation efforts; and washing all ground-moving equipment prior to entry into construction sites. These specific conservation measures are intended to reduce the amount or extent of localized impacts, although localized adverse effects are not completely eliminated. The general conservation measures include management actions designed to maintain cover of remnant

stands of native forbs and shrubs and protect sagebrush through BMPs to prevent fire ignitions or control fire spread through fire suppression activities. General conservation measures are intended to incrementally improve rangeland conditions across the range of the species. As general conservation measures are implemented over the long term, their effectiveness will be evaluated and modified as appropriate through an adaptive management process. The 2013 CA provides direction for annual monitoring to assess effectiveness of conservation measures and an adaptive management program to respond to new information and ongoing actions, as appropriate.

The effects of the Gateway West transmission line ROW are not expected to reduce the overall abundance of slickspot peppergrass over the permitted term of the action (50 years). The conservation value assigned to the EOs crossed by this action is not likely to change over the term of this ROW authorization due to Project implementation, inclusive of BMPs and EPMs, as described herein.

2.7.2 Slickspot Peppergrass Critical Habitat Conclusion

The Service has reviewed the current status of slickspot peppergrass proposed critical habitat, the environmental baseline in the action area, effects of the proposed action, and cumulative effects, and it is our conclusion that the proposed action is not likely to destroy or adversely modify proposed critical habitat for slickspot peppergrass. Similar to our conclusion regarding the species as described above, the Service concludes that direct and indirect effects to proposed critical habitat for slickspot peppergrass will be limited to damage to or loss of some individual slickspot microsites that cannot be avoided, unintentional fire ignition, Project-generated dust and soil movement, removal of some remnant native vegetation, and the potential introduction or spread of invasive nonnative plants. Adverse effects of the proposed action on PCEs 1, 2, 3, and 4 will occur at a localized level relative to the rangewide extent of proposed critical habitat for slickspot peppergrass. The Service expects that the function of all PCEs of proposed critical habitat in the action area and rangewide in southwestern Idaho will not be significantly changed as a result of Project construction, operation, maintenance, and decommissioning activities. Therefore, we have concluded that Project construction, operation, maintenance, and decommissioning activities will not appreciably diminish the value of the PCEs of proposed critical habitat for slickspot peppergrass.

The Service reached the no destruction or adverse modification determination on the basis that the aggregate effects of Project construction, operation, maintenance, and decommissioning activities, inclusive of Project BMPs and EPMs as well as applicable conservation measures set forth in the 2013 CA (USBLM and USFWS 2013, entire), taken together with cumulative effects, are compatible with maintaining the ecological function of slickspot microsites, remnant sagebrush stands, remnant native plants, and insect pollinators within proposed critical habitat in Critical Habitat Subunits 2b, 2d, 3a, and 3b, Critical Habitat Units 2 and 3, and proposed critical habitat rangewide. As described above, the long-term conservation of slickspot peppergrass is likely to depend on the maintenance or improvement of ecological function of the higher quality (A- through C-ranked) EOs rangewide, including maintaining or improving the connectivity within and between EOs, to facilitate pollinator activity, maintain genetic diversity, and minimize the effects of activities that promote the establishment of invasive nonnative plant species and fire frequency in intact Wyoming big sagebrush communities.

Project BMPs and EPMS as well as CA slickspot peppergrass conservation measures being implemented by the Bureau in conjunction with Project construction, operation, maintenance, and decommissioning activities also serve to avoid or minimize impacts to PCEs of proposed critical habitat. Measures such as avoidance of slickspot microsites and seeding of areas disturbed during construction activities, equipping construction and maintenance vehicles with fire suppression tools, restricting vehicles to designated roads and trails, and washing all equipment prior to entry into construction and maintenance sites will reduce the risk of impacts to slickspot microsites (PCE1), remnant intact sagebrush steppe habitat (PCE 2), habitat components important to insect pollinators (PCE 3), and adequate insect pollinators for slickspot peppergrass seed production (PCE 4) in the Project area. These specific measures are intended to reduce the amount or extent of impacts, although some localized adverse effects to PCEs will not be completely eliminated.

2.8 Incidental Take Statement

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species, respectively, without specific exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of take in the Act means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Because the "take" prohibitions detailed under section 9(a)(1) of the Act do not apply to listed plants, those sections of the Act dealing with incidental "take", Sections 7(b)(4) and 7(o)(2), generally do not apply to listed plants either. Therefore, we are not including an Incidental Take Statement for slickspot peppergrass in this CO.

However, section 9(a)(2) of the Act prohibits, among other actions, the removal and reduction to possession of plants listed as endangered or threatened from areas under Federal jurisdiction. The Act prohibits the malicious damage of Federally listed endangered plants on areas under Federal jurisdiction, or the destruction of endangered plants on non-Federal areas in violation of State law or regulations or in the course of any violation of a State criminal trespass law. These protections may apply to slickspot peppergrass as well if State regulations are promulgated.

2.9 Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop new information on listed species.

The Service recommends that the Bureau implement the following conservation measures:

- Provide the Idaho Natural Heritage Program, the Bureau's Boise District Office, and the Service's Idaho Fish and Wildlife Office with slickspot peppergrass preconstruction survey results for Segments 8 and 9 of the Project.
- Similar to BMPs and EPMs for construction activities, avoid impacts to slickspot peppergrass and slickspot microsites when conducting Project maintenance and decommissioning activities, to the extent possible. Suggested BMPs and EPMs include:
 - Use existing roads for maintenance and decommissioning activities.
 - Stage maintenance and decommissioning equipment in previously disturbed areas.
 - Avoid parking on or driving through slickspot microsites during maintenance and decommissioning activities.
 - Avoid parking over dry vegetation during maintenance and decommissioning activities.
 - Locate soil stockpile or soil spread areas at least 50 feet from slickspot microsites during maintenance and decommissioning activities.
 - Use appropriate dust abatement methods during ground disturbing activities to limit the effects of fugitive dust on slickspot peppergrass and its habitat as well as to PCEs of proposed critical habitat.
 - Avoid Project maintenance and decommissioning activities within the three habitat categories for slickspot peppergrass during periods when soils are saturated or when slickspot peppergrass plants are flowering, except in cases where emergency work must take place in order to restore power.
 - Emergency conference/consultation shall be completed if emergency actions as defined under the Act (such as emergency restoring of power) result in adverse impacts to the species that have not been adequately addressed in previous section 7 conference/consultation activities.
- Use the conservation measures and associated implementation actions in the 2013 CA as a basis for developing conservation measures for future revised Land Use Plans (LUP) in order to facilitate recovery of slickspot peppergrass. Given new information resulting from implementation actions identified in the 2013 CA (e.g., completion of surveys), and recent and ongoing research on habitat restoration, insect pollinators, wildfire, and invasive nonnative plants, LUPs may be revised to include more stringent conservation measures and implementation actions, as appropriate.
- Continue to implement conservation measures for slickspot peppergrass, regardless of future listing status, to ensure continued species conservation and population expansion over time. The Service's interpretation of the signed 2013 CA is that the conservation measures apply to Bureau actions regardless of the species' status under the Act.

- Continue annual monitoring efforts to ensure that conservation measures are implemented and to assist in determining if these measures are effective in the conservation of the species and report these annual findings to the Service.
- Conduct surveys in cooperation with the Service, Idaho Department of Fish and Game, and other parties to determine slickspot peppergrass locations and densities in potential habitat. Provide all slickspot peppergrass survey results to the IDFG's Idaho Natural Heritage Program for incorporation into their database.
- Encourage research and projects to restore sagebrush-steppe habitat within the range of slickspot peppergrass.
- Actively participate in critical habitat and recovery planning efforts for slickspot peppergrass.
- Continue to participate in the LEPA Technical Team and other cooperative forums for sharing information, developing partnerships, and encouraging research to facilitate the survival and recovery of slickspot peppergrass, including restoration techniques for sagebrush-steppe habitat and methods to reintroduce slickspot peppergrass into areas capable of supporting the species.
- Conduct annual coordination meetings between the Bureau and the Service to address new information; provide perspective regarding the relationship of new information to ongoing actions; use this information, as appropriate, to modify actions or conservation measures via the established adaptive management strategy; and consider whether this information may modify the analyses in this CO and/or the appropriateness of the Service's conclusions.
- Establish conservation reserves for slickspot peppergrass to maintain high quality sagebrush-steppe habitat and for use as research areas.
- Exercise section 7(a)(1) of the Act to maintain or enhance plant communities in a manner compatible with the needs of slickspot peppergrass and its proposed critical habitat, which includes maintaining a functional sagebrush-steppe ecosystem, minimizing ground disturbance in slickspot habitats, and providing native forb cover to maintain or enhance insect pollinator populations.
- Prioritize fire suppression to protect remaining large sagebrush stands within the range of slickspot peppergrass.
- Avoid or minimize ground-disturbing activities within EOs when soils are saturated and/or when slickspot peppergrass is flowering (May–June).
- Avoid pesticide contact with slickspot peppergrass plants or insect pollinators near EOs.
- For upcoming Bureau permit renewals and reissuances and the updated Jarbidge and Four Rivers Resource Management Plan efforts, cooperate with the Service, the Idaho Department of Fish and Game, permit holders, and other parties to identify strategies for avoiding or minimizing adverse impacts to slickspot peppergrass and PCEs of proposed critical habitat.
- Continue to encourage the restoration of native sagebrush steppe habitat on Bureau lands for species native to this habitat type, including slickspot peppergrass and its proposed critical habitat.
- Conduct annual reporting on herbicide use, fire suppression activities, monitoring results, and any revegetation planned or implemented on Bureau lands in relation to potential impacts to slickspot peppergrass and slickspot microsites as part of annual coordination meetings between the Bureau and the Service.

- Consider use of conservation measures for slickspot peppergrass on Bureau lands that also complement conservation of the other sagebrush steppe habitat obligates, including greater sage-grouse (*Centrocercus urophasianus*), a candidate species, and pygmy rabbit (*Brachylagus idahoensis*), a species of concern.

To remain informed about actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations listed above.

2.10 Reinitiation Notice

This concludes formal conference on slickspot peppergrass and its proposed critical habitat. Because the "take" prohibitions detailed under section 9(a)(1) of the Act do not apply to listed plants, requirements for reinitiation of formal consultation associated with incidental "take" as described below are not applicable to listed plants, including slickspot peppergrass, should the species become listed in the future.

As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if:

1. The amount or extent of incidental take is exceeded.
2. New information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this CO.
3. The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this CO.
4. A new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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4. APPENDIX: DEFINITIONS OF HABITAT CATEGORIES AND EFFECTS ASSESSMENT FOR SLICKSPOT PEPPERGRASS

Definitions of Habitat Categories for Slickspot Peppergrass (USBLM 2009, p. B-2 as shown in USBLM 2013a, p. A-1)

Potential Habitat –

Areas within the known range of slickspot peppergrass that have certain general soil and elevation characteristics that indicate the potential for the area to support slickspot peppergrass, although the presence of slickspots or the plant is unknown. These areas meet the following criteria:

- Natric and natric-like soils forming "slickspots," and associated soil series, or phases thereof, which support Loamy 7- to 10-inch and 10- to 13-inch Wyoming big sagebrush Ecological Sites (Major Land Resource Areas 11—Snake River Plains, and 25—Owyhee High Plateau) and have an aridic bordering on xeric soil moisture regime; and
- 2,200 to 5,400 feet elevation.

Occupied Habitat –

In the BLM's 2012 Assessment, the term "occupied habitat" refers to areas where slickspot peppergrass has been documented or identified as an element occurrence (EO) and includes the area generally within 0.5 mile of that occurrence that is important to maintain or improve habitat integrity and pollinator populations necessary for species conservation. For analysis purposes in this BA, a generalized area delineated by a 0.5 mile radius circle was drawn around each EO (this circle may include areas of non-habitat). This area identified as occupied habitat may or may not include additional slickspots or slickspot peppergrass plants beyond the EO. Further refinement of occupied habitat may be accomplished through field surveys considering existing resource conditions as well as specific habitat quality and integrity.

Slickspot Peppergrass Habitat –

Potential habitat areas with Wyoming big sagebrush ecological sites that through Stage 1 surveys have documented slickspot microsites (natric and natric-like soil types) within 2,200 feet and 5,400 feet elevation in Southwest Idaho. Slickspot peppergrass habitat includes areas with slickspots of unknown occupancy and, in some cases, may be dominated by non-native vegetation such as annual grasses or crested wheatgrass (*Agropyron cristatum*). In addition, to maintain ecological continuity, if there is less than 0.5 mile between areas defined as slickspot peppergrass habitat, then the entire area is considered slickspot peppergrass habitat. Surveyed potential habitat not meeting these criteria will no longer be considered habitat for slickspot peppergrass.

EFFECTS DETERMINATION CHECKLIST FOR SLICKSPOT PEPPERGRASS (USBLM 2013a, pp. A-2 – A-8)

SLICKSPOT PEPPERGRASS PHYSIOGRAPHIC REGION NAME: Snake River Plain

NAME OF PROJECT BEING EVALUATED: Gateway West Transmission Project /or suitable habitat.

PROJECT TYPE: Energy Development and Transmission

PROJECT STATUS: Proposed Action

NARRATIVE SUMMARY OF SLICKSPOT PEPPERGRASS OBSERVATIONS WITHIN ACTION AREA (Element Occurrence #, Element Occurrence Ranking, Survey Year, Survey Intensity, Number of Slickspot Peppergrass Plants Observed, Precipitation within Survey Year, etc.)

No Project specific surveys for slickspot peppergrass have been conducted within the Action Area.

Element Occurrence Number(s):

EOs that are within the action area and intersected by the Project footprint:

EO Number	EO Rank	Within Action Area	Intersected by Project Footprint
15	D	Yes	No
18	C	Yes	No
24	C	Yes	Yes
25	C	Yes	No
30	B	Yes	Yes
31	C	Yes	Yes
42	F	Yes	Yes
51	BD	Yes	No
54	F	Yes	No
72	C	Yes	No
104	C	Yes	Yes

Occupied habitat (i.e., the 0.5-mile buffer around the EO) of two additional EOs, EO 62 and EO 105, occurs within the action area but is not intersected by the Project footprint. Management areas for known occurrences and occupied habitat that are intersected by the action area are listed below (by CCA Management Area):

- Kuna Management Area - MA 6 / EOs #18, 24, 25, 42, (105₁)

- Orchard Management Area – MA 8A and 8B / EOs #15, 30, 31, 54, 72, 104
- Mountain Home Management Area – MA 9 / EOs # 51, 62

HIP Transect Number(s):

EO Number	HIP Transect Number
15	015
18	018A, 018b, 019A
24	024
25	025
30	030B
31	031
42	042
51	051A, 051B
54	054
62	062
72	072B, 072C
104	072A
105	-1/

1/ No HIP monitoring transect is currently associated with this EO. Monitoring data for EO 42, a nearby EO, are used to characterize baseline conditions for this EO in this analysis.

Potential Effects Pathways	Indicators	Baseline Indicator Conditions		Effect of Action on Indicator Condition		
		Current Condition Description	Current Quality Ranking (H, M, L)	Description of Potential Effects of the Action on the Baseline within the Action Area	Restore, Maintain or Degrade Habitat	Expected Modification of Baseline ↑ → ↓
A. Slickspot Conditions	A-1. Density of nonnative annual and/or nonnative perennial plants established within slickspots	Predominantly occupied by nonnative invasive species, predominantly cheatgrass (<i>Bromus tectorum</i>).	L	Project construction, operation, and maintenance increase the potential for further spread and proliferation of non-native plants and increased risk of wildland fire, which may affect slickspot peppergrass and PCE 1, 2, 3, and 4 of proposed critical habitat. Maintenance roads may be beneficial to slickspot peppergrass, because two-track maintenance roads and bare soil areas associated with line structures may act as fuel breaks, potentially limiting spread of wildfire and subsequent spread of weeds. Maintenance roads may also provide access for fire suppression activities.	Degrade	↓
	A-2. Level of ground disturbance within slickspots	Observed disturbance is restricted to livestock compaction and trampling, ant mound and badger burrow establishment, and invasive species encroachment. However, few of the slickspots demonstrated the cryptogamic crusts characteristic of pristine slickspots.	M	Soil compaction and soil disturbance stemming from construction activities and overland travel of construction and maintenance vehicles, where slickspots are not avoidable, may affect slickspot peppergrass and PCE 1 of proposed critical habitat.	Degrade	↓

Potential Effects Pathways	Indicators	Baseline Indicator Conditions		Effect of Action on Indicator Condition		
		Current Condition Description	Current Quality Ranking (H, M, L)	Description of Potential Effects of the Action on the Baseline within the Action Area	Restore, Maintain or Degrade Habitat	Expected Modification of Baseline ↑ → ↓
A. Slickspot Conditions (continued)	A-3. Level of organic debris and/or soil deposition and accumulation within slickspots	Most slickspots lacked a late seral cryptogamic crust and consisted of a moderate to high proportion of bare soil; lack of crust is most likely attributable to wildfire as opposed to aeolian or fluvial deposition. Where invasive species encroachment occurred, organic debris deposition was a subsequent byproduct.	L	The proposed action is expected to impose minimal soil deposition effects on slickspots. There is potential for increased spread and proliferation of invasive species which may indirectly increase organic debris deposition in slickspot microsites over time, which may affect slickspot peppergrass and PCE 1 of proposed critical habitat. However, this increase in organic debris deposition is expected to be so small it cannot be meaningfully measured, detected, or evaluated.	Maintain	→
B. Habitat Characteristics within the Action Area Surrounding Occupied Slickspots	B-1. Level of ground disturbance within the action area	In areas where the corridors are situated along existing roads, ground disturbance can be significant. In areas away from existing roads, ground disturbance is restricted to residual wildfire impacts and typical post-wildfire grazing impacts.	L	As described above (A-2), some soil disturbance could occur from Project construction, operation, and maintenance. Although relatively minor in scale, permanent impacts associated with road improvement and construction, as well as tower placement, will impose irreversible negative effects to the landscape by effectively transferring the land use.	Degrade	↓

Potential Effects Pathways	Indicators	Baseline Indicator Conditions		Effect of Action on Indicator Condition		
		Current Condition Description	Current Quality Ranking (H, M, L)	Description of Potential Effects of the Action on the Baseline within the Action Area	Restore, Maintain or Degrade Habitat	Expected Modification of Baseline ↑ → ↓
B. Habitat Characteristics (continued)	B-2. Condition of native vegetation within the action area - Level of habitat fragmentation	The condition of native vegetation is degraded and sparse. Small pockets of sagebrush exist and Sandberg bluegrass (the latter likely a function of overgrazing). Intact communities of purple three-awn exist in good condition but occur few and far between on steeper, south-facing. Habitat fragmentation is demonstrable and widespread. Much of the area has been fragmented due to past wildfires, with pockets of shrubs in both potential and occupied habitat within the action area.	L	Assume there will be some loss of native shrub cover within the construction footprint of the project as well as during some Project maintenance activities, which could impact the species as well as PCEs 2 and 4 of proposed critical habitat.	Degrade	↓
	B-3. Condition of native vegetation within the action area - presence of nonnative annuals and/or nonnative perennial plants	The presence of non-native species is prevalent and widespread and represents the overall characterization of the Action Area.	L	The proposed action has potential to increase the spread and proliferation of non-native species, particularly annual species, which may affect the species as well as PCEs 2, 3, and 4 of proposed critical habitat.	Degrade	↓
	B-4. Condition of native vegetation within the action area - % cover of biological soil crusts	In association with residual native vegetation, biological soil crusts exhibit higher than expected cover. However, outside of these native pockets, crust cover is minimal and of an early seral state.	L	Assume some loss of biological soil crust forb cover within the construction footprint of the project as well as during some Project maintenance activities, which could impact the species as well as PCE 2 of proposed critical habitat.	Degrade	↓

Potential Effects Pathways	Indicators	Baseline Indicator Conditions		Effect of Action on Indicator Condition		
		Current Condition Description	Current Quality Ranking (H, M, L)	Description of Potential Effects of the Action on the Baseline within the Action Area	Restore, Maintain or Degrade Habitat	Expected Modification of Baseline ↑ → ↓
B. Habitat Characteristics (continued)	B-5. Condition of native vegetation within the action area - % cover of native forbs	The presence of non-native species is widespread and represents the overall characterization of the Action Area. Native forb cover is correspondingly low		Assume some loss of native forb cover within the construction footprint of the project as well as during some Project maintenance activities, which could impact the species as well as PCEs 2, 3, and 4 of proposed critical habitat.	Degrade	↓
SUMMARY		<p>Summary of Overall Status of Baseline within the Action Area Thirteen EOs (including occupied habitat of 2 EOs) currently exist within the Action Area. Five of these would be intersected by the Project footprint. EOs within the Action Area include two as F (failed to find), one as "B", seven as "C", two as "D", and one as "BD". EOs intersected by the Project footprint are ranked as: F (2), C (3), and B (1). The presence of non-native species is prevalent and widespread and condition of native vegetation is degraded and sparse. Observed disturbance; however, is restricted to livestock compaction and trampling, ant mound and badger burrow establishment, and invasive species encroachment. However, few of the slickspots demonstrate the cryptogamic crusts characteristic of pristine slickspots.</p>	L	<p>Summary of Potential Effects of the Action on the Baseline within the Action Area Project construction, operation, and maintenance increase the potential for further spread and proliferation of non-native plants and increased risk of wildland fire, which may affect slickspot peppergrass and PCEs 1, 2, 3, and 4 of proposed critical habitat. Additionally, soil compaction, soil disturbance, loss of native vegetation, and disturbance or loss of biological crusts due to construction and operation and maintenance activities may occur and may affect slickspot peppergrass, slickspot peppergrass habitat and PCEs 1, 2, 3, and 4 of proposed critical habitat. Permanent impacts to slickspots; however, are expected to be relatively minor in scale.</p>	Degrade	↓

Dichotomous Key for Effects Determinations

***Lepidium papilliferum* Conference Framework**

Dichotomous Key for Effects Determinations

1. Are there documented occurrences of *Lepidium papilliferum* or proposed or designated critical habitat, or is potential habitat or slickspot peppergrass habitat present in the Action Area?

A. NO No Effect–Conference is not necessary

B. YES Go to #2

2. Does the Effects Determination Checklist show any effect whatsoever on the species and/or its critical habitat or on potential habitat or slickspot peppergrass habitat resulting from the action?

A. NO No Effect–Conference is not necessary

B. YES Go to #3

3. Does the Effects Determination Checklist show any potential change (degradation/restoration or downward/upward trends) in any of the Matrix Indicators resulting from the action?

A. NO No Effect–Conference is not necessary

B. YES Go to #4

4. Is there a negative effect of the action on any Matrix Indicators that is able to be meaningfully measured, detected, or evaluated OR is reasonable certain to occur to individuals or populations of *Lepidium papilliferum* or its habitat (i.e., critical habitat Primary Constituent Elements, potential habitat, slickspot peppergrass habitat) within the Action Area?

A. NO May Affect, is Not Likely to Adversely Affect–Informal Conference with the Service is advised

B. YES May Affect, is Likely to Adversely Affect – Formal Conference with the Service is advised

PCE/Pathway Indicator Crosswalk for Slickspot Peppergrass		
PCE	PCE Description	Corresponding Pathway Indicator
1	Ecologically functional microsites or "slickspots" that are characterized by: (a) a high sodium and clay content and a three-layer soil horization and (b) sparse vegetation with low to moderate introduced plant species cover	A-1. Density of nonnative annual and/or nonnative perennial plants established within slickspots A-2. Level of ground disturbance within slickspots A-3. Level of organic debris (litter or feces) and/or soil deposition and accumulation within slickspots
2	Relatively intact native Wyoming big sagebrush vegetation assemblages within 820 feet (250 meters) of slickspots	B-1. Level of ground disturbance within the action area B-2. Condition of native vegetation within the action area - level of habitat fragmentation B-3. Condition of native vegetation within the action area - presence of nonnative annuals and/or nonnative perennial plants B-4. Condition of native vegetation within the action area - percent cover of biological soil crusts B-5. Condition of native vegetation within the action area - percent cover of native forbs
3	A diversity of native plants for insect pollinator habitat requirements	B-3 and B-5
4	Sufficient pollinators for successful fruit and seed production	B-1, B-2, B-3, and B-5