3.11 SPECIAL STATUS WILDLIFE AND FISH SPECIES

The Preferred Route, Proposed Route, and Route Alternatives would pass through multiple habitats that could potentially support special status species. These species include threatened and endangered species listed under the ESA, candidate species and those formally proposed for ESA listing, those listed by the Forest Service and BLM as sensitive, and Forest Service MIS. For discussion purposes, these categories of special status wildlife and fish species will be referred to collectively as TES wildlife or TES fish species. TES plant species are discussed in Section 3.7 – Special Status Plants. Other species, including those petitioned for listing under the ESA but not included in any TES category as specified above, are considered in Section 3.10 – General Wildlife and Fish.

The BLM's Preferred Routes for each segment of the Project are listed below. Where applicable, the preferred route identified by another federal agency or a county or state government is also noted.

- **Segment 1W:** The BLM's Preferred Route is the Proposed Route (Figure A-2). This route is also the State of Wyoming's preferred route.
- **Segment 2:** The BLM's Preferred Route is the Proposed Route (Figure A-3). This route is also the State of Wyoming's preferred route.
- **Segment 3:** The BLM's Preferred Route is the Proposed Route, including 3A (Figure A-4). This route is also the State of Wyoming's preferred route.
- **Segment 4:** The BLM's Preferred Route is the Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF. The portion of this route in Wyoming is also the State of Wyoming's preferred route. The Forest Service's preferred route is the Proposed Route within the NF incorporating Alternative 4G (Figure A-6).
- **Segment 5:** The BLM's Preferred Route is the Proposed Route incorporating Alternatives 5B and 5E, assuming that WECC reliability issues associated with 5E are resolved (Figure A-7). Power County's preferred route is the Proposed Route incorporating Alternatives 5C and 5E (Figure A-7).
- **Segment 6:** The BLM's Preferred Route is the proposal to upgrade the line voltage from 345 kV to 500 kV (Figure A-8).
- **Segment 7:** The BLM's Preferred Route is the Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be microsited to avoid sage-grouse PPH. Power and Cassia Counties' preferred route is Alternative 7K (Figure A-9).
- **Segment 8:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 8B (Figure A-10). This is also IDANG's preferred route.
- **Segment 9:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and the community of Murphy (Figure A-11). Owyhee County's preferred route is Alternative 9D (Figure A-11).
- **Segment 10:** The BLM's Preferred Route is the Proposed Route (Figure A-12).

3.11.1 Affected Environment

This section describes the existing environmental conditions for TES wildlife or fish species that could be impacted by the Project. It defines the Analysis Area, and then outlines the issues that were raised during public scoping, followed by a description of the laws, regulations, and policies in place to manage TES species. This section concludes by describing the methods used to assess TES habitats, and a description of the existing conditions of the Analysis Area and the TES species potentially present within this area.

3.11.1.1 Analysis Area

The Project would cross a portion of the Intermountain West region, in southern Wyoming and Idaho. Elevation, slope, aspect, average seasonal temperatures, and annual precipitation exhibit a wide range across the almost 1,000 miles crossed by the Project. This diversity in conditions currently supports a wide range of habitat types across the Analysis Area. The primary habitat types found within the Analysis Area include shrublands, grasslands, forest/woodlands, and wetland/riparian areas (see Section 3.6 – Vegetation Communities). Shrublands are the most common habitat type found within the Analysis Area. It is the dominant type throughout the Wyoming portions of the Project, and is common within the Idaho portions. Grasslands occur in both Wyoming and Idaho, but are most abundant along Segments 8, 9, and 10 within Idaho. Nearly all of the grasslands crossed by the Project are semi-natural plant communities, dominated by introduced grass species. Forest and woodlands are limited in the Analysis Area; the majority of the forest/woodlands crossed by the Project occur near Segments 1, 4, 5, and 7, where the Project would cross areas of high elevation in the Laramie Mountains of Wyoming, and the Wasatch, Portneuf, and Deep Creek Mountains in Idaho. Wetlands and riparian vegetation are present, but are not common in the general region of the Project; with most of the wetlands occurring along Segment 4 (see Section 3.9 – Wetlands and Riparian Areas).

The Analysis Area for fish and wildlife was designed to capture the current conditions of the habitats that could be impacted by the Project's construction and operation, and included the habitat types described above. The Analysis Area for fish resources closely follows that described in Section 3.16 – Water Resources, and Section 3.9 – Wetlands and Riparian Areas. It includes the stream segments crossed by the Proposed Route and its Alternatives, wetland and riparian areas adjacent to these streams, and the water reaches and fish resources located directly downstream of these crossings (on average about 2 miles). It also includes access roads, and other Project-related construction areas that could affect riparian habitat. A detailed discussion of how impacts to wetland and riparian areas were calculated can be found in Section 3.9 – Wetlands and Riparian Areas, as well as 3.6 – Vegetation Communities.

The general Analysis Area used for wildlife habitat mapping (see Section 3.11.1.4) consisted of a 1,000-foot-wide area centered on the Proposed Route and Route Alternatives (500-foot-wide on either side of the centerline of each route), as well as a 50-foot-wide area along any roads located outside the 1,000-foot route-centered area. This area was established based on the available data obtained during remote sensing (see Section 3.11.1.4). While most of this Analysis Area would not be directly impacted

by the Project, information gathered for this larger area allows for an understanding of the context in which the impacts would occur and allows an assessment of indirect effects. The Analysis Area encompasses all Project components, including the entire Project ROW, all access roads and ancillary facilities, as well as all staging areas and fly yards.

The Analysis Area for some of the TES species was expanded beyond the initial 1,000-foot-wide Analysis Area discussed above, due to current policies and regulations in place for individual species, as well as the availability of additional data outside of this initial area. Table 3.11-1 summarizes the extent of the expanded Analysis Area used for individual TES species (note that this is not a comprehensive list of data sources used during the TES analysis; this table only lists area/distance outside of the initial 1,000-foot-wide Analysis Area used for applicable species, as well as the data source that required this expansion). For some of the TES species included in Table 3.11-1, multiple extents are presented due to various regulations and policies in place, or due to requests from agencies. For example, the Analysis Area used for the greater sage-grouse (*Centrocercus urophasianus;* hereafter referred to as sage-grouse) assessment consisted of an 11-mile-wide buffer around the Project (i.e., 11 miles on either side of the Project, resulting in a 22-mile-wide corridor). This distance was based on the requirements of IM Wyoming-2010-012 (BLM 2009c), and the BLM's *Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines* (see Appendix J-1). Sage-grouse habitat and potential impacts were also broken down into multiple subsets of this 11-mile-wide distance, such as Core and Key Areas, PPH, and Preliminary General Habitats (PGH), areas within 4 miles of leks (as required by the Wyoming Governor's EO 2011-5, BLM Instructional Bulletin 2010-039, and the requirements in BLM 2009c), areas within 2 miles of leks (based on recommendations from Idaho Sage-grouse Advisory Committee [2006]), areas within 0.6 mile of leks (based on BLM IM Wyoming-2012-019), and areas within 0.25 mile of leks (based on various BLM RMP "no surface occupancy" requirements), as well as various intermediate distances (e.g., 3- and 1-mile-wide buffers).

The Analysis Area used to assess the effects of habitat fragmentation consisted of a 4-mile-wide buffer around the Project's centerline (see Section 3.10.1.1). A 4-mile-wide buffer was chosen to assess a large enough area to capture the current and existing level of fragmentation, without assessing too large of an area, which would mask the effects of the Project's contribution to the area's fragmentation.

Table 3.11-1. Expanded Analysis Area for Selected Species with Available Data

Species	Extent of Expanded Analysis Area	Description (references provided when available or relevant)
Black-footed ferret (*Mustela nigripes*)	Shirley Basin 10(j) Population	The extent of the Shirley Basin 10(j) population (i.e., a re-introduced population) as mapped by the Wyoming Game and Fish Department (WGFD).
Bonytail chub (Gila elegans)	All Colorado River drainage located downstream from the Analysis Area	As required by the tiered Biological Opinion (BO) on water withdrawals from the Colorado River watersheds.

Table 3.11-1. Expanded Analysis Area for Selected Species with Available Data (continued)

Species	Extent of Expanded Analysis Area	Description (references provided when available or relevant)
Canada lynx (*Lynx canadensis*)	Lynx Analysis Units (LAU) and Linkage Habitat	LAUs are areas identified by the Forest Service that have substantial lynx habitat, are delineated at the scale required for a female home range (Forest Service 2007c), and considered by the USFWS in its proposed rule for expansion of critical habitat for the lynx. Data extent is statewide. Lynx linkage habitats are areas designated linkage habitat by an interagency / intergovernmental panel (Forest Service 2007c). Data extent is statewide.
Colorado pikeminnow (*Ptychocheilus lucius*)	All Colorado River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Colorado River watersheds.
Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*)	Distance from lek perimeter: 0.25 mile	BLM "no surface occupancy" land use designation, as designated within the various BLM RMPs at the time of initial Project design (2008).
	Distance from lek perimeter: 0.6 mile	Based on the Proponents' assumption that the "no surface occupancy" requirements could increase to 0.6 mile prior to the Project's final permitting.
	Distance from lek perimeter: 2 miles	Based on the average distance (or more) that grouse nesting and brood rearing usually occurs in relation to leks (Giesen and Connelly 1993; Meints 1991).
Gray wolf (*Canis lupus*)	Known locations of wolf packs	Known locations of wolf packs mapped by the Idaho Natural Heritage Program and the Wyoming Natural Diversity Database (WYNDD).
Grizzly bear (*Ursus arctos horribilis*)	Primary Conservation Area (PCA)	Minimum seasonal habitat components necessary to support grizzly bear populations, as part of the 1993 Grizzly Bear Recovery Plan.
	Distinct Population Segment (DPS)	Boundary of the grizzly bear's Yellowstone Distinct Population Segment.
Greater sage-grouse (*Centrocercus urophasianus*)	Distance from lek perimeter: 0.25 mile	BLM "no surface occupancy" requirements for non-Core Areas as found in the BLM RMPs.
	Distance from lek perimeter: 0.6 mile	Based on current "no surface occupancy" requirements found in BLM IM Wyoming-2012-019 for Wyoming Core Areas.
	Distance from lek perimeter: 1 mile	An intermediate distance (between other required distances) assessed due to the uncertainty regarding regulatory requirements for greater sage-grouse lek avoidance.
	Distance from lek perimeter: 2 miles	Based on the Conservation Plan for the Greater Sage-grouse (Connelly et al. 2000; IDFG 2006).
	Distance from lek perimeter: 3 miles	An intermediate distance (between other required distances) assessed due to the uncertainty regarding regulatory requirements for greater sage-grouse lek avoidance.
	Distance from lek perimeter: 4 miles	As required by Wyoming Governor Executive Order 2011-5, and the requirements of BLM Instructional Memorandums (BLM 2009c) and the BLM Instructional Bulletin 2010-039.

Table 3.11-1. Expanded Analysis Area for Selected Species with Available Data (continued)

Species	Extent of Expanded Analysis Area	Description (references provided when available or relevant)
Greater sage-grouse (*Centrocercus urophasianus*) cont.	Key habitat	Areas mapped by Idaho Department of Fish and Game (IDFG) and BLM as areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year including winter, spring, summer, late brood-rearing, fall, transition sites from winter to spring, spring to summer, and summer/fall to winter.
	Core areas	Areas mapped by the Wyoming Governor's Sage-Grouse Implementation Team as important habitat for greater sage-grouse.
	11-mile buffer around the Project (22-mile-wide analysis corridor	Based on the requirements of BLM Instructional Memorandums (BLM 2009c), and the Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines (BLM 2011a).
	Preliminary Priority Habitats	As required in BLM IM 2012-043.
	Preliminary General Habitats	As required in BLM IM 2012-043.
Humpback chub (*Gila cypha*)	All Colorado River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Colorado River watersheds.
Interior least tern (*Sterna antillarum*)	All Platte River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Platte River watersheds.
Pallid sturgeon (*Scaphirhynchus albus*)	All Platte River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Platte River watersheds.
Piping plover (*Charadrius melodus*)	All Platte River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Platte River watersheds.
Razorback sucker (*Xyrauchen texanus*)	All Colorado River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Colorado River watersheds.
Wyoming pocket gopher (*Thomomys clusius*)	Model of possible gopher presences within Wyoming based on historical data	Database maintained by the WYNDD.
Whooping crane (*Grus americana*)	All Platte River drainage located downstream from the Analysis Area	As required by the tiered BO on water withdrawals from the Platte River watersheds.

3.11.1.2 Issues Related to Special Status Wildlife and Fish Species

Issues identified during Project scoping (Tetra Tech 2009) and comments on the Draft EIS included the following:

- The effects of Project activities on species federally listed as threatened, endangered, proposed, or candidates under the ESA;
- The effects of Project activities on species listed as sensitive by the BLM or Forest Service;
- The effects of Project activities on Forest Service MIS;
- The need to consult various agencies and conservation groups; and
- The need to comply with existing conservation plans.

3.11.1.3 Regulatory Framework

The following is a discussion of the relevant regulations and policies that address and govern impacts to TES species.

Federal Regulations and Policies

Endangered Species Act

The ESA was enacted in 1973. This law established a regulatory system to protect species that are at risk of extinction. Species listed under the ESA are protected from any action that would constitute a "take," which is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct. Many states have developed threatened and endangered species lists that differ from the federal list regulated by the ESA; however, none of the states crossed by the Project have developed a separate list that contains regulatory authority beyond the ESA list for wildlife.

The ESA requires, under Section 7 of the Act, that "Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an ''agency action'') is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical (16 U.S.C. 35 §1531-1544)." Species that have been petitioned for listing have no legal status and will not be included in consultation or conferencing for this Project.

Upper Colorado Endangered Fish Recovery Program

Part of the Analysis Area, in southwestern Wyoming, drains into the Colorado River watershed. The Upper Colorado Endangered Fish Recovery Program was established in 1988, and enacts conservation measures to minimize adverse effects to four endangered fish (Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub) and their critical habitat within the Colorado River. This program dictates effects on these four listed fish and their critical habitat from water withdrawals anywhere upstream of where these fish and their critical habitat occur. De minimis depletions (less than 0.1 acre-feet per year) require no depletion fee and would result in a "no effect" determination for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub and their critical habitat. Small depletions (between 0.1 and 100 acre-feet per year) require no depletion fee, but would require consultation and would result in a "may affect, likely to adversely affect" determination for these fish species and a "may affect, not likely to adversely affect" determination for their critical habitat. Any depletions greater than 100 acre-feet per year require a one-time depletion fee, would require consultation, and would result in a "may affect, likely to adversely affect" determination for these fish species and a "may affect, not likely to adversely affect" determination for their critical habitat (McKee 2012). However, the USFWS has indicated that if the entirety of this depletion is drawn from depletions for which consultation has already taken place, this would not be considered an additional withdrawal and would result in a no effect determination for both the species and their critical habitat (McKee 2012). If only part of water withdrawals can come from

depletions for which consultation has taken place, the portion that has been consulted on can be subtracted from the total amount, and effects determinations may be based on the remaining amount. In order to calculate the number of acre-feet per year, the total amount of water withdrawn is divided over the life of the Project, not necessarily over the number of years during which water would actually be withdrawn (Abbott 2012; McKee 2012). None of the four ESA-listed fish covered under the UCEFRP or their critical habitat are found in the Analysis Area (USFWS 1990a, 2002c, 2002d, 2002e; 59 *Federal Register* 13374); however, they do occur downstream of the Analysis Area.

Platte River Recovery Implementation Program

The eastern end of the Project, in central Wyoming, drains into the Platte River watershed. Federally listed species that could be affected by flow depletion in the Platte River watershed are the pallid sturgeon, interior least tern, and whooping crane, which are listed as endangered; and the piping plover and western prairie fringed orchid which are listed as threatened. Portions of the Platte River are also designated as critical habitat for the whooping crane. Critical habitat for piping plover has been designated, but not in the Platte River basin; the other three species have no proposed or designated critical habitat. The Platte River Recovery Implementation Program (PRRIP), established in 1997, implements actions designed to assist in the conservation and recovery of these target species and their associated habitats along the central and lower Platte River in Nebraska through a basin-wide cooperative approach agreed to by the states of Wyoming, Nebraska, and Colorado, as well as the U.S. Department of the Interior. The PRRIP addresses the adverse impacts of existing and certain new water-related activities on the Platte River target species and associated habitats, and provides ESA compliance for effects to the target species. The State of Wyoming is in compliance with its obligations under the PRRIP. The Wyoming State Engineer's Office is responsible for determining if a water withdrawal is an existing or new water withdrawal and what level of withdrawal it constitutes. The level of withdrawal for a temporary industrial use would depend on the amount of depletion, and the existing conditions of the river at the time of the depletion. For federal actions and projects participating in the PRRIP, the PRRIP Final EIS (BOR and USFWS 2006) and the June 16, 2006, programmatic Biological Opinion (USFWS 2006a) serve as the description of the environmental baseline and environmental consequences for the effects of the federal actions on the listed target species. Under this Biological Opinion, any depletion from the Platte River system less than 0.1 acre-feet per year would result in a "*no effect*" determination for the targeted species and whooping crane critical habitat, and would not require consultation with USFWS. Depletions greater than 0.1 acre-feet per year would require consultation and would result in a "may affect, likely to adversely affect" determination for the targeted species and a "may affect, not likely to adversely affect" determination for their ESA-designated critical habitat (McKee 2012). USFWS has indicated that if all water can be drawn from depletions for which consultation has already taken place, this would not be considered an additional withdrawal and would result in no new effect to both the species and whooping crane critical habitat (McKee 2012). In order to calculate the number of acre-feet per year, the total amount of water withdrawn is divided over the life of the Project, not necessarily over the number of years during which water would actually be withdrawn (Abbott 2012; McKee 2012). No depletion fee is associated with the PRRIP (McKee 2012). None of the ESA-listed

wildlife or plant species covered under the PRRIP or their critical habitat are found in the Analysis Area (USFWS 1988, 1990b, 1996; Dryer and Sandvol 1993; CWS and USFWS 2007; 43 *Federal Register* 20938); however, they do occur downstream of the Analysis Area.

BLM and Forest Service

The BLM and Forest Service have developed land-management plans for the various FOs and NFs under each of their jurisdictions. These plans detail land-management goals and objectives, specify permissible and prohibited activities by geographic designation, and provide BMPs and stipulations required for activities in that NF or BLM District's jurisdiction. They include temporal and spatial restrictions for any activities within certain areas inhabited by TES species (note that both the BLM and Forest Service are currently in the process of evaluating and amending land use plans with respect to sage-grouse, across much of the species' range). Tables that list the applicable stipulations from the management plans as well as whether or not the Project is in compliance with these stipulations can be found in the Administrative Record; plan amendments for instances where the Project would not be in compliance with Forest Service standards or BLM requirements can be found in Appendix F as well as in a summarized list found in Tables 2.2-1 through 2.2-3 in Chapter 2. A list of all state and federally imposed seasonal restrictions can be found in Appendix I; the Project would comply with all agency timing restrictions unless an exception is granted by the Agencies.

Both the Forest Service and the BLM have established a list of species they consider at risk on lands they manage. The Project would cross two Forest Service Regions (Region 2 and 4), each of which contains a separate sensitive species list. The Regional Foresters sensitive species lists include plant and animal species for which population viability is a concern within NFS lands. BLM sensitive species, per BLM Manual 6840, are managed under the special status species policy. The objectives of the BLM special status species policy, per BLM Manual 6840.02A and .02B, are to: 1) conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species; and 2) to initiate proactive conservation measures that reduce or eliminate threats to BLM sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

The FSM defines MIS as "plant and animal species, communities, or special habitats selected for emphasis in planning, and which are monitored during forest plan implementation to assess the effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent" (Forest Service 1991a). Each NF designates its own list of MIS. The Medicine Bow Forest Plan has designated eight MIS, including the American marten (*Martes americana*), common trout, golden-crowned kinglet (*Regulus satrapa*), Lincoln's sparrow (*Melospiza lincolnii*), northern goshawk (*Accipter gentilis*), snowshoe hare (*Lepus americanus*), three-toed woodpecker (*Picoides dorsalis*), and Wilson's warbler (*Wilsonia pusilla*; Forest Service 2003b). The Sawtooth Forest Plan has designated five MIS species, including the bull trout (*Salvelinus confluentus*), sage-grouse, northern goshawk, Yellowstone cutthroat trout (*Oncorhychus clarki bouvieri*), and the pileated

woodpecker (*Dryocopus pileatus*). The Columbian sharp-tailed grouse, sage-grouse, and northern goshawk have been designated as MIS by the Caribou Forest Plan (Forest Service 2003a).

In November 2004, the BLM published the National Sage-Grouse Habitat Conservation Strategy. This Strategy emphasizes partnerships in conserving sage-grouse habitat through consultation, cooperation, and communication with the Western Association of Fish and Wildlife Agencies (WAFWA), USFWS, Natural Resources Conservation Service (NRCS), Forest Service, U.S. Geological Survey (USGS), state fish and wildlife agencies, local sage-grouse working groups, and various other public and private partners. In addition, the National Sage-Grouse Habitat Conservation Strategy set goals and objectives, assembled guidance and resource materials, and provided comprehensive management direction for the BLM's contributions to the ongoing multi-state sage-grouse conservation effort. In March 2010, the USFWS published its decision on the petition to list the sage-grouse as threatened or endangered (75 *Federal Register* 13910) and found that listing at the current time was warranted but precluded at this time due to higher listing priorities. In its "warranted but precluded" finding, the USFWS concluded that existing regulatory mechanisms were inadequate to protect the species. As a result, in August 2011, the BLM supplemented their National Sage-Grouse Habitat Conservation Strategy by releasing its National Greater Sage-Grouse Planning Strategy (BLM 2011b), as well as Instructional Memorandum (IM) 2012-044. The goal of the Planning Strategy and IM 2012-044 is to review existing regulatory mechanisms and to implement new or revised regulatory mechanisms through the land use planning process to conserve and restore sage-grouse and their habitat. The Forest Service and BLM will develop a joint EIS/Supplemental EIS that assesses the various alternatives considered during this planning process (to amend the applicable BLM RMPs and Forest Service Forest Plans). The BLM will be the lead agency on these EISs and Supplemental EISs, while the Forest Service will be participating as a cooperating agency (BLM 2011c).

Until the applicable BLM RMPs are amended (scheduled to occur in 2014), BLM IM 2012-043 (i.e., the BLM's *Greater Sage-Grouse Interim Management Policies and Procedures*) directs BLM management regarding ongoing and proposed BLM actions across various programs. The primary emphasis of BLM IM 2012-043 is the: 1) protection of unfragmented habitats, 2) minimization of habitat loss and fragmentation, and 3) management of habitats to maintain, enhance, or restore conditions that meet sage-grouse life history needs. Specifically, BLM IM 2012-043 describes interim conservation policies and procedures that are to be used by BLM within greater sage-grouse PPH and PGH during this interim period, to conserve sage-grouse. PPHs are defined as areas that have the highest conservation value to maintaining sustainable sage-grouse populations. These areas would include breeding, late brood-rearing, and winter concentration areas. PGHs are areas of occupied seasonal or year-round habitat outside of Priority Habitat. Both PPH and PGH were delineated cooperatively between federal and state management agencies.

BLM IM 2012-043 states that:

> *The BLM field offices do not need to apply the conservation policies and procedures described in this IM in areas in which (1) a state and/or local regulatory mechanism has been developed for the conservation of the Greater Sage-Grouse in coordination and concurrence with the FWS (including the Wyoming Governor's Executive Order 2011-5, Greater Sage-Grouse Core Area Protection); and (2) the state sage-grouse plan has subsequently been adopted by the BLM through the issuance of a state-level BLM IM.*

Wyoming has established a state regulatory mechanism for the conservation of sage-grouse (see the "State Regulations and Policies" section below), and the BLM has adopted this state strategy through the issuance of BLM IM Wyoming-2012-019; therefore, PPH and PGH will not be designated in Wyoming, and the Wyoming Core Areas have been adopted by the BLM for federal planning purposes. PPH and PGH were designated in Idaho on April 2012. In many places, the PPHs and PGHs designated in Idaho incorporate Idaho's Key and Perennial Grassland or Conifer Encroachment Restoration habitats (see the discussion of "Idaho Key and Restoration Habitats" below, as well as in the "State Regulations and Policies" section regarding Key and Restoration Habitats); therefore, values reported for Key Habitats and PPH/PGH should not be considered cumulative.

Idaho Key and Restoration Habitats

Idaho (in a combined effort between the BLM and IDFG) has identified Key Habitats in Idaho, which are defined as areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year including winter, spring, summer, late brood-rearing, fall, transition sites from winter to spring, spring to summer, summer/fall to winter. In addition to Key Habitats, Idaho has also identified Restoration (R)1, R2, and R3 habitats. These classifications, including Key habitat, have been in use in Idaho and updated approximately annually based on changes due to wildfire, restoration or new mapping efforts, since approximately 2001, and are used for general sage-grouse conservation planning purposes. R1 habitats are defined as sagebrush-limited areas with acceptable understory conditions in terms of grass species composition; it includes native and seeded perennial grass rangelands. R1 habitats are important areas to protect from wildfire and encourage sagebrush establishment and retention. Inexpensive management treatments may be needed (e.g., sagebrush and/or forb seedings) in R1 habitats. R2 habitats are defined as regions where existing sagebrush cover in these areas may or may not be adequate to meet the needs of sage grouse, but understory herbaceous conditions are poor. Undesirable plant species such as cheatgrass (*Bromus tectorum*), medusahead rye (*Taeniatherum caput-medusae*) or other exotic plants are common to dominant in R2 habitats. Expensive management treatments are needed for restoration of R2 habitats. R3 habitats are areas where conifers (e.g., primarily junipers but could also include other species such as Douglas-fir) are encroaching into sage-grouse habitat areas. Opportunities exist for improving habitat through appropriate fire management response, prescribed fire, chemical or mechanical means in R3 habitats. Spatial data for Key, R1, and R2 habitats, along with other information such as known seasonal habitats and population information, were

used to inform the more recently developed Idaho PPH and PGH maps that BLM is now using, based on national policy guidance.

USFWS Greater Sage-grouse Conservation Objectives

In 2013, the USFWS published their Greater Sage-grouse Conservation Objectives: Final Report (USFWS 2013c). This report provides guidelines and objectives for the conservation of the greater sage-grouse. The main objective identified in the report is to minimize habitat threats to the species so as to meet the objective of the 2006 WAFWA Greater Sage-Grouse Comprehensive Conservation Strategy (i.e., reversing negative population trends and achieving a neutral or positive population trend). This report is a guidance document, and does not create a legal obligation beyond the existing legal requirements related to this species.

Other Federal Regulations/Polices

There are other federal regulations/polices in addition to those discussed above; such as the Bald and Golden Eagle Protection Act, which prohibits wounding, killing, molesting, or disturbing eagles, even if the harm to the eagle is the result of otherwise legal activities (16 U.S.C. § 668a-d), and the MBTA, which decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected (USFWS 2002b). Species covered under these two regulations will be addressed in Section 3.10 – General Wildlife and Fish, because this section (i.e., Section 3.11) discusses only those species covered under the ESA, those listed by the Forest Service or BLM as sensitive, and Forest Service MIS.

State Regulations and Polices

Comprehensive Wildlife Conservation Strategies

Although none of the states crossed by the Project have enacted a state-level endangered species act that designates official state-listed game and fish species, the IDFG and WGFD have published Comprehensive Wildlife Conservation Strategies (CWCS) aimed at encouraging land-management activities that conserve and enhance wildlife habitat (IDFG 2005; WGFD 2005); however, note that the WGFD finalized their “CWCS” on January 2011 and renamed this plan to the State Wildlife Action Plan. These State Conservation Strategies/Plans were established to create a conservation plan to conserve the states’ Species of Greatest Conservation Need (SGCN) and to provide a common framework that would enable conservation partners (federal, state, and private) to jointly implement a long-term approach for the benefit of SGCN. These Conservation Strategies are not regulatory documents, are not intended to be prescriptive, and the species identified are not equivalent to an official state listing as threatened, endangered, or fully protected; however, these Conservation Strategies do define SGCN, identify the key habitats for each SGCN and the regions within the state where they can be found, recommend actions to improve the population status and habitat conditions of SGCN, and describe an approach for long-term monitoring. In general, the species included within the SGCN lists are those that have demonstrated a conservation need (due to population or habitat parameters) or where demographic data are lacking. The Idaho CWCS establishes 229 SGCN; these include 126 vertebrate species and 103 invertebrates (IDFG 2005). The Wyoming CWCS establishes 278 SGCN; these include 191 vertebrate species and 87 invertebrates

(WGFD 2005). SGCN species will only be discussed in this section (i.e., 3.11) if they are also covered under the ESA, listed by the Forest Service or BLM as sensitive, or are Forest Service MIS. All other SGCN species are addressed in Section 3.10 – General Wildlife.

Wyoming Governor's Executive Order 2011-5 (Wyoming Sage-Grouse Core Areas)

On June 2, 2011, the Governor of Wyoming established EO 2011-5, which designates Sage-Grouse Core Population Areas (Core Areas). This EO replaced the earlier version of this executive order (i.e., EO 2010-4). Under EO 2011-5, new transmission lines need to be constructed within 0.5 mile of existing 115-kV or larger transmission lines (i.e., those that existed prior to EO 2010-4), or within a 2-mile-wide corridor established by the Governor as the "state of Wyoming's preferred alternative" in southwestern Wyoming, unless it can be demonstrated by the state wildlife agency that a proposed transmission line would not cause declines in sage-grouse populations within Core Areas. The State of Wyoming views the use of these designated corridors as mitigation and requires no additional mitigation for projects routed within these corridors. Multiple route alternatives are being considered for the Gateway West Project across southwestern Wyoming, most of which cross some Core Area; however, only the Proposed Routes in Wyoming (i.e., Proposed Route Segments 1W[a], 1W[c], 2, 3, and 4) are located within the Governor's corridor and are therefore in compliance with the Wyoming Governor's EO 2011-5 (i.e., the Route Alternatives in Wyoming are not in compliance with the EO).

Idaho Key and Restoration Habitats

See the discussion in the "Federal Regulations and Policies" section.

Idaho Task Forces

On March 9, 2012, Idaho Governor's EO 2012-02 was issued to establish the Idaho Sage-Grouse Task Force. The intent of the task force and EO 2012-02 is to provide long-term protection to Idaho's sage-grouse populations by addressing primary and secondary threats described in the EO. In addition to recommending conservation measures to avoid and minimize impacts to sage-grouse, the Task Force's recommendations include the establishment of new sage-grouse habitat designations (similar to the Idaho Key, PPH, and PGH discussed earlier; IGTF 2012). These new sage-grouse habitat designations by the Task Force include "Core Habitat" (CHZ), "Important Habitat" (IHZ), and "General Habitat" (GHZ). The Governor's Alternative was finalized in September 2012 and provided to BLM for inclusion as an alternative in the current national sage-grouse EIS process aimed at updating the BLM's RMPs (as part of the BLM's National Greater Sage-Grouse Planning Strategy and IM 2012-044). As a decision on an alternative for BLM's National Greater Sage-Grouse Planning Strategy/ RMP amendment will not be made until later in 2014, the potential new sage grouse habitat designations from the Task Force have not been incorporated into this EIS analysis.

Non-Binding Local Recommendations (i.e., Sage-Grouse Local Working Groups)

The purpose of the Sage-Grouse Local Working Groups (in all states crossed by the Project) is to provide guidance that agencies, businesses, and individuals should

consider when performing actions in sage-grouse habitats. These working groups have no legal authority to bind any agency, business, and individual to any specific action; although the BLM and many other agencies voluntarily comply with these recommendations to the extent practical.

Idaho Sage-Grouse Local Working Groups

There are nine Sage-Grouse Working Groups in Idaho whose jurisdiction would be crossed by the transmission line. From east to west along the Project, these include the East Idaho Uplands, Big Desert, South Magic Valley, North Magic Valley, Jarbidge, Mountain Home, Shoshone Basin, Curlew, and Owyhee working groups. Only the Jarbidge, Big Desert, East Idaho Uplands, Shoshone Basin, Curlew, North Magic Valley, and Owyhee working groups have completed their Conservation Plans (CWG 2004; JWG 2007; SBWG 2008; BDWG 2010; EIWG 2011; OCWG 2004, NMWG 2011); the remaining plans (the Conservation Plans for Mountain Home and South Magic Valley are not yet drafted or completed).

In areas of Idaho where the Local Working Groups have not finalized their plan, the State's *Conservation Plan for the Greater Sage-Grouse in Idaho* would apply as a source for recommended conservation measures. Unlike the Local Working Groups, this state plan identifies threats at a broad statewide-scale, while also providing a toolbox of finer-scale conservation measures that the Local Working Groups can use and/or adopt. The main goal of the Conservation Plan for the Greater Sage-grouse in Idaho is to maintain, improve, and where possible, increase sage-grouse populations and habitats in Idaho, while considering the predictability and long-term sustainability of a variety of other land uses (IDFG 2006). During preparation of the state plan, an independent science panel evaluated and ranked 19 potential threats to sage-grouse in the state, and found that the top three included 1) wildfire, 2) infrastructure development (e.g., transmission, energy development, communications towers, roads etc.), and 3) conversion of lands to annual grasslands. Each of these threats contributes to overall habitat loss for the species.

The mission statement of the Jarbidge Working Group is to "work toward the improvement of sage-grouse habitat and identify and address multiple-use factors affecting sage-grouse populations" (JWG 2007). The Big Desert Group's stated goal is to "[u]tilize a collaborative effort that fosters and supports management of sage-grouse and sage-grouse habitat within the Big Desert SGPA by fostering effective coordination between government agencies, tribes, non-government organizations, landowners, livestock operators, and interested individuals; and integrating national, regional, and local input and knowledge" (BDWG 2010). The East Idaho Uplands Group's stated goal is to "[u]tilize a collaborative effort that fosters and supports management of sage-grouse and sage-grouse habitat within the East Idaho Uplands Sage-grouse Planning Area ... by fostering effective coordination between government agencies, tribes, non-government organizations, landowners, livestock operators, and interested individuals; and integrating national, regional, and local input and knowledge" (EIWG 2011). The goal of the North Magic Valley Working Group is to "[m]aintain, improve, and where possible, increase sage-grouse populations and habitats in the North Magic Valley Sage-grouse Planning Area, while considering the predictability and long-term

sustainability of a variety of other land uses" (NMWG 2011). The goal of the Owyhee Working Group is to put into place a framework that would guide management efforts aimed at improving sage-grouse populations and reverse recent declines of sage-grouse populations (OCWG 2004). The primary goal of the Shoshone Basin Local Working Group is to develop a management plan that enables livestock operations to maintain the following levels of grazing: Horse Creek Allotment – 1,820 Animal Unit Months (AUMs); Magic Common Allotment – 792 AUMs; Kerr Lost Creek Allotment – 3,659 AUMs; South Big Creek Allotment – 115 AUMs (SBWG 2008). The goal of the Curlew Local Working Group is to preserve and increase sage-grouse populations in the Greater Curlew Valley Area (CWG 2004).

These working groups attribute the declines of sage-grouse to decreases in habitat quantity and quality (in part due to increased wildfires, fragmentation, and invasive species), as well as losses of sage-grouse due to hunting and predation (however, the specific issues differ by region and working group area and each of these factors may not apply to all of the groups). Furthermore, the East Idaho Uplands Group identified conservation of Conservation Reserve Program (CRP) lands, human disturbances, infrastructure, isolated populations and lack of data, and urban/ex-urban development as having a high risk to sage-grouse and their habitats (with various other factors having medium to low risk; EIWG 2011). Habitat management priorities identified by these Working Groups include noxious weed control, fire management aimed at increasing the interval between fires, and various habitat protection and enhancement measures. Some of the recommendations from these working groups include the following:

- Revegetation with native grass, shrub, and forb species following disturbance in sagebrush habitats;
- Cleaning vehicles and equipment to minimize the spread of noxious weeds prior to entering other areas;
- Mapping locations of known active and historical sage-grouse habitat;
- Improving livestock management;
- Monitoring West Nile Virus and research the factors that contribute to its spread
- Conducting predator control studies; and
- Developing a comprehensive GIS project for sage-grouse planning areas that contains information on sage-grouse populations, sage-grouse habitat characteristics, current threats to the species, and current land uses and ownerships to improve species impact assessments as well as land management plans.

<u>Wyoming Sage-grouse Local Working Groups</u>

There are three conservation areas crossed by the Project that have Wyoming Local Sage-grouse Working Groups in Wyoming. From east to west, these include the Bates Hole/Shirley Basin, South-central, and Southwest working groups. According to the Wyoming Local Sage-grouse Working Group Charter, the goal of these working groups is to "develop and facilitate implementation of local conservation plans for the benefit of sage-grouse, their habitats, and whenever feasible, other species that use sagebrush habitats." Each of these three Working Groups has released a Conservation Plan

detailing the natural history, threats, and mitigation measures for sage-grouse in each conservation area (SCWG 2007; SWWG 2007; BSWG 2007). These Local Working Groups state (at the time of their plans publication) that the primary threats to sage-grouse in Wyoming are impacts to vegetation (i.e., grazing and invasive plants) and the development of natural resource (such as oil and gas). Conservation measures suggested by the Working Groups include the following:

- Washing equipment and vehicles to prevent invasive plants spreading to new areas;
- Developing and implementing livestock grazing strategies to promote healthy sagebrush; and
- Conducting surveys for sage-grouse breeding activity before surface disturbance during the breeding season within suitable sagebrush habitat within 0.5 mile of the proposed activities.

Timing and seasonal restrictions suggested by the Working Groups to minimize impacts to sage-grouse include:

- Avoiding human activity and disturbance within 0.25 mile of leks between 8:00 p.m. and 8:00 a.m. from March 1 to May 15;
- No aboveground facilities within 0.25 mile of active sage-grouse strutting grounds, and installing raptor perch deterrents on tall structures within 0.5 mile of any sage-grouse lek; and
- Restricting surface-disturbing and disruptive activities in suitable sage-grouse nesting and brood rearing habitat within 2 miles of an occupied lek, or in identified sage-grouse nesting and early brood rearing habitat outside the 2-mile buffer from March 15 through July 15, and within identified sage-grouse winter habitat from November 15 until March 14 (seasonal stipulations for winter concentration areas can be applied on a case-by-case basis).

Nevada Sage-Grouse Local Working Groups

None of the routes would pass directly through Nevada; however, the 11-mile-wide analysis area used for sage-grouse would extend across the northern border of Nevada along Alternative 7K. The Northeastern Nevada Stewardship Group has established a Sagebrush Ecosystem Conservation Strategy for this region, which outlines specific measures to protect sage-grouse (NNSG 2004), which are similar to those discussed above for the Idaho and Wyoming Local Working Groups. The Northeastern Nevada Stewardship Group's Sagebrush Ecosystem Conservation Strategy differs from the States' Sage-Grouse Conservation Strategy, in that the Northeastern Nevada Stewardship Group's strategy is a watershed-based ecosystem conservation strategy, while the states' strategy primarily focuses on sage-grouse conservation. While the two strategies share common goals and considerable overlap in process, they remain separate approaches. The Northeastern Nevada Stewardship Group has incorporated some of the statewide strategy for sage-grouse conservation, but recommends implementing sage-grouse conservation through watershed/ecosystem management.

The primary goal of the states' strategy is to "Create healthy, self-sustaining sage-grouse populations well distributed throughout the species historical range by maintaining and restoring ecologically diverse, sustainable, and contiguous sagebrush ecosystems and by implementing scientifically-sound management practices." The primary goal of the Northeastern Nevada Stewardship Group strategy is to "Manage watersheds, basins, and sub-basins in a manner that restores or enhances (as appropriate) the ecological processes necessary to maintain proper functioning ecosystems, inclusive of sage-grouse."

Utah Sage-Grouse Local Working Groups

None of the routes would pass directly through Utah; however, the 11-mile-wide analysis area used for sage-grouse would extend into Utah along some of Segment 4's alternative routes (e.g., Alternatives 4B, 4C, 4D, and 4E) as well as Alternative 7K. The Rich County Sage-Grouse Local Working Group (RCWG) has established an ecosystem conservation strategy for the lands in Utah near the Alternatives along Segment 4, and West Box Elder Sage-Grouse Local Working Group (WBEWG) has established a similar strategy for the lands in Utah near Alternative 7K. Both the RCWG and the WBEWG will implement their strategy via an adaptive resource management framework. Furthermore, the RCWG lists three actions in their strategy to minimize potential impacts of transmission lines on sage-grouse: "1) [a]void new construction during important periods and re-route lines where technically and economically feasible to avoid impacts…[i]f new power lines must be installed, route them along existing roads if possible; 2) [s]chedule maintenance to minimize important periods, however, maintenance in emergency situations will be unrestricted; and 3) [i]nstall raptor deterrents when applicable" (RCWG 2006).

3.11.1.4 Methods

The identification and characterization of TES species within the Analysis Area was completed through a review of available literature, federal and state databases, consultation with federal and state biologists, and the completion of limited biological surveys and remote habitat assessments.

Literature and Agency Database Review

Preliminary investigations included review of information and literature obtained from the USFWS, WGFD, IDFG, Forest Service, and BLM. The Forest Service, BLM, and state wildlife agencies work closely together to develop, maintain, and update a database of known wildlife occurrences and habitats; however, these data are not considered comprehensive and cannot be used exclusively to determine the location of wildlife species or their habitats. Additional information was obtained from independent literature searches, examination of aerial photographs, and queries of GIS databases: including the IDFG's Natural Heritage Program, the WYNDD, and other databases maintained by the BLM, Forest Service, IDFG, and WGFD regarding known and potential locations of TES species and their habitats within the Analysis Area. These data were used to develop the list of special status species of concern that could potentially be present within the Analysis Area.

Biological Field Surveys

State-maintained databases were used as the primary source of information regarding the location of sage-grouse leks along the proposed transmission line; however, the BLM and state agencies determined that sage-grouse surveys were necessary at specific areas along the Proposed Route and Route Alternatives, prior to the publication of an EIS. BLM biologists identified specific areas within the Project's segments that had a high potential for sage-grouse occurrence, but where very little data regarding possible lek locations or status existed (Tetra Tech 2008). Due to Columbian sharp-tailed grouse exhibiting similar breeding habits as sage-grouse (e.g., male breeding displays at leks during comparable breeding seasons) and overlapping range, Columbian sharp-tailed grouse lek surveys were conducted concurrently with sage-grouse lek surveys. Aerial surveys were conducted for both sage-grouse and Columbian sharp-tailed grouse during April 2008, and the results of these surveys were included in the state-maintained GIS lek databases. The BLM also determined that raptor nest surveys were necessary along specific portions of the Proposed Route and Route Alternatives. Raptor nest surveys were conducted by aerial survey methods concurrent with sage and sharp-tailed grouse surveys. Additionally, ground-nesting raptor surveys were conducted during the appropriate survey window in the late spring/early summer of 2008. A detailed discussion of the methods and results of these surveys can be found in the Greater Sage-grouse and Columbian Sharp-tailed Grouse Aerial Survey and the Raptor Nest Aerial and Ground Surveys Report (Tetra Tech 2008). Locations of leks and raptor nests detected during these surveys were provided to the state wildlife agencies for inclusion into their state-maintained databases. The most recent state wildlife agencies' databases were used in the effects analysis for this EIS, which incorporated the results of the project-specific surveys.

The Forest Service determined that surveys would be required, prior to the publication of an EIS, for the northern goshawk and flammulated owl (*Otus flammeolus*) within the Caribou-Targhee NF and for the northern goshawk on the Medicine Bow-Routt NFs, because current data on nest locations within the Analysis Area are not considered complete. No additional nests for either species, beyond those already identified within existing database, were located during the surveys. Existing nests that were located during these surveys were determined to be inactive. A detailed discussion of the methods and results of these surveys can be found in the Northern Goshawk and Flammulated Owl Surveys Reports (Tetra Tech 2010d, 2010e).

The Proponents have committed to conducting preconstruction surveys along the Project's Proposed Route (within suitable habitats) for certain species. Surveys the year prior to construction would be conducted, using protocols approved by state and federal agencies, for the following TES species:

- bald eagle (*Haliaeetus leucocephalus*);
- black-footed ferret (in white- and black-tailed prairie dog colonies);
- burrowing owl (*Athene cunicularia*);
- Columbian sharp-tailed grouse;
- ferruginous hawk (*Buteo regalis*);

- flammulated owl;
- greater sage-grouse;
- mountain plover (*Charadrius montanus*);
- northern goshawk;
- Preble's meadow jumping mouse;
- pygmy rabbit;
- three-toed woodpecker;
- white-tailed prairie dog (*Cynomys leucurus*);
- Wyoming pocket gopher; and
- any species that becomes listed under the ESA between now and the beginning of construction and could occur within the Analysis Area.

In addition, the USFWS and BLM would require that preconstruction surveys be conducted for the midget faded rattlesnake, yellow-billed cuckoo, as well as raptor species (including the golden eagle, prairie falcon, red tailed hawk, and Swainson's hawk; note that some of these are not TES wildlife species, and their pre-construction surveys would be applicable to Section 3.10 – General Wildlife). Preconstruction survey results would be provided to the applicable land-management agency. The following EPM would be applied during preconstruction surveys:

TESWL-2 In the event that an ESA-listed species not covered by the Project's BO is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.

Vegetation and Habitat Mapping Methods

The Project has been proposed for an area with substantial public lands, including BLM-managed and NFS lands, as well as state lands. These lands are managed as part of a multiple-use mandate, which includes management procedures for conserving and improving wildlife populations and stopping or reversing population declines of sensitive species. Therefore, there are some data available regarding wildlife occurrences on these public lands. Similar data are not consistently available for private lands. The proportion of private and public lands that would be crossed by the Project is roughly equal; therefore, there is a discontinuity between the level of detail and available data along the Project's route regarding wildlife habitat. This means that existing databases regarding known wildlife occurrences could not be used exclusively to determine impacts to TES wildlife species. In addition, landowner permission is required prior to surveying private lands, and many private landowners have declined access to their lands for surveys. This means that exhaustive field surveys for TES wildlife species could not be conducted along the entire length of the Project. Therefore, the BLM determined that a remote sensing approach, augmented with field surveys as well as known wildlife data maintained by federal, state, and private entities, would be

appropriate for gathering information on wildlife habitat crossed by this Project.[1] The wildlife species included in this remote sensing effort included the burrowing owl, Columbian sharp-tailed grouse, mountain plover, northern leopard frog, prairie dog, pygmy rabbit, and yellow-billed cuckoo. These species were selected in coordination with biologists working with the Proponents as well as the state and federal agency staff biologists. They were selected because there is literature available regarding their habitat preferences in at least some of their life stages, and that literature could be used to define the remote sensing variables to assess, including vegetation type, percent cover, slope, and aspect.

The habitat mapping conducted for this Project was based on remote sensing image interpretation and ground-based surveys to confirm the vegetation types identified through image interpretation in the Analysis Area (see Section 3.6 – Vegetation Communities). Vegetation typing was further refined using a GIS model for percent cover, slope, and aspect to determine suitable habitat for the targeted species. A more detailed description of the vegetation-habitat mapping methods and the results can be found in the Vegetation and Habitat Baseline Technical Report (Tetra Tech 2010a).

Remote sensing mapping methods similar to those used during this Project to map habitats for the seven wildlife species discussed above have been routinely used by various government and private entities to map vegetation and habitat types (more details regarding the species habitats mapped and how they were mapped can be found in the “Habitat Assessment” sub-section below as well as within Tetra Tech 2010a). The exact methods of these efforts vary; however, in general they all consist of acquisition of aerial images, segmentation of images into polygons, identification of polygons (photo interpolation), and field verifications. For example, the NPS used similar methods (including aerial image segmentation, field verifications, and photo interpolation) to identify the vegetation types found within the 18 million-acre Wrangell-St. Elias National Park and Preserve (Stumpf 2007). They determined that their remote sensing and field verification methods were sufficient to provide data that would conform to NPS standards, were compatible with other Inventory and Monitoring Program of the NPS mapping programs, and provided information required for the design of programs within the National Parks (Stumpf 2007). Recently, the NPS used the results of this remote sensing effort (Stumpf 2007) to assess the impacts of a project that proposes to reconstruct nine off-road-vehicle trails within the Nabesna portion of the Wrangell-St. Elias National Park and Preserve (NPS 2010b). In addition, the USGS GAP is a spatial database that is routinely used by both government and private entities to identify the locations and extent of vegetative communities and wildlife species during initial project design and analysis (USGS 2005a). The GAP analysis differs from the methods used in this Project in that the GAP maps are based on satellite imagery (USGS 2004), whereas the remote sensing used during this Project utilized lower altitude aerial images taken of the Analysis Area, and are of a finer scale/detail (Tetra Tech 2010a). In addition, habitat for some of the species considered within this EIS have been mapped in portions of the U.S. using similar methods as were employed here, such as

[1] Note that these data are used for the initial impact assessment contained in the EIS. However, preconstruction surveys would be required for the entire line prior to construction.

habitat for the American marten (Vasquez and Spicer 2005), grouse species (Homer et al. 1993), and pygmy rabbit (Rachlow and Svancara 2006).

Habitat Assessment

The habitat modeling effort is summarized briefly in the following sections; however, a detailed description of this effort can be found within the Vegetation and Habitat Baseline Technical Report (Tetra Tech 2010a).

The location and types of vegetation present within the Analysis Area were determined through remote sensing. The suitability of these vegetative types for TES habitat was assessed using GIS modeling, which combined appropriate NVCS vegetation alliances, known species ranges identified by agencies and/or the University of Wyoming, and existing GIS biophysical parameters (i.e., slope and elevation). For the purpose of this analysis, suitable habitat is defined as those areas that satisfy the habitat attributes of vegetation type, slope, and elevation limitations identified for each species. The outer boundaries of these mapped suitable habitats were clipped to the known extent of each species' current range (based on data from the IDFG and WYNDD). These suitable habitat maps were used to define areas that could support several macro-feature habitat components and predict where each targeted species may potentially occur.

To determine the acreage of impacts that could potentially occur to each species habitat, the Project's construction and operational footprint were overlaid onto known or mapped suitable habitat for each species. Areas where the Project's construction or operational footprints are co-located with suitable habitats were considered to be areas that contained direct impact to TES wildlife species habitats. Impacts to various vegetation types were calculated in a similar way, and are discussed in detail within Section 3.6 – Vegetation Communities.

The habitat parameters used for modeling suitable habitat for the seven targeted species are described in the following paragraphs.

Burrowing Owl

Habitat parameters that were incorporated into the burrowing owl GIS habitat model include vegetation type and slope. The vegetation types of shrub-steppe, grasslands, and disturbed shrublands / grasslands were selected using the NVCS vegetation alliance GIS coverage. Areas with slope less than 15 percent (Rich 1986) were identified through slope classification of the National Elevation Database.

Columbian Sharp-Tailed Grouse

The habitat parameters incorporated into the Columbian sharp-tailed grouse habitat model include vegetation type. During summer months, this species inhabits area containing relatively dense herbaceous and shrub cover. In the winter, Columbian sharp-tailed grouse use forest habitat, particularly riparian areas, and feed on aspen, serviceberry, and choke cherry up to 4 miles from leks (WGFD 2005). To incorporate both winter and summer habitat into the model for the Columbian sharp-tailed grouse, the NVCS vegetation alliance GIS coverage was used to select all shrub-steppe and grassland alliances within at least 497 feet (151.5 meters) from mountain shrub or riparian alliances (Marks and Marks 1988).

Mountain Plover

The habitat parameters incorporated into the mountain plover GIS habitat model include vegetation type and slope. The NVCS vegetation alliance GIS coverage was used to select xeric (i.e., dry habitat) shrubland and grassland alliances. Areas with slope less than 8.7 percent (Smith and Keinath 2004) were identified through slope classification of the National Elevation Database.

Northern Leopard Frog

Habitat parameters incorporated into the northern leopard frog GIS habitat model include wetland/vegetation type and elevation. The appropriate wetland/vegetation type for the northern leopard frog was identified via the NVCS vegetation alliance GIS coverage. Elevation data was derived from the National Elevation Database. All wetland areas below 9,720 feet (2,960 meters) in elevation were considered in the model (Bull 2005; Groves et al. 1997; WGFD 2005).

Prairie Dog

Habitat parameters included in the white-tailed prairie dog GIS habitat model include vegetation type, slope, and elevation. Vegetation types of shrub-steppe and mixed-grass and shortgrass prairie were selected using the NVCS vegetation alliance GIS coverage. Areas with the appropriate slope and elevation were identified through slope and elevation classification of the National Elevation Database. Areas with elevation between 3,773 to 10,499 feet (1,150 to 3,200 meters; Seglund et al. 2004; WGFD 2005) and slope less than 30 percent (Seglund et al. 2004; WGFD 2005) were selected for suitable habitat.

Prairie dog colonies were mapped through aerial photo interpretation techniques with color aerial photography (Project-specific and NAIP imagery) of the Analysis Area. Prairie dog colonies and complexes (at least two prairie dog colonies within about 4.3 miles of each other) were mapped according to the Black-Footed Ferret Survey Guidelines for Compliance with the ESA (USFWS 1989). White-tailed prairie dog complexes of greater than 200 acres and black-tailed prairie dog *Cynomys ludovicianus*) complexes of greater than 80 acres were mapped (USFWS 1989). The white-tailed prairie dog occurs in the western two-thirds of Wyoming; therefore, colonies identified within this species range were considered white-tailed prairie dog colonies. The black-tailed prairie dog occurs in the eastern third of Wyoming; therefore, colonies identified within this species range were considered black-tailed prairie dog colonies. The boundary of each prairie dog complex was digitized into GIS polygons and the total acreage of each complex determined.

Existing white-tailed and black-tailed prairie dogs were mapped during this modeling effort (in addition to add suitable habitat, as was mapped for the other targeted species), because both of these species are recognized as keystone species (i.e., a species that has a disproportionate effect on its environment relative to its abundance). They provide a prey base to many avian, mammalian, and reptilian predators and their burrows provide habitat features for many species, including TES species such as the black-footed ferret, mountain plover, and burrowing owl. For example, the abundance and distribution of the black-footed ferret (a federally listed endangered species) is related to the abundance and

distribution of prairie dogs, because the black-footed ferret relies on large occupied prairie dog colonies for suitable habitat and preys almost exclusively on prairie dogs.

Pygmy Rabbit

Habitat parameters that were incorporated into the pygmy rabbit GIS habitat model include vegetation type and slope. The NVCS vegetation alliance GIS coverage was used to select sagebrush (both disturbed and undisturbed) habitat types. Areas with percent slope of less than 15 percent were identified through slope classification of the National Elevation Database.

Pygmy rabbits are closely associated with deep loose soil types; however, when soil types were incorporated into the Project-specific models, the results created omission errors (areas of known pygmy rabbit habitat being classified as unsuitable habitat). This is likely due to the fact that available soil data is mapped within a 1 square kilometer spatial scale, and this coarse spatial scale misses some suitable habitats that occur at a smaller spatial scale. Rachlow and Svancara (2006) modeled pygmy rabbit habitat within Idaho using soil type/depth as a model parameter, and also came to the conclusion that the soil data resulted in omission errors, with 12.5 percent of the known rabbit locations occurring outside of mapped rabbit habitat. Therefore, although soil type/depth is an important component of pygmy rabbit habitat selection, the use of soil type/depth in habitat models underestimates the total suitable habitat available. The model, as currently designed, more closely fits to known occurrences of pygmy rabbits than if it contained a soil type/depth parameter.

Yellow-Billed Cuckoo

Habitat parameters that were incorporated in the yellow-billed cuckoo GIS habitat model include vegetation type. Vegetation types of forested wetlands and riparian areas were selected using the NVCS alliance map.

Greater Sage-Grouse

Sage-grouse habitat was originally included in the remote sensing analysis. The original intent of this effort was to use this Project-specific remote sensing analysis to determine the quantitative impacts (i.e., acres of impacts) that would occur to sage-grouse habitats. However, an interagency group consisting of the BLM, USFWS, IDFG, and WGFD decided that the remote sensing data were insufficient to address project-related impacts to sage-grouse habitats. This group developed a three-component Analysis Framework for Interstate Transmission Lines that could be used to analyze potential impacts to sage-grouse (the framework can be found in its entirety within Appendix J-1). The first two components of the framework are the Impacts Assessment itself including 1) Evaluation of Direct and Indirect Impacts, and 2) Addressing Direct Loss of Birds. The third component of the framework includes determining appropriate mitigation to offset impacts that could not be avoided or minimized. The framework also contains methods for a density disturbance calculation (DDC) that can be conducted in Core Areas (Wyoming) and Key areas (Idaho) once a “preferred alternative” has been selected; however, this DDC would only be required if the “preferred alternative” is routed in Core Areas outside of the Wyoming Governor’s Corridor (i.e., it would not be required if the route is located within the Wyoming Governor’s Corridor). The Wyoming Governor’s Corridor is shown in Figure 3.11-1.

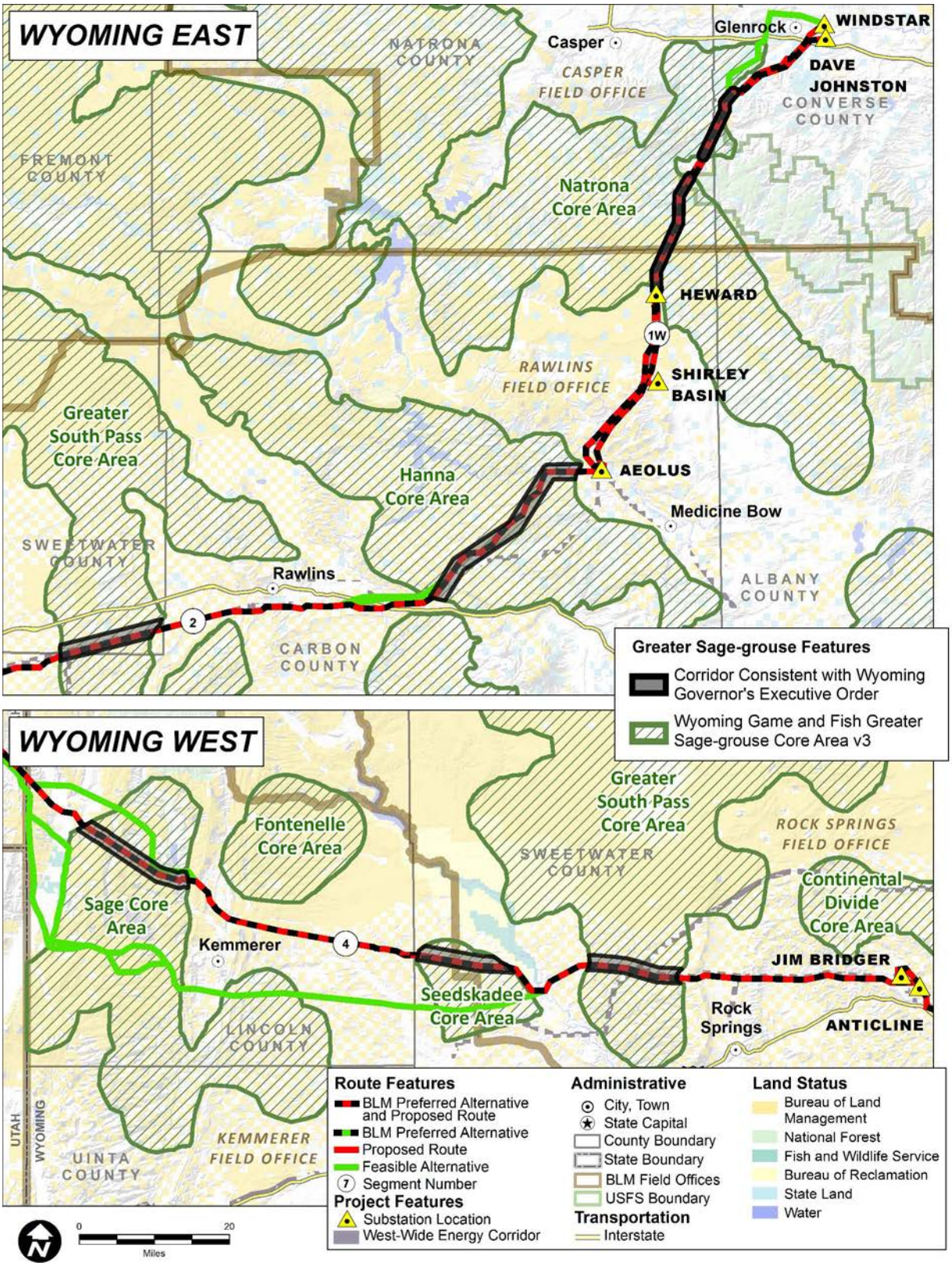

Figure 3.11-1. Wyoming Governor's Designated Corridor through Sage-Grouse Core Areas

The role and specific analysis to be conducted under each of the framework's elements is as follows:

(1) Evaluation of Direct and Indirect Impacts – This portion of the sage-grouse impact assessment addresses Project-related habitat impacts that bear directly on listing factors considered by the USFWS when evaluating the need to provide full listing protection under the ESA. An analysis of sage-grouse populations that attend leks within 18 kilometers (11 miles) of the Project is a critical component of an impacts analysis for the species because these sage-grouse may be indirectly affected by the loss of habitat functionality during other seasons of the year (Connelly et.al. 2000). In addition, the construction of a transmission project or other linear facility may inhibit movement related to daily or seasonal migration patterns, or could result in avoidance of important daily or seasonal habitats once used extensively by local sage-grouse populations (see Appendix J-1).

A GIS platform (i.e., ArcGIS) was used to calculate direct impacts to sage-grouse habitats. This analysis used the current Regional Gap Analysis Program (ReGAP) data[2] as the habitat base-layer. All areas designated as sagebrush habitats within the ReGAP database, which occurred within the range of the sage-grouse, were considered as potential habitat for this species. The Project's disturbance layer was then overlaid onto this area to predict the acreage of direct disturbances that could occur to sage-grouse habitats. The Project's disturbance layer consisted of a GIS spatial layer that contained all ground disturbances proposed for the Project (e.g., tower bases, access roads, pulling and tensioning sites, fly-yards, temporary work spaces, etc.). A disturbance layer was developed for the Project's construction phase, as well as its operations phase (more details regarding this disturbance layer are provided in Section 3.6 and Chapter 2 of this EIS). Calculations were also made for impacts to Core Areas; Key Habitats; R1, R2, and R3 areas; PPH; and PGH by overlaying the Project's disturbance layer onto these agency-designated sage-grouse habitats, via ArcGIS. Indirect impacts to sage-grouse and their habitats are qualitatively assessed in this EIS due to the limited extent of scientific data available to quantify these potential impacts (UDNR 2010).

(2) Addressing Direct Loss of Birds – The Agencies' framework states that addressing the direct loss of birds is "an important contribution to the USFWS's rangewide jeopardy analysis conducted as part of the overall informal conferencing process for this Candidate species" (see Appendix J-1). In addition, addressing direct loss of birds provides key information needed for completing any potential future formal Section 7 consultation that would be required if the sage-grouse is ultimately listed under ESA during project development, thereby significantly streamlining this process. The framework states that there are two ways that a project proponent can deal with the issue of "direct loss of birds": a) work closely with the USFWS and state agency biologists to develop an approach to address loss of birds from project-related impacts

[2] ReGAP it is a multi-institutional cooperative effort coordinated by the USGS Gap Analysis Program. The primary objective of the update is to use a coordinated mapping approach to create detailed, seamless GIS maps of land cover, all native terrestrial vertebrate species, land stewardship, and management status, and to analyze this information to identify those biotic elements that are underrepresented on lands managed for their long term conservation or are "gaps."

and their replacement, and b) contribute financially to research projects that have been designed specifically to address this issue.

(3) Mitigation – To properly determine the extent of necessary mitigation, one must first determine how project-related impacts to habitats would affect the services that those habitats once provided. The framework developed by the interagency group recommends that a Habitat Equivalency Analysis (HEA) be used to determine the extent of habitat services lost due to project-related impacts, as well as scale the extent of necessary compensatory mitigation. When wildlife habitat is the primary service of interest, habitat services (e.g., nest sites, forage, cover from predators, etc.) are generally quantified using a metric that represents the functionality or quality of habitat (i.e., the ability of that habitat to provide those services, such as vegetation composition and structure, patch size, proximity to breeding areas, etc.). Areas with the highest habitat service levels are those areas with the highest habitat quality.

An HEA is not an impacts analysis; rather, it is a method of quantifying the permanent or interim loss of habitat services from project-related impacts (measured as a loss of habitat services from pre-disturbance conditions) and is used to scale compensatory mitigation requirements to potential Project related impacts (King 1997; Dunford et al. 2004; Kohler and Dodge 2006; NOAA 2006, 2009). An HEA provides a scientific-based method of scaling compensatory mitigation requirements, and has been used by federal regulatory agencies including the USFWS and the National Oceanic and Atmospheric Administration (NOAA).

The Proponents have conducted a HEA for the Project (the BLM and cooperating agencies provided technical and biological advice regarding the development of the HEA; however, the Proponents maintain responsibility and ownership of the HEA). Details of how the HEA was conducted, what data were used during the assessment, the justification for the HEA's assumptions and parameters, as well as the results of this analysis can be found in Appendix J-2. The Proponents have also prepared a draft outline of their Sage-Grouse Mitigation Plan, based in part on the results of their HEA, which can be found in Appendix C-3 (the BLM and cooperating agencies provided recommendations regarding appropriate compensatory mitigation; however, the Proponents maintain responsibility and ownership of the mitigation plan).

Density Disturbance Calculation – As outlined in the framework, once a preferred alternative has been selected by the BLM, an additional site-specific evaluation regarding the density of disturbance within Core/Key Areas may be conducted if the selected route is located in Wyoming Core Areas outside of the Wyoming Governor's Corridor (see Appendix J-1). Note that the DDC is not a part of the general impact analysis and is instead a tool developed by the BLM to evaluate opportunities to: 1) minimize the density of disturbance within Core Areas that are outside the designated disturbance corridor identified in the Wyoming Governor's EO 2011-5; and 2) restore and/or enhance important sage-grouse habitat as a part of project-related mitigation. These site-specific habitat evaluations will also enable the BLM to: 1) demonstrate compliance with the *Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands including Federal Mineral Estate* (IM WY-2010-012 [BLM 2009c]); and 2) demonstrate consistency with the sage-grouse Core Area

Protection from the Wyoming Governor's EO 2011-5[3], if the route is located outside of the Wyoming Governor's Corridor. As the BLM's Preferred Route in Wyoming is located within the Wyoming Governor's corridor through Core areas, a DDC is not required for this Project and will not be conducted.

3.11.1.5 Existing Conditions[4]

This section discusses the TES species that could potentially be present within the Analysis Area. It is broken into three parts: 1) threatened, endangered, proposed, or candidate species under the ESA; 2) Forest Service and BLM sensitive species; and 3) Forest Service MIS. The potential impacts that could occur to these species as a result of Project-related activities are addressed in Section 3.11.2.

Threatened, Endangered, Proposed or Candidate Species under the ESA

The threatened, endangered, proposed, or candidate species covered under the ESA that could potentially be present within or in close proximity of the Analysis Area are listed in Appendix D, Table D.11-1. This list was discussed and evaluated in Level 1[5] meetings in Wyoming on May and November 2008, and in Idaho on April 2008. This list has been updated since the 2008 meetings, due to updates made to the list of species covered under the ESA since 2008. This list may contain some species that are present within the general portion of the states crossed by the Project; however, their distribution does not overlap with or habitat for these species is not present within the Analysis Area. Note that the Proposed Route would not cross through ESA-designated critical habitat for any TES wildlife species; however, Alternative 9E (revised) would cross through bull trout designated critical habitat.

Although no threatened, endangered, proposed, or candidate fish species covered under the ESA are present within or in close proximity to the Analysis Area (including areas directly downstream of Project-related stream crossings), several ESA fish species are present in downstream areas located outside of the Analysis Area (when considering the entire length of a stream, which can extend hundreds of miles and pass through multiple states). The ESA fish species that are located outside of the Analysis Area, but which still need to be considered within this analysis because they could be affected by water withdrawal from the Colorado or Platte River systems (as defined by the Upper Colorado Endangered Fish Recovery Program for the Colorado River system, as well as the PRRIP for the Platte River system) are listed in Appendix D, Table D.11-1 (see Sections 3.11.1.3 and 3.11.2.2).

[3] Note that this EO has undergone multiple revisions in the last 3 years, and that the process continues to evolve. The BLM will continue to work with the Wyoming Governor as well as the state wildlife agency to ensure a cohesive methodology for the protection of the greater sage-grouse.

[4] Note that the level of information presented within this document may differ between species. This is due to specific requests from wildlife and land-management agencies regarding individual TES species. For example, the level of information for the sage-grouse is at times more detailed than that presented for other species due to the potential Project-related impacts to sage-grouse, the elevated level of concern expressed by federal and state agencies regarding this species, and specific requests made by wildlife management agencies and the public regarding information on sage-grouse.

[5] Level 1 meetings are quarterly meetings among USFWS, BLM, state wildlife departments, Forest Service, and biologists that provide Project updates and allow for technical discussion and agreements on protocols.

The following contains a discussion of each of the threatened, endangered, proposed, or candidate species that were determined to have distribution or suitable habitat within the Analysis Area, or were identified during agency coordination meetings as a species that needed to be addressed in detail within this EIS.

Threatened, Endangered, Proposed, or Candidate Wildlife Species under the ESA

Greater Sage-Grouse (Candidate; MIS; Forest Service Sensitive; BLM Sensitive)
The sage-grouse was first considered for protection under the ESA in 2003. After reviewing the best available scientific and commercial information regarding the sage-grouse's status and factors affecting its current status, the USFWS concluded (on January 2005) that listing the sage-grouse was not warranted (70 *Federal Register* 2243). However, on February 2008, the USFWS announced that the sage-grouse would receive an additional review to determine if the species warrants protection under the ESA. The USFWS stated that the new status review would take into consideration relevant information that had become available since 2005 (73 *Federal Register* 75176-75244). The new status review conducted by the USFWS utilized, to a large extent, data from a population trend analyses conducted in 2008 by the WAFWA, which incorporated an additional 4 years of data beyond what was used by the Connelly et al. (2004) analysis during the initial status review. The WAFWA analysis found a long-term population decline between 1965 and 2007 (WAFWA 2008). Based in part on this new information, as well as compounding factors they determined were currently threatening sage-grouse (e.g., habitat loss, West Nile virus, hunting and predation pressures, etc.), the USFWS determined on March 23, 2010, that listing the sage-grouse was warranted but precluded by higher priority species, thereby designating the sage-grouse as a candidate species (75 Federal Register 13910 14014). The USFWS is scheduled to make a final listing determination (i.e., either listing the sage-grouse as threatened or endangered, or determining that it does not warrant listing) by 2015. As one of the USFWS reasons for the "warranted but precluded" status for the sage-grouse was that existing regulatory mechanisms were inadequate to protect the species, the BLM as well as state governments have established, or are in the process of establishing, guidelines and regulations meant to further protect this species (see the discussion of federal and state regulations in Section 3.11.1.3). Although there is concern regarding this species' current status, hunting of this upland game-bird is still permitted by many states, including Idaho and Wyoming.

The sage-grouse is a sagebrush obligate, ground-nesting upland game-bird species. It is considered a landscape species,[6] and can be found in foothills, plains, and mountain slopes where sagebrush is present or in mixtures of sagebrush, aspen, and open meadows. Suitable habitats for sage-grouse have been declining across the west, with most of the remaining suitable habitats located on federally managed lands (the vast majority of which are located on BLM-managed lands; Wisdom et al. 2002). Declines in the suitability of sage-grouse habitats, both on and off federally managed lands, have resulted from a variety of factors including direct loss of habitat, invasion of exotic species, grazing by herbivores, alterations to fire regimes, and lack of successful

[6] Landscape species use large, diverse areas and can have a substantial impact on the structure and function of natural ecosystems.

rehabilitation of impacted area with native shrubland species (Wisdom et al. 2002; Knick et al. 2010). Other factors that may also affect the suitability of sage-grouse habitats include the presence of or distance to anthropogenic features (Wisdom et al. 2011; see further discussion in Section 3.11.2).

Sage-grouse habitat use varies by season. In general, breeding habitats (i.e., spring habitat) and brood rearing habitats (i.e., summer habitat) are characterized by 10 to 25 percent sagebrush cover on average, with an abundant grass and forb understory of greater than 15 percent cover (Connelly et al. 2000). The perennial grass component is important in providing cover for nest sites, and forbs are important as browse for sage-grouse and providing habitat for protein rich insects necessary for chick growth. These habitats include a variety of sagebrush areas that are capable of supporting a continued source of succulent forbs and insects. Suitable summer habitats may also include higher elevations where forbs are still present, as well as agricultural fields, lower-elevation meadows, moist grassy areas, and riparian areas adjacent to sagebrush communities where suitable forbs are present. Winter habitat consists of relatively large areas of sagebrush with 10 to 30 percent canopy cover on average, which provides cover and forage for grouse above the snow (Connelly et al. 2000). Habitats with a variety of sagebrush heights are typically preferred by sage-grouse. Sage-grouse are capable of traveling long distances between seasonal habitats when necessary. For example, some populations may travel up to 50 miles between summer and winter ranges (Leonard et al. 2000).

Potential sage-grouse habitat (defined as all sagebrush habitats located within the known range of sage-grouse) occurs along all segments, and the Proposed Route would cross through approximately 617.4 miles of this habitat (see Appendix D, Table D.11-3).

PPH and PGH have been designated by the BLM in coordination with respective state wildlife agencies, based on direction provided in the BLM's National Greater Sage-Grouse Planning Strategy (BLM 2011b) as well as IMs 2012-043 and 2012-044. PPHs are defined as areas that have the highest conservation value to maintaining sustainable sage-grouse populations. These areas would include breeding and late brood-rearing (i.e., summer habitats), as well as winter concentration areas. PGH are areas of occupied seasonal or year-round habitat outside of priority habitat. The Proposed Route would pass through about 40.2 miles of PPH and 83.3 miles of PGH (see Table 3.11-2; also see Table D.11-11 in Appendix D, which lists this same information but for the Proposed Route and Route Alternatives). Appendix E, Figure E.11-3 shows the locations of PPH and PGH along the Project.

As stated previously, the State of Wyoming has designated Core Areas and the State of Idaho and BLM have identified Key Habitats, both of which are considered crucial and important habitat for the sage-grouse. Core areas in Wyoming were delineated around high concentrations of leks and other suitable habitat features frequented by this species as well as in consideration of other factors. Much of the Key Habitats in Idaho have recently (i.e., in 2012) been incorporated into the PPH designations discussed earlier (see Table 3.11-2). Similar to Wyoming Core, Idaho PPH also incorporates considerations of high lek density as well as lek connectivity considerations. Currently, there are about 15,297,867 acres of designated Core Areas in Wyoming, and about

9,180,182 acres of Key Habitats in Idaho. Appendix E, Figures E.11-2 and E.11-3 show the locations of Core/Key habitats in relation to the Project. The Proposed Route would pass through both Wyoming's Core Areas and Idaho's Key Habitats for a total of 184.6 miles (see Table 3.11-2; also see Table D.11-11 in Appendix D, which lists this same information but for the Proposed Route and Route Alternatives).

Table 3.11-2. Miles of Agency Designated Greater Sage-Grouse Habitat Crossed by the Proposed Route's Centerline[1/]

Segment Number	Segment Total Length (miles)	Core Areas Crossed (miles)	Key Areas Crossed (miles)	R1 Habitats Crossed (miles)	R2 Habitats Crossed (miles)	R3 Habitats Crossed (miles)	PPH (miles)	PGH (miles)
1W(a)	73.8	25.8	–	–	–	–	–	–
1W(c)	73.6	24.8	–	–	–	–	–	–
2	91.9	40.9	–	–	–	–	–	–
3	45.9	–	–	–	–	–	–	–
3A	5.1	–	–	–	–	–	–	–
4	197.6	40.2	14.6	–	–	–	9.2	5.4
5	55.7	–	–	–	–	–	–	–
6	0.5	–	–	0.3	–	–	–	0.3
7	118.2	–	11.9	16.5	–	5.1	8.4	25.1
8	131.5	–	15.1	20.0	11.4	–	6.6	21.1
9	162.2	–	11.2	10.0	–-	–	16.0	25.8
10	34.4	–	0.1	6.0	5.7	–	–	6.0
Total Miles	**990.5**	**131.7**	**52.9**	**52.6**	**17.1**	**5.1**	**40.2**	**83.3**

1/ Mileages are rounded to the nearest tenth; therefore, columns may not sum exactly.
PGH – Preliminary General Habitat; PPH – Preliminary Priority Habitat

In addition to Key Habitats, Idaho has delineated R1, R2, and R3 habitats for sage-grouse (see definitions of R1, R2, and R3 habitats in Section 3.11.1.3). About 3,460,058 acres of R1, 864,196 acres of R2, and 495,675 acres of R3 habitats have been delineated in Idaho. The Proposed Route would pass through 52.6 miles of R1 habitats, 17.1 miles of R2 habitats, and 5.1 miles of R3 habitats (see Table 3.11-2; also see Table D.11-11 in Appendix D, which lists this same information but for the Proposed Route and Route Alternatives).

The state wildlife agencies (e.g., IDFG, WGFD, Nevada Department of Wildlife, and Utah Division of Wildlife Resources) maintain databases of leks within their respective states. Federal and local entities can contribute data to these databases; however, the state agencies maintain ownership and responsibility over these databases. Leks within these state-maintained databases are differentiated by their status (e.g., occupied leks, unoccupied leks, undetermined leks). The term "occupied" is defined differently by the IDFG and WGFD. In Idaho, the IDFG define occupied leks as any lek that has been active during at least one breeding season within the prior 5 years; in Wyoming the WGFD define occupied leks as those that have been visited by males within the last 10 years. The Project would not cross through Nevada or Utah, and no direct impact to sage-grouse or their habitats is expected in these states; however, the 11-mile-wide analysis area used for sage-grouse would extend into Nevada and Utah along some of Segment 4's alternative routes as well as Alternative 7K. For the sake of this analysis, the Agencies have determined that all sage-grouse leks in Nevada and Utah will be

considered "occupied" in regard to management for this Project, due to the limited number of leks located within the portion of the 11-mile-wide Analysis Area buffer that overlaps these two states.

As required by BLM IM Wyoming-2012-019, calculations of distance between leks and proposed projects use lek perimeters when available (lek perimeter data is mapped and maintained by the respective state wildlife agency along with the state's lek database); when lek perimeter data are not available, the lek's centroid is used in the calculation. The Proposed Route's centerline would pass within 0.6 mile of 9 leks that are either occupied or have an undetermined management status (6 of which are located on federally managed lands; see TESWL-8), and within 2 miles of 42 leks with these same management statuses (26 of which are on federally managed lands; see Table 3.11-3; also see Table D.11-9 in Appendix D, which lists this same information but includes Route Alternatives as well). This value increases to 412 leks when considering a distance of 11 miles from the Proposed Route (with 272 leks on federally managed lands).

Table 3.11-3. Number of Greater Sage-Grouse Leks within Specified Distances of the Proposed Route's Centerline

Segment Number	Segment Length (miles)	Leks within 0.25 mile	Leks within 0.6 mile	Leks within 1 mile	Leks within 2 miles	Leks within 3 miles	Leks within 4 miles	Leks within 11 miles
Occupied Leks								
1W(a)	73.8	–	–	–	9(2)	12(2)	16(5)	46(16)
1W(c)	73.6	–	–	1	6(1)	13(3)	17(5)	49(18)
2	91.9	–	2(1)	5(3)	15(7)	32(16)	41(21)	130(59)
3	45.9	–	–	–	1(1)	3(3)	4(3)	35(17)
3A	5.1	–	–	–	–	–	–	12(4)
4	197.6	–	2(2)	6(4)	14(8)	24(13)	29(14)	106(62)
5	55.7	1	1	1	1	1	1	2
6	0.5	–	–	–	–	–	–	–
7	118.2	–	1	1	2(1)	3(2)	7(6)	43(37)
8	131.5	–	–	–	–	2(2)	2(2)	22(18)
9	162.2	–	–	–	1(1)	1(1)	9(9)	59(55)
10	34.4	–	–	–	–	–	1(1)	27(26)
Total Proposed[1/]		**1**	**4(3)**	**10(6)**	**22(13)**	**43(25)**	**64(38)**	**280(171)**
Leks with Undetermined Status								
1W(a)	73.8	–	–	–	–	–	–	4(2)
1W(c)	73.6	–	–	–	–	–	1	6(4)
2	91.9	–	–	2(2)	2(2)	2(2)	2(2)	8(6)
3	45.9	–	–	–	–	–	–	1
3A	5.1	–	–	–	–	–	–	1
4	197.6	–	1(1)	2(1)	8(3)	8(3)	10(5)	23(10)
5	55.7	–	-	–	–	–	–	3
6	0.5	–	-	–	–	–	–	6(5)
7	118.2	–	1	3(2)	3(2)	7(5)	10(7)	28(22)
8	131.5	–	-	–	–	3(1)	5(3)	31(25)
9	162.2	–	1(1)	1(1)	2(2)	6(5)	10(9)	58(54)
10	34.4	1(1)	2(1)	3(2)	5(4)	7(6)	7(6)	22(20)
Total Proposed[1/]		**1(1)**	**5(3)**	**11(8)**	**20(13)**	**31(20)**	**42(30)**	**132(101)**

Table 3.11-3. Number of Greater Sage-Grouse Leks within Specified Distances of the Proposed Route's Centerline (continued)

Segment Number	Segment Length (miles)	Leks within 0.25 mile	Leks within 0.6 mile	Leks within 1 mile	Leks within 2 miles	Leks within 3 miles	Leks within 4 miles	Leks within 11 miles
Unoccupied Leks (i.e., leks that have not been active within the last 5 years in Idaho or the last 10 years in Wyoming)								
1W(a)	73.8	–	–	–	–	–	–	4(1)
1W(c)	73.6	–	–	–	–	–	–	6(1)
2	91.9	–	–	2(2)	3(3)	5(4)	6(5)	20(9)
3	45.9	–	–	–	–	–	1(1)	4(4)
3A	5.1	–	–	–	–	–	–	2(2)
4	197.6	–	1(1)	3(2)	3(2)	5(2)	7(3)	22(12)
5	55.7	–	–	–	–	–	–	–
6	0.5	–	–	–	–	–	–	–
7	118.2	–	–	–	1	1	1	6(4)
8	131.5	–	–	1(1)	2(2)	2(2)	2(2)	2(2)
9	162.2	–	–	–	–	4(2)	4(2)	14(11)
10	34.4	–	–	–	–	1	1	5(3)
Total Proposed[1/]		**0**	**1(1)**	**6(5)**	**9(7)**	**16(10)**	**19(12)**	**60(34)**

Note: The numbers in parentheses indicate the number of leks located on federally managed lands (e.g., a "4(2)" value indicates there are 4 leks within the buffer distance, 2 of which are located on federally managed lands).
1/ There is some overlap between the number of leks located along one Segment compared to another (e.g., a lek located 2 miles from the end of Segment 4 may also be located within 2 miles of Segment 5); therefore, the values reported for each segment separately in this table cannot be summed to get the total number of leks located along the Proposed Route as a whole.

Black-Footed Ferret (*Endangered*)

The black-footed ferret was first designated as "endangered" by the Bureau of Sport Fisheries and Wildlife in 1966. The species was listed as "threatened with extinction" (endangered) on March 11, 1967, and its current status is endangered under the ESA. The reduction in the availability of their principal prey species, in combination with other factors such as secondary poisoning from toxicants ingested by prairie dogs (upon which they are reliant for survival), resulted in the near extinction of the black-footed ferret in the wild by the early 1970s (USFWS 2003a). As the entire known population of ferrets in the Project Area (i.e., the Shirley Basin 10(j) population) is "reintroduced," they are considered a nonessential experimental population under the ESA and are treated as an ESA proposed species. The 10(j) population discussed above is the only known population of black-footed ferrets in Wyoming; all other areas of the state have been block cleared, meaning that there is no requirement to survey or conduct Section 7 consultation for these remaining areas.

Black-footed ferrets are highly dependent upon prairie dog colonies for food, shelter, and dens; therefore, the ranges of these species coincide (USFWS 2003a). Historically, black-footed ferrets have been reported in association with the black-tailed prairie dog, white-tailed prairie dog, and Gunnison's prairie dog (*Cynomys gunnisoni*) towns (USFWS 2003a). Substantial reductions in both prairie dog numbers and distribution have occurred during the last century due to the conversion of native prairie to farmland, widespread poisoning of prairie dogs, and outbreaks of sylvatic plague. Sylvatic plague is an exotic disease to which prairie dogs have little or no immunity and to which the black-footed ferrets are also highly susceptible (USFWS 2003a).

The black-footed ferret was believed to be extinct throughout North America until a small relic population was discovered in a prairie dog colony west of Meeteetse, Wyoming, in 1981. Canine distemper and sylvatic plague killed the majority of that population in 1986 and 1987 (WGFD 2005). The 18 surviving ferrets were captured and became the founder population for captive breeding efforts initiated by the WGFD. These efforts were successful and have provided ferrets for reintroduction at nine sites in the western United States and Mexico. Currently only two reintroduced populations have been established that no longer require releases of captive-raised ferrets; one in western South Dakota and the other near Medicine Bow in southeastern Wyoming (WGFD 2005). The Rawlins BLM FO is home to the first site of the reintroduced black-footed ferret population in the country. It is the only known population in Wyoming that is still extant. This population is located in Carbon County, and is called the Shirley Basin 10(j) population (hereafter referred to as "10(j)"). This re-introduced population is considered a nonessential experimental population and is treated as an ESA proposed species (i.e., not protected from unintentional take).

The USFWS in coordination with state wildlife agencies have "block-cleared" various areas, after determining that these areas no longer contain any wild, free-ranging black-footed ferrets (i.e., those listed as endangered under the ESA). Block clearance means that activities within these areas that result in the removal of black-tailed prairie dogs or their habitat will no longer be required to meet the USFWS survey guidelines for black-footed ferrets, or undergo consultation under Section 7 of the ESA (USFWS 2004b). However, USFWS also stated that the clearance from surveys must not be interpreted to mean that the area is free of all value to black-footed ferrets, and coordination with USFWS is necessary to ensure that the most recent information is accessed. This clearance from the need for surveys does not provide insight into an area's value for recovery of the species through future reintroduction efforts (see discussion above regarding reintroduction efforts). Thus, while an action proposed in a cleared area needs no survey and is not likely to result in take of ESA listed endangered individuals, the action could have an adverse effect upon the value of a prairie dog town as a future reintroduction site and should be evaluated to determine the significance of that effect.

Habitat for black-footed ferrets was considered to be the extent of the Shirley Basin populations (i.e., the 10(j) population) mapped by the WGFD (along Segments 1 and 2). The Proposed Route would cross this black-footed ferret habitat along Segments 1 and 2. Out of the total combined length of 239.3 miles for Segments 1w(a), 1W(c), and 2, the Proposed Route would cross approximately 6.3 miles of suitable black-footed ferret habitat (see Table D.11-3 in Appendix D).

Canada Lynx (*Threatened*)

On July 8, 1998, the USFWS proposed to list Canada lynx as a threatened species under the ESA. The Forest Service and BLM responded to the proposal by establishing a team of international experts in lynx ecology to collect and summarize scientific data. This resulted in the publication *Ecology and Conservation of Lynx in the United States* (Ruggiero et al. 1999). Based on the information gained through this study, the USFWS listed the Canada lynx as threatened, effective April 24, 2000 (65 *Federal Register* 16051-16086). The USFWS published a revision of the critical habitat designation for

the lynx on February 25, 2009 (74 *Federal Register* 36); however, the Project does not cross through designated critical habitat for the Canada lynx.

Lynx habitat is found generally at middle to upper elevations. Their habitat includes primarily cool, moist subalpine fir (*Abies lasiocarpa*) and Engelmann spruce (*Picea engelmannii*) forests, and moist lodgepole pine (*Pinus contorta*) forests. Cool, moist forests of Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), Western larch (*Larix occidentalis*), and aspen contribute to lynx habitat where intermingled with, or adjacent to, Engelmann spruce (*Picea engelmannii*) or lodgepole pine (*Pinus contorta*). Lynx tend to have very large home ranges, varying from about 15,000 to 30,000 acres or 10 to 20 square miles. Lynx are highly mobile, with characteristic long-distance movements in excess of 60 miles. Studies have shown that they prefer contiguous forests and avoid large openings unless shrubs and trees provide enough hiding cover (Ruggiero et al. 1999). Lynx may also use lowland shrub habitats periodically, while dispersing between suitable high-elevation forest habitats, or while snowshoe hare populations are low in forest habitats and populations of shrub-dependent prey species (e.g., sage-grouse or jackrabbit) are high in shrub habitats adjacent to forested areas (Ruediger et al. 2000).

Snowshoe hares are the primary prey of lynx, making up anywhere from 35 to 97 percent of the diet (Ruggiero et al. 1999); therefore, any action that impacts snowshoe hares can have consequences to lynx. In addition, other small mammal species, such as red squirrels, may be an important alternate prey, especially when hare populations are low (Ruggiero et al. 1999).

The majority of the Analysis Area consists of unsuitable habitat for the Canada lynx; however, the centerline of Alternative 4F bisects a small portion of one area designated as a Lynx Analysis Unit (LAU). An LAU is described as core habitat for the Canada lynx and is considered occupied habitat (Forest Service 2007c). The centerline of Alternative 4F would cross 4.5 miles of this core LAU area. All other Route Alternatives (including the Proposed Route) would entirely avoid LAUs (Table D.11-3 in Appendix D). The portions of the LAU crossed by Alternative 4F is located south of the Bridger NF, which itself represents the southern extent of the designated critical habitat for Lynx (74 *Federal Register* 63343-63366). This area is shown in Figure E.11-1. Table 3.11-4 displays the total size of this LAU, as well as the total acreage of forested habitat contained within this LAU (note that this is the total area in the LAU, not the area impacted by the Project; see Section 3.11.2.2 for a discussion of the area impacts).

Table 3.11-4. Total Size of Lynx Analysis Units (LAUs) Crossed by the Project

Total Size of LAU (acres)	Total Forested Habitat in LAU (acres)
18,776	15,659

The Project would cross multiple areas that have been designated as lynx linkage habitat by an interagency / intergovernmental panel (Forest Service 2007c), all of which are located along Segment 4 (see Figure E.11-1). The Forest Service has indicated that one of these linkage corridors is located in the Caribou-Targhee NF (D. Green 2012).

Columbia Spotted Frog (Candidate; Forest Service Sensitive)

In May of 1989, the USFWS received a petition to list the Columbia spotted frog (*Rana luteiventris*) under the ESA. In May 1993, the USFWS released their 12-month petition finding in which they stated that the Columbia spotted frog consisted of five distinct population segments: 1) the main population (Alaska, British Columbia, Alberta, Wyoming, Montana, north and central Idaho, eastern Washington, and northeastern Oregon); 2) the Great Basin (southern Idaho and Nevada); 3) the West Coast (western Washington, Oregon, Idaho, and Nevada); 4) the Wasatch Front, Utah; and 5) the West Desert, Utah. All of the distinct population segments, except for the main population, were classified as candidate species by this May 1993 12-month petition finding.

Columbia spotted frogs are found near bodies of slow-moving water including lakes, ponds, sluggish streams, and marshes. During the summer they may disperse into upland forests, grasslands, and shrublands; however, these upland habitats must still be closely associated with moist vegetated areas. Aquatic habitat for the spotted frog consists of the littoral zone of emergent vegetation, including willows, grasses and sedges, and submerged aquatic plants. The spotted frog over-winters in or immediately adjacent to permanent waterbodies that remain above freezing temperatures and are well oxygenated, such as streams, springs, and spring-fed lakes.

General associations of Columbia spotted frogs with NWI classifications have been made in several studies (Patla and Keinath 2005). The NWI classifications that are associated with Columbia spotted frogs occurrences include palustrine wetlands with shrub-scrub, emergent, aquatic bottom, and intermittent riverine streambed sites; and water regimes include seasonally flooded, semi-permanently flooded, and saturated areas.

In Idaho, the species mainly occurs in northern Idaho with separate isolated populations in Owyhee County. In Wyoming, it is found in Bighorn, Sheridan, Johnson, Teton, Sublette, Fremont, and Lincoln Counties.

Suitable habitat for the Columbia spotted frog was considered to be all wetland habitats located within Owyhee, Bighorn, Sheridan, Johnson, Teton, Sublette, Fremont, Lincoln, and Eureka Counties (however, the Project would only cross through Owyhee and Lincoln Counties). Suitable wetland habitat for the Columbia spotted frog would be crossed by Segments 4, 8, and 9. Out of the total combined length of 491.3 miles for Segments 4, 8, and 9, the Proposed Route would cross approximately 2.9 miles of suitable Columbia spotted frog habitat (Table D.11-3 in Appendix D).

Grizzly Bear (Threatened; Forest Service Sensitive)

In July 1975, the grizzly bear was designated as threatened in the conterminous United States under the ESA. Populations of these bears have increased due to protective measures required under the ESA. The Yellowstone Distinct Population Segment (DPS) has increased from estimates as low as 136 individuals (when this population was first listed in 1975) to more than 500 animals as of 2006; population increases have occurred at a rate of 4 to 7 percent annually. Therefore, on March of 2007, the USFWS announced that the grizzly bear's Yellowstone DPS had recovered and subsequently dropped their status as threatened under the ESA. In 2009, Montana District Court Judge Donald W. Molloy ruled that existing regulatory mechanisms outside the ESA were

inadequate to protect the grizzly bears, and that the USFWS failed to adequately consider the impacts of global warming and other factors on food sources for the grizzly, before delisting the Yellowstone DPS. Therefore, the Yellowstone DPS has been relisted as a threatened species under the ESA as of March 26, 2010.

Grizzly bears are habitat generalists; however, they are found most often in mountainous habitats, away from human developments. The primary factors that determine the suitability of habitat and the number of bears that the habitat can support is overall habitat productivity, availability of food, and the level and types of human activities present. Food types utilized by the Yellowstone DPS grizzly bears depend on the season of year, and can range from ungulates, spawning cutthroat trout, seeds of whitebark pine (*Pinus albicaulis*), and army cutworm moths (USFWS 2007a). In fact, impacts to the whitebark pine due to global warming and infestation by pine beetles was one of the primary reasons for Judge Donald W. Molloy's ruling to relist the Yellowstone DPS.

The grizzly bear Primary Conservation Area (PCA) was established by the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area, and the 1993 Grizzly Bear Recovery Plan. The PCA contains the minimum seasonal habitat components necessary to support grizzly bear populations. The PCA encompasses 9,209 square miles (5,893,760 acres) within three states: southern Idaho, southwest Montana, and Northwest Wyoming (USFWS 2007a). In addition, the USFWS has designated the boundaries of the Yellowstone DPS and the acreage of suitable habitat within the DPS (USFWS 2007a). Yellowstone grizzly bears continue to increase their range and distribution annually, and grizzly bears in the Yellowstone area now occupy habitats that they have been absent from for decades. Approximately 84 to 90 percent of females with cubs occupy the PCA and the remaining females with cubs have expanded beyond the portion of PCA within the DPS boundaries. Grizzly bears now occupy 68 percent of suitable habitats located within the DPS boundaries and may soon occupy the remainder of available suitable habitat (USFWS 2007a).

The Proposed Route along Segments 3 and 4 would pass through approximately 163.5 miles of land within the range of the Yellowstone DPS (the total combined length of Segments 3 and 4 equals approximately 248.6 miles). The Project would cross the Yellowstone DPS along the southernmost edge of the DPS boundary, adjacent to Highway 80, Highway 30, and the town of Kemmerer; however, the Project (Proposed Route and Route Alternatives) would not pass through the PCA or though areas identified by the USFWS as suitable grizzly bear habitats.

<u>Idaho Ground Squirrel (Northern – Threatened / Southern – Candidate)</u>
In January 1989, the USFWS determined that the northern Idaho ground squirrel (*Spermophilus brunneus brunneus*) qualified as a category 1 candidate species. In February 1996, the USFWS ceased using category designations and included the northern Idaho ground squirrel as a candidate species. In April 2000, the USFWS listed the northern Idaho ground squirrel as threatened, while the southern Idaho ground squirrel (*Spermophilus brunneus endemicus*) remains listed as a candidate species (65 *Federal Register* 17778-17786).

Research suggests that northern and southern ground squirrel prefers native cover such as big sagebrush, bitterbrush, and a variety of native forbs and grasses; however, some nonnative features may enhance their survival, including alfalfa fields, haystacks, and fence lines. Populations are typically associated with shallow rocky soils in xeric meadows surrounded by ponderosa pine and Douglas-fir forests.

Northern Idaho ground squirrels are only found in west-central Idaho within Adams and Valley Counties (USFWS 2003b); habitat for the northern Idaho ground squirrel occurs at elevations ranging from 3,000 to 5,400 feet, surrounded by forests. The southern subspecies of the Idaho ground squirrel is found at lower elevations within hilly areas and grasslands; these areas are often dominated by annual grassland with relict big sagebrush and bunch grasses. Recent surveys indicate that the southern Idaho ground squirrel occurs in about 38 square miles in Idaho extending from Emmett northwest to Weiser and the surrounding area of Squaw Butte, Midvale Hill, and over to the Henley Basin in Gem, Payette, and Washington Counties. Its range is bounded on the south by the Payette River, on the west by the Snake River, and on the northeast by lava flows with little soil. Currently, the distribution of the species is patchy, with areas of localized abundance and large areas of apparently suitable habitat that are unoccupied or sparsely occupied. The areas of localized abundance are typically concentrated around human-altered landscapes such as golf courses and row crop or farmed fields (particularly alfalfa and clover). The Project does not cross either of these species' current distributions.

Interior least tern (*Endangered*)

The interior least tern was listed as endangered on May 28, 1985. Interior least terns breed in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande River systems. Their winter range is uncertain, but probably includes coastal areas of Central and South America. In the U.S. terns use barren to sparsely vegetated sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines from late April to August. The Project does not cross historical or current distribution for this species; however, they may be found in downstream locations along the Platte River (see discussion of the PRRIP in Section 3.11.1.3).

Piping Plover (*Threatened*)

The piping plover was federally listed as threatened in 1986, except in the Great Lakes watershed where it was listed as endangered. Its range during the breeding season includes south-central Canada, northeastern Montana, North and South Dakota, and Nebraska (Elliott-Smith and Haig 2004). There is no designated critical habitat for piping plovers near the Analysis Area; the nearest critical habitat is located over 100 miles away, in eastern Montana (67 *Federal Register* 57638).

Breeding habitat for this species is wide, sparsely vegetated, open sandy beaches at alkali lakes, reservoirs, rivers, and, less commonly, freshwater lakes, dry alkali lakes, and sandpits (Elliott-Smith and Haig 2004). The piping plover's diet is made up of freshwater and marine invertebrates washed up on shore and benthic invertebrates (Elliott-Smith and Haig 2004). Threats to piping plovers include human disturbance, development of beaches, increases in mammalian and avian predators in response to disturbance, and changes in hydrology (Elliott-Smith and Haig 2004).

The Project does not cross historical or current distribution for this species; however, the piping plover may be found in downstream locations along the Platte River (see discussion of the PRRIP in Section 3.11.1.3).

Preble's Meadow Jumping Mouse (Threatened; Forest Service Sensitive; BLM Sensitive)

On May 13, 1998, the USFWS designated the Preble's meadow jumping mouse (*Zapus hudonius preblei*) as threatened in its entire range; and on June 23, 2003, critical habitat for this species was designated. On February 2, 2005, the USFWS issued a 12-month finding on a petition to delist the Preble's meadow jumping mouse and proposed to remove the mouse from the federal list of threatened and endangered species. On July 10, 2008, the USFWS removed ESA protections for Preble's meadow jumping mouse populations, delisted their critical habitat in Wyoming, and amended the listing for the mouse to indicate that the subspecies remains protected as a threatened species in the Colorado portion of its range (USFWS 2008c). However, on August 5, 2011, the USFWS relisted the Preble's meadow jumping mouse as threatened in Wyoming. Critical habitat has been designated for Preble's meadow jumping mouse in Colorado but not Wyoming; therefore, this critical habitat is not crossed by the Project (by the Proposed Route or the Route Alternatives).

Preble's meadow jumping mouse habitat consists of dense, well-developed wetland and riparian areas as well as the adjoining uplands, with the uplands containing undisturbed shrub cover. Although they typically inhabit stream-side areas, this species has been observed to hibernate, forage, and escape flooding by entering adjacent upland areas (up to 328 feet beyond the 100-year flood plain). Studies show that the Preble's meadow jumping mouse is capable of traveling more than 0.5 mile in a single night. Hibernation occurs underground or beneath logs or other similar shelters.

Their known distribution overlaps with portions of Laramie, Goshen, Platte, Albany, and Converse Counties in Wyoming. Knowledge about the distribution of this species has increased dramatically since the time of original listing due to increased trapping and survey efforts; these efforts have resulted in an expansion of the known range of these mice, especially in Wyoming (73 *Federal Register* 39790), and further studies are needed to better understand their current distribution. Due to the uncertainty regarding their distribution, the analysis presented in this EIS considers suitable habitat for this species to be all wetland and riparian areas as well as areas 328 feet beyond the 100-year floodplain within the eastern portion of the Wyoming segments of the Project (i.e., Segments 1W and 2).

The closest known occurrence of a Preble's meadow jumping mouse to the Analysis Area was one female from 1991 that was located approximately 3.7 miles east of Segment 1W(c); however, it is not a confirmed record (WYNDD 2010). The Project would cross through suitable habitat for the Preble's meadow jumping mouse (i.e., wetland and riparian areas as well as areas 328 feet beyond the 100-year floodplain) within the eastern portion of the Wyoming segments (i.e., Segments 1W and 2). Out of the total combined length of 239.3 miles for Segments 1W and 2, the Proposed Route would cross approximately 22.1 miles of potential Preble's meadow jumping mouse habitat (Table D.11-3 in Appendix D).

Whooping Crane (*Endangered*)
Whooping cranes were listed as endangered in 1970, with critical habitat designated in 1978. There are approximately 340 birds living in the wild, with the only self-sustaining population nesting in the Northwest Territories of Canada and wintering along the Gulf of Mexico at Aransas NWR in Texas (CWS and USFWS 2007). Collisions of cranes with powerlines contribute substantially to whooping crane mortality during migration; however, this population does not migrate through or stop over in the Analysis Area (CWS and USFWS 2007). Some birds and eggs were introduced at Grays Lake NWR in Idaho in an attempt to establish an additional, separate population, but this did not succeed and as of 2002 there are no birds at this location (CWS and USFWS 2007). The Project does not cross historical or current distribution for this species; however, whooping cranes may be found in downstream locations along the Platte River (see discussion of the PRRIP in Section 3.11.1.3).

Wolverine (Proposed; Forest Service Sensitive; BLM Sensitive)
In July 2000, the USFWS received a petition from the Biodiversity Legal Foundation and others to list the wolverine within the contiguous United States as a threatened or endangered species under the ESA and to designate critical habitat for the species. In December 2010, the USFWS determined that listing the wolverine was warranted but precluded by higher priority species, thereby designating the wolverine as a candidate species. However, the USFWS announced in February 2013 that they were proposing to list the DPS of the North American wolverine occurring in the contiguous United States, as a threatened species under the ESA, thereby establishing it as a proposed species.

Wolverines have large home ranges and typical occurs in very low densities. South of Canada, its distribution is typically limited to high mountain environments at or above the tree line; however, the wolverine can occur outside of these areas as long as snow conditions are still suitable during spring and summer (USFWS 2010f). Suitable denning habitat contains deep spring snow levels, which females use to construct burrows. Wolverines are opportunistic feeders and will scavenge carrion, as well as consume small mammals, birds, insects, and fruits.

The Project would not occur or impact areas within high altitude habitats near the tree line (i.e., in areas where wolverines are typically distributed in this region); however, the Project would pass through areas where the wolverine could occur as long as snow conditions are still suitable during spring and summer (USFWS 2010f). The Forest Service indicated that there was a wolverine observed about 6 miles south of the Proposed Route along Segment 4 in 2008, within the Copenhagen basin (Forest Service 2012). However, wolverines often move long distances in short periods of time when dispersing from natal ranges, making it difficult or impossible to distinguish with confidence between occurrence records that represent established populations and those that represent short-term transitory occupancy that do not represent a potential for establishment of home ranges and reproduction (USFWS 2010f). Therefore, while wolverines are expected to use the Bear River Range as migratory/ transitory habitat (i.e., along Segment 4), denning and reproduction within the area are not expected (Table D.6-1 in Appendix D lists the miles of forested habitat crossed along Segment 4).

Wyoming Toad (*Endangered*)
The Wyoming toad (*Bufo baxteri*) was listed by the USFWS as endangered in 1984 (73 *Federal Register* 58261-58262). The toad was believed to have gone extinct in 1987, although toads were later found at Mortenson Lake southwest of Laramie. Reintroduction attempts have occurred within Albany County, Wyoming. The toad was historically found only in the Laramie Basin within 30 miles of Laramie, Wyoming. By the early 1990s, a captured breeding program was commenced in an attempt to save the endangered toad from extinction, but no known wild reproduction has occurred since 1991. This species formerly inhabited floodplains, ponds, and small seepage lakes in the shortgrass communities of the Laramie Basin. The Project does not cross historical or current distribution for this species.

Yellow-Billed Cuckoo (Candidate; Forest Service Sensitive; BLM Sensitive)
In February 1998, the USFWS received a petition to list the western yellow-billed cuckoo under the ESA. In July 2001, the USFWS determined that listing the yellow-billed cuckoo in the western continental United States was warranted but precluded by higher priority species, thereby designating the yellow-billed cuckoo as a candidate species. It is considered a BLM sensitive species east of the continental divide. The threats currently facing the yellow-billed cuckoo include habitat loss, cattle grazing, and pesticide application.

Yellow-billed cuckoos breed in large blocks of riparian habitats. In Idaho, Wyoming, and most of the west, this usually consists of mature or late successional cottonwood stands with a dense understory of willow (*Salix* spp.) or dogwood (*Cornus* spp.). Dense understory foliage is important in nest site selection, whereas cottonwood trees (*Populus* spp.) are important for foraging. Nesting pairs require a minimum of approximately 5 acres of prime riparian habitat (Reynolds and Hinckley 2005).

In Idaho, historical records of yellow-billed cuckoos include the Snake River valley in the southeastern and southwestern portion of the state; however, recent observations (2003 to 2005) were restricted to the southeastern portion of the state only (Reynolds and Hinckley 2005). Suitable habitat along the Snake River in southeastern Idaho occurs sporadically from American Falls Reservoir, upstream to Palisades Dam, and from the confluence of the Henry's Fork and the South Fork of the Snake River upstream to St. Anthony (Reynolds and Hinckley 2005; USFWS 2007b). Habitat is also limited in Wyoming, occurring mainly along the Bighorn, Powder, Laramie, Cheyenne, and North Platte River drainages (Bennet and Keinath 2001).

Suitable habitat for the yellow-billed cuckoo was mapped where the species range overlaps the Analysis Area (as described in Section 3.11.1.4). Habitat for the yellow-billed cuckoo would be crossed by the centerline of the Proposed Route along Segment 9. Out of the total length of 162.2 miles for Segments 9, the Proposed Route would cross approximately 0.4 mile of suitable yellow-billed cuckoo habitat (see Table D.11-3 in Appendix D).

Threatened, Endangered, Proposed, or Candidate Invertebrate Species under the ESA

Four invertebrate species listed under the ESA are present within the Analysis Area. The distribution of these species is generally limited to aquatic habitats within the Snake and Bruneau River systems. Most of these invertebrate species have been impacted due to the past and current exploitation and development of the Snake River ecosystem, which has transformed these river systems from free-flowing cold-water systems to more slow-moving warmer systems.

Banbury Springs Limpet (*Endangered*)

The Banbury Springs limpet (*Lanx* spp.*)* was listed as endangered under the ESA in January 1992.

This species requires cold, clear, well-oxygenated water with swift currents. The Banbury Springs limpet is found on smooth basalt, boulders, or cobble-sized grounds ranging from 2 to 20 inches deep, but it avoids areas with green algae. Currently, this species is only known to exist at four cold-spring locations that are isolated from each other: Thousand Springs, Box Canyon Springs, Briggs Springs, and Banbury Springs (USFWS 1995).

The 1995 recovery plan for the Banbury Springs limpet designated river mile (RM) 584.8 to 589.3 of the Snake River as a recovery area for this species (USFWS 1995). The recovery area is located within the Analysis Area; however, the transmission line would not cross this species recovery area (including the Project's Proposed Route and Route Alternatives). In addition, there are no current plans to cross this area with access roads.

Bliss Rapids Snail (*Threatened*)

The Bliss Rapids snail (*Taylorconcha serpenticola*) was listed as threatened under the ESA in December 1992. The USFWS announced on June 6, 2007, that they had determined that a petition to delist the species may be warranted and that they would conduct a status review of the Bliss Rapids snail; however, the USFWS determined in September 2009 that the Bliss Rapids snail is likely to become endangered within the foreseeable future. It was therefore not removed from the ESA list.

This species resides on the sides and undersides of rocks in free-flowing and cold-water springs in the middle Snake River, in Idaho. It prefers relatively clean and rocky substrates, where it grazes on algae and diatoms at night. Current distribution of this snail within the Snake River consists of disjointed populations located primarily within the Hagerman reach and the tailwaters of the Bliss and Lower Salmon Dams (USFWS 1995).

The 1995 recovery plan for the Bliss Rapids snail designated RM 547 to 585 of the Snake River as a recovery area for this species (USFWS 1995). The transmission line would span this species recovery area along Segment 8 (Proposed Route), as well as Alternative 8A (at RM 573.5). There are no current plans to cross this species recovery area with access roads.

Bruneau Hot Springsnail (*Endangered*)
The Bruneau hot springsnail (*Pyrgulopsis bruneauensis*) was listed as endangered under the ESA in January 1993. The USFWS was ordered to reconsider its determination by the courts, and reconfirmed this species endangered status in June 1998.

The Bruneau hot springsnail occurs in thermal springs along an approximately 5-mile reach of the Bruneau River and in Hot Creek. The Bruneau hot springsnail inhabits small, geothermal spring runs and seeps, typically on basalt bedrock. Temperatures in these waters range from 15.7 to 36.9 degrees Celsius. Substrates usually comprise gravel and silt but individuals are also found on sand, mud, and algal film. Macrophytes are usually absent from occupied habitat.

A recovery plan was finalized in December 2003. This recovery plan defines the recovery area for the Bruneau hot springsnail as the portion of the Bruneau River between the southern boundary of Section 12, Township 8 South, Range 6 East and the northern boundary of Section 35, Township 7 South, Range 6 East, of Owyhee County, Idaho (Myler et al. 2007). This species recovery area is found within the Analysis Area; however, the transmission line would not cross this species recovery area (the Proposed Route or Route Alternatives). In addition, there are no current plans to cross this area with access roads.

Snake River Physa Snail (*Endangered*)
The Snake River physa snail (*Haitia [Physa] natricina*) was listed as endangered under the ESA in January 1992.

In 1995, the USFWS (1995) reported that the Snake River physa's "modern" range extended from Grandview (RM 487) to the Hagerman Reach (RM 573). However, recently identified specimens collected by the Bureau of Reclamation (Gates and Kerans 2010) and Idaho Power Company from 1995 to 2003 (Keebaugh 2009) confirm its distribution to as far upstream as Minidoka Dam (RM 675) and as far downstream as Ontario, Oregon (RM 368), some 128 miles downstream of its previously recognized downstream range (Grandview). Two specimens were recovered from the Bruneau River arm (RM 4) of C.J. Strike Reservoir (Keebaugh 2009), representing the only tributary of the Snake River in which the species has been recorded. While the species is more widespread than previously thought, currently recorded from an estimated 307 river miles, it has not been found at high densities within much of its current known range and is likely absent from portions of the river. The most extensive surveys conducted to date are from the 12-mile reach below Minidoka Dam (RM 663-675; Gates and Kerans 2010), in which live Snake River physa were recovered from 29 of 365 samples collected. In plots where they were found, densities were typically 32 per square meter, but live animals reached relatively high densities in a few of these samples, estimated at 40 to 64 individuals per square meter. Elsewhere in the Snake River, surveys have been much less intensive and not specific to Snake River physa. Of 758 samples re-examined by Keebaugh (2009) between river miles 200 and 589.2, 4.5 percent (34) contained Snake River physa. Of those, 67 percent (23) contained a single animal (0.25/m2) and one sample near Marsing, Idaho (RM 421) contained a high of 7 individuals, extrapolating to a density of 28 per square meter. Hence, in

habitats sampled in the lower Snake River, the species would probably not be regarded as ubiquitous or abundant, but rather patchily distributed. River reaches upstream of the Hagerman area (est. RM 590) through Milner Reservoir (est. RM 663) have not received systematic surveys or re-examination of previously collected materials.

The 1995 recovery plan for the Snake River physa designated RM 553 to 675 of the Snake River as a recovery area for this species (USFWS 1995). The Project would span this species recovery area in multiple places: along Segment 8 (Proposed Route) and Alternative 8A at RM 573.5, and along Segment 10 (Proposed Route) at RM 624.0. There are no current plans to cross this species recovery area with access roads.

Threatened, Endangered, Proposed, or Candidate Fish Species under the ESA

A total of five fish species listed under the ESA are present in downstream areas outside of Analysis Area. The ESA species present in downstream areas outside of Analysis Area include four fish species found in the Colorado River system and one in the Platte River system. In addition, ESA listed critical habitat for the bull trout is located within the Analysis Area and would be crossed by one of the Project's Route Alternatives.

Colorado Pikeminnow (*Endangered*)

The Colorado pikeminnow (formerly Colorado squawfish) was listed under the Preservation Act of 1966, and has since become listed as endangered by the USFWS under the ESA.

This fish is the largest minnow in North America and one of the largest in the world. Colorado pikeminnow occur in the warm, swift waters of the big rivers of the Colorado Basin. Adults are migratory and inhabit pools and eddies just outside the main current. Young can be found in backwater areas. Colorado pikeminnow are adapted to rivers with seasonally variable flow, high silt loads, and turbulence. These fish can tolerate a broad range of temperatures from 35°C in the summer to lower than 10°C in winter. Historically, this species was found in the Colorado River and major tributaries in Arizona, New Mexico, Utah, Colorado, and Wyoming. Populations also exist in the Colorado, Green, Yampa, Gunnison, and San Juan Rivers, tributaries of the Colorado River (SJRB 2010).

The Project does not cross the current distribution of this species; however, this species may be found in downstream locations along the Colorado River (see discussion of the Upper Colorado Endangered Fish Recovery Program in Section 3.11.1.3).

Razorback Sucker (*Endangered*)

The razorback sucker was listed as endangered by the USFWS on October 23, 1991.

The razorback sucker occurs in medium to large rivers with swift turbulent waters, as well as slow backwater areas where it feeds on benthic fauna and flora, detritus, and plankton. This fish was historically found throughout the Colorado River Basin. Most wild fish are now found in Lake Mohave, which represents the largest population within the lower basin. A few adults have also been found in Lake Mead and Lake Havasu. In the upper basin, they can be found in un-impounded waters of the Green, Yampa, and

mainstem of the Colorado (SJRB 2010). Although adults reproduce in reservoirs, young do not survive due to a lack of suitable food items and predation by nonnative fishes.

The Project does not cross the current distribution of this species; however, this species may be found in downstream locations along the Colorado River (see discussion of the Upper Colorado Endangered Fish Recovery Program in Section 3.11.1.3).

Humpback Chub (*Endangered*)
The humpback chub was listed as endangered by the USFWS on March 3, 1967.

The humpback chub have been associated with a variety of habitats ranging from pools with turbulent to little or no current; substrates of silt, sand, boulder, or bedrock; and depth ranging from about 3.3 feet (1 meter) to as deep as 49 feet (15 meters). The historical distribution of the humpback chub includes portions of the mainstem Colorado River and four of its tributaries: the Green, Yampa, White, and Little Colorado Rivers. Currently, there are two populations near the Colorado/Utah border, one at Westwater Canyon in Utah and one in an area called Black Rocks, in Colorado. Smaller numbers have been found in the Yampa and Green Rivers in Dinosaur National Monument, Desolation and Gray Canyons on the Green River in Utah, Cataract Canyon on the Colorado River in Utah and the Colorado River in Arizona (USFWS 2010b).

The Project does not cross the current distribution of this species; however, this species may be found in downstream locations along the Colorado River (see discussion of the Upper Colorado Endangered Fish Recovery Program in Section 3.11.1.3).

Bonytail Chub (*Endangered*)
Bonytail chub were listed as endangered by the USFWS in 1980.

Bonytail chub are considered mainstream river species, preferring pools and eddies of warm, often heavily silted, swift moving rivers. However, they do occur in reservoir habitats as well. These fish were once common in portions of the upper and lower Colorado River basins. Now the bonytail chub is the rarest of the endangered fish species in the Colorado River basin. Recent surveys indicate that it is presently found only in Lake Mohave along the Arizona and Nevada border (USFWS 2010c).

The Project does not cross the current distribution of this species; however, this species may be found in downstream locations along the Colorado River (see discussion of the Upper Colorado Endangered Fish Recovery Program in Section 3.11.1.3).

Pallid Sturgeon (*Endangered*)
The Pallid sturgeon was listed as endangered by the USFWS on September 6, 1990.

Their preferred habitat has a diversity of depths and velocities formed by braided channels, sand bars, sand flats and gravel bars. The largest remaining populations of pallid sturgeon appear to be in the upper Missouri River above Ft. Peck Reservoir in Montana; in the Missouri and Yellowstone Rivers above Garrison Reservoir in North Dakota and Montana, respectively; in the Mississippi River below St. Louis, Missouri to the Old River Control Structure in Louisiana; and below the Old River Control Structure in the Atchafalaya and Red Rivers of Louisiana (USFWS 2001).

The Project does not cross historical or current distribution for this species; however, this species may be found in downstream locations along the Platte River (see discussion of the PRRIP in Section 3.11.1.3).

Bull Trout (ESA Critical Habitat)

The closest bull trout to the Analysis Area are in the Boise River watershed, upstream of Lucky Peak Dam, just southeast of Boise; therefore, there are no bull trout located within the Analysis Area. However, designated critical habitat for this species is located within the Analysis Area.

On January 14, 2010, the USFWS proposed revising the designation of critical habitat for the bull trout. In total, approximately 22,679 miles of streams and 533,426 acres of reservoirs or lakes were proposed for the revised critical habitat designation within Washington, Oregon, Nevada, Idaho, and Montana. On October 18, 2010, the USFWS made a determination regarding this proposed critical habitat (effective on November 17, 2010), and designated a total of 19,729 miles of streams and a total of about 488,252 acres of reservoirs or lakes as critical habitat for the bull trout. The transmission line would span a portion of this designated critical habitat along Alternative 9E (near node 9n); however, no road crossings would occur across bull trout critical habitat. The transmission line crossing would occur once along the Bruneau River, located approximately 10 miles south of where this river joins C.J. Strike Reservoir. Vegetation adjacent to the crossing was defined as “Wetland and Riparian” during Project-specific remote sensing, with adjacent areas defined as “Disturbed Sagebrush” (Tetra Tech 2010a).

BLM and Forest Service Sensitive Species

The Regional Foresters sensitive species list includes plant and animal species for which population viability is a concern on lands managed by the Forest Service. BLM sensitive species, per BLM Manual 6840, are managed under the special status species policy, which is to conserve BLM listed species and their ecosystems, and to ensure that actions taken by the BLM are consistent with the conservation of special status species and do not contribute to the listing of any species under the ESA. Species lists for the NFs and BLM FOs crossed by the Project were consulted to determine which species should be analyzed.

The habitat requirements and pertinent life history traits of all BLM and Forest Service sensitive species with the potential to occur near the Analysis Area are discussed in Table D.11-2 and Table D.11-1 of Appendix D. Table D.11-2 is limited to non-ESA species, while Table D.11-1 includes sensitive species that are also listed as threatened or endangered under the ESA, or those that are candidates or proposed for listing (e.g., sage-grouse, yellow-billed cuckoo, Columbia spotted frog).

Most of the BLM and Forest Service sensitive species that could potentially occur within the Analysis Area (see Tables D.11-1 and D.11-2 of Appendix D) will be addressed by grouping them based on their habitat requirements or life history traits. It is reasonable to lump these species because quantitative data for each species are not available, habitat requirements are similar for each group, and the potential impacts that could occur are similar (see impact discussion in Section 3.11.2); therefore, a group

discussion will accurately capture potential impacts for most of these species, while reducing redundancy in the impact analysis. However, some of the BLM and Forest Service sensitive species will be addressed individually due to increased concern regarding the effects of potential impacts, or when quantitative data (in the form of known occurrences or Project-specific habitat modeling) are available. Of the BLM and Forest Service sensitive species that could potentially occur within the Analysis Area (see Tables D.11-1 and D.11-2 of Appendix D for a comprehensive list of the sensitive species that could potentially occur within the Analysis Area), a detailed discussion and individual analysis of potential impacts is limited to five mammal species, four species of birds, and one amphibian, while the remaining species are discussed by habitat grouping (impacts are discussed in Section 3.11.2). Note that some of the BLM and Forest Service sensitive species are discussed within the preceding ESA section, due to their additional status as threatened, endangered, proposed, or candidate species under the ESA (e.g., sage-grouse).

BLM and Forest Service Sensitive Wildlife Species

Bald Eagle (Forest Service Sensitive; BLM Sensitive)
In 1963, the lower 48 states were home to barely 400 nesting pairs of bald eagles. After decades of conservation effort, the populations have recovered to approximately 10,000 nesting pairs, a 25-fold increase in the last 40 years. The bald eagle was officially declared recovered and removed from the threatened and endangered species list in June 2007. As of April 2007, the USFWS documented 216 bald eagle territories within Idaho and 95 within Wyoming. Bald eagles continue to be protected by the Eagle Act and the MBTA; both federal laws prohibit “taking” – killing, selling, disturbing, or otherwise harming eagles, their nests, or eggs (see Section 3.10 – General Wildlife and Fish).

Bald eagles are strongly associated with aquatic environments and often occupy riparian or lacustrine areas (i.e., rivers and lakes). Nesting and roosting occur in large trees or snags with open crowns that are typically found within 2 miles of a large, permanent waterbody. Bald eagles are opportunistic feeders, which feed on a wide variety of prey. Fish are most commonly taken, but mammals, reptiles, amphibians, and birds can also serve as prey, and carrion is frequently used during the winter.

As forested areas are limited in the general region crossed by the Project, the Analysis Area provides only limited nesting habitat for the bald eagle; however, it does contain some nesting and overwintering habitat. Out of the total combined length of 237.5 miles for Segments 1W(a), 1W(c), 5, and 10, the Proposed Route would cross approximately 13.4 miles of potential bald eagle overwintering habitat (Table D.11-4 in Appendix D). In addition, there is a single active bald eagle nest located within 1 mile of Segment 1W(a), one along Segment 1W(c), three along Segment 4, and two nests along Segment 5 (Table D.10-2 in Appendix D). The Proposed Route would cross 9.7 miles of habitat located within 1 mile of active bald eagle nests (Table D.11-4 in Appendix D).

Black-Tailed Prairie Dog (Forest Service Sensitive; BLM Sensitive)
In 2000, the USFWS listed the black-tailed prairie dog as an ESA candidate species. This species was later removed from this list in August 2004 after an updated evaluation of the best available scientific information led the USFWS to determine that the black-

tailed prairie dog was not likely to become an endangered species within the foreseeable future. Then on December 2, 2008, the USFWS announced a 90-day finding on a petition to list the black-tailed prairie dog as threatened or endangered under the ESA (73 *Federal Register* 10514-10560). The USFWS stated that the petition presents substantial scientific or commercial information indicating that listing the black-tailed prairie dog may be warranted. Therefore, a status review was initiated to determine if this species warranted listing. However, on December 3, 2009, the USFWS announced that listing the black-tailed prairie dog as either threatened or endangered is not warranted at this time (74 *Federal Register* 63343-63366).

The black-tailed prairie dog lives in burrows within dry prairies that contain short grass. The burrow entrance leads to a tunnel that goes down about 3 to 10 feet and then straightens out to a horizontal tunnel that runs about 10 to 15 feet. The black-tailed prairie dog is considered a keystone species for grassland habitats. The black-footed ferret, swift fox (*Vulpes velox*), golden eagle (*Aquila chrysaetos*), and ferruginous hawk utilize prairie dogs as a food source; while the mountain plover and burrowing owl depend on burrow habitats created by prairie dogs. Numerous other species share habitat with prairie dogs, and rely on them to varying degrees (73 *Federal Register* 73211-73219).

Historically, black-tailed prairie dogs generally occurred in large colonies that often contained thousands of individuals, covered hundreds or thousands of acres, and extended for many miles (73 *Federal Register* 73211-73219). Currently, most colonies are much smaller. Colonial behavior can increase the transmission of disease that can impact their populations (73 *Federal Register* 73211-73219). Sylvatic plague is a disease that can spread from prairie dog to prairie dog through the exchange of infected fleas or by contact between infected mammals. Black-tailed prairie dogs can be very susceptible to the sylvatic plague, and this disease has been a factor in the reduction of prairie dog abundance.

Wyoming historically had about 16,000,000 acres of black-tailed prairie dog habitat; however, recent estimates indicate that there are only 229,607 acres of suitable prairie dog habitat remaining in Wyoming (73 *Federal Register* 73211-73219). As described in Section 3.11.1.4, the suspected locations of black-tailed prairie dog colonies/complexes were mapped with the use of aerial photography (Tetra Tech 2010a; Figure E.11-4, Appendix E). Black-tailed prairie dog colonies/complexes occur along Segments 1W(a) and 1W(c) (see Table 3.11-5). Out of the total combined length of 147.4 miles for Segments 1W(a), and 1W(c), the Proposed Route would cross approximately 27.8 miles of suspected black-tailed prairie dog colonies and complexes (see Table D.11-4 in Appendix D and Figure E.11-4).

Table 3.11-5. Number of Black-Tailed Prairie Dog Colonies Crossed by the Proposed Route and Its Alternatives

Segment Number	Segment or Alternative	Black-Tailed Prairie Dog Colonies
1W(a)	Proposed – Total Length	3
	Proposed – Comparison Portion for Alternative 1W(a)-B	3
	Alternative 1W(a)-B	4
1W(c)	Proposed – Total Length	3

Burrowing Owl (Forest Service Sensitive; BLM Sensitive)
Burrowing owls occur in a wide variety of arid and semiarid environments. They occur in areas with well-drained soils, level to gentle slopes, and short vegetation with a high percentage of bare ground, which allows for visibility of predator and prey species. They prefer open prairie, grassland, desert, and shrub-steppe habitats, and may also inhabit agricultural areas, overgrazed pastures, golf courses, and airfields. Given their reliance on short vegetation, they are commonly found in association with high-intensity grazers, such as domestic livestock, prairie dogs, and ground squirrels.

Burrowing owls do not dig their own burrows. Instead, they use the burrows of other animals such as badgers (*Taxidea taxus*), prairie dogs, ground squirrels, marmots (*Marmota* spp.), and coyotes (*Canis latrans*), and are therefore associated with the presence of these burrowing species. The density of burrows is important as some burrows are used for nesting, while others (classified as “satellite” burrows) are used as cover for juvenile and adult owls, prey cache sites, and roosts from which the male may guard the nest burrow. They often nest in burrows near active prairie dog towns.

The burrowing owl home range often contains a mosaic of short vegetation for nesting habitat interspersed within taller vegetation for hunting. Tall vegetation may provide the cover necessary to host large populations of rodents, which are then susceptible to predation as they traverse through more open areas.

In Idaho, burrowing owls are patchily distributed throughout the southern half of the state. In Wyoming, they occur and breed throughout most of the state with highest concentrations in the south and east. Suitable habitat for the burrowing owl was mapped where the species range overlaps the Analysis Area (as described in Section 3.11.1.4). Habitat for the burrowing owl exists within all segments. The Proposed Route would cross approximately 643.7 miles of suitable habitat (Table D.11-4 in Appendix D). Table D.10-2, in Appendix D, lists the number of active burrowing owl nests that would be located along various portions of the Project.

Columbian Sharp-Tailed Grouse (MIS; Forest Service Sensitive; BLM Sensitive)
The Columbian sharp-tailed grouse occurs in grasslands, sagebrush-grassland, meadow-steppe, mountain shrub, agricultural fields and riparian habitats. Vegetation types include communities of sagebrush-bunchgrass, serviceberry (*Amelanchier alnifolia*), snowberry (*Symphoricarpos albus*), chokecherry (*Prunus virginiana*), Gambel oak (*Quercus gambelii*), and willow riparian habitats. Breeding habitat is dominated by relatively dense herbaceous cover and shrubs, with the majority of nesting and brood activities occurring within 2 miles of leks (Meints 1991). Brood rearing habitat contains a mosaic of dense shrubs and grasses with rich forbs and insect foods. Winter habitat consists of riparian areas or deciduous trees and shrubs for feeding, roosting, and escape cover. Spring/summer home range includes breeding, nesting, and brood rearing habitat usually within a several mile-wide area.

In Idaho, Columbian sharp-tailed grouse occur mainly in the southeastern portion of the state with smaller areas in south–central Idaho along the Nevada border and in an isolated portion of western Idaho. There is also a robust population south of Grace, Idaho, on the west end of Segment 4. In Wyoming, the species occurs in a small area

in the south-central portion of the state; however, the WGFD have stated the Project would not impact this species within Wyoming (Fry 2010).

Suitable habitat for the Columbian sharp-tailed grouse was mapped where the species range overlaps the Analysis Area (as described in Section 3.11.1.4). Habitat for the Columbian sharp-tailed grouse exists within Segments 4, 5, 6, 7, and 9. Out of the total combined length of 534.2 miles for Segments 4, 5, 6, 7, and 9, the Proposed Route would cross approximately 188.0 miles of suitable habitat (Table D.11-4 in Appendix D).

As stated earlier, the state wildlife agencies (e.g., IDFG, WGFD, Nevada Department of Wildlife, and Utah Division of Wildlife Resources) maintain databases of leks within their respective states. Federal and local entities can contribute data to these databases; however, the state agencies maintain ownership and responsibility over these databases. Leks within these state-maintained databases are differentiated by their status (e.g., occupied leks, unoccupied leks, undetermined leks). The term "occupied" is defined differently by the IDFG and WGFD. In Idaho, the IDFG define occupied leks as any lek that has been active during at least 1 breeding season within the prior 5 years; in Wyoming the WGFD define occupied leks as those that have been visited by males within the last 10 years. The Project would not cross through Nevada or Utah, and no direct impact to Columbian sharp-tailed grouse or their habitats is expected in these States; however, the 2-mile-wide Analysis Area used for Columbian sharp-tailed grouse would extend into Utah along Alternatives 4B, 4D, and 7K. For the sake of this analysis, the Agencies have determined that all Columbian sharp-tailed grouse leks in Utah will be considered "occupied" in regards to management for this Project, due to the limited number of leks located within the portion of the 2-mile-wide Analysis Area buffer that overlaps Utah.

The Proposed Route's centerline would pass within 0.25 mile of 4 Columbian sharp-tailed grouse leks that are either occupied or have an undetermined lek status (see Table 3.11-6; also see Table D.11-10 in Appendix D, which lists this same information but includes Route Alternatives as well). This value increases to 9 leks when considering a distance of 0.6 mile from the Proposed Route, and 48 when considering a distance of 2 miles. None of these leks are located on federally managed lands.

Table 3.11-6. Number of Columbian Sharp-Tailed Grouse Leks within Specified Distances of the Proposed Route's Centerline

Segment Number	Segment Length (miles)	Leks within 0.25 mile	Leks within 0.6 mile	Leks within 2 miles
Occupied Leks				
4	197.6	2	3	13
5	55.7	1	4	17
7	118.2	1	4	25
Total Proposed[1/]	371.4	4	9	43
Leks with Undetermined Activity Status				
4	197.6	–	–	1
5	55.7	–	–	2
7	118.2	–	–	4
Total Proposed[1/]	371.4	–	–	5

Table 3.11-6. Number of Columbian Sharp-Tailed Grouse Leks within Specified Distances of the Proposed Route's Centerline (continued)

Segment Number	Segment Length (miles)	Leks within 0.25 mile	Leks within 0.6 mile	Leks within 2 miles
Unoccupied Leks (i.e., leks that have not been active within the last 5 years in Idaho or the last 10 years in Wyoming)				
4	197.6	–	–	–
5	55.7	–	–	–
7	118.2	–	–	1
Total Proposed[1/]	371.4	–	–	1

Note: A number in parentheses indicates the number of leks located on federally managed lands (e.g., a "4(2)" value indicates there are 4 leks within the buffer distance, 2 of which are located on federally managed lands). None sharp-tailed grouse leks in this table occur on federal lands.
1/ There is some overlap between the number of leks located along one Segment compared to another (e.g., a lek located 2 miles from the end of Segment 4 may also be located within 2 miles of Segment 5); therefore, the values reported for each Segment separately in this table cannot be summed to get the total number of leks located along the Proposed Route as a whole.

Gray Wolf (Forest Service Sensitive)

The gray wolf was listed as endangered throughout most of its range; however, the Northern Rocky Mountain DPS was delisted in May 2011 due to recovery (76 *Federal Register* 25590). This delisting affects the wolf population along the portion of the Project location in Idaho. Although Wyoming is within the Northern Rocky Mountain DPS, wolves in Wyoming were an exception to the delisting. In Wyoming, wolves remained listed under the ESA in 2011, although as a nonessential experimental population. This means that they do not receive full protection under the ESA. However, in October 2011, the USFWS proposed to remove the experimental status of wolves in Wyoming and delist these wolves from the ESA (76 *Federal Register* 61782); the wolf was officially delisted in Idaho in 2012.

Gray wolves are considered habitat generalists and do not require a specific habitat type for survival; instead, habitat for wolves is largely based on the density of prey species found within a given area. As the gray wolf is considered a habitat generalist and does not require a specific habitat type for survival, gray wolves could potentially be present along any portion of the line regardless of habitat type, with the exception of where the transmission line passes through areas of heavy agricultural use. The closest they have been documented to the Project is along the Proposed Route near Cokeville (Segment 4), in 2003. However, the BLM's Kemmerer FO has indicated that a pack was detected on Dempsey Ridge (also near Segment 4) in 2010 (this is likely the same pack, due to the close proximity of Cokeville to Dempsey Ridge). See Appendix E, Figure E.11-1 for identified wolf packs in the vicinity of the Project.

Mountain Plover (Forest Service Sensitive; BLM Sensitive)

The mountain plover was proposed for listing as a threatened species under the ESA in 1999. On September 2003 the USFWS withdrew the listing after determining that the threats to the species were not as "significant" as earlier believed. Following a lawsuit over this determination, the USFWS overturned their decision effective as of June 30, 2010, and restored the mountain plovers' status as a proposed species. However, in 2011, the USFWS again determined that the mountain plover does not warrant federal protection as a threatened or endangered species.

The mountain plover inhabits low, open habitats such as arid shortgrass and mixed grass prairies, xeric shrubland communities, heavily grazed areas, prairie dog colonies, and tilled agricultural fields. Inhabited grasslands are often dominated by blue grama (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), or western wheat grass (*Agropyron smithii*). Shrubland communities are often dominated by saltbush and sagebrush types. Consistent habitat characteristics are flat topography, short vegetation, and high bare-ground cover. Due to habitat features of short vegetation and bare ground, habitat often occurs in areas of disturbance such as fire, heavy grazing, presence of burrowing animals, or anthropogenic factors. Surface water or wet soils are rarely found in the vicinity of nesting plovers.

The mountain plover does not occur in Idaho. In Wyoming, suitable habitat is abundant, and this species occurs and breeds throughout most of the state. Suitable habitat for the mountain plover was mapped where the species' range occurs within the Analysis Area (as described in Section 3.11.1.4). Habitat for the mountain plover exists within Segments 1, 2, 3, and 4. Out of the total combined length of 487.9 miles for Segments 1, 2, 3, and 4, the Proposed Route would cross approximately 260.6 miles of suitable mountain plover habitat (Table D.11-4 in Appendix D).

<u>Northern Leopard Frog (Forest Service Sensitive; BLM Sensitive)</u>
The northern leopard frog was proposed for listing under the ESA in 2006; however, the USFWS determined in 2011 that this species does not warrant federal protection as a threatened or endangered species.

The northern leopard frog has been found in the northern portion of the United States, from the New England states to Washington and Oregon. It has also been observed in the Rocky Mountain States as far south as New Mexico, Utah, Nevada, and northern Arizona. The northern leopard frog's habitat consists of swampy, cattail marshes on the plains, beaver ponds in the foothills, and the cool, moist montane zones near timberlines up to 11,000 feet in elevation.

While leopard frogs were once very common, their populations are currently undergoing a decline. No single factor has been identified as the cause for the reduction in leopard frog populations, but there are several contributing factors such as disease (i.e., red-leg, chytrid), introduced species (i.e., bullfrogs, fish, crayfish), use of toxic chemicals (i.e., atrazine, rotenone), and habitat loss/alteration/fragmentation. Habitat changes and other factors may be adversely affecting this species, but lack of data precludes identification of specific problems and development of management recommendations. Population status, distribution, and habitat data for areas near the Project Area are lacking for this species (WGFD no date). Northern leopard frogs are apparently extirpated from the Targhee NF of western Wyoming and adjacent Idaho (Koch and Peterson 1995). Northern leopard frogs are severely reduced in the Laramie Basin of Wyoming but may still be common in other parts of the state (WGFD no date). Northern leopard frogs were documented in 1997 along portions of the Snake River, and the margins of Lake Walcott and Murtaugh Lake (Makela 1998).

Suitable habitat for the northern leopard frog was mapped where the species range overlaps the Analysis Area (as described in Section 3.11.1.4). All segments could provide

habitat for the northern leopard frog. The Proposed Route would cross a combined total of 15.5 miles of northern leopard frog habitat (Table D.11-4 in Appendix D).

Pygmy Rabbit (Forest Service Sensitive; BLM Sensitive)

In January 2008, the USFWS announced a 90-day finding on a petition to list the pygmy rabbit as threatened or endangered under the ESA. On October 1, 2010, the USFWS concluded that the pygmy rabbit does not warrant protection under ESA in California, Nevada, Oregon, Idaho, Utah, Wyoming, or Montana.

The pygmy rabbit occurs within the Great Basin region, including southern Idaho and Nevada (NatureServe 2009), where it is limited to the high plains between 4,900 and 7,900 feet in elevation (Roberts 2003). The pygmy rabbit is a sagebrush obligate species that is closely associated with large, dense stands of big sagebrush that grow in deep loose soils. They are found in alluvial fans, swales in a rolling landscape, large flat valleys, at the foot of mountains, along creek and drainage bottoms, or other landscape features where soil may have accumulated to greater depths. They are generally found on flatter ground, but can occur in areas with moderate slopes. During winter, pygmy rabbits in southwestern Wyoming selectively use dense and structurally diverse stands of sagebrush that accumulated a relatively large amount of snow. These sub-snow environments provide access to a relatively constant supply of food and protection from predators and thermal extremes.

The pygmy rabbit digs its own burrows, although it will sometimes occupy holes in rock crevices or burrows made by other animals. Pygmy rabbit burrows typically have three or more entrances, and are occupied by a single rabbit. Rabbits travel through extensive runways that interlace through the sagebrush thickets. Male home range size is usually 50 acres (20.2 hectares) or smaller, and female home ranges are smaller than males. The pygmy rabbit is most active during twilight hours, but they can be active at any time.

Pygmy rabbits occur in stands of tall, dense sagebrush with deep soils. Various subspecies of sagebrush are used, including Wyoming (*Artemisia tridentata wyomingensis*), mountain (*A. t. vaseyana*), and Great Basin (*A. t. tridentata*). Other shrub species may be co-dominant or present, including bitterbrush (*Purshia tridentata*), rabbitbrush (*Chrysothamnus* spp.), greasewood (*Sarcobatus vermiculatus*), winterfat (*Eurotia lanata*), and juniper (*Juniperus* spp.). However, sagebrush comprises the majority of their diet throughout the year. The absolute cover and height of sagebrush varies by locality, but in virtually all cases, they occur in stands with the greatest relative cover and height compared to the surrounding area. Pygmy rabbits may occupy and develop burrows in “mima mounds” (mounds of soil several feet high and approximately 20 to 30 feet in diameter) with taller and denser sage, which are dotted in a landscape of shorter and thinner shrubs, with harder soils. On 1:24,000 aerial photos these mounds can be seen as a pattern of darker dots, extending over many miles of landscape; and from the ground, the mounds appear as lenses of darker taller sage. In southwest Idaho in the mahogany (*Cercocarpus ledifolius*) savannah, the mounding of the soil is present but not as clear. A dotted pattern is not always visible on 1:24,000 aerial photographs, although careful examination can show subtle and dim dotting. In

southwest Idaho, another habitat is areas where low sage (*Artemisia arbuscula*) and big sage intermingle, where the big sage may form islands within the low sage matrix.

Suitable habitat for the pygmy rabbit was mapped where the species range overlaps the Analysis Area (as described in Section 3.11.1.4). Habitat for the pygmy rabbit exists along all segments except for Segment 1W. The Proposed Route would cross 487.9 miles of suitable pygmy rabbit habitat (Table D.11-4 in Appendix D).

White-Tailed Prairie Dog (Forest Service Sensitive; BLM Sensitive)

In May of 2008, the USFWS concluded that a 12-month status review for the white-tailed prairie dog was necessary. On June 1, 2010, the USFWS completed its status review of the white-tailed prairie dog and determined that it does not warrant protection as a threatened or endangered species under the ESA (75 *Federal Register* 104).

The white-tailed prairie dog occurs in shrub-steppe and short-grass prairie ecosystems, in stands of open shrub canopy with abundant grasses and forbs. They are typically found at elevations between 3,726 to 10,368 feet (WGFD 2005). The white-tailed prairie dog occurs on drier sites and higher elevations than the black-tailed prairie dog; and unlike the black-tailed prairie dog, commonly used habitat includes a low shrub component. White-tailed prairie dogs identify predators visually; therefore, they typically occur in areas that contain short shrub and herbaceous vegetation. However, unlike the black-tailed prairie dog, they do not clip taller vegetation to suppress plant growth. Percent plant cover and vegetative height is likely more important to white-tailed prairie dog habitat selection than plant species composition. The white-tailed prairie dog feeds primarily on forbs and grasses. They obtain most of their water requirements through consumption of vegetation, and they can become water-stressed if sufficient succulent vegetation is not available. The white-tailed prairie dog forms loose colonies. They are active above ground during the spring and summer and hibernate during the fall and winter.

The white-tailed prairie dog does not occur in Idaho. In Wyoming, it primarily inhabits the western two-thirds of the state. Suitable habitat for the white-tailed prairie dog was mapped where the species' range overlaps the Analysis Area (as described in Section 3.11.1.4). Habitat for the white-tailed prairie dog would be crossed by Segments 1, 2, 3, and 4. Out of the total combined length of 487.9 miles for Segments 1W, 2, 3, and 4, the Proposed Route would cross approximately 324.9 miles of suitable white-tailed prairie dog habitat (see Table D.11-4). Table 3.11-7 lists the number of colonies crossed by the Project (also see Figure E.11-4 in Appendix E).

Table 3.11-7. Number of White-Tailed Prairie Dog Colonies Crossed by the Proposed Route and Its Alternatives

Segment Number	Segment or Alternative	White-Tailed Prairie Dog Colonies
1W(a)	Proposed – Total Length	3
1W(c)	Proposed – Total Length	4
2	Proposed – Total Length	3
3	Proposed – Total Length 3	2
	Proposed – Total Length 3A	4

Table 3.11-7. Number of White-Tailed Prairie Dog Colonies Crossed by the Proposed Route and Its Alternatives (continued)

Segment Number	Segment or Alternative	White-Tailed Prairie Dog Colonies
4	Proposed – Total Length	8
	Proposed – Comparison Portion for Alternatives 4B,C,D,E,F	3
	Alternative 4B	2
	Alternative 4C	2
	Alternative 4D	2
	Alternative 4E	2
	Alternative 4F	3

Wyoming Pocket Gopher (Forest Service Sensitive; BLM Sensitive)

In September 2007, USFWS received a petition to list the Wyoming pocket gopher as an endangered or threatened species under the ESA. On February 10, 2009, the USFWS published a 90-day finding on this petition, in which they stated that substantial scientific or commercial information is available that indicates listing may be warranted. However, on April 15, 2010 the USFWS determined that listing the Wyoming pocket gopher as either endangered or threatened was not warranted (75 *Federal Register* 72 [2010-04-15]).

Limited information is available regarding the habitat requirements of Wyoming pocket gophers. The species seems to prefer loose, gravelly, upland soils with gentle slopes, often where greasewood is growing (Keinath and Beauvais 2006). Recent studies indicate that occupied habitat is generally defined by sites with 50 to 80 percent bare ground and limited litter and grass cover (Griscom et al. 2010). This species' range is relatively limited (i.e., it is known to occur only in Carbon and Sweetwater Counties, Wyoming). As the Wyoming pocket gopher is a fossorial species (i.e., a species that burrows and nests belowground but forages aboveground), and populations are assumed to be small, few observations have ever been made. The actual status of the Wyoming pocket gopher population is unknown due to the paucity of data. However, based on the results of recent surveys conducted by the WYNDD (Griscom et al. 2010), the USFWS has determined that the Wyoming pocket gopher currently inhabits its known range in a pattern that approximates its historical distribution (USFWS 2010d).

The known distribution of the Wyoming pocket gopher is restricted to the south-central portion of the Wyoming, as it is only known to inhabit an area along the Carbon and Sweetwater County lines. The closest known occurrence of a Wyoming pocket gopher near the Project was from 1976, and was located approximately 0.5 mile north of Segment 3 (WYNDD 2010). Suitable habitat for the Wyoming pocket gopher has been mapped by the WYNDD (WYNDD 2010), and these data were used to assess the locations of habitat that could be impacted by this Project. The Proposed Route would cross this agency-mapped suitable habitat along Segments 2, 3, and 4. Out of the total combined length of 340.5 miles for Segments 2, 3, and 4, the Proposed Route would cross approximately 80.3 miles of agency-mapped suitable habitat for the Wyoming pocket gopher.

BLM and Forest Service Sensitive Species Fish Species

A total of 16 fish species found along the length of the Project were noted as being sensitive (Appendix D, Table D.11-2). Six were trout taxa; three were suckers, two were sculpin, and five were minnow species (including four chubs and one dace).

In general, trout species are found in clear cold-water systems including small streams, large rivers, and lakes depending on species distribution. The Yellowstone cutthroat trout (which, in addition to being a Sensitive species, is also designated as an MIS species on the Sawtooth NF) is found at various locations in the Snake, Bighorn River, and Yellowstone River drainage systems in Montana, Wyoming, Idaho, Nevada, and Utah, and are present along the Project in Idaho within Marsh Creek along Segment 4, various portions of the Snake River, and in various creeks along Alternatives 7K (IDFG 2007; Gresswell 2009). Most of the populations found along Alternative 7K are isolated from each other and are already subjected to other land management uses (e.g., roads, water divisions, OHV use, and grazing). The Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) is found in the Colorado River drainage located above the Grand Canyon (including the Green River). The Bonneville cutthroat trout (*Oncorhynchus clarki utah*) is endemic to the Bonneville basin, and is found within clear rivers and streams within Bear River drainage. The redband trout (*Oncorhynchus mykiss gairdneri*), westslope cutthroat trout (*Oncorhynchus clarki lewisi*), and fine-spotted cutthroat trout are widely distributed; however, the Project would only cross their distribution along the Snake River drainage. Furthermore, westslope cutthroat trout's current distribution may be located north of the Project area, and as such, this species would not be located in the Project area (Trout Unlimited 2011).

Two of the three sucker species are not restricted to cold-water streams and are often found in larger rivers. These two species (flannelmouth sucker [*Catostomus latipinnis*] and bluehead sucker [*Catostomus discobolus*]) are found only in specific drainages. The other sucker (mountain sucker [*Catostomus platyrhynchus*]) is most often found in cool flowing water, small to medium size streams, and is more widely distributed.

The Shoshone sculpin (*Cottus greenei*) is only present in springs and a few small streams in the Hagerman Valley along the Snake River in south-central Idaho. The other sculpin, Wood River sculpin (*Cottus leiopomus*), is only found in the Wood River drainage of central Idaho, typically in clear cool small mountain streams, mostly just north of where the Shoshone sculpin is found.

The northern leatherside chub (*Lepidomeda copei*) is present in cool-water streams of Bear, Snake, as well as Colorado and Green River drainages, while the roundtail chub (*Gila robusta*) is found mostly in larger rivers of the Colorado River drainage. While the sturgeon chub (*Macrhybopsis gelida*) is primarily present in large highly turbid river systems in the eastern Wyoming along the route, the lake chub (*Couesius plumbeus*) occupies varied habitat depending on location from large lakes and rivers in more northern regions of its distribution to small first-order streams in Great Plains areas, all with cool shallow gravel or sandy bottom areas in central Wyoming along the route. The finescale dace (*Phoxinus neogaeus*) has an affinity for small sluggish spring-fed streams, often containing beaver ponds or spring-fed bogs with cool water and high amounts of LWD.

Forest Service Management Indicator Species

The Forest Service MIS are species whose response to land-management activities or projects can be used to predict the likely response of other species with similar habitat requirements. The proposed Project would cross two NFs (the Medicine Bow-Routt and the Caribou-Targhee NF) while the Sawtooth NF would be crossed by a Route Alternative (Alternative 7K). Each of these NFs has designated their own list of MIS. The Medicine Bow Forest Plan has designated eight species as MIS including the American marten, common trout, golden-crowned kinglet, Lincoln's sparrow, northern goshawk, snowshoe hare, three-toed woodpecker, and Wilson's warbler. The Columbian sharp-tailed grouse, sage-grouse, and northern goshawk have been designated as MIS by the Caribou Forest Plan. The Sawtooth Forest Plan has designated five MIS species, including the bull trout, sage-grouse, northern goshawk, Yellowstone cutthroat trout, and the pileated woodpecker. Of the 13 Forest Service MIS (i.e., the northern goshawk and sage-grouse are on multiple lists), 11 have the potential to occur within the Analysis Area based on the presence of habitat or co-location of the Project with each species range. Neither the bull trout nor the pileated woodpecker is likely to occur within the Analysis Area. Bull trout are not located within the Analysis Area, although designated critical habitat for bull trout would be crossed by one of the Route Alternatives (see the discussion on bull trout, in the ESA section above). The pileated woodpecker is not found within Wyoming. In Idaho, year-long habitat for the pileated woodpecker is found within the northern half of Idaho; however, this habitat is located north of the Analysis Area. The Columbian sharp-tailed grouse, sage-grouse, Yellowstone cutthroat trout, and various common trout species are addressed in detail above, within the ESA and Sensitive Species sections. The remaining MIS species will be discussed in this section.

American Marten (Medicine Bow Forest Plan MIS)

The American marten is associated with mature or late successional mesic conifer or mixed conifer forests that contain coarse woody debris, have intermediation canopy closures between 30 to 70 percent, and are adjacent to riparian areas (Vasquez et al. 2005). Home ranges can vary, and range from 0.5 to 3.0 square miles for males, with female home ranges varying in size from approximately one-third to half the size of males (Vasquez et al. 2005). The population of martens fluctuates widely from year to year, and is correlated with prey abundance; however, long-term population trends for the American marten are currently unknown. This species is sensitive to developments within mature or late-successional forests that reduce canopy cover, remove coarse woody debris, reduce the recruitment of coarse woody debris, or increase road densities within these forest habitats. They are highly sensitive to forest fragmentation, with martens generally avoiding areas containing greater than 25 percent non-forested lands. The location of this species within the Analysis Area is unknown; however, the closest known occurrence of an American marten near the Analysis Area is located approximately 19.5 miles from Segment 4. It is assumed that this species could occur within forested portions of the Analysis Area. Forested habitats occur along Segments 1W, 4, 5, and 7 (see Appendix D, Table D.6-1).

Golden-Crowned Kinglet (Medicine Bow Forest Plan MIS)

The golden-crowned kinglet inhabits dense, coniferous forests, especially where spruce or firs are present. The average home range sizes or requirements for this species are currently unknown. Population trends for the golden-crowned kinglet have varied widely over time, but have shown a decline in both Idaho and Wyoming between 2000 and 2006 (Sauer et al. 2008). The greatest threat to this species would likely be loss of forest habitat. Golden-crowned kinglets have been observed within the Analysis Area of Segment 1W, along on the border of Natrona and Converse Counties, Wyoming. It is assumed that this species could occur within forested portions of the Analysis Area. Forested habitats occur along Segments 1W, 4, 5, and 7 (see Appendix D, Table D.6-1).

Lincoln's Sparrow (Medicine Bow Forest Plan MIS)

Information regarding the Lincoln's sparrow habitat requirements is limited, but based on what is known, they seem to prefer riparian willow habitats at elevations between 6,725 and 7,414 feet. Wide population fluctuations are normal for this species, and can be caused by multiple factors including excessive rain, drought, changes in habitat, and natural disturbances (Stephens et al. 2003). Population trends for the Lincoln's sparrow have shown a nationwide increase in size by 2.3 percent between the years 1966 to 2000; however, data are not sufficient to determine the population trends for this species in Wyoming (Stephens et al. 2003). The Lincoln's sparrow breeds in the northern states, and over-winters along the west coast and southern states. Spring migration can vary, but on average, it begins in middle to late April, peaks in May, and ends in late May. Breeding grounds are left in early September (Stephens et al. 2003). The location of this species within the Analysis Area is unknown; however, the closest known occurrence of a Lincoln's sparrow near the Analysis Area is located approximately 13.5 miles from Segment 8. It is assumed that this species could occur within riparian/wetland portions of the Analysis Area; which occur within all segments crossed by the Project (see Appendix D, Table D.6-1).

Northern Goshawk (Caribou and Medicine Bow Forest Plan MIS)

The northern goshawk is a habitat generalist and can be found in both coniferous and deciduous forests, woodlands, or along treelines adjacent to open habitats. During nesting, they prefer mature forest habitats. Home ranges vary in size depending on the abundance of habitat and prey, but they can range from 570 to 3,500 hectares (Kennedy 2003). The current data available (from the Breeding Bird Survey and the Christmas Bird Count) are inadequate to estimate the population trends of this species within Wyoming or Idaho (Kennedy 2003). Threats to this species include habitat alteration, direct human disturbances, pesticides, and harvesting for falconry. The northern goshawk is known to occur in and near the Analysis Area, and is considered a year-round resident of the area. There are five known northern goshawks nests that occur within 1 mile of the Proposed Route: one nest within 1 mile of Segments 1W(a) and 1W(c)), and four along Segment 4. There are also three nests located within 1 mile of Alternative 7K (see Appendix D, Table D.10-2). The nest along Segment 1W is located on the Medicine Bow-Routt NFs, and the four nests along Segment 4 are located on the Caribou-Targhee NF.

Snowshoe Hare (Medicine Bow Forest Plan MIS)

The snowshoe hare inhabits dense woodlands/forests which experience a deep winter snow accumulation. Optimum densities of woody shrubs and small trees range from 4,600 to 33,210 stems per hectare. Koeler (1990) suggested that snowshoe hares avoid clear-cuts and very young stands, while Conroy et al. (1979) found that they typically inhabit areas that contain a mosaic of forest ages and openings. Occupied habitat typically contains dense protective understory vegetation composed of edible shrubs and trees (Ruediger et al. 2000). The average snowshoe home range sizes vary from 5 to 10 hectares; however, they have been to disperse for distances of up to 12 miles (Ruediger et al. 2000). The population densities of snowshoe hares are highly dependent on the populations of their primary predator, the lynx, and can range from 0 to 2.7 hares per hectare (Ellsworth and Reynolds 2006). Threats to this species include changes to the distribution and characteristics of subalpine forests. This includes the effects of global climate change, silviculture practices, wildfire suppression, habitat loss, and hunting. The location of this species within the Analysis Area is unknown; however, the closest known occurrence of snowshoe hares near the Analysis Area is located approximately 8.8 miles from Segment 8. It is assumed that this species could occur within forested portions of the Analysis Area. Forested habitats occur along Segments 1W, 4, 5, and 7 (see Appendix D, Table D.6-1).

Three-Toed Woodpecker (Medicine Bow Forest Plan MIS)

The three-toed woodpecker inhabits mature or late-successional forests dominated by spruce and fir as well as lodgepole pine. These birds will also exploit recently burned forests, as these recent burns can provide a rich food source. Home range sizes are highly uncertain, but some studies have found home ranges as large as 304 hectares (Wiggins 2004). Home range sizes are likely dependent on the abundance of food sources. Population trends for this species are uncertain due to its low abundance and the difficulty in conducting accurate surveys for this species; however, according to Breeding Bird Survey data, populations in Wyoming likely increased by 4.7 percent between 1980 and 2003, but this increase is not statistically significant and highly uncertain (Wiggins 2004; Sauer et al. 2008). Although this species is not threatened on a range-wide scale, the Forest Service is concerned about its future due to its dependence on mature or late-successional forests, as well as natural forest disturbances such as fire. The location of this species within the Analysis Area is unknown; however, the closest known occurrence of the three-toed woodpecker near the Analysis Area is located approximately 12.4 miles west of Segment 1W(a). It is assumed that this species could occur within forested portions of the Analysis Area. Forested habitats occur along Segments 1W, 4, 5, and 7 (see Appendix D, Table D.6-1).

Wilson's Warbler (Medicine Bow Forest Plan MIS)

The Wilson's warbler is a high-altitude riparian species that inhabits mesic shrub communities or willow woodlands located near the edges of beaver ponds, lakes, riparian areas, fens, bogs, and overgrown clear-cuts. Population trends for this species show that it is stable to declining range-wide, and stable to increasing in the NFs found within the Rocky Mountain Region (Johnson and Anderson 2003). This species breeds near the Analysis Area, and its densities are highest between late April and May, with egg-laying occurring in June to July (Johnson and Anderson 2003). The greatest threat

to this species range-wide is likely the loss of riparian habitat. The location of this species within the Analysis Area is unknown; however, the closest known occurrence of the Wilson's warbler near the Analysis Area is located approximately 11.7 miles from Segment 7. It is assumed that this species could occur within riparian/wetland portions of the Analysis Area, which occur within all segments crossed by the Project (see Appendix D, Table D.6-1).

3.11.2 Direct and Indirect Effects[7]

Plan Amendments

Tables that list the applicable stipulations from the various federal management plans as well as whether or not the Project is in compliance with these stipulations can be found in the Administrative Record; plan amendments for instances where the Project would not be in compliance with Forest Service standards or BLM requirements can be found in Appendix F, as well as a summarized list found in Tables 2.2-1 through 2.2-3. As shown in these tables, there are multiple plan amendments proposed that, although not specifically related to TES species, would result in alterations to current land management (such as changes to VRMs, or allowing the line to occur outside the existing/designated utility corridors). These amendments could allow the permitting of this Project in areas that are currently managed in such a way as to exclude projects of this type. Impacts to wildlife and their associated habitats that could result from the permitting and subsequent construction of this Project are disclosed in the following sections. Any plan amendments that are related specifically to a TES wildlife species will be discussed in detail, within the appropriate species section.

The plan amendments considered for this Project that would relate to TES wildlife management direction are presented below (see Appendix F-1 and F-2):

- Medicine Bow Forest Plan: Proposed Segment 1W – TES Standard 4 provides protection for northern goshawk nests by protecting 30 acres of dense vegetation surrounding each of 3 selected nests. The proposed amendment would allow the Gateway West Transmission Line Project and will require Medicine Bow National Forest timing restrictions for northern goshawks will be followed.
- Medicine Bow Forest Plan: Proposed Segment 1W – TES Standard 5 provides protection for northern goshawk post-fledging areas (PFAs) inclusive of the selected 30-acre nest sites and a minimum of 200 acres. Management of the PFAs prohibits activities that could degrade foraging habitat. The proposed amendment would allow the Gateway West Transmission Line Project and will require that the Medicine Bow National Forest timing restrictions for northern goshawks will be followed.
- Medicine Bow Forest Plan: Proposed Segment 1W – TES Standard 11 allows no loss or degradation of known or historic habitat for the boreal toad, wood frog,

[7] Note that the level of information presented within this section may differ between species. This is due to specific requests from wildlife and land-management agencies regarding individual TES species. For example, the level of information for the sage-grouse is at times more detailed than that presented for other species due to the potential Project-related impacts to sage-grouse, the elevated level of concern expressed by federal and state agencies regarding this species, and specific requests made by wildlife management agencies and the public for information on sage-grouse.

or northern leopard frog. The proposed amendment would allow the Gateway West Transmission Line Project and will require mitigation measures, to be approved by the Medicine Bow Forest, applied to prevent impacts to the northern leopard frog (the boreal toad and wood frog are not found in the Project area).

- Kemmerer RMP: Proposed Segment 4 and Alternatives 4C, 4E – The RMP requires the Rock Creek/Tunp area to be managed for the preservation and enhancement of critical wildlife habitats and cultural values. The proposed amendment would allow the Project, where it would otherwise be in conflict with the management objectives of Decision 7014. Micrositing and mitigation measures will be required to minimize impacts to affected areas and resources.
- Caribou Forest Plan: Proposed Segment 4 – Management Standards and Guidelines for goshawk state that there can be no created openings within goshawk nesting areas and that the maximum created opening is less than or equal to 40 acres within the Post-Fledging Area and Foraging Area. Gateway West would exceed this acreage of disturbance in goshawk habitats. An amendment is proposed to permit the Gateway West Transmission Line with appropriate mitigation. Standards and Guidelines for goshawk habitat will not apply within the ROW corridor or to approved access roads provided mitigation measures are implemented.

3.11.2.1 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of the Gateway West Transmission Line Project and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to TES species would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing developments within the Analysis Area and from other projects, including wind farms, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.3, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

3.11.2.2 Effects Common to All Action Alternatives

This section discusses the common effects of both construction and operations on TES species, regardless of whether the Proposed Route or one of the Route Alternatives are selected. Federal ESA species are discussed first, then Forest Service and BLM sensitive species, followed by Forest Service MIS. Tables D.11-5 and D.11-6 (in Appendix D) identify the acres of construction impacts to suitable habitat for the federal ESA listed species, as well as BLM and Forest Service sensitive species, where quantitative species specific data were available. Tables D.11-7 and D.11-8 (in Appendix D) display this same information, but for operations impacts. A segment-by-

segment disclosure of impacts, which differentiates among effects that would occur where Route Alternatives are proposed, is found in Section 3.11.2.3. Section 3.11.2.3 is primarily a list of habitat impact values and a brief discussion of which alternative per segment would result in the least impacts to TES species, where quantitative species specific data are available.

Table 2.7-1 in Chapter 2 contains a list of the EPMs that have been developed as part of this Project to offset or reduce potential impacts to wildlife species (including TES), as well as a description of where these various measures would apply (e.g., on private, state, or federally managed lands). These measures also contain commitments by the Proponents to follow all existing federal BMPs and restrictions that are applicable to the BLM FO and National Forests crossed by the Project (i.e., EPMs G-1, G-2, and G-4), and the utilization of third-party environmental monitors who would ensure the Project complies with all environmental restrictions and requirements during construction (i.e., EPM G-3). Note that EPMs are presented in detail within Section 3.11 only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized.

The measures listed in Table 2.7-1 were developed cooperatively between the Project's Proponents and the Agencies to protect sensitive resources. Some of the EPMs listed in Table 2.7-1 could be required by the Agencies on all land ownerships (i.e., federally managed, state, and private lands) due to the broad authority found under certain regulations (e.g., protection of federally listed wildlife species would be required on all lands, regardless of land ownership, due to the USFWS's authority granted by the ESA). With the exception of these circumstances, however, the Agencies do not have the authority to require EPMs on private and state lands. Therefore, the Proponents have agreed to a broad-based conservation plan, under which they have volunteered to apply some of the federally required measures (i.e., those that are only required on federally managed lands) to certain private and state lands as well. The Proponents have agreed to this broad-based conservation plan in order to protect sensitive resources over a broader area and because Project-wide measures are easier to administer and explain to construction personnel. Due to the checkerboard land ownership pattern in Wyoming, the Proponents have committed (within their POD) to apply the spatial and temporal wildlife restrictions required on federally managed lands to all portions of the Project located in Wyoming (including private and state lands) as well as all lands in Idaho along Segments 6, 8, and 9, except for the following circumstances: 1) non-ESA-related TES measures would not be applied at proposed substation and regeneration sites located on private lands; 2) non-ESA-related TES measures that are only applicable to a specific BLM FO will not be applied on private lands; 3) non-ESA-related TES measures that are only applicable to NFS lands will not be applied on private lands; and 4) non-ESA-related TES measures that conflict with requests from private property owners would not be applied on the applicable private land. As the checkerboard land ownership pattern is not as extensive in Idaho, and the land ownership along Segments 4 (in Idaho), 5, 7, and 10 are predominantly private land ownerships, the Proponents would only apply the federally required non-ESA spatial and temporal wildlife restrictions on federally managed lands along these segments in Idaho, but not on the state and private lands.

The Proponents have indicated in their Framework Environmental Compliance Management Plan (see Appendix B) that they may request exceptions from spatial and temporal restrictions on BLM-managed lands under certain circumstances. The Proponents had proposed a project-specific exception process for these exceptions; however, the agencies have rejected this project-specific exception process. In order to ensure protection of the sensitive resource in question, the Proponent would be required to follow the current BLM-established exception processes when requesting exceptions to spatial and temporal restrictions on BLM-managed lands, as outlined in WILD-1 (see Table 2.7-1 in Chapter 2). If an exception is granted on BLM-managed lands, the Agencies would require that monitoring is conducted to determine occupancy of the habitat in question, and to ensure that all construction activities cease if species use of the area resumes. The Forest Service does not have an established exception process, and would therefore not grant exceptions to spatial and temporal restrictions on lands they manage.

Note that a threat determination call is made for each species discussed within this section where threat determinations are appropriate. Threat determination language for species listed as threatened or endangered under the ESA follow standard ESA language. Threat determination language used for all other species is consistent with the language required by the Forest Service because there is no official threat determination language for ESA candidate species or for BLM sensitive species. This Project would cross two Forest Service regions: Region 2 (which includes the Medicine Bow-Routt NFs), and Region 4 (which includes the Caribou-Targhee and Sawtooth NFs). Each of these regions has different threat determination language that they require for impact discussions regarding sensitive species and ESA proposed/candidate species. The purpose and meaning of each region's language is essentially the same, but the exact text that is legally required differs slightly.[8] For species that are listed as sensitive in both regions, both threat determination languages will be provided. For species that are listed as sensitive in only one region, only that region's language will be used.

Threatened, Endangered, Proposed, or Candidate Species under the ESA

Federal ESA Wildlife Species

Greater Sage-Grouse (Candidate; MIS; Forest Service Sensitive; BLM Sensitive)
The following impact discussion for sage-grouse will follow the directions and format outlined in the interagency *Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines* (see Appendix J-1). The format used for other species may differ from that used for sage-grouse.

The USFWS's *12-Month Findings for Petitions to List the Greater Sage-Grouse as Threatened or Endangered* (2010e) listed the following as potential impacts to the sage-grouse resulting from powerlines: 1) collisions/electrocutions, 2) consolidation of

[8] For example, for an action that could impact a species but would not jeopardize the continued existence of the species, Region 2's required language is "May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing." Region 4's required language is "May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability."

predatory birds along powerlines, 3) lower recruitment rates near lines, 4) habitat fragmentation, 5) degradation of habitat due to spread of invasive plant species, 6) impacts resulting from the line's electromagnetic fields, and 7) direct loss of habitat. Additional impacts related to construction and operations of the line, as well as associated infrastructure, could include short-term disturbances due to construction and long-term disturbances during operations, increased road access allowing poaching/hunting in previously inaccessible locations, and changes to habitat structure resulting from altered fire regimes.

Construction-related Impacts

The sage-grouse is a ground nester and generally nests, rears young, and winters near their mating grounds, although some birds can migrate up to 50 miles between summer and winter ranges (Leonard et al. 2000). Because it is a ground nester, this species is sensitive to the type of ground-clearing activities that would occur during Project construction. Table D.11-5 (in Appendix D) lists the acreage of impact, by line segment and alternative, which would occur to potential sage-grouse habitat (i.e., all sagebrush habitats within the known range of sage-grouse) during construction. In order to minimize this potential impact, the Proponents attempted to avoid lekking habitat during the initial Project design, and would conduct preconstruction surveys to facilitate micro-siting of the Project to the extent feasible (discussed in more detail below). Agency-required spatial and temporal restrictions would be utilized during the breeding seasons to minimize direct impacts to this species (discussed in more detail below). In addition, EPM WILD-9 would require that all vegetation clearing Project-wide (i.e., on federal, state, and private lands) be conducted prior to the onset of the general avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds.

As discussed in Section 3.11.1.4, the Proponents have committed to conducting pre-construction surveys for TES species, including sage-grouse, to determine activity levels prior to construction, as well as facilitate micrositing of the Project outside of occupied areas to the extent practical. As there are multiple protocols that have been used by various researchers in the past to survey for sage-grouse, EPM TESWL-5 would be followed to ensure that all Project-related surveys for grouse species are conducted according to agency approved protocols:

TESWL-5 Grouse Species – Proponents will provide the Agencies a list of the protocols that the Proponents will use during greater sage-grouse and sharp-tailed grouse pre-construction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.

The following EPMs would be employed on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2), in order to avoid and minimize potential impacts to sage-grouse (they are based on the requirements found in BLM RMPs, IMs, and Information Bulletins):

TESWL-8 Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within

Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.

TESWL-9 Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 mile) may be reduced on a case by case basis by the applicable agency, if site-specific conditions would allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing powerline is located between the Project and the lek).

Although EPMs TESWL-8 and TESWL-9 are only required on federally managed lands (per the BLM's authority over non-ESA listed species), the Proponents have agreed to implement these measures on certain state and private lands (see Table 2.7-1 in Chapter 2) and have attempted to route the Project's centerline to avoid all leks by at least 0.25 mile Project-wide. The Proponents were successful in routing the Proposed Route's centerline to avoid all "occupied" leks on federally managed lands by at least 0.25 mile; however, based on recent lek data, it was determined that the centerline of the Proposed Route would come within 0.25 mile of one lek with an "undetermined" management status on federally managed lands along Segment 10, and within 0.25 mile of a lek with an "occupied" management status on private/state lands along Segment 5 (see Table 3.11-3). The Proponents also attempted to avoid leks by at least 0.65 mile to the extent possible Project-wide. However, not all leks could be avoided by this distance (see discussion below) due to the need to avoid other sensitive resources (e.g., high-altitude mountain habitats that contain species listed under the ESA, or sensitive cultural resources that are protected by the various SHPOs).

As stated earlier, there are no occupied leks located within 0.25 mile of the portion of the Proposed Route's centerline located on federally managed lands (i.e., leks that would be under the BLM's jurisdiction and enforcement authority under TESWL-8)[9]. However, there are two occupied leks on federally managed lands (i.e., Craven Reservoir Lek on the Kemmerer FO, and the Bates Creek Reservoir Lek on the Casper FO) that are located within 0.25 mile of existing access roads along the Proposed Route, which the Proponents have requested authorization to improve. These existing roads come within 1,020 feet of Craven Reservoir Lek, and cross through the Bates Creek Reservoir Lek. Improvement of these roads would include new surface disturbance and possibly a widening of the existing road bed (i.e., new surface occupancy), which would violate the requirements found in TESWL-8. The BLM has determined that access to these portions of the Project on federally managed lands can

[9] There is one lek with an "undetermined" management status along the Proposed Route's centerline on federally managed lands (which would not be managed under TESWL-8 as it is not "occupied"), and an occupied lek on private/state lands (which would not be under the jurisdiction of TESWL-8 as it does not occur on federally managed lands).

be achieved through existing access roads that are not located within 0.25 miles of occupied leks, and which the Proponents have stated that they are also planning on improving as part of the Project. Therefore, the BLM would not approve the proposed improvement of these existing access roads located within 0.25 mile of occupied leks on federally managed lands, and would require that the Proponents access the Project via other existing access roads that would not impact leks within 0.25 mile (as required by TESWL-8).

There are four occupied leks located within 0.6 mile of the Proposed Route, three of which are located on federally managed lands, with two of these three federal leks located in Core Areas (see the requirements in TESWL-8). However, as the portion of the Proposed Route in Wyoming is routed through the Wyoming Governor's corridor, this portion of the route is in compliance with Wyoming Governor's EO 2011-5; as a result, the Proposed Route is also in compliance with the requirements of BLM IM Wyoming-2012-019, and consequently the requirements of TESWL-8. There is one lek located on federally managed lands within 0.6 mile of the Project in Core Areas along Alternative 4F; however, this portion of Alternative 4F is also located within the Wyoming Governor's corridor (i.e., this small portion of Alternative 4F is located in the same place as the Proposed Route). As a result, the portion of Alternative 4F located within 0.6 mile of this sage-grouse lek is in compliance with Wyoming Governor's EO 2011-5, BLM IM Wyoming-2012-019, and consequently the requirements of TESWL-8. However, there is a lek (Little Round Mountain North Lek) located on federally managed lands in Core Areas that is also located within 0.6 mile of an existing access road that would need improvement along Alternative 4B (which is not located in the Wyoming Governor's corridor). As this portion of Alternative 4B is not located within the Wyoming Governor's corridor, it is not in compliance with the requirements of BLM IM Wyoming-2012-019 and TESWL-8. No amendment process is available for IMs; therefore, for Alternative 4B to be approved, the access roads associated with Alternative 4B would need to be altered to avoid Core Area leks on federally managed lands by more than 0.6 mile. Otherwise, Alternative 4B could not be approved based on the requirements of BLM IM Wyoming-2012-019 and TESWL-8.

As stated in TESWL-9, the 4-mile temporal avoidance requirement related to occupied and undetermined leks located on federally managed lands can be reduced through the BLM's established exception process, based on site-specific conditions (see WILD-1 for a description of the exception process). These conditions include areas where topography prevents construction activities from being visible from the lek, or a major disturbance such as a freeway or existing powerline is located between the Project and the lek. Of the 64 occupied and 42 unoccupied leks located within 4 miles of the Proposed Route, a total of 68 occur on federally managed lands (see Table 3.11-3). Table D.11-16 in Appendix D lists the distance that sightlines from these leks would extend in the direction of the proposed construction disturbances (e.g., transmission line, access roads, fly yards, etc.) based on an assessment of topography, slope, and the location of existing power-lines and highways. The BLM would take these distances into consideration when evaluating any exceptions to the 4-mile avoidance requirement requested by the Proponents.

Even with the implementation of the avoidance and minimization measures discussed above, some loss of sage-grouse habitat would still occur. Loss of habitat would occur due to direct removal of vegetation, introduction of noxious weeds, fragmentation, edge effects, and altered fire regimes (see further discussion in Sections 3.8 and 3.10). In addition, construction-related noise and dust disturbance would occur during construction, which could potentially make habitat within the immediate vicinity of the activity temporarily unsuitable for this species; however, the Proponents have developed measures within their Traffic and Transportation Management Plan to control dust near construction activities (see Table 2.7-1 in Chapter 2, and Appendix B), and Agency-required timing restrictions would be implemented to limit the impacts of noise on birds during sensitive periods (see Appendix I). The potential impact of noise and dust on wildlife, as well as the measures proposed to limit this potential impact, are applicable to all species addressed within this document.[10]

Birds could experience direct mortality if construction equipment drives over nests or strikes birds, or if birds are hiding in shrub cover that is removed/cleared. However, the Proponents have developed EPMs in their Framework Operations and Maintenance Plan, as well as their Framework Traffic and Transportation Monitoring Plan (see Appendix B) to limit the potential risk of direct vehicular impacts with wildlife (the potential impact of traffic-related mortality to wildlife, as well as the measures proposed to limit this potential impact, are applicable to all terrestrial species addressed within this document). In addition, the risk of direct mortality would be limited due to the utilization of agency required timing restrictions for construction near known breeding grounds on federally managed lands (restricting construction to periods outside of the typical breeding season for habitats located within certain distances of leks). However, because some breeding/nesting habitat could still be impacted during the breeding season even with the implementation of these timing restrictions (e.g., in areas far enough from leks that they are not affected by these timing restrictions, or on private/state lands in Idaho), some direct impacts to birds as well as their breeding habitat could still occur. If nesting birds are disturbed, mortality of chicks could occur through both crushing of eggs and young by construction equipment or by abandonment by females (i.e., parent bird). In addition, flight responses and disturbance could increase the energy costs of both parent birds and chicks, thereby adding additional stresses on birds located adjacent to construction activities. However, Project compliance with the agency timing restriction would limit disturbance or displacement of brooding birds as well as impacts to chicks, by limiting impacts to areas outside of agency-designated breeding habitats during the breeding season. In addition, as discussed above, EPM WILD-9 would require that, to the extent feasible, all vegetation clearing Project-wide (i.e., on federal, state, and private lands) be conducted prior to the onset of the general avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds Project-wide, thereby minimizing this risk. Multipurpose yards, fly yards, and the temporary construction areas (i.e., areas not needed for permanent maintenance) would be revegetated following construction in

[10] To reduce text, this and other impacts that state “applicable to all wildlife species addressed within this document” will not be discussed in detail again for every species.

accordance with the Proponents' Framework Reclamation Plan (see Appendix B). However, revegetation in arid landscapes can take many decades to restore to preconstruction conditions or to levels that are suitable for sage-grouse; therefore, all direct impacts to sagebrush would be considered long term, even with the implementation of active revegetation efforts (see further discussion in the "Operations-related Impacts" section).

No areas that have been officially designated as sage-grouse "Winter Concentration Areas"[11] are known to occur within areas crossed by the Project; however, if areas that would be impacted by the Project are or become designated as Winter Concentration Areas, then the following EPM would apply on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2):

TESWL-10 Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated area from November 1 through March 15.

The Project, as currently designed, may not be in compliance with a requirement found in the Kemmerer RMP regarding the management of the Rock Creek/Tunp area. The Kemmerer RMP states:

> *Manage the Rock Creek/Tunp area of significant resource concern within the objective of preserving and enhancing the critical wildlife habitats and cultural values that occur within the area…No net loss of habitat function allowed from any construction activity within the boundaries of the management area. Successful re-establishment or improvement of habitats could offset any new disturbance areas.*

The Project would cross through the Rock Creek/Tunp management area if the Proposed Route or Alternatives 4C or 4E are chosen, and construction of the line could result in a net loss of sagebrush habitats in this area. As a result, the Project would either need to be altered so that it is in compliance with the Kemmerer RMP (e.g., not selecting the Proposed Route Segment 4 or Alternatives 4C or 4E), or the RMP would need to be amended. The BLM's Kemmerer FO would require the following EPM if the Proposed Route Segment 4 or Alternatives 4C or 4E are selected and a plan amendment to the Kemmerer RMP is approved.

TESWL-16 Sage-Grouse – If the Kemmerer RMP is amended to allow the Proposed Route or Alternatives 4C or 4E to be selected, existing fences within 1 mile of the portion of the Gateway West Project located on lands managed by the Kemmerer RMP will be modified with FireFly Grouse Flight diverters (or a similar product) in order to prevent greater sage-grouse mortalities. Additional site-specific reclamation, such as transplanting sagebrush seedlings within previous disturbed habitats, will also be required to off-set the net loss of sagebrush habitats within the Rock Creek/Tunp management area.

[11] Note that each state (Idaho and Wyoming) may have a slightly different term for "Winter Concentration Area"; therefore, the term "Winter Concentration Area" refers to any area officially designated by a state of federal agency as crucial to the survival of sage-grouse during the winter.

Fences located in sagebrush habitats have been identified as a major cause of mortality for sage-grouse, due to these low-flying birds colliding with and becoming entangled within these fences (Stevens 2011). Fences identified as having the highest risk of sage-grouse collisions by Stevens (2011) were those that were close to leks (i.e., within 1.2 miles), were located on exposed and high topography, and were less visible due to construction materials or location (e.g., lacked wood posts or had large spans between posts). Therefore, measures that limit this potential risk could result in a reduction in current sage-grouse mortality levels within an area. As a result, the Agencies and the Proponents may consider applying TESWL-16 or a similar measure Project-wide or within specific areas outside of federally managed lands (see Appendix J) to reduce fence collision risk and associated sage-grouse mortalities as a way to mitigate some impacts from the project.

In addition to the spatial restriction requirements found in TESWL-8 and TESWL-9 (as described above), the Pocatello FO has recently revised their RMP, which includes the following measure applicable to lands under the jurisdiction of their FO:

> *New infrastructure facilities/structures (e.g., major power transmission lines, power distribution lines, communications towers, and temporary meteorological towers) requiring permanent surface occupancy will be sited in a manner that avoids sage-grouse habitat to the extent possible and will be placed at least 2.0 miles from occupied leks or other important sage-grouse seasonal habitats as identified locally*

There are three occupied leks located within 2 miles of the Proposed Route and its associated disturbances (e.g., access roads) in the Pocatello FO (i.e., leks 2B011, 2B032, and 2B035). However, only one of these leks is located on federally managed lands (i.e., lek 2B035, which has been surveyed by the state twice in the last 10 years, with an average attendance of five male grouse and a peak of nine). The Pocatello FO has indicated that the 2-mile lek restriction can be waived if it is determined the proposed route is in the best possible location, and that other possible routes would result in greater adverse impacts. The BLM (including the Pocatello FO) has determined that moving the route north or south (in order to avoid lek 2B035) would result in greater impacts to sensitive resources than the current proposed route through the Pocatello FO; therefore the 2-mile restriction has been waived for lek 2B035.

There are other regulatory mechanisms, beyond those contained in the BLM's RMPs, which projects need to consider when impacting sage-grouse habitats. These additional regulatory mechanisms are discussed in Section 3.11.1.3 (e.g., the Wyoming Governor's EO 2011-5, Wyoming Core Areas, Idaho Key and Restoration Habitats, and the PPH and PGH defined by the National Greater Sage-Grouse Planning Strategy and BLM Washington Office IMs 2012-044 and IM 2012-043). Table D.11-14 (in Appendix D) lists the acres of impact that would occur to Core Areas, Key and Restoration Habitats, PPH, and PGH during construction. As discussed in Section 3.11.1.3, only the Proposed Routes in Wyoming are in compliance with the Wyoming Governor's EO 2011-5. Consistent with BLM's Greater Sage-grouse Interim Management Policies and Procedures (IM 2012-043), the Project has striven to protect "un-fragmented habitats" as well as minimizing "habitat loss and fragmentation" by creating multiple route

alternative that collocate the line with existing disturbances/ROW as well as avoiding leks to the extent practical. Although it is outside of the scope of a transmission line project to manage habitats, the BLM (as a land-management agency) has defined PPH and PGH, and is in the process of revising their RMPs (IM 2012-044) to provide additional regulatory mechanisms to promote sage-grouse conservation. Current interim policy, as outlined in IM 2012-043, is to manage "habitats to maintain, enhance, or restore conditions that meet sage-grouse life history needs."

Impact values reported within this document are based on indicative engineering. To ensure that the final engineering design is routed to avoid known or newly discovered sage-grouse use areas to the extent practical, as well as other structures/locations occupied by sensitive species, the following EPM would be applied on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). This measure is applicable to all sensitive species that utilize specific structures/locations.

TESWL-4 The Environmental CIC, an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify, and flag if appropriate, the location of any known occupied structures (e.g., nests, burrows, colonies) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be "microsited" (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.

Operations-related Impacts

Table D.11-7 in Appendix D lists the permanent impacts that would occur to potential sage-grouse habitat (defined as all sagebrush habitats located within the range of the sage-grouse) during the Project's operations; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3. Permanent impacts to Agency-designated sage-grouse habitats are listed in Table D.11-15 (in Appendix D). As stated earlier, due to a lack of available data on the extent and magnitude of indirect impacts that could occur to sage-grouse from transmission lines (e.g., the presence of tall structures; UDNR 2010), indirect impacts are assessed in a qualitative manner within this EIS.

Potential direct impacts to sage-grouse from the Project's operations include collisions with Project structures or maintenance vehicles, as well as the effects of the transmission line's electromagnetic field on sage-grouse. Indirect effects to sage-grouse from the Project's operations include the following: 1) reduced habitat quality due to the slow recovery rate of sagebrush habitats in this arid region; 2) increased disturbance as well as poaching/hunting along the ROW due to an increase in human activity and access created by the new roads; 3) alteration to habitat due to changes in fire regimes or weed presence/extent, 4) displacement of sage-grouse by species that may benefit from the installation of the powerline (e.g., raptors and ravens); 5) an

increase in predation by raptors and ravens (due to an increase in potential perch sites associated with the new transmission structures); and 6) a potential avoidance of Project features that could result in an increase in habitat loss and fragmentation. These potential impacts are discussed in more detail within the following paragraphs.

Permanent loss of vegetation utilized by TES species would primarily be associated with areas that are occupied by access roads, transmission pole structures, and substations as other Project-related disturbances would be revegetated in accordance with the Framework Reclamation Plan (see Appendix B). Permanent loss of vegetation would be limited due to the efforts proposed to restore and revegetate disturbed habitats that are not occupied by these permanent structures (see Table 2.7-1 in Chapter 2, and Appendix B). However, revegetation in arid landscapes can take many years to reestablish to pre-disturbance conditions or to levels that are suitable for sage-grouse, especially in terms of mature sagebrush canopy cover. Therefore, revegetated shrublands would still have lower shrub cover than undisturbed areas for many decades. In addition, even if revegetation efforts within the ROW are successful, they are unlikely to provide habitat of the same quality or suitability as before construction, due to the presence of the new transmission facility nearby (consequently there may be a need for additional mitigation activities elsewhere; see Appendix C-3). Revegetated areas are also more susceptible to the establishment or spread of invasive plant species, and the presence of invasive plant species can reduce habitat quality for species that rely on native vegetation (see Section 3.8 – Invasive Plant Species); however, the Proponents' Framework Reclamation Plan outlines a program for monitoring these areas and prescriptions for preventing the establishment of noxious weeds (see Section 3.6 – Vegetation Communities). The potential impacts resulting from permanent loss of vegetation, slow recovery rates in revegetated areas, and establishment/spread of invasive plant species, as well as the measures taken to minimize these effects, would be applicable to all species addressed within this document.

Routine maintenance would continue along the transmission line and its associated facilities for the life of the Project. These maintenance activities will typically consist of one or two routine occurrences a year (see Chapter 2 as well as Appendix B for a full description of the typical operations and maintenance activities that would occur). The infrequent presence of workers along the transmission line and the periodic maintenance activities could result in disturbances to adjacent wildlife. In addition, increased use of the area by vehicles would increase the risk of vehicular-related wildlife mortality. Therefore, EPMs OM-1 through OM-27 have been developed, as part of the Proponents' Framework Operations, Maintenance, and Emergency Response Plan (see Appendix B), to limit the impact to wildlife species due to the operations and maintenance of the Project. The potential impacts of Project maintenance and the measures taken to minimize these impacts would be applicable to all species addressed within this document.

The construction of new Project-related roads could create new access to areas previously inaccessible to the public (a road density analysis, including densities on NFs, is presented in Section 3.10.2.3). If these roads are used by the public, then increased disturbances may occur to wildlife species that utilize adjacent habitats; this

could include an increase in direct mortality to general wildlife species from poaching, hunting, fishing, or collecting. However, the Proponents have developed a Framework Traffic and Transportation Monitoring Plan (Appendix B) that includes measures to prevent unauthorized vehicular use of the new access roads, as well as setting speed limits on access roads for Project workers to limit the potential for direct vehicular impacts with wildlife. This would limit the disturbance to wildlife species that could result from use of these roads, by limiting unauthorized use of these roads and establishing speed limits for authorized use. The potential impacts of increased human access and the measures taken to minimize these effects would be applicable to all species addressed within this document.

Fire, and its effects to sagebrush habitat quality, has been identified as a threat to sage-grouse (Connelly et al. 2000; Idaho Sage-grouse Advisory Committee 2006; USFWS 2010e; Knick and Connelly 2011). Construction and operations activities could inadvertently cause fires, resulting in a loss of habitat as well as an increased opportunity for the spread of invasive plant species, which could potentially result in both short- and long-term impacts to sage-grouse and their habitats. Because hot, dry, windy conditions are likely throughout the summer, the risk of wildfires during construction and operations of the Project during this season may be elevated. There are multiple potential causes of project-related wildfires (see Section 3.6 – Vegetation, and Section 3.22 – Public Safety); however, one of the main causes of these wildfires is the use of access roads by vehicles during dry-hot seasons (when dry grass may be present along access roads). The underside of hot vehicles can ignite the dry grass found along the access roads, resulting in a brush-fire. Wildfires, regardless of the source of ignition, could result in the further loss of wildlife habitat (in addition to direct impacts related to the project clearing), a reduction in habitat quality for some species, as well as direct mortality for species that are unable to flee the fire (e.g., nestlings or injured individuals). To minimize the potential for wildfires, state and federal fire prevention requirements would be followed. All Project personnel would be trained in wildfire risk prevention and each construction crew would carry adequate fire suppression equipment. Fire prevention measures have been developed (refer to Table 2.7-1 in Chapter 2) that outline the responsibilities of Project personnel for prevention and suppression of fires, and define minimum fire prevention and suppression measures that would be used during construction and operations of the Project. Although these measures would only be required on federally managed lands (i.e., the BLM does not have the authority to establish requirements on private or state lands), these are standard practices, and the Proponents have agreed to implement many of these measures Project-wide (see Table 2.7-1). The potential impacts of altered fire regimes and the measures taken to minimize these impacts would be applicable to all terrestrial species addressed within this document.

It is possible that the transmission line and its structures could become an attractant to raptor and ravens for nesting and perching habitats (Gilmer and Wiehe 1977; Knight and Kawashima 1993; Steenhof et al. 1993; Connelly et al. 2004; Manzer and Hannon 2005; Coates and Delehanty 2010; Howe 2012). The numbers of ravens and raptors that use existing transmission lines for perching habitat can become quite substantial. For example, a study conducted along a 500-kV transmission line that spanned from

south-central Idaho to south-central Oregon found approximately 2,100 ravens at a single roost that spanned approximately 4 miles of the line and 15 towers (Engel et al. 1992). Although the presence of this 500-kV transmission line likely resulted in an increase in the number of ravens within the roosts, Engel et al. (1992) concluded that each of the major roosts found during the study were situated in an area where ravens had roosted communally before the line was constructed. Coates et al. (2008) found that ravens were one of the most common predators of sage-grouse in northeastern Nevada, and that the presence of ravens can inhibit females from leaving their nests to forage, thereby resulting in nest failure and mortality. During a study conducted in Elko, Nevada, Coates and Delehanty (2010) found that an increase of one raven per 10 kilometers resulted in a 7.4 percent increase in the odds of sage-grouse nest failure. They further found that the probability of sage-grouse nest failure increased in areas with reduced shrub cover (Coates and Delehanty 2010). As a result, the increase in raptor and raven numbers along the transmission line, coupled with the reduced shrub cover in areas recovering from construction disturbances, could result in increased predation rates on sage-grouse as well as increased nest failures. The extent that these impacts could occur depends on the hunting range of predatory avian species. For example, non-breeding pairs of ravens have been documented to travel an average of 4.3 miles (6.9 kilometers) and up to 40.5 miles (65.2 kilometers) in Idaho from roost sites to food sources and 16.8 miles (27 kilometers) in Michigan (ranging from 0.5 to 91.3 miles [0.8 to 147.0 kilometers]), with breeding pairs often traveling up to 0.8 mile (1.3 kilometer) while searching food (i.e., they were flying to a landfill), and 0.35 mile (0.56 kilometer) while hunting (Engel and Young 1992; Boarman and Heinrich 1999). Golden eagle hunting ranges vary by season and location, but are typically very large (e.g., around 161.6 square miles [260 square kilometers]; DeGraaf and Yamasaki 2000).

The effect of increased raptor and raven predation rates on prey species would be most prominent where the Project is located in areas that do not contain other tall structures, such as existing transmission lines or trees. Approximately 63 percent of the Proposed Route is located adjacent to (within 1 mile of) existing transmission lines that already serve as nesting and perching habitats for raptors and ravens. In these areas, the Project could cumulatively add to the numbers of raptors and ravens that are already utilizing existing transmission lines in the general area. In the remaining areas where the Project would not be collocated with existing lines or other tall natural structures (e.g., forested habitats), it could create new nesting and perching opportunities. Of the 369.3 miles of the Proposed Route that are not located within 1 mile of an existing line, about 343.4 miles are located within non-forested habitats (or 35 percent of the Proposed Route's length). It is in these areas that the effects of potential consolidation of raptor and raven populations on prey species would be most substantial. The risk of increased predation pressures by raptors and ravens would be applicable to all raptor/raven prey species that occur in open shrubland and grassland habitats.

To reduce the effects of the Project on raptor/raven predation pressures, the Agencies would require EPM TESWL-1 on federally managed lands, and the Proponents have

indicated that they would also apply this EPM to certain applicable state/private lands (see Table 2.7-1 in Chapter 2):

TESWL-1 H-frame structures shall be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species.

TESWL-1 requires that anti-perch devices be used in certain locations. Although some studies have found mixed results regarding the effectiveness of perch deterrents and anti-perch devices, the effectiveness of these deterrents has been supported by current research (Lammers and Collopy 2007; Oles 2007; HawkWatch International 2008; Prather and Messmer 2010; Slater and Smith 2010). For example, during a study on H-framed lines in Wyoming, Slater and Smith (2010) found that perch deterrents were highly effective in reducing perch use by raptors; with a 13- to 45-fold difference in perch use between deterred and non-deterred lines (Slater 2012). Oles (2007) provided further evidence that perch deterrents may be effective in limiting perching by raptors and ravens. Even though the effectiveness of these deterrents has been questioned by power companies in the past, the BLM views them as one tool amongst the total minimization/avoidance measures necessary to limit potential impacts. Furthermore, these devices are required as part of some of the BLM district RMPs (e.g., the Kemmerer RMP's Wildlife Management requirements). The final design and specifications of the perch deterrent and anti-perch devices that would be used would need to be proposed by the Proponents and approved by the BLM prior to their installation; however, the BLM has utilized the "Mini Zena" perch deterrent in the past and would likely approve their use if they were proposed for use by the Proponents for this Project.

There is a potential risk of avian collisions with transmission lines or other Project-related structures due to the Project's construction and operations, which could result in elevated mortality rates for some avian species. A variety of factors influence avian transmission line collisions, such as: configuration and location of transmission lines; the tendency of specific species to collide with transmission lines; and environmental factors such as weather, topography, and habitat (APLIC and USFWS 2005). Line placement with respect to other structures and topography can influence the collision rate of avian species at a given transmission line. Collisions usually occur near water or migration corridors, and occur more often during inclement weather. Less agile birds, such as heavy-bodied birds or birds that travel in flocks, are more likely to collide with overhead lines because they lack the ability to quickly negotiate obstacles. The risk of sage-grouse collisions with transmission structures is very low, due to this species' flight behaviors, which generally involve short, low flights (although they are capable of long flights at altitudes comparable with the transmission line height). However, mortalities of sage-grouse resulting from collisions with tall structures have been reported, including three mortalities in Utah (Borell 1939), two mortalities in Idaho (Beck et al. 2006), and two in California (Gardner 2009 as cited in USFWS 2010e). Therefore, some sage-grouse mortalities resulting from collisions may occur. The Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce potential risk of avian mortalities. These plans are in compliance with Avian Power Line Interaction Committee (APLIC) suggested practices

(see Section 3.10 – General Wildlife and Fish), and includes measures that would be taken if avian mortalities are discovered, and modification and/or additions to the line that can be done if elevated mortalities are discovered. Furthermore, EPM WILD-3 would be implemented to ensure that any future modifications to the line be in compliance with APLIC guidance.

The presence of guy wires (thin wires that are sometimes used to support tall structures) can also increase the risk of avian collisions with tall structures; therefore, EPM WILD-6 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). This measure would require the use of flight diverters on all guy wires to limit the potential risk of sage-grouse collisions.

The BLM's Kemmerer FO has identified the following EPM to further reduce the risk of sage-grouse collisions with guy wires on lands they manage:

TESWL-11 No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer Resource Management Plan.

Birds can become electrocuted if they come into contact with powered phases of the line while taking off from a perched position along the line or when flying between the lines. The spacing between phases of the Project's transmission lines is much larger than the wing spans for sage-grouse (or any other North American bird); therefore, electrocution due to the transmission line is not a hazard for sage-grouse. However, the distribution lines that serve the substations could provide some electrocution hazard to sage-grouse, although this hazard would be negligible due to the limited number of places new distribution lines would be constructed (at the Aeolus, Anticline, and Cedar Hill Substations), and the fact that these distribution lines would be constructed in accordance with APLIC guidelines (i.e., designed to prevent avian electrocutions). The distribution lines at the Cedar Hill Substation would be short in length (200 feet long), thereby further reducing the risk of electrocutions (by minimizing the extent of area exposed). However, the distribution lines for the Aeolus and Anticline Substations would be approximately 11 miles and 3.3 miles long. Sage-grouse are not expected to perch on the powerlines (a common way that avian species become electrocuted); therefore, the only way that they would become electrocuted in this area would be if they were to fly between the phases of the distribution line (which is unlikely to occur due to their typical flight behavior of low short flights). As a result, the risk of sage-grouse mortalities occurring as a result of electrocutions is negligible (the potential risk of avian electrocuted, as well as the measures proposed to limit this potential risk, are applicable to all avian species addressed within this document).

There are concerns that sage-grouse would avoid areas that contain tall structures, and could be displaced or cease occupying areas near such structures (Braun 2002; Manville 2004; Pitman et al. 2005; Pruett et al. 2008, Wisdom et al. 2011). For example, Wisdom et al. (2011) used a discriminant function analysis to determine which environmental factors had the most statistically significantly effect on the extirpated and occupied ranges of sage-grouse. They found that the best predictors between extirpated and occupied ranges were environmental factors such as sagebrush area

and elevation, as well as anthropogenic factors such as land ownership, distance to cellular towers, and distance to transmission lines (Wisdom et al. 2011), indicating that the presence of tall structures (such as cell towers and transmission lines) may adversely affect sage-grouse occupancy of otherwise suitable habitats. Adult sage-grouse are believed to have a high site fidelity to both lekking and nesting habitats; therefore, there can be a time delay between impacts to habitats and a detectable loss of habitat utilization (e.g., birds that traditionally used the areas may continue to use the area after an anthropogenic disturbance occurs, but new birds may not recruit to the area, ultimately resulting in loss of utilization over time).

Peer reviewed science that demonstrates that an avoidance or non-avoidance of tall structures by sage-grouse is either limited or nonexistent in the current literature. This lack of evidence is related to a lack of peer-reviewed and controlled studies that can differentiate between the impacts related to tall structures and those related to other components of human developments (e.g., noise and/or human presence near tall structures such as oil wells), as opposed to a true lack of evidence (UDNR 2010). Although peer reviewed science that demonstrated a clear avoidance of tall structures is lacking for sage-grouse, studies conducted on species that have similar life history traits to sage-grouse (e.g., the lesser and greater prairie-chickens) have shown that use of habitat is reduced when these habitats are located near tall structures (Pitman et al. 2005; Pruett et al. 2008). The possible mechanisms for this reduced use near tall structures could include many factors such as a reduction in shrub cover near disturbances, a potential inherent fear of tall structures by these species, increased predation rates near these structures, or a reduced recruitment in poor quality habitats due to disturbances resulting in a decline in attendance over time. Pruett et al. (2008) found that lesser and greater prairie-chickens avoided powerlines by at least 330 feet; however, the presence of state highways did not have a statistically significant impact on their distribution and range. Therefore, if sage-grouse have similar responses to disturbances as the lesser and greater prairie-chickens, it is possible that the vegetative clearing for the permanent access roads would not result in habitat fragmentation for sage-grouse, but that the presence of the transmission structures and line would serve as a form of habitat fragmentation, and may inhibit movement to some degree. If the response of sage-grouse to transmission lines is similar to those recorded by Pruett et al. (2008) for the lesser and greater prairie-chickens, then edge effects resulting from newly fragmented habitats could extend approximately 330 feet into habitat patches. This would further reduce the available habitat for sage-grouse and possibly isolate subpopulations (see Tables D.10-3 through D.10-5 of Appendix D for the level of fragmentation that would occur due to both the transmission line and the proposed access roads). However, because the lesser and greater prairie-chickens have different morphology, behavior, seasonal habitat use patterns, and distributions compared to sage-grouse, caution needs to be taken when applying data on the lesser and greater prairie-chickens to sage-grouse (UDNR 2010).

Sage-grouse may also avoid areas adjacent to transmission lines due to the presence of an increased electromagnetic field near the line (Balmori and Hallberg 2007, Naugle et al. 2010). Increased electromagnetic fields have been shown to alter the behavior and physiology of avian species (Fernie and Reynolds 2005). Avian species vary in

their sensitivity to an altered electromagnetic field; however, current data are lacking regarding its effects on sage-grouse. Section 3.21 – Electrical Environment discusses the strength of the electromagnetic field at varying distances from the Project. The potential impacts of an increased electromagnetic field would be applicable to all avian species addressed within this document; however, the sensitivity of the various avian species addressed in this document to an increased electromagnetic field is uncertain. Some kestrels, falcons, tree swallows, and chickens have been shown to be highly sensitive to electromagnetic fields (USFWS 2011c); however, these species are not considered sensitive species within the Project area.

Because data regarding avoidance of habitats by sage-grouse due to transmission lines are limited, the Proponents have conducted an independent desktop analysis regarding the longevity of sage-grouse leks adjacent to existing transmission lines in Idaho, to provide additional information regarding this issue (the results of this independent analysis are presented in Appendix B). During this desktop analysis, the Proponents were unable to find evidence of lek abandonment or a decrease in lek attendance (within their study area) that can be correlated with distance to existing transmission lines or the number of years since the transmission line was installed. However, the Proponents' desktop analysis is only one study and has not been peer reviewed; it therefore does not provide enough evidence to definitively say that lek abandonment or a decrease in lek attendance will not occur due to this Project. The Proponents' desktop analysis is only presented within this EIS to add additional data to the assessment and discussion of potential impacts. However, the results of this independent desktop analysis are similar to those found by Johnson et al. (2010). Johnson et al. (2010) was also unable to find a relationship between lek counts and the distance between leks and powerlines, but they were able to find evidence of declining lek use at distances up to 18 kilometers (11 miles) from highways and communication towers.

The BLM's *Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines* (see Appendix J-1) requires that impact assessments on sage-grouse address the "direct loss of sage-grouse." Due to the implementation of the EPMs and adherence to established agency-required timing and spatial restrictions on disturbance near sage-grouse habitats, no direct loss of birds is expected during the construction phase of the Project. There is also a low anticipated risk for direct loss of birds during the operations phase of the Project, in the form of collisions with tower structures and guywires (with only a small handful of collision-based mortalities known to have occurred nation-wide; Borell 1939; Beck et al. 2006; Gardner 2009 as cited in USFW 2010). However, sage-grouse collision with powerlines has not been studied intensively to date and, as carcasses may be quickly scavenged, collision data may be underestimating true mortality levels. Also, as discussed previously, there is a very low risk of electrocutions at associated distribution lines during operations (the risk of electrocutions along the transmission line is negligible because the spacing between the transmission line's conductors is greater than the wingspan of sage-grouse). The Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce the potential risk of sage-grouse mortalities. These plans are in compliance with APLIC suggested practices (see Section 3.10) and include modifications and/or additions to the line that can be done if sage-grouse mortalities are

discovered. In addition, EPM WILD-6 (which would require the use of flight diverters on all guy wires) would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). Furthermore, EPM WILD-3 would be implemented Project-wide to ensure that any modifications to the line are done in compliance with APLIC guidance. These measures would reduce the risk of sage-grouse mortalities (i.e., direct loss of birds) during the operations phase of the Project. Furthermore, based on guidance found in the BLM's *Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines* (Appendix J-1), the Proponents will continue to work closely with the USFWS and state agencies to develop an approach to address loss of birds from Project-related impacts, and it is expected that they may contribute to research projects that have been designed specifically to address this issue (see recommendation in Appendix J-1).

In addition to proposed measures aimed at avoiding and minimizing impacts to sage-grouse (see the EPMs), compensatory mitigation for impacts to sage-grouse and their habitats that could not be avoided or minimized is necessary due to: 1) the current declines in their populations and habitats range-wide; 2) the current concerns regarding their status; 3) the magnitude of potential impacts that the Project could have on their habitats; 4) the impact that their potential ESA listing could have on the economic stability of the regions' oil and gas industry as well as other land-uses range-wide; and 5) suggestions found in the interagency sage-grouse framework (Appendix J-1). The Proponents have prepared an HEA to quantify the permanent or interim loss of habitat services from Project-related impacts (measured as a loss of habitat services from pre-disturbance conditions) and to scale compensatory mitigation requirements (see Appendix J-2). The Proponents have also prepared a draft outline of their Sage-Grouse Mitigation Plan, based on the results of their HEA (see Appendix C-3). The activities and programs listed in Appendix C-3 would be implemented to prevent the Project from resulting in a loss of sage-grouse population viability, or contribute to the species' potential listing under the ESA.

Conclusion

Given the extent of the direct and indirect impacts on sage-grouse and their habitat, as well as EPMs and the Proponents' proposed compensatory mitigation plan (which was based on the results of the HEA; see Appendices C-3 and J-2), the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for sage-grouse (Region 4 Forest Service language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 Forest Service language). However, the cumulative effects of this Project combined with other reasonably foreseeable projects could be substantial (based on the current trends in sage-grouse populations), and are addressed in Chapter 4.

<u>Black-Footed Ferret (Endangered, Nonessential Experimental Population)</u>

Construction-related Impacts

There are no known populations of black-footed ferrets in the Analysis Area; however, surveys for ferrets have not been conducted within the entire area. Black-footed ferrets

from the Shirley Basin 10(j) population could occur within the Analysis Area; however, the re-introduced black-footed ferret populations in Wyoming (including the Shirley Basin 10(j) population) are considered a nonessential experimental population and are treated as an ESA proposed species (i.e., not protected from unintentional take). If there are any ferrets in the area, then the Project could potentially result in direct mortality, or have direct adverse impacts on their habitat, as well as adverse impacts to their primary prey source, the prairie dog (impacts to prairie dogs are discussed separately in the Black- and White-Tailed Prairie Dog portion of this section). Temporary, construction-related habitat removal would include temporary roads, laydown areas, and fly yards, all of which would be restored following construction in accordance with the Proponents' Framework Reclamation Plan (see Appendix B). The acreage of impact to suitable habitat by line segment and alternative is listed in Table D.11-5 (Appendix D) and is discussed in Section 3.11.2.3. Construction-related noise and dust disturbance would also occur, which could potentially make habitat temporarily unsuitable for black-footed ferrets; however, the Proponents have developed EPMs within their Traffic and Transportation Monitoring Plan (see Table 2.7-1 in Chapter 2, and Appendix B) to control dust near construction activities. This plan also includes measures to control traffic (both existing and construction related) near construction activities, to reduce the likelihood of vehicular related mortality of wildlife during construction.

As stated earlier, pre-construction surveys for TES species would be conducted to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical. The Proponents have committed, in their POD, to conduct preconstruction surveys for black-footed ferrets in white-tailed colonies. However, to ensure complete coverage of suitable habitat (i.e., the potential for black-footed ferret presence in black-tailed prairie-dog colonies as well as white-tailed colonies), TESWL-3 would be implemented on all land ownerships along Segment 1W.

TESWL-3 Black-Footed Ferret – Pre-construction surveys will be conducted for the black-tailed prairie dog (in addition to those already proposed for the white-tailed prairie dog) in Segment 1W.

These pre-construction surveys would aid in determining if black-footed ferrets are present in areas that would be disturbed by construction, and facilitate micro-siting of the Project outside of these areas if ferrets are found. However, even if there are no ferrets present in the area during construction, there is still the potential for reducing habitat quality, and therefore reducing the likely success of future ferret re-introduction.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered colonies as well as other structures occupied by sensitive species.

Operations-related Impacts

The Project's operations would result in some permanent loss of black-footed ferret habitat. Table D.11-7 in Appendix D lists the permanent operations impacts that would

occur to black-footed ferret habitats; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

As was described for sage-grouse, once the transmission line is in place, operations impacts to black-footed ferrets would include a possible increase in predation pressure where the Project provides new perching opportunities for raven and raptor species. This effect would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. An increase in the numbers of predatory bird species, or a consolidation of their populations along transmission lines, could result in an increase in ferret mortalities within these areas, as well as a possible increase in harassment of this prey species. This could result in ferrets avoiding or abandoning habitat adjacent to areas along the line, due to the presence of tall structures and the potential consolidation of raptor and raven populations. To limit the potential risk of increased predation pressures on sensitive prey species, TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

The Project would not likely serve as a barrier to the black-footed ferret's movement, but could result in a hazard to this species, due to increases in the predation rate and the level of predatory harassment near the line (as discussed above). Other risks to black-footed ferrets and their habitats as a result of the Project's operations (e.g., disturbance due to Project maintenance, potential collisions with project vehicles, habitat degradation due to fire or invasive plants, and the risk of increased poaching due to increased access) would be minimized via the measures discussed in the sage-grouse section (as impacts common to all species).

Conclusion

Any impacts on prairie dogs (the primary prey source for black-footed ferrets) or their habitat from the Project could reduce habitat for future re-introductions of ferrets; however, the Project is not likely to contribute to a trend towards federal listing or loss of viability for either species of prairie dog (see the BLM and Forest Service Sensitive Species section, below). If ferrets are present near the Project, the presence of the transmission towers could increase predation pressures on this species; however, EPMs would be implemented to limit the potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs, the Project may affect, but is not likely to adversely affect, the black-footed ferret.

Canada Lynx (*Threatened*)

Construction-related Impacts

The potential effects of Project construction on the Canada lynx include disturbance of movement pattern, as well as loss or modification of habitat. Due to the Canada lynx's large home range (which ranges from 10 to 20 square miles) and high mobility, it is possible that lynx would not be present during construction, or that they would avoid portions of their home range that contain construction activities. If they are present, and avoid portions of their home range where construction activities would occur, this could result in a temporary shift in the lynx's movement patterns.

Of the approximately 18,776 acres of total area found within the lynx core habitat (LAU) crossed by Alternative 4F (see Table 3.11-4), about 139 acres would be disturbed along Alternative 4F during construction; however, no LAUs would be crossed or impacted by the Proposed Route. All LAUs disturbed during construction (with the exception of areas used as permanent access roads, substation footprints, and pole structure bases) would be revegetated following construction in accordance with the Framework Reclamation Plan (see Appendix B). However, the Proponents would not allow trees or large woody vegetation to establish under the transmission lines, resulting in a linear band that would be clear of trees for the life of the Project. The width of this permanently deforested band would depend on which tower and circuit type is used for that particular forest crossing (ranging from 125 to 300 feet wide). Details on ROW clearing are found in Section 3.6.2.3.

Lynx linkage habitat consists of areas that provide landscape connectivity between blocks of primary lynx habitat. Linkage areas occur both within and between geographic areas where blocks of lynx habitat are separated by intervening areas of non-lynx habitat such as basins, valleys, or agricultural lands. Shrub-steppe habitats that contain low human and/or road densities may also provide important linkage habitat between the lynx's primary forest habitat (Ruediger et al. 2000); therefore, impacts to previously undisturbed shrub-steppe communities and linkage habitat may affect the lynx's ability to move between patches of primary habitat. Linkage habitat has been identified in Idaho, Montana, Utah, and Wyoming by an interagency/ intergovernmental panel (Forest Service 2007c). The Project would cross multiple paths that have been designated as lynx linkage habitat (Forest Service 2007c), all of which are located along Segment 4 (see Appendix E, Figure E.11-1). This includes a linkage path that connects the southern portion of the Caribou-Targhee NF to the northeastern border of Utah; another linkage path connects the portion of the lynx core habitat that would be impacted by the Project to the northeastern border of Utah. Lynx would likely not utilize these linkage habitats during construction activities due to the presence of construction machinery and noise; resulting in a temporary adverse impact to the utility of these linkage habitats. Long-term impacts on the ability of these areas to serve as linkage habitats would be low due to the limited degree of habitat disturbance, lack of major active roads constructed through these habitats as a result of the Project, limited expected human presence in these areas during operation, and the restoration and revegetation efforts proposed (see the Framework Reclamation Plan in Appendix B). However, restoration in shrub-steppe habitats could take decades to restore conditions to preconstruction levels, and access roads could allow some non-Project-related human access to these areas (even with the measures proposed to limit this illegal use; see the Traffic and Transportation Monitoring Plan in Appendix B); indicating that some limited effects to linkage habitats could continue beyond the construction phase, but to an unquantifiable degree.

Snowshoe hares are the primary prey of lynx; therefore, an assessment of impacts on the Canada lynx must take into account potential impacts to the snowshoe hare. Impacts to the snowshoe hare are analysis under the "Forest Service Management Indicator Species" section. As discussed within this separate snowshoe hare section, impacts to the snowshoe hare would likely be limited, and would result in negligible

effects to lynx populations. Impacts to other small mammal species, which could potential serve as prey for the lynx (such as the red squirrel), are assessed in Section 3.10 – General Wildlife and Fish. As discussed in Section 3.10, some localized impacts may occur to small mammals; however, these are unlikely to result in population level impacts, and are therefore unlikely to impact the lynx food supply.

Operations-related Impacts
No permanent loss of LAUs would occur along the Proposed Route; however, Alternative 4F would permanently impact about 77 acres of LAUs due to Project structures (see Appendix D, Table D.11-7). As discussed above, the Project could have some limited impacts to the movement of the Canada lynx, due to long-term impacts to forested habitats, a reduction of shrub densities along linkage habitat, and an increase in human access to these areas, but to an unquantifiable degree.

It has been suggested that the Canada lynx is generally tolerant of human presences (Staples 1995; Roe et al. 1999; Mowat et al. 2000; Ruediger et al. 2000), indicating that the limited presence of humans during Project operations is unlikely to impact this species. Furthermore, studies have shown that moderately used roads (such as snowmobile trails and logging roads) do not appear to affect habitat use (McKelvey et al. 2000; Ruediger et al. 2000), indicating that the presence of Project-related access roads are unlikely to reduce lynx use of areas, or result in isolation of populations.

Conclusion
The Project would result in the loss of some LAU habitat (if Alternative 4F is selected), and would cross multiple lynx linkage habitats. However, the Project is not expected to substantially impact the lynx's prey base or result in long-term impedance to movement. Therefore the Project's construction and operations may affect, but are not likely to adversely affect, the Canada lynx.

<u>Columbia Spotted Frog (Candidate; Forest Service Sensitive)</u>

Construction-related Impacts
The potential effects of Project construction on the Columbia spotted frog include modification or loss to habitat (including alterations to the microclimates of these areas) and direct mortality.

Wetlands and riparian areas are the primary habitat for the Columbia spotted frog. Habitats suitable for the Columbia spotted frog are not abundant within the Analysis Area, and the few wetland and riparian areas that are proposed for crossing by the transmission line would be spanned, thereby avoiding direct impacts on these potentially sensitive areas (see Section 3.9 – Wetlands and Riparian Areas). The acreage of impact to suitable habitat by line segment and alternative is listed in Table D.11-5 (Appendix D) and discussed in Section 3.11.2.3. All areas disturbed during construction (with the exception of areas used as permanent access roads, substation footprints, and pole structure bases) would be revegetated following construction in accordance with the Framework Reclamation Plan (see Appendix B). However, the Framework Reclamation Plan is aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to wetlands or riparian areas, or the reestablishment of

stream/wetland shade vegetation and/or LWD. Therefore, additional measures have been identified to further protect these sensitive areas, which are discussed below in more detail.

There is a very low possibility that the transmission line structures would be placed in riparian habitat; instead, it is common engineering practice to span riparian habitat with the conductors and place the towers outside riparian habitat. However, the Proponents may propose one or more access roads that cross riparian habitat. Disturbances within these areas could result in direct mortality of frogs during the clearing and construction of the stream/waterbody crossing. In addition, increased sedimentation could result, which if at high enough levels could impact tadpoles and eggs present at both at the crossing location itself and immediately downstream. Sedimentation could bury frog eggs and/or damage tadpole gills, resulting in mortality. However, sedimentation would be controlled through implementation of the Proponents' SWPPP (see Appendix B). In addition, the possibility of a spill of toxic materials into waterbodies would be limited due to the implementation of the Proponents' SPCC Plan and SWPPP (see Appendix B; these measures would be applicable to all species that inhabit wetlands or waterbodies). Even with the implementation of these preventive and protective measures, the crossing of waterbodies by access roads should be avoided to the extent feasible; in addition, all necessary crossing should occur outside of forested riparian areas to reduce the amount of riparian vegetation that would need to be cleared.

EPMs WET-1 through WET-4 would be implemented to reduce impacts to riparian/wetland habitats, FISH-3 to prevent the establishment of aquatic invasive species in these wetland/riparian habitats, and WQA-23 through WQA-26 to reduce potential impacts to waterbodies resulting from road crossings. WET-2 through WET-4 and WQA-23 would be implemented on all lands, regardless of land ownership. The remaining measures would be implemented on federally managed lands, as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, the Agencies have identified the following EPM, which would be required on all federally managed lands to further reduce potential impacts to the Columbia spotted frog and other species that depend on riparian/wetland habitats:

TESWL-14 For the protection of aquatic- and riparian-/wetland-dependent species, surface disturbing and disruptive activities must be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands.

Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans must be developed. These plans shall: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate

land-management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat.

Operations-related Impacts

As stated earlier, permanent habitat loss would be associated with access roads, transmission pole structures, and substations; however, these facilities/structures would be located outside of riparian/wetland areas whenever possible. Table D.11-7 in Appendix D lists the permanent operations impacts that would occur to this species habitat; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

Minor clearing of vegetation and weed control near water crossings would be conducted primarily via mechanical methods; however, some herbicides may be used. If herbicides are used inappropriately near waterbodies, they can enter the water column through direct contact, spray drift, or leaching through the soils or groundwater, and can adversely impact species that utilize the aquatic environment. To prevent adverse impact to these species resulting from potential herbicide use, the following EPM would be applied Project-wide (this measure would be applicable to all species that utilize the aquatic environment):

OM-20 Only herbicides approved by the land-managing agency as safe to use in aquatic environments and reviewed by the Proponents for effectiveness will be used within 100 feet of sensitive aquatic resources.

The transmission line would not serve as a barrier to the Columbia spotted frog, as long as the EPMs identified above are implemented so that riparian and wetland microclimates are not altered in such a way as to prevent the movement of the Columbia spotted frog. However, any roads that are constructed within wetland/riparian habitats could result in a barrier to movement to the Columbia spotted frog, and could fragment habitat resulting in further loss of suitable habitat due to edge effects (see Table D.10-3 of Appendix D for the level of fragmentation that would occur due to proposed access roads, and Section 3.10.2.2 for a general discussion of habitat fragmentation). See further discussion on road and culvert installation requirements below, in the “Federal ESA Invertebrate Species” section.

The transmission line itself could serve as a hazard to the Columbia spotted frog due to the increased electromagnetic field near the line. For example, studies have shown that frog tadpoles can experience increased mortality when developing within increased electromagnetic fields (Balmori 2006). Therefore, there may be a localized impact area under the line where tadpole development does not occur normally. See Section 3.21 – Electrical Environment for a discussion of the strength of the electromagnetic field at varying distances from the Project.

Predation rates on this species would be largely unaffected by construction of the line. Some increased predation may be experienced due to consolidation of ravens along the line as ravens are a generalist hunter (see the discussion of raven consolidation and increased predation rates in the sage-grouse section); however, because the Project is not expected to substantially modify frog hiding habitat (i.e., frogs would still be able to hide from avian predators), predation rates are not expected to be substantially altered from existing conditions.

Conclusion
The Project would span riparian and wetland areas to the extent practical. In areas where they cannot be avoided, EPMs would be applied to limit potential impacts to riparian and wetland dependent species. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the Columbia spotted frog (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Grizzly Bear (Threatened; Forest Service Sensitive)

Construction-related Impacts
Construction of the Proposed Route would impact a total of about 3,185 acres of land within the range of the Yellowstone DPS; however, no lands would be impacted within the grizzly bear PCA or within areas identified by the USFWS as suitable grizzly bear habitats. The majority of impacts that would occur within the DPS boundary would occur adjacent to Highway 80, Highway 30, and the town of Kemmerer. Due to the limited habitat requirements of the grizzly bear, direct impacts to lands resulting from the Project's construction would not have a measurable effect on this species. However, if bears are present during construction, then construction activities could result in avoidance of the area and/or displacement of bears into adjacent areas. Furthermore, the Project has been re-routed to avoid known location of whitebark pine; therefore, no impacts to this important food source for grizzly bears are expected to occur (see Appendix M).

Operations-related Impacts
The transmission line and its associated structures would not likely serve as a barrier or hazard to the grizzly bear; and the operations of the Project are not likely to have a measurable adverse impact to the grizzly bear.

Conclusion
If grizzly bears are present near the Project, then they may avoid areas where construction occurs, which could result in displacement of bears to adjacent habitats. The Project would impact habitats that could be utilized by grizzly bears; however, the Project would avoid impacts to whitebark pine. Therefore, the Project's construction and operations may affect, but are not likely to adversely affect, the grizzly bear.

Idaho Ground Squirrel (Northern – Threatened / Southern – Candidate)

Construction and Operations-related Impacts
No habitat for the northern or southern Idaho ground squirrel exists within the Analysis Area and the Project would not cross this species' known distribution; therefore, Project construction and operations would have no effect on either of these ground squirrel species.

Conclusion
The Project would have no effect on the Idaho ground squirrel, as no habitat for the northern or southern Idaho ground squirrel exists within the Analysis Area and the Project would not cross this species' known distribution.

Piping Plover (*Threatened*), Interior Least Tern (*Endangered*), and Whooping Crane (*Endangered*)

Construction and Operations-related Impacts
The piping plover, least tern, and whooping crane are all located well downstream of any Project-related activity. Project-related actions that may affect local conditions (e.g., change in riparian habitat, sediment, accidental toxicant spills) would have no effect on downstream habitats these species inhabit. However, the Project would use water for dust control and to mix concrete (see Section 3.16 – Water Resources, for the amount of water use by segment and alternative) and may obtain some of this water from the Platte River system. While no direct effects to these listed bird species would result from Project-related actions, the tiered BO of the USFWS on the Platte River system indicates that any new or additional depletion from this system would result in a "may affect, likely to adversely affect" determination for these species as well as whooping crane critical habitat (see discussion of the PRRIP in Section 3.11.1.3). The Proponents have committed (in their POD; see Appendix B of this EIS) to purchasing enough water (from existing water withdrawals for which consultation has already occurred) to cover any water needs from the Platte River system. However, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. As a result, it is uncertain if the Proponents would be able to acquire enough water, for which consultation with the USFWS has already occurred, to cover the Project's water needs. Therefore, until these water needs have been fully identified and enough water has been acquired, the BLM must determine that the Project may affect and is likely to adversely affect the aforementioned species, and may affect but is not likely to adversely affect whooping crane designated critical habitat.

Conclusion
The Proponents have committed to purchasing enough existing water rights to cover the extent of estimated water withdrawals from the Platte River system for which consultation has already occurred; however, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. Therefore, the Project may affect and is likely to adversely affect these species (see Appendix M for more details). The appropriate agencies would need to approve the final list of existing water rights purchased by the Proponents before the Notice to Proceed would be issued.

Preble's Meadow Jumping Mouse (Threatened; Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the Preble's meadow jumping mouse are similar to those discussed for other riparian/wetland-dependent species, and include modification or impacts to habitat (including alterations to the microclimates of these areas) and direct mortality.

The acreage of impact to suitable habitat, by line segment and alternative, is listed within Table D.11-5 of Appendix D and discussed in detail in Section 3.11.2.3. All areas disturbed during construction (with the exception of areas used as permanent access roads, substation footprints, and pole structure bases) would be revegetated following construction in accordance with the Framework Reclamation Plan. However, as was discussed for the Columbia spotted frog, revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, EPMs WET-1 through WET-4 would be implemented to reduce impacts to riparian/wetland habitats. WET-2 through WET-4 would be implemented on all lands regardless of land ownership, while WET-1 would be implemented on federally managed lands, as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, the Agencies have identified TESWL-14, which would be required on all federally managed lands to further reduce potential impacts to Preble's meadow jumping mouse and other species that depend on riparian/wetland habitats.

Operations-related Impacts

Operations impacts to this species are similar to those discussed for other wetland- and riparian-dependent species. Permanent habitat loss would primarily be associated with access roads, transmission pole structures, and substations. For the most part, these would be located outside of wetland and riparian zones. Table D.11-7 of Appendix D lists the operations impacts that would occur to this species. The impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

The transmission line and its associated structures would not serve as a barrier or hazard to the Preble's meadow jumping mouse, as long as the EPMs identified above are implemented so that riparian and wetland microclimates are not altered in such a way as to prevent the movement of this species. However, any roads that are constructed within wetland/riparian habitats could result in a barrier to movement and could fragment habitat (see Table D.10-3 of Appendix D for the level of fragmentation that would occur due to proposed access roads).

As was described for sage-grouse, once the transmission line is in place, operations impacts to Preble's meadow jumping mouse would include a possible increase in predation pressure where the Project provides new perching opportunities for raven and raptor species. This effect would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. An increase in the numbers of predatory bird species, or a consolidation of their populations along

transmission lines, could result in an increase in mouse mortalities within these areas, as well as a possible increase in harassment of this prey species. This could result in mice avoiding or abandoning habitat adjacent to areas along the line, due to the presence of tall structures and the potential consolidation of raptor and raven populations. To limit the potential risk of increased predation pressures on sensitive prey species, TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Conclusion

Preconstruction surveys would be performed in potential suitable habitats to determine if this species does occur within the eastern portion of the Analysis Area. The Project would span riparian and wetland areas to the extent practical, thereby minimizing potential impact to suitable habitat. In areas where riparian and wetland areas cannot be avoided, EPMs would be applied to limit potential impacts to riparian- and wetland-dependent species. As a result, the Project may affect, but is not likely to adversely affect, the Preble's meadow jumping mouse.

<u>Wolverine (Proposed; Forest Service Sensitive; BLM Sensitive)</u>

Construction-related Impacts

The Project would not occur or impact areas within high altitude habitats near the tree line (i.e., in areas where wolverines are typically distributed in this region); however, the wolverine is a wide-ranging species and can occur outside of these areas as long as snow conditions are still suitable during spring and summer (USFWS 2010f). The Forest Service indicated that there was a wolverine observed about 6 miles south of the Proposed Route along Segment 4 in 2008, within the Copenhagen basin (Forest Service 2012); however, wolverines often move long distances in short periods of time when dispersing from natal ranges, making it difficult or impossible to distinguish with confidence between occurrence records that represent established populations and those that represent short-term transitory occupancy that do not represent a potential for establishment of a home range or reproduction (USFWS 2010f). Therefore, it is possible that wolverines could be present in areas proposed for construction along Segment 4; however, as the Project would not impact habitats that are typically associated with suitable wolverine denning habitats, no direct impacts to unique wolverine habitats are anticipated. If wolverines are dispersing through the area during construction, they could be disturbed due to the presence of humans and/or construction equipment. This could result in an alteration to an individual's behaviors, such as changing the path of movement or the complete exclusion of the individual from the area during construction. If this disturbance were to occur, it is likely to only affect a small number of individuals, as this species typically occurs at a very low density.

Operations-related Impacts

The transmission line and its associated structures would not likely serve as a barrier or hazard to the wolverine, and the operations of the Project are not likely to have a measurable adverse impact on the wolverine.

Conclusion
The Project would not impact habitats that are typically utilized by the wolverine (i.e., high altitude habitats near the tree line); however, the wolverine may disperse through forested habitats crossed by the Project along Segment 4. If a wolverine is present near the Project during construction, then they may avoid areas where active construction occurs. Therefore, the Project's construction and operations may affect, but are not likely to adversely affect, the wolverine.

Wyoming Toad (*Endangered*)

Construction and Operations-related Impacts
No habitat for the Wyoming toad exists within the Analysis Area and the Project does not cross any historical or current distributions; therefore, construction and operations would have no effect on this listed species.

Conclusion
The Project would have no effect on the Wyoming toad, because habitat for this species does not exist within the Analysis Area and the Project would not cross its known distribution.

Yellow-Billed Cuckoo (Candidate; Forest Service Sensitive)

Construction-related Impacts
The potential effects of Project construction on the yellow-billed cuckoo include loss or modification of habitat, disturbance due to construction activities, and direct mortality.

Habitat for the yellow-billed cuckoo consists of riparian zones that contain mature or late-successional cottonwood stands with dense understories of willow and dogwood. Suitable habitat for the yellow-billed cuckoo has been mapped within the Analysis Area (see Section 3.11.1.4). Habitats suitable for the yellow-billed cuckoo are not abundant within the Analysis Area (i.e., prime riparian habitat at least 5 acres in size; Reynolds and Hinckley 2005) as much of the remaining cottonwood riparian zones are too narrow in width to support the yellow-billed cuckoo (based on Project-related habitat mapping). The acreage of impact to suitable habitat by line segment and alternative is listed in Table D.11-5 (Appendix D) and discussed in Section 3.11.2.3. As was discussed for the Columbia spotted frog, project-related revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, additional measures have been identified to further protect these sensitive areas, which are discussed below in more detail.

As was discussed for the Columbia spotted frog, there is a very low possibility that the transmission line structures would be placed in riparian habitat; however, the Proponents may propose one or more access roads that cross riparian habitat. To the extent feasible, such crossings should be avoided. If unavoidable, EPMs WET-1 through WET-4 and TESWL-14 would be implemented to reduce impacts to riparian habitats. WET-2 through WET-4 would be implemented on all lands regardless of land ownership; WET-1 would be implemented on federally managed lands as well as

certain applicable state/private lands; while TESWL-14 would be implemented on federally managed lands. Impacts to nesting birds would be minimized through implementation of mitigation measure WILD-9 (which would be implemented on all lands regardless of land ownership), while impacts to snag habitats would be minimized through the implementation of mitigation measure WILD-10 (which would be implemented on federally managed lands as well as certain applicable state/private lands). In addition, the following EPM would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2):

TESWL-7 A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring-measures to ensure compliance with this measure.

Operations-related Impacts

As stated earlier, permanent habitat loss would be associated with access roads and tower bases; however, these facilities/structures would be located outside of riparian/wetland areas whenever possible. Any roads that are constructed within riparian habitats could fragment riparian habitat, resulting in further loss of suitable habitat due to edge effects (see Table D.10-3 of Appendix D for the level of fragmentation that would occur due to proposed access roads and Section 3.10.2.2 for a general discussion of habitat fragmentation). Table D.11-7 in Appendix D lists the permanent operations impacts that would occur to this species; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

Additional impacts resulting from the Project's operations would include the potential for collisions with transmission lines or structures (as was discussed for sage-grouse). A variety of factors influences avian transmission line collisions: configuration and location of transmission lines; the tendency of specific species to collide with transmission lines; and environmental factors such as weather, topography, and habitat (APLIC and USFWS 2005). Line placement with respect to other structures and topography can influence the collision rate of avian species at a given transmission line. Collisions usually occur near water or migration corridors, and occur more often during inclement weather. Less agile birds, such as heavy-bodied birds or birds that travel in flocks, are more likely to collide with overhead lines as they lack the ability to quickly negotiate obstacles. The yellow-billed cuckoo's tendency to collide with transmission structures is uncertain. To reduce the risk of collision with conductors that cross riparian areas, the Proponents have proposed the option of installing flight diverters in specific locations (see the Avian Protection Plans on the Proponents' Web sites). The types of flight diverters that are currently under consideration within the Proponents' Avian Protection Plans include a bird flight diverter type that consists of a rubber coil wrapped around the wires and held in place by the Heliformed rod gripping section; a target type (Cat. ID 41701) that consist of a hanging orange target that is attached to the conductor (up to 2.5 inches diameter) by means of a jaw clamp; and a FireFly (Cat. ID 46619) that consists of a hanging fluorescent 3-in-1 color flapper that glows in the dark. The FireFly flight diverter is attached to the conductor (up to 2.5 inches diameter) by means of a jaw

clamp. To further reduce the potential for yellow-billed cuckoo collision with conductors, EPM WILD-7 (which requires the use of flight diverters in certain locations where avian collisions would be most likely to occur due to site-specific conditions such as terrain or habitat) would be implemented on all land ownerships. In addition, EPM WILD-6, which would require the use of flight diverters on all guy wires, would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). Although the transmission line and its structures would cause some risk of collisions, they would not serve as a barrier to movement for the yellow-billed cuckoo.

Conclusion

The Project would span riparian and wetland areas to the extent practical. Where such areas cannot be avoided, EPMs would be applied to limit potential impacts to riparian and wetland dependent species. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the yellow-billed cuckoo (Region 4 language). For the same reasons, the Project may adversely impact individuals but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Federal ESA Invertebrate Species

There are four federally listed aquatic invertebrate species found within the Analysis Area that could be affected by the Project's construction and operations: the Bliss Rapids snail (Threatened); Banbury Springs limpet (Endangered); Snake River physa snail (Endangered); and Bruneau hot springsnail (Endangered). However, the transmission line would span the recovery area of only two of these four species (Bliss Rapids snail and Snake River physa snail), and no roads are currently proposed across these areas.

Construction-related Impacts

The potential effects of Project construction on these aquatic invertebrates would be similar to those discussed for the Columbia spotted frog, and could include impacts or modification of habitat as well as direct mortality. However, direct impacts to these species are unlikely because no road crossings are currently proposed through ESA-listed aquatic invertebrate habitats, and the transmission line itself would only span habitats for the Bliss Rapids snail and Snake River physa snail.

Transmission poles would not likely be constructed within river or spring habitats, as avoiding placing poles within these areas is a standard engineering practice. In addition, no river crossing by roads are proposed directly upstream of these habitats during wet conditions; therefore, there are no Project-related upstream actions that are expected to impact habitats for these listed aquatic invertebrates. However, the transmission line would span these species habitats along three segments of the Snake River: at RM 541.5, RM 573.5, and RM 624.0. These crossings are located along areas that contain either agricultural or shrub dominated habitats; therefore, only limited disturbance to vegetation would occur along these crossings (i.e., any individual trees that are tall enough to interfere with the transmission line would be removed). The

potential removal of isolated trees along the mainstem of the Snake River at 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, but could result in some sedimentation (which is discussed in more detail within the following paragraphs).

Sedimentation to waterbodies adjacent to construction areas would be controlled through implementation of the Proponents' SPCC Plan (see Appendix B); as would the prevention of accidental spills of toxic materials into waterbodies by requiring that toxic materials such as oil and fuel be keep at varying distances away from waterbodies and wetlands (as required by the various land-management agencies). EPMs WET-1 through WET-4 would reduce impacts to riparian habitats due to loss of vegetation. If impacts are unavoidable, the Agencies have identified TESWL-14 to further reduce potential impact to wetland- and riparian-dependent species. WET-2 through WET-4 would be implemented on all lands regardless of land ownership; WET-1 would be implemented on federally managed lands as well as certain applicable state/private lands; while TESWL-14 would be implemented on federally managed lands (see Table 2.7-1 in Chapter 2).

Road crossings of rivers, cold-water springs, and spring creeks would be avoided to the extent practical in all areas, and no road crossings are currently proposed for ESA-listed aquatic invertebrate species habitats. However, if on-site construction conditions change and a road crossing is needed across these habitats, crossings could result in direct mortality due to crushing of snails by construction equipment, and would result in a short-term increase in sedimentation, which could impact these species through burial of eggs, or mortality of their algae food supplies. Furthermore, the construction of roads near cold-water springs and spring creeks could result in the removal of forested or overhanging shrub vegetation, which could result in increases in the temperatures of these cold-water springs and creeks.[12] An increase in temperatures could result in injury or reduced fitness. These effects could impact species living both at the point where clearing occurred (i.e., at the road crossing) and at points farther downstream, thereby affecting species whose recovery area may not be crossed by the Project (such as the Banbury Springs limpet or the Bruneau hot springsnail). Therefore, the BLM and USFWS recommend that the Proponents do not consider crossing cold-water springs or spring creeks near the Snake River or the Bruneau River when developing their final engineering design, and the Agencies have identified TESWL-14 to protect sensitive riparian areas on federally managed lands. Furthermore, EPMs WQA-23 through WQA-26 would be implemented to limit the potential impact of road crossings on aquatic resources by establish requirements regarding road crossing designs and implementation. WQA-23 would be implemented on all land ownerships; while WQA-24 through WQA-26 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). However, as stated earlier, no crossings of these species' habitats by roads are currently proposed.

As discussed for the Colorado and Platte River Systems, water may be withdrawn from the Snake River system (which includes the Bruneau River) during construction;

[12] Cold-water springs and spring creeks are much narrower and have less water volume than the Snake River main stem, and are more likely to result in increased temperatures due to impacts to adjacent riparian vegetation than clearing along the Snake River main stem.

however, the Proponents have committed to purchasing enough water to cover any needed water withdrawals from the Snake River system (Appendix B). As a result, water levels are not expected to decrease in the Snake or Bruneau Rivers due to this Project. The appropriate agencies would need to approve the final list of water sources purchased by the Proponents before the Notice to Proceed would be issued. No water withdraws from springs along the Snake or Bruneau River would be conducted by the Proponents or approved by the agencies; as a result, no effects to the thermal aquifer along hot springs in these rivers are expected.

Operations-related Impacts

Permanent loss of habitat during Project operations would be minimal due to the limited scope of initial impact and the restoration efforts aimed at restoring and revegetating riparian/wetland habitats following construction. No permanent loss of ESA-listed aquatic invertebrate habitat is expected because no road crossings are currently proposed across these areas; furthermore, the transmission line would span portions of the habitat located in agricultural or shrubland areas (thereby minimizing riparian impacts).

Minor clearing of vegetation and weed control near water crossings would be conducted primarily via mechanical methods; however, some herbicides may be used. If herbicides are used inappropriately near waterbodies, they can enter the water column through direct contact, spray drift, or leaching through the soils or groundwater, and can adversely impact aquatic life. To prevent adverse impact to aquatic life resulting from potential herbicide use, EPM OM-20 would be applied Project-wide (this measure would be applicable to all aquatic species, not just listed invertebrate species):

Once installed, the transmission line and pole structures would not serve as a barrier or hazard to ESA-listed aquatic invertebrates, as the line and its associated structures would not directly impede their aquatic habitats. Currently, no road crossings or their associated culverts are proposed through these habitats; however, if a road crossing becomes necessary due to design changes, it would not serve as a barrier or hazard as long as the culvert is designed and installed correctly. However, a poorly designed culvert could result in fragmentation of habitats and isolation of upstream and downstream populations. Therefore, all culverts (both temporary and permanent) would be designed and installed to ensure the continued free flow of water, as well as to allow both the upstream and downstream movement of aquatic organisms (the number of culverts that would be installed per segment is shown in Table D.16-1 of Appendix D). If disturbance resulting from culvert construction is one acre or more, the Proponents would conduct construction and decommissioning of culverts under a Construction General Permit required for stormwater operations, which includes the development of BMPs to protect surface water from stormwater runoff. BMPs would also be employed to minimize sedimentation to waterbodies due to construction activities. All culverts that are not necessary for operation of the Project would be removed in accordance with the Proponents' Framework Traffic and Transportation Monitoring Plan (see Appendix B and Table 2.7-1 in Chapter 2). In addition, culverts would be inspected regularly (permanent culverts inspected annually during operation) to make sure that they are not plugged and are functioning properly. The Proponents' responsibility for inspecting culverts, as well as conducting all necessary repairs, would continue as long as the

culverts are present within the watershed (this would continue for the life of the Project for permanent culverts). The BLM and Forest Service have specific requirements regarding culvert design and installation on lands they manage. The Proponents would consult with the Forest Service and BLM prior to construction, regarding design, layout, and decommissioning requirements for each temporary and permanent culvert that would located on federally managed lands. All culverts located on federal lands would be constructed in accordance with the applicable federal agency's management plan standards. In all other areas where more restrictive regulations are not in place, the culvert specifications outlined in Appendix B would be used. To further reduce the risk to aquatic organisms created by the use of culverts, EPMs FISH-1, WQA-24, WQA-25, and WQA-26 would be implemented to ensure culverts are designed and installed properly. Again, no road crossings or culverts are currently proposed through ESA-listed aquatic invertebrate habitats; however, these BMPs, mitigation measures, and construction design requirements would ensure that culverts would not impede the movement of, or fragment aquatic habitats for, these listed aquatic invertebrates or other aquatic organisms, if road crossing layouts are changed in the future.[13]

Conclusion

No road crossings are proposed within habitats that support listed aquatic invertebrate species and the transmission line would span these habitats in areas that currently contain agricultural or shrubland vegetation; therefore, vegetation removal and maintenance would be minimal. EPMs would be applied to limit potential impacts to riparian- and wetland-dependent species. Based on impacts related to the limited ROW maintenance and the implementation of EPMs, the Project may affect, but is not likely to adversely affect, these listed aquatic invertebrate species.

Federal ESA Fisheries Species

Colorado River Drainage Fish Species (*Endangered*)

Construction- and Operations-related Impacts

The Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub are all located in the Colorado River system, but well downstream of any Project-related activities. Project-related impacts that may affect local conditions (e.g., change in riparian habitat, sediment, accidental toxicant spills) would have no effect on downstream habitats these species inhabit because the system where these species reside would be unchanged from local conditions. However, under the Upper Colorado Endangered Fish Recovery Program, any amount of water removed from the Colorado River system is considered to be a depletion of water. The Project would use water for dust control and to mix concrete (see Section 3.16 – Water Resources, for the amount of water use by segment and alternative) and may obtain some of this water from the Colorado River system. While no direct or adverse effects to any of these listed fish species would result from Project-related actions, the tiered BO of the USFWS on the Colorado River system indicates that any new or additional depletion from this system greater than 0.1 acre-feet/year would result in a "may affect, likely to adversely affect" determination for the aforementioned species and their critical habitat. The Proponents

[13] If road crossing locations are changed so that ESA-listed aquatic invertebrate habitats are impacted, consultation with the USFWS would need to be re-initiated (see discussion in the Biological Assessment [Appendix M of this EIS]).

have committed (in their POD; see Appendix B of this EIS) to purchasing enough water (from existing water withdrawals for which consultation has already occurred) to cover any water needs from the Colorado River system. However, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. As a result, it is uncertain if the Proponents would be able to acquire enough water, in which consultation with the USFWS has already occurred, to cover the Project's water needs. Therefore, until these water needs have been fully identified and enough water has been acquired, the BLM must determine that the Project may affect and is likely to adversely affect the aforementioned species, and may affect but is not likely to adversely affect their designated critical habitat.

The following EPM would be required (based on the USFWS tiered Biological Opinion on the Colorado River water withdrawals) if the Project results in depletions greater than 100 acre-feet per year from the Colorado River:

TESWL-12 Colorado River T&E Fishes – A payment of a one-time fee, based on a fee schedule provided by the USFWS, will be made based on the amount of water used during construction of any segments that cross the Colorado River system.

Conclusion

The Proponents have committed to purchasing enough existing water rights to cover the extent of estimated water withdrawals from the Colorado River system for which consultation has already occurred; however, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. Therefore, the Project may affect and is likely to adversely affect these species (see Appendix M for more details). The appropriate agencies would need to approve the final list of existing water rights purchased by the Proponents before the Notice to Proceed would be issued.

Platte River Drainage Fish Species (*Endangered*)

Construction- and Operations-related Impacts

The pallid sturgeon is located in the Platte River drainage, but well downstream of any Project-related activities. As was discussed for the Colorado River drainage species, Project-related impacts that may affect local conditions (e.g., change in riparian habitat, sediment, accidental toxicant spills) would have no effect on these downstream habitats because the system where these species reside would be unchanged from local conditions. However, under the PRRIP, water removed from the Platte River system is considered to be a depletion of water and can be considered to have an effect on this species. The Project would use water for dust control and to mix concrete (see Section 3.16 – Water Resources, for the amount of water-use by Segment and Alternative) and may obtain some of this water from the Platte River system. While no direct or adverse effects to this listed fish species would result from Project-related actions, the tiered BO of the USFWS on the Platte River system indicates that any new or additional depletion

from this systems greater than 0.1 acre-feet/year would result in a "may affect, likely to adversely affect" determination for this species. The Proponents have committed (in their POD; see Appendix B of this EIS) to purchasing enough water (from existing water withdrawals for which consultation has already occurred) to cover any water needs from the Platte River system. However, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. As a result, it is uncertain if the Proponents would be able to acquire enough water, in which consultation with the USFWS has already occurred, to cover the Project's water needs. Therefore, until these water needs have been fully identified and enough water has been acquired, the BLM must determine that the Project may affect and is likely to adversely affect the aforementioned species.

Conclusion

The Proponents have committed to purchasing enough existing water rights to cover the extent of estimated water withdrawals from the Platte River system for which consultation has already occurred; however, the Proponents have not yet identified the sources or exact amount of water they plan to purchase or the current use of the water withdrawals versus its expected use after purchase (for the Project); they have also not secured these water withdrawals at this time. Therefore, the Project may affect and is likely to adversely affect the aforementioned species (see Appendix M for more details). The appropriate agencies would need to approve the final list of existing water rights purchased by the Proponents before the Notice to Proceed would be issued.

Bull Trout (ESA Critical Habitat)

Construction- and Operations-related Impacts

No critical habitat for the bull trout would be crossed by the Proposed Route; however, the transmission line along Alternative 9E (near Node 9n) would span bull trout critical habitat. This habitat is located along the Bruneau River, approximately 10 miles south of where this river joins C.J. Strike Reservoir. No road crossings would occur along this critical habitat. In addition, no road crossings would occur directly up or downstream of this critical habitat. Vegetation adjacent to the area where the transmission line would span this critical habitat has been defined as "Wetland and Riparian" during Project-specific remote sensing, with adjacent areas defined as "Disturbed Sagebrush" (Tetra Tech 2010a); therefore, no forested habitat would be impacted and stream temperatures would not be measurably impacted. With the implementation of BMPs outlined in Appendix B and Table 2.7-1 in Chapter 2, potential impacts from turbidity would be minimal and short term.

Conclusion

The Project would not cross critical habitat for the bull trout; however, Alternative 9E would cross a section of designated critical habitat. This crossing would consist of a spanning of the river by the transmission line in a shrub-dominated area, with no road crossings proposed. Therefore, the Project may effect, but is unlikely to adversely affect critical habitat for the bull trout.

BLM and Forest Service Sensitive Species

This section addresses potential impacts to BLM and Forest Service sensitive species. As stated earlier, a detailed discussion and individual analysis of potential impacts is limited to five mammal species, four species of birds, and one amphibian. Impacts to the remaining species potentially present within the Analysis Area will be addressed by grouping these species based on their habitat preferences or life history traits, and then discussing the likely impacts to these groups as a whole.

BLM and Forest Service Sensitive Wildlife Species

Bald Eagle (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the bald eagle include disturbance, loss or modification of habitat, and direct mortality (as discussed earlier, the Bald and Golden Eagle Protection Act and applicable permits are discussed in Section 3.10 – General Wildlife and Fish). The acreage of impact to nest and winter habitat by line segment and alternative is listed in Table D.11-6 (Appendix D) and discussed in Section 3.11.2.3. Nesting sites are vulnerable to construction disturbances because the adult eagles may abandon the nest during periods of high human activity, resulting in mortality of eggs or nestlings. However, as shown in Table D.11-4, bald eagle habitat is limited within the Project area. All construction activities on federally managed lands would be conducted in accordance with agency requirements and exclusion zones. Furthermore, construction activities Project-wide would comply with the requirements in the MBTA and Bald and Golden Eagle Protection Act (see Section 3.10 – General Wildlife and Fish). To further protect bald eagles during the nesting season, WILD-9 would be implemented on all land ownerships; this measure which would require that all vegetation clearing be conducted prior to the onset of the general avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season. Impacts to snag habitats on federally managed lands would be minimized through implementation of EPM WILD-10.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered nests as well as other structures occupied by sensitive species.

Operations-related Impacts

Table D.11-8 in Appendix D lists the permanent operations impacts that would occur to bald eagle habitat; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

The Project's operations could result in a potential for collisions with Project structures, resulting in elevated mortality rates (as was discussed for sage-grouse). Although best available science suggests that bald eagles have a relatively low risk of collisions with transmission lines compared to other avian species, evidence does show that bald eagle collisions are possible and do occur (USFWS 2010g; Mojica et al. 2009). Estimating the true rate of eagle collisions is difficult, due to factors such scavengers

removing carcasses, lack of extensive carcass searches at existing lines, and eagles injured by collisions that do not die near the line (e.g., if the injured bird leaves the location and is therefore not identified as a collision injury). These limitations on estimating collision rates are compounded by the fact that many studies on eagle/power-line mortality combine electrocution with collision mortalities, due to an uncertainty regarding the cause of death (USFWS 2010g). However, it is believed that that greatest risk for bald eagle collisions with powerlines occurs along the mid-span of a line as it crosses a river (USFWS 2010g). Measures would be taken during the design and construction of the Project to minimize the risk of avian collisions, including eagle collisions. Areas of high risk for avian collisions would be marked with bird flight diverters as required in EPM WILD-7, thereby reducing potential collision hazard. In addition, EPM WILD-6 would require the use of flight diverters on guy wires. WILD-7 would be implemented on all lands regardless of land ownership, while WILD-6 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Although bald eagles are less likely to collide with powerlines than many other avian species (Olendorff et al. 1981), they are still vulnerable to mortality resulting from electrocution by powerlines. Birds can become electrocuted if they come into contact with powered phases of the line while taking off from a perched position along the line or when flying between the lines. This is unlikely to occur along the transmission line because the spacing between phases of the Project's transmission lines is much larger than the wing spans for all avian species likely present along the Project; therefore, electrocution due to the transmission line is not a hazard for bald eagles. However, the distribution lines that serve the substations could provide an electrocution hazard to bald eagles, although this hazard would be negligible due to the limited number of places new distribution lines would be constructed (at the Aeolus, Anticline, and Cedar Hill Substations), and the fact that these distribution lines would be constructed in accordance with APLIC guidelines (i.e., designed to prevent avian electrocutions). The distribution line at the Cedar Hill Substation would be short in length (200 feet long), thereby further reducing the risk of electrocutions (by minimizing the extent of area exposed). However, the distribution lines for the Aeolus and Anticline Substations would be approximately 11 miles and 3.3 miles long, respectively. Although the Aeolus line would cover approximately 11 miles of land, no bald eagle habitat or known nests occur in this area. In addition, the Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce potential risk of avian electrocution. These plans are in compliance with APLIC suggested practices (see Section 3.10 – General Wildlife and Fish), and include measures to be taken if avian mortalities are discovered, and modification and/or additions to the line that can be made to prevent the use of the line by avian species. Furthermore, EPM WILD-3 would be implemented Project-wide, to ensure that any modifications to the line are also in compliance with APLIC guidance. These measures would reduce the risk of raptor wingspans coming in contact with both lines, or between the lines and conductors, along the distribution lines.

As described in the operations section for sage-grouse, the presence of the transmission line and its structures could serve as nesting and perching habitat for

raptor species. This could be a beneficial impact to the bald eagle due to the increase in potential perching habitat.

Conclusion
The Project would impact habitats near nests and roosting habitats. However, EPMs would be implemented to limit the potential impact on this species. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the bald eagle (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Black-Tailed and White-Tailed Prairie Dog (*Forest Service Sensitive; BLM Sensitive*)

Construction-related Impacts
The potential effects of Project construction on the white- and black-tailed prairie dog include direct mortality, disturbance, and loss or modification of habitat. Prairie dogs and/or their burrows could be crushed by construction equipment and foraging habitat could be impacted during construction. Construction-related noise and dust disturbance would also occur during construction, which could potentially make habitat temporarily unsuitable for these prairie dog species. Impacts by segment are found in Table D.11-6 in Appendix D and are discussed in Section 3.11.2.3.

As discussed for other TES species, standard best management practices would be employed during construction to minimize disturbances (see Table 2.7-1) and pre-construction surveys would be conducted in support of black-footed ferret surveys to avoid disturbances. Occupied habitats identified during these surveys would be avoided to the extent practical. Furthermore, impact values reported within this document are based on indicative engineering. To ensure that the final engineering design is routed to avoid known locations of prairie dog towns/colonies as well as other structures occupied by sensitive species to the extent practical, EPM TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

To further reduce potential impact to prairie dogs, the Agencies would require that EPM TESWL-15 be implemented on federally managed lands within the Rawlins FO (per the requirements found in the Rawlins RMP):

TESWL-15 Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins FO.

Operations-related Impacts
The Project's operations would result in some permanent loss of prairie dog habitat. Table D.11-8 in Appendix D lists the permanent operations impacts that would occur to prairie dog habitat; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

Similarly to what was described for sage-grouse, once the transmission line is in place, operations impacts to either species of prairie dog would include a possible increase in

predation pressure where the Project provides new perching opportunities for raven and raptor species. This effect would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. An increase in the numbers of predatory bird species, or a consolidation of their populations along transmission lines, could result in an increase in prairie dog mortalities within these areas, as well as a possible increase in harassment of this prey species. This could result in prairie dogs avoiding or abandoning habitat adjacent to areas along the line, due to the presence of tall structures and the potential consolidation of raptor and raven populations. To limit the potential risk of increased predation pressures on sensitive prey species TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Conclusion

The Project would impact prairie dog habitat, and could result in increased predation pressures; however, EPMs would be applied to limit the potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Burrowing Owl (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the burrowing owl include direct mortality, disturbance, and loss or modification of habitat. In addition, because the burrowing owl is a burrow nester it is highly sensitive to the types of ground-clearing activities that would occur during construction. Pre-construction surveys for TES species would be conducted to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical. To further protect burrowing owls during the nesting season, WILD-9 would be implemented on all land ownerships, which would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds.

Because the burrowing owl does not dig its own burrows, and instead utilizes the abandoned burrows of other burrowing species, any impacts to these other burrowing species could impact the burrowing owl. Therefore, any impacts to prairie dogs (a species that creates burrows that the burrowing owl utilizes) could reduce habitat for future burrowing owl re-introductions; however, the Project is not likely to contribute to a trend toward federal listing or loss of viability for either species of prairie dog (see the impact discussion in the black-tailed and white-tailed prairie dog section).

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure

that the final engineering design is routed to avoid known or newly discovered burrows as well as other structures occupied by sensitive species.

The Project may not be in compliance with a requirement found in the BLM's RMP for the Green River Management Area, regarding raptor nests. The Green River RMP states that:

> *Project components, such as permanent and high profile structures, i.e., buildings, storage tanks, powerlines, roads, well pads, etc. are prohibited within an appropriate distance of active raptor nests. The appropriate distance (usually less than 1/2 mile) will be determined on a case-by-case basis and may vary depending upon the species involved, natural topographic barriers, and line-of-sight distances, etc. Placement of facilities, "on" (very low profile) or below ground, and temporary disruptive activities, such as occur with pipeline construction, seismic activity, etc., could be granted exceptions within 1/2 mile of active raptor nests, in certain circumstances.*

Within the Green River Management Area, the Project would cross within 0.5 mile of known burrowing owl burrows. As a result, the Project may not be in compliance with the Green River RMP. However, the BLM has determined that no plan amendments would be required to meet this RMP requirement because this conflict can be resolved using the administrative process outlined in the Green River RMP (refer to Appendix 2 of the Green River RMP, "Mitigation Guidelines for Surface-Disturbing and Disruptive Activities").

Operations-related Impacts

Table D.11-8 in Appendix D lists the permanent operations impacts that would occur to burrowing owl habitat; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

As was described for sage-grouse, once the transmission line is in place, operations impacts to the burrowing owl would include a possible increase in predation pressure where the Project provides new perching opportunities for raven and raptor species. This effect would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. An increase in the number of predatory bird species, or a consolidation of their populations along transmission lines, would result in an increase in owl mortalities within these areas, as well as a possible increase in harassment to this prey species. To limit the potential risk of increased predation pressures on sensitive prey species TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Another potential impact often associated with linear projects is the disruption and isolation of populations; however, the Project is not expected to serve as a barrier to owl movement. In addition, the risk of collisions with transmission structures or electrocutions is negligible for the burrowing owl due to its flight behaviors, which are limited to short, low flights, as well as the utilization of APLIC guidelines when building the Project (see the discussion for the sage-grouse).

Conclusion
The Project would impact burrowing owl habitat, and could result in increased predation pressures; however, EPMs would be applied to limit the potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Columbian Sharp-Tailed Grouse (MIS; Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts
The potential effects of Project construction on the Columbian sharp-tailed grouse include direct mortality, disturbance, and loss or modification of habitat.

As the Columbian sharp-tailed grouse is a ground nester, it is very sensitive to the type of ground-clearing activities that would occur during Project construction. Therefore, the Proponents attempted to avoid all leks by at least 0.25 mile when routing the Proposed Route, in accordance the BLM RMP requirements for “no surface occupancy” that were in place at the time of initial Project design in 2008; The Proponents were successful in avoiding all occupied Columbian sharp-tailed grouse leks on federally managed lands by at least 0.25 mile; however, the centerline of the Proposed Route along Segments 4, 5, and 7 would come within 0.25 mile of occupied leks on non-federally managed lands (see Table D.11-10 in Appendix D). In addition, the Proponents attempted to avoid leks by 0.65 mile to the extent possible, based on the assumption made at the time of initial Project design (2008) that the “no surface occupancy” requirement could increase from 0.25 mile to 0.6 mile prior to the final permitting of the Project. However, the Project could not avoid all leks by this distance (see Tables 3.11-6 and Table D.11-10 in Appendix D), due to the need to avoid other sensitive resources (e.g., sensitive cultural resources, or high altitude mountain habitats that contain species listed under the ESA). None of leks located within 0.6 mile of the Project, however, are located on federally managed lands (i.e., in areas under the jurisdiction of the BLM).

Loss of Columbian sharp-tailed grouse habitat would occur due to direct removal of vegetation, introduction of noxious weeds, fragmentation, edge effects, and altered fire regimes (see further discussion in Section 3.10.2.2). In addition, construction-related noise and dust disturbance would occur, which could potentially make habitat temporarily unsuitable for the Columbian sharp-tailed grouse. Birds could experience direct mortality if construction equipment drives over nests or birds that are hidden in shrub cover. However, as discussed for sage-grouse, the Proponents have developed EPMs in their Framework Operations and Maintenance Plan, as well as their Framework Traffic and Transportation Monitoring Plan (see Appendix B) to limit the potential risk of direct vehicular impacts with wildlife.

As discussed in Section 3.11.1.4, the Proponents have committed to conducting pre-construction surveys for TES species, including the Columbian sharp-tailed grouse, to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical. EPM TESWL-5 would be

followed to ensure that all pre-construction surveys for grouse species are conducted according to agency approved protocols.

The following EPM[14] would be employed on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) in order to avoid and minimize potential impacts to Columbian sharp-tailed grouse.

TESWL-6 Sharp-Tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance shall be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.

The risk of direct mortality would be limited due to the utilization of agency timing restrictions for construction near known breeding grounds (restricting construction to periods outside of the typical breeding season for habitats located within certain distances of leks). However, as some breeding/nesting habitat would still be impacted during the breeding season (in areas far enough from leks that they are not affected by timing restrictions), some direct impacts to birds as well as their breeding habitat could occur. This would result in increased mortality of chicks through both crushing by construction equipment, as well as abandonment by females (i.e., parent birds). In addition, flight responses and disturbance would increase the energy costs of both parent birds and chicks, thereby, adding additional stresses on birds located adjacent to construction activities. However, Project compliance with the agency timing restriction would limit disturbance or displacement of brooding birds as well as impacts to chicks located in breeding habitat around leks, by limiting impacts to only areas outside of agency-designated breeding habitats during the breeding season (thereby reducing the risk of crushing nests or chicks). However, WILD-9, which would be implemented on all land ownerships, requires that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds. This EPM would minimize the risk of disturbing nesting birds.

Even with the implementation of the EPMs and mitigation measures listed above, some loss of sharp-tailed grouse habitat would occur during Project construction. The acreage of construction-related impact by line segment and alternative is found in Table D.11-6 in Appendix D and discussed in detail in Section 3.11.2.3. As discussed earlier, all disturbed areas such as the staging areas, fly yards, and the temporary construction areas that are not needed for permanent maintenance would be revegetated following construction in accordance with the Framework Reclamation Plan (see Appendix B). However, revegetation in arid landscapes can take many decades to restore to preconstruction conditions or to levels suitable for grouse species, so these impacts would be long term.

[14] As required by BLM Information Bulletin ID-2010-039.

Operations-related Impacts

Table D.11-8 in Appendix D lists the permanent operations impacts that would occur to Columbian sharp-tailed grouse habitat; the impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

As was described for sage-grouse, the presence of the transmission line could increase both the predation rate and the level of predatory harassment experienced by sharp-tailed grouse by increasing or consolidating populations of raptors and ravens along the Project's route. This could result in an increase in mortality and a reduction of use near the Project. This effect would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. TESWL-1 would be implemented on federally managed lands to limit the potential risk of increased predation pressures on sensitive prey species, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

The potential impact to the Columbian sharp-tailed grouse related to collisions and electrocutions, as well as the measures that would be taken to reduce this risk, would be similar to that discussed above for sage-grouse.

There are concerns that the sharp-tailed grouse might avoid areas with tall structures, and would therefore be displaced or cease occupying areas near the Project. Sharp-tailed grouse have been found to be somewhat tolerant of disturbances and tall structures, and were found to display on traditional lek sites after the construction of structures such as houses (Baydack et al. 1987). However, only limited studies have been conducted on this species, and the results of lek abandonment studies conducted on similar species (lesser and greater prairie-chicken) have demonstrated that use may become reduced near tall structures (Pitman et al. 2005; Pruett et al. 2008). The possible mechanisms for this reduced use near tall structures could include many factors such as a reduction in shrub cover near disturbances, a potential inherent fear of tall structures by these species, increased predation rates near these structures, or a reduced recruitment in poor quality habitats due to disturbances. Pruett et al. (2008) found that lesser and greater prairie-chickens avoided transmission powerlines by at least 330 feet; however, the presence of state highways did not have a statistically significant impact on their distribution and range. Therefore, it is possible that the vegetative clearing for the permanent access roads would not result in habitat fragmentation for grouse species, but that the presence of the transmission structures and line would serve as a form of habitat fragmentation and a barrier to movement. If the response of the Columbian sharp-tailed grouse to transmission lines is similar to those recorded by Pruett et al. (2008) for the lesser and greater prairie-chicken, then edge effects resulting from newly fragmented habitats could extend approximately 330 feet into habitat patches. This would further reduce the available habitat for the Columbian sharp-tailed grouse and possibly isolate subpopulations (see Tables D.10-3 through D.10-5 of Appendix D for the level of fragmentation that would occur due to both the transmission line and the proposed access roads).

Conclusion
The Project would impact sharp-tailed grouse habitat, and could result in increased predation pressures; however, EPMs would be applied to limit the potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the sharp-tailed grouse (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Gray Wolf (Forest Service Sensitive)

Construction-related Impacts
Because the gray wolf is considered a habitat generalist and does not require a specific habitat type for survival, gray wolves could potentially be present along any portion of the line. However, as the Project would not impact habitats that are unique to the general area or are specifically required by wolves for survival, habitat loss resulting from the Project's construction would not have a measurable effect on this species. As discussed for the Canada lynx, the gray wolf has a large home range and as such, it is possible that wolves would not be present during construction. However, if wolves are present during construction, they would likely avoid the area, resulting in a temporary shift in wolf movement patterns.

Operations-related Impacts
The transmission line and its associated structures would not likely serve as a barrier or hazard to the gray wolf; and the operations of the Project are not likely to have a measurable adverse impact to the gray wolf.

Conclusion
The Project would impact habitats that could be utilized by wolves; however, the Project would not impact habitats that are unique to the general area or are specifically required by wolves for survival. If wolves are present near the Project during construction, then they may avoid areas where active construction occurs. Therefore, the Project's construction and operations may impact individuals or habitat, but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the gray wolf (Region 4 language).

Mountain Plover (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts
The potential effects of Project construction on the mountain plover include direct mortality, disturbance, and loss or modification of habitat. In addition, construction-related noise and dust disturbance would also occur, which could potentially make habitat temporarily unsuitable for this species. The mountain plover is a ground nester and is therefore sensitive to types of ground-clearing activities that would occur during Project construction. Pre-construction surveys for TES species would be conducted to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical. To further protect mountain plover during the nesting season, WILD-9 would be implemented on all land

ownerships, which would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds. The acreage of impact to suitable habitat by line segment and alternative is listed in Table D.11-6 of Appendix D and discussed in Section 3.11.2.3.

Operations-related Impacts

Table D.11-8 of Appendix D lists the permanent operations impacts that would occur to this species. The impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

There is a potential risk of avian collisions with transmission lines or other Project-related structures due to the Project construction and operations, which could result in elevated mortality rates for some avian species (as was discussed for sage-grouse). The mountain plover's potential to collide with transmission lines is uncertain; however, it is a ground nester that hunts ground-dwelling invertebrates, indicating that it is unlikely to collide with transmission lines except possibly during migration (when they generally fly at heights higher than would be expected during breeding or hunting). The Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce potential risk of avian mortalities. These plans are in compliance with APLIC suggested practices (see Section 3.10 – General Wildlife and Fish); they include measures to be taken if avian mortalities are discovered, and modification and/or additions to the line that can be done if elevated mortalities of avian species are discovered. In addition, EPM WILD-6, which would require the use of flight diverters on all guy wires, would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). The risk of electrocution is negligible for the mountain plover due to its flight behaviors, as well as the utilization of APLIC guidelines when building the Project (see the discussion for sage-grouse). Although the transmission line and its structures would cause some risk of collisions, they would not serve as a barrier to movement for the mountain plover.

Similarly to what was described for sage-grouse, the presence of the transmission line could increase both the predation rate and the level of predatory harassment experienced by the mountain plover, by increasing or consolidating populations of raptors and ravens along the Project's route. This could result in an increase in mortality and a reduction of use near the Project. This effect would be greatest in open habitat types where other tall structures, including distribution and transmission lines, do not currently exist. To limit the potential risk of increased predation pressures on sensitive prey species TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Conclusion

The Project would impact mountain plover habitat and could result in increased predation pressures; however, EPMs would be applied to limit the potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operations may impact individuals or habitat,

but are not likely to contribute to a trend toward federal listing or cause a loss of viability for the mountain plover (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Northern Leopard Frog (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the northern leopard frog are similar to those discussed for other riparian-/wetland-dependent species (such as the Columbia spotted frog), and include modifications or impacts to habitat (including alterations to the microclimates of these areas) and direct mortality.

The acreage of impact to suitable habitat, by line segment and alternative for the northern leopard frog is listed within Table D.11-6 of Appendix D and discussed in detail in Section 3.11.2.3. All areas disturbed during construction (with the exception of areas used as permanent access roads, substation footprints, and pole structure bases) would be revegetated following construction in accordance with the Framework Reclamation Plan. However, as was discussed for the Columbia spotted frog, revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, additional measures have been identified to further protect these sensitive areas, which are discussed below in more detail.

There is a very low possibility that the transmission line structures would be placed in riparian habitat because it is common engineering practice to span riparian habitat with the conductors and place the towers outside riparian habitat. However, the Proponents may propose one or more access roads that cross riparian habitat. Disturbances within these areas could result in direct mortality of frogs during the clearing and construction of the stream/waterbody crossing. In addition, increased sedimentation could result, which if at high enough levels could impact tadpoles and eggs present at both at the crossing location itself and immediately downstream. Sedimentation could bury frog eggs and/or damage tadpole gills, resulting in mortality. However, sedimentation would be controlled through implementation of the Proponents' SWPPP (see Appendix B). In addition, the possibility of a spill of toxic materials into waterbodies would be limited due to the implementation of the Proponents' SPCC Plan and SWPPP (see Appendix B; these measures would be applicable to all species that inhabit wetlands or waterbodies). Even with the implementation of these preventive and protective measures, the crossing of waterbodies by access roads should be avoided to the extent feasible; in addition, all necessary crossing should occur outside of forested riparian areas to reduce the amount of riparian vegetation that would need to be cleared.

EPMs WET-1 through WET-4 would be implemented to reduce impacts to riparian/wetland habitats, FISH-3 to prevent the establishment of aquatic invasive species in these wetland/riparian habitats, and WQA-23 through WQA-26 to reduce potential impacts to waterbodies resulting from road crossings. WET-2 through WET-4 and WQA-23 would be implemented on all lands, regardless of land ownership. The

remaining measures would be implemented on federally managed lands, as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, the Agencies have identified TESWL-14, which would be required on all federally managed lands to further reduce potential impacts to northern leopard frog and other species that depend on riparian/wetland habitats.

The Medicine Bow Forest Plan requires that "no loss or degradation of known or historical habitat for the boreal toad, wood frog, or northern leopard frog" be allowed. However, the portion of the Project that crosses the Medicine Bow-Routt NFs would impact less than 1 acre of mapped northern leopard frog habitat (impacted along Segment1W). Therefore, for this NF to grant a ROW permit, the Project would either need to be altered so that it is in compliance with the Forest Plan regarding the boreal toad, wood frog, and northern leopard frog, or the Forest Plan would need to be amended (see Appendix F).

Operations-related Impacts

Operations impacts to the northern leopard frog are similar to those discussed for other wetland- and riparian-dependent species. Permanent habitat loss would primarily be associated with access roads, transmission pole structures, and substations. For the most part, these would be located outside of wetland and riparian zones. Furthermore, measures would be taken to prevent herbicide use during Project operation from impacting species that utilize the aquatic environment (i.e., OM-20). Table D.11-8 of Appendix D lists the operations impacts that would occur to habitat for this species. The impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

The transmission line and its associated structures would not serve as a barrier to this species; as long as the EPMs and mitigation measures identified above are implemented so that riparian and wetland microclimates are not altered in such a way as to prevent the movement of this species. However, any roads that are constructed within wetland/riparian habitats could result in a barrier to movement and could fragment habitat (see Table D.10-3 of Appendix D for the level of fragmentation that would occur due to proposed access roads).

The transmission line itself could serve as a hazard to the northern leopard frog due to the increased electromagnetic field near the line. For example, studies have shown that frog tadpoles can experience increased mortality when developing within increased electromagnetic fields (Balmori 2006). Therefore, there may be a localized impact area under the line where tadpole development does not occur normally. See Section 3.21 – Electrical Environment for a discussion of the strength of the electromagnetic field at varying distances from the Project.

Predation rates on this species would be largely unaffected by construction of the line. Some increased predation may be experienced due to consolidation of ravens along the line as ravens are a generalist hunter (see the discussion of raven consolidation and increased predation rates in the sage-grouse section); however, as the project is not expected to substantially modify frog hiding habitat (i.e., frogs would still be able to hide from avian predators), predation rates are not expected to be substantially altered from existing conditions.

Conclusion

The Project would span riparian and wetland areas to the extent practical. Where such areas cannot be avoided, EPM and mitigation measures would be applied to limit potential impacts to riparian- and wetland-dependent species. Based on the potential for impacts and the implementation of EPMs and mitigation measures, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Pygmy Rabbit (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the pygmy rabbit include direct mortality, disturbance, and loss or modification of habitat. In addition, construction-related noise and dust disturbance would also occur, which could potentially make habitat temporarily unsuitable for the pygmy rabbit. Pre-construction surveys for TES species would be conducted to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical. The acreage of impact to suitable habitat, by line segment and alternative, is listed within Table D.11-6 of Appendix D, and is discussed in detail in Section 3.11.2.3.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands (as well as certain applicable state/private lands; see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered burrows as well as other structures occupied by sensitive species.

Operations-related Impacts

Table D.11-8 of Appendix D lists the permanent operations impacts that would occur to this species. The impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

As was described for sage-grouse, the presence of the transmission line could increase both the predation rate and the level of predatory harassment experienced by pygmy rabbits, by increasing or consolidating populations of raptors and ravens along the Project's route. This could result in an increase in mortality and a reduction of use near the Project. This effect could be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. To limit the potential risk of increased predation pressures on sensitive prey species TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

The Project itself would not likely serve as a barrier to movement for this species, but could result in a hazard, due to increase in the predation rate and the level of predatory harassment near the line.

Conclusion

The Project would impact pygmy rabbit habitat, and could result in increased predation pressures; however, EPMs and mitigation measures would be applied to limit the

potential impact of the Project on this species. Based on the potential for impacts and the implementation of EPMs and mitigation measures, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for the pygmy rabbit (Region 4 language).

Wyoming Pocket Gopher (Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts

The potential effects of Project construction on the Wyoming pocket gopher include direct mortality, disturbance, and loss or modification of habitat. Quantifying this potential effect is problematic because the distribution of this species and the location of its habitat are uncertain. The closest known occurrence of a Wyoming pocket gopher near the Analysis Area was from 1976, and was located approximately 0.5 mile north from Segment 3 (WYNDD 2010). The WYNDD has mapped the likely locations of suitable habitat for the Wyoming pocket gopher. Table D.11-6 (Appendix D) lists the construction-related impacts that would occur to this mapped suitable habitat. Pre-construction surveys for TES species would be conducted to determine activity levels prior to construction, as well as facilitate micro-siting of the Project outside of occupied areas to the extent practical.

Operations-related Impacts

Table D.11-8 of Appendix D lists the permanent operations impacts that would occur to this species. The impacts by segment and alternative are discussed in detail in Section 3.11.2.3.

If the Wyoming pocket gopher is present near the Project, the transmission line and its associated structures are not expected to serve as a barrier to movement or a hazard to this species. However, roads could potentially serve as barriers, and could fragment populations of Wyoming pocket gopher if they bisect populations (see Table D.10-3 of Appendix D for the level of fragmentation that would occur due to proposed access roads).

Conclusion

The Project could impact this species if it is present near construction areas; however, pre-construction surveys would be conducted to determine the location of this species and limit the potential impact of the Project on this species through avoidance of occupied habitat. Based on the potential for impacts and the avoidance of occupied habitats determined though preconstruction surveys, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

BLM and Forest Service Sensitive Fish Species

Sensitive Trout Taxa (Redband trout, Westslope Cutthroat Trout, Yellowstone Cutthroat Trout, Colorado River Cutthroat Trout, Bonneville Cutthroat Trout, Fine-Spotted Trout) (Forest Service Sensitive; BLM Sensitive; see Table D.11-2 of Appendix D)

Construction-related Impacts

The potential effects of the Project's construction on all trout taxa would be similar, as the life history and habitat requirements are generally similar among these fish. These species generally require clear, cold water for rearing, clean gravel for spawning in the spring, and a diverse habitat structure when present in streams. Therefore they are sensitive to the same general impacts that could result from Project activities. Any differences in impacts would primarily occur due to each species distribution in relation to the Project.

Habitat for the Yellowstone cutthroat trout would be crossed by the Project within the Snake River drainage above Shoshone Falls; in addition, Alternative 7K would cross through tributaries of the Raft River that contain one of the last remaining Yellowstone cutthroat populations in this area. Most of these populations are isolated from each other and are already subjected to other land management uses/disturbances (e.g., roads, water divisions, OHV use, and grazing).

Habitat for the Colorado River cutthroat trout would be crossed along the Green River. Habitat for the Bonneville cutthroat trout would be crossed along the Bear River drainage. Habitat for the redband trout, fine-spotted trout, and possibly the westslope cutthroat would be crossed along the various rivers and streams found within the Snake River drainage.

The Project's effects that were discussed in Section 3.10 – General Wildlife and Fish would apply to these trout taxa. As discussed earlier, road crossings would result in the greatest impact to aquatic resources; the number of stream crossings by roads is listed in Table D.16-1 of Appendix D (note that the potential network of access roads is preliminary at this time and would be revised as engineering is completed; therefore, the exact location of crossings are unknown at this time). Impacts from road crossings would include increased sediment to streams from areas where roads cross streams (possibly causing local displacement of fish), reduced benthic food organisms, reduced spawning gravel quality, reduced organic input (which could reduce the availability of potential food supplies), and a future loss of LWD (resulting in reduced stream habitat quality). Along forested areas, a reduction of riparian vegetation and trees may cause a slight localized increase in temperature (immeasurable on most perennial streams) as stream temperature dynamics in forested settings can be regulated by shade. These impacts would be greatest along small, slow-moving waterbodies. Removal of vegetation and direct solar radiance can result in high local temperature increases. As stream temperature is constantly striving to gain equilibrium with air temperature, influences of direct solar radiance can be substantial. However, even though gaps in canopy cover can result in an immediate increase in stream temperature, stream temperatures do not continue to increase at an accelerated rate as canopy cover resumes downstream (Danehy et al. 2005).

Vegetation removal associated with crossings in forested settings is expected to be minimal and localized with no substantial contribution to increasing stream temperatures. However, the majority of the Analysis Area consists of low grassland and shrub environments; therefore, the majority of stream crossings would occur outside of forested areas. Minimal research has been conducted regarding the effects of riparian vegetation removal on stream temperatures in shrub-steppe ecosystems. Disregarding the influence of groundwater or low-order tributaries, temperatures of streams in shrub-steppe systems can be expected to be generally higher than those of forested systems due to a lack of canopy cover. Furthermore, existing canopy cover likely has a limiting effect on shrub-steppe systems due to its minimal contribution of shade, as shrub canopy cover is typically concentrated only along the edges of a stream (i.e., when the sun is directly overhead it is imparting maximum solar radiance directly onto the middle / deeper portions of the stream). Based on this, riparian vegetation removal in shrub-steppe systems is likely to have an insignificant effect on stream temperature.

To limit the potential impact of road crossings on aquatic resources, EPMs FISH-1 as well as WQA-23 through WQA-26 would be implemented, which establish requirements regarding road crossing designs and implementation. EPM FISH-3 would also be implemented to prevent the establishment of aquatic invasive species in aquatic habitats. Furthermore, EPM FISH-2 would be implemented to ensure that water withdrawals would not result in direct impacts to fish located adjacent to the withdrawal. WQA-23, FISH-2, and FISH-3 would be implemented on all lands, regardless of land ownership. The remaining measures would be implemented on federally managed lands, as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

FISH-2 When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.

No species-specific EPMs have been proposed for any fish species. However, most of the potential adverse effects to these fish species and the other fish species listed in the sections below would be reduced through the EPMs identified above, as well as those identified in Section 3.6 – Vegetation Communities, Section 3.8 – Invasive Plant Species, Section 3.9 – Wetlands and Riparian Areas, Section 3.16 – Water Resources, and through proper coordination with resource agencies on any construction work conducted in and near streams.

Operations-related Impacts

Culvert installation could impede fish passage if not properly designed and installed. Therefore, all culverts (both temporary and permanent) would be designed and installed to ensure the continued free flow of water, as well as to allow both the upstream and downstream movement of aquatic organisms (see the discussion on culvert installation requirements found in the ESA aquatic invertebrate species section above). To further reduce the risk to aquatic organisms created by the use of culverts, FISH-1, as well as WQA-24 through WQA-26 would be implemented to ensure culverts are designed and installed properly. These measures would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Reduction of habitat quality from loss of LWD, reduced shade, and reduced input of organic matter including insects would continue locally as the ROW would remain cleared in some areas (see Section 3.6 – Vegetation Communities). Road crossings would also remain cleared of vegetation. Roads would continue to contribute sediment to streams, but at a lesser rate than during construction. Clearing of vegetation and weed control near riparian crossings would be conducted primarily via mechanical methods; however, some herbicides may be used. If herbicides are used inappropriately near waterbodies, they can enter the water column through direct contact, spray drift, or leaching through the soils or groundwater, and can adversely impact aquatic life. To prevent adverse impacts to aquatic life resulting from potential herbicide use, EPM OM-20 would be implemented Project-wide.

With the EPMs above, as well as within Section 3.6 – Vegetation Communities, Section 3.8 – Invasive Plant Species, Section 3.9 – Wetlands and Riparian Areas, and Section 3.16 – Water Resources, the effects to local fish stocks should be minor.

Conclusion

The construction of the Project would reduce instream habitat through road and transmission line construction, and short- and long-term loss of riparian vegetation could reduce habitat quality for sensitive trout. All stream crossings in forested areas would be avoided to the extent practical, and EPMs would be implemented to limit potential impacts to aquatic resources. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for these sensitive trout species (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

<u>Shoshone and Wood River Sculpins (Forest Service Sensitive; BLM Sensitive)</u>

Construction-related Impacts

These two species are found near the same region of south-central Idaho but in slightly differing habitats. The Shoshone sculpin is primarily found in cool water springs (e.g., water temperature of 14°C) along the north side of the Snake River, although they may be present in small streams that lead to the Snake River in this region as well. The Wood River sculpin is found farther north in the Wood River system, typically at higher elevations. Habitat for both of these species could be crossed by the Proposed Route or Route Alternatives, but it is not clear if the Project would actually cross a location where they could be present because of their limited site-specific distribution information, and the fact that the exact location of road crossings are unknown at this time. However, both species are known to prefer cool water, so actions that can increase water temperature (such as ROW clearing and road construction) could be a detriment to their habitat. However, the portion of the transmission line near the Snake and Wood Rivers is generally not wooded (consisting of shrub or grassland habitats), so reduction of shade trees from construction appears unlikely; therefore, there would be limited effects on temperature. Also, for Shoshone sculpin, their reliance on springs indicates that they rely on stream habitat that is temperature-controlled by groundwater,

which is less affected by local cover; therefore, Project-related effects resulting from temperature increases on habitat appear unlikely. Because of limited riparian vegetation to be removed near their habitat in this region, little or no effect on organic stream input would occur.

The sensitivity of these species to turbidity and changes in water quality is uncertain (as it has not been well studied in the current literature), but the impact of the Project on these species due to potential water quality issues would likely be similar to those discussed for the sensitive trout taxa. In addition, the EPMs discussed for trout species would be applicable to all aquatic organisms.

Operations-related Impacts
Operations impacts for these two species would be similar to those identified for the sensitive trout taxa.

Conclusion
The construction of the Project could potentially reduce in-stream habitat quality through road and transmission line construction. All stream crossings in forested areas would be avoided to the extent practical, and EPMs would be implemented to limit potential impacts to aquatic resources. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for these sensitive sculpin species (Region 4 language).

Minnows: Roundtail, Northern Leatherside, Lake and Sturgeon Chubs and Finescale Dace (*Forest Service Sensitive; BLM Sensitive*)

Construction-related Impacts
These minnows are all generally small, mostly cool-water fish, that are found most often in streams and rivers; they vary in location along the Proposed Route and Route Alternatives by species. The roundtail chub is found only in the Colorado drainage (on the eastern portion of the Project) including the Green River, which is crossed by the Proposed Route and Route Alternatives. The northern leatherside chub is a small fish found in the Bear, Snake, and Colorado River drainages within medium-size streams (including Goose Creek and Raft River). The other three species are found in the eastern portion of the route, with the lake chub and sturgeon chub in portions of the North Platte River located in the Analysis Area, and the finescale dace also located in the North Platte River but likely outside of the Analysis Area.

The roundtail chub tends to occur in medium to larger rivers, often in more turbid water. It is not restricted to exclusively cool-water conditions; therefore, effects of loss of riparian habitat on stream temperatures would have no effect on this species. As they are often found in turbid waters, potential short-term increases in turbidity would also have no effect on this species. However, this species is dependent on LWD; therefore, the loss of riparian vegetation located directly adjacent to the stream crossing could have localized impacts to this species. These impacts would be limited by the presence of LWD that would originate from trees located directly upstream of the crossing, but adjacent LWD input would not completely eliminate this impact.

The northern leatherside chub tends to occur in medium-sized rivers that contain low water velocities, intermediate depths, and a low level of turbidity (UDWR 2009). They can tolerate a wide range of temperatures, but are typically associated with streams that contain healthy riparian vegetation and intact streambanks. Therefore, potential impacts to stream temperatures resulting from vegetation removal would have little or no effect on this species, but the loss of riparian vegetation and the potential short-term increases in turbidity could impact this species. Impacts would be similar to those discussed for trout species.

Sturgeon chub tend to occur in medium to large rivers. They are more common in warmer water than the other minnows of concern in the Analysis Area and also differ in that they prefer turbid water conditions. Thus, modification of riparian conditions or slight additions of turbidity from construction should have no adverse effect to this fish.

Lake chub and finescale dace are more often found in small spring-fed streams in this region. Should the route cross streams where these species are present, effects would be similar to those discussed for trout species, except for loss of riparian cover effects on temperature, which would be less for these species. In addition, their habitat use of spring-fed streams would make changes in temperature from riparian vegetation removal even more unlikely. As noted for trout species, effects would also be inconsequential due to the small area affected per stream crossing.

The EPMs discussed for trout species would be applicable for all aquatic organisms.

Operations-related Impacts
Operations impacts for these two species would be similar to those identified for the sensitive trout taxa.

Conclusion
The construction of the Project could potentially reduce in-stream habitat quality through road and transmission line construction. Impacts for some species would also include local temperature increase and loss of LWD input. All stream crossings in forested areas would be avoided to the extent practical, and EPMs would be implemented to limit potential impacts to aquatic resources. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for these sensitive minnow species (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

Bluehead, Flannelmouth, and Mountain Suckers (*Forest Service Sensitive; BLM Sensitive*)

Construction-related Impacts
Bluehead and flannelmouth suckers tend to occupy large streams, although the flannelmouth sucker may also be present in small streams. Both feed primarily on stream bottoms. The flannelmouth is restricted to the Colorado River basin and may be in some of the larger streams crossed by the Proposed Route and/or Route Alternatives

(see Table D.11-2 in Appendix D). The bluehead sucker is found in several drainages including the Colorado and upper Snake Rivers. This species is typically found in turbid or muddy waters. Neither species is restricted to cold-water systems. Unlike trout, sediment runoff is unlikely to have any effect on these species as they are adapted to larger turbid waters. Loss of riparian habitat may reduce organic input to the stream systems they occupy, but these effects would be slight and unsubstantial. The mountain sucker prefers clear and cool, and would be commonly present in the central portion of the route (western Wyoming to eastern Idaho) where these conditions occur. While they prefer cooler conditions, they are moderately tolerant of warmer conditions. Also they are often associated with cover in streams. In many ways construction effects to this sucker species would be similar to those for trout, although effects to spawning would be less as this species would be less sensitive to changes in stream temperatures. Overall, loss of cover and organic input where riparian vegetation is removed and slight increases in turbidity would have slightly adverse effects in localized areas of their habitat, but the overall effects to the species would be negligible.

The EPMs discussed for trout species would be applicable for all aquatic organisms.

Operations-related Impacts
Operations impacts for these three species would be similar to those identified for the sensitive trout taxa.

Conclusion
The construction of the Project and its operation and maintenance would potentially reduce riparian organic input quantity. All stream crossings in forested areas would be avoided to the extent practical, and EPMs would be implemented to limit potential impacts to aquatic resources. Based on the potential for impacts and the implementation of EPMs, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area, nor cause a trend towards federal listing (Region 2 language).

BLM and Forest Service Sensitive Species Discussed as Groups

The remaining BLM and Forest Service sensitive species with the potential to occur within the Analysis Area are discussed in the following subsections. They have been grouped based on their habitat preferences. To enhance the readability of this section, the scientific names of the species listed in this section will not be presented here, but can be found within Table D.11-2 of Appendix D.

<u>Shrub-Steppe/Mixed Grass Prairie Species</u>
The BLM or Forest Service sensitive mammalian species that inhabit shrub-steppe / mixed grass prairie habitat types and could potentially occur within the Analysis Area include the American marten, black-tailed prairie dog, dark kangaroo mouse, Idaho pocket gopher, kit fox, Merriam's ground squirrel, pygmy rabbit, Piute ground squirrel, swift fox, white tailed prairie dog, Wyoming ground squirrel, and Wyoming pocket gopher (see Table D.11-2 in Appendix D).

The BLM or Forest Service sensitive avian species that inhabit shrub-steppe / mixed grass prairie habitat types and could potentially occur within the Analysis Area include the Baird's

sparrow, black throated sparrow, Brewer's sparrow, burrowing owl, chestnut-collared longspur, Columbian sharp-tailed grouse, ferruginous hawk, sage-grouse, grasshopper sparrow, loggerhead shrike, long-billed curlew, McCown's longspur, mountain plover, northern harrier, prairie falcon, sage sparrow, sage thrasher, short-eared owl, Swainson's hawk, and the Wilson's warbler (see Table D.11-2 in Appendix D).

The BLM or Forest Service sensitive reptilian species that inhabit shrub-steppe / mixed grass prairie habitat types and could potentially occur within the Analysis Area include the longnose snake, midget faded rattlesnake, and the Mojave black collared lizard (see Table D.11-2 in Appendix D).

Construction-related Impacts

Impacts to these shrub-steppe/mixed grass species would be similar to those discussed for other species that occur in these habitat types (such as the black-footed ferret, prairie dog, and burrowing owl) and would include direct mortality, disturbance, and loss or modification of habitat. Table D.6-2 of Appendix D lists the acres of temporary disturbances to shrub-steppe and grassland habitats that would occur due to Project construction. As discussed earlier, all disturbed areas such as the staging areas, fly yards, and the temporary construction areas that are not needed for permanent maintenance would be revegetated following construction in accordance with the Framework Reclamation Plan (see Appendix B). However, revegetation in arid landscapes can take many decades to restore to preconstruction conditions, so these impacts would be long term.

Construction-related noise and dust disturbance could potentially make currently occupied habitat temporarily unsuitable for these species, and result in abandonment of habitats. If avian species abandon nests due to these construction disturbances or if nests are destroyed during construction, then mortality of chicks would occur. To limit the potential impact of clearing on nesting birds found in shrub-steppe / mixed grass prairie habitat types, EPM WILD-9 would be implemented Project-wide, which requires that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season.

As was discussed for the burrowing owl, the Project may not be in compliance with a requirement found in the BLM's RMP for the Green River Management Area, regarding raptor nests. The Green River RMP states that:

> *Project components, such as permanent and high profile structures, i.e., buildings, storage tanks, powerlines, roads, well pads, etc. are prohibited within an appropriate distance of active raptor nests. The appropriate distance (usually less than 1/2 mile) will be determined on a case-by-case basis and may vary depending upon the species involved, natural topographic barriers, and line-of-sight distances, etc. Placement of facilities, "on" (very low profile) or below ground, and temporary disruptive activities, such as occur with pipeline construction, seismic activity, etc., could be granted exceptions within 1/2 mile of active raptor nests, in certain circumstances."*

Within the Green River Management Area, the Project would cross within 0.5 mile of 11 known ferruginous hawk nests. As a result, the Project may not be in compliance with the Green River RMP. However, the BLM has determined that no plan amendments would be required to meet this RMP requirement because this conflict can be resolved using the administrative process outlined in the Green River RMP (refer to Appendix 2 of the Green River RMP, "Mitigation Guidelines for Surface-Disturbing and Disruptive Activities").

In addition, the Project may not be in compliance with a requirement found in the Kemmerer RMP, regarding tall structures and sagebrush obligate species. The Kemmerer RMP states:

> *Wildlife Management – Avoid new, permanent high-profile structures (higher than 12 feet) within 1 mile of occupied sagebrush obligate habitats unless anti-perch devices are installed. Prohibit new, permanent high-profile structures relying on guy wires for support in these habitats. Exceptions can be made if NEPA analysis shows little or no impact to sagebrush obligate species.*

As structures that rely on guy wires could be used during construction, the Project is not in compliance with the Kemmerer RMP. However, EPM WILD-6 would be implemented on federally managed lands in order to minimize the risk of avian species colliding with guy wires by requiring guy wires to be fitted with flight diverters. As a result, an exception may be granted; otherwise, the Project would either need to be altered so that it is in compliance with the Kemmerer RMP, or the RMP would need to be amended.

Snake species that inhabit shrubland habitats can be highly vulnerable to impacts from access roads. Snakes could be killed while attempting to cross these roads (i.e., via vehicular strikes, or due to exposure to predators while crossing the road). In addition, construction of the Project, as well as use of the area by humans, can result in loss or disturbance to snake dens. To avoid destroying den sites and injuring or killing individual midget faded rattlesnakes, the following EPM would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2):

TESWL-13 Midget Faded Rattlesnake – Preconstruction surveys for occupied or potential midget faded rattlesnake hibernacula (i.e., rock outcrops with south to east aspect) will be conducted. The Proponents shall prepare a plan identifying measures to reduce impacts to midget faded rattlesnake if they are discovered. This plan shall require approval by BLM and the WGFD prior to its implementation.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered structures occupied by sensitive species,

Operations-related Impacts

Table D.6-3 of Appendix D lists the acres of permanent disturbance to shrub-steppe and grassland habitats that would occur due to Project operations. As discussed earlier, permanent loss of potential habitat would be limited due to the efforts proposed to restore and revegetate disturbed habitat following construction (see Appendix B).

In addition, once the transmission line is in place, operations impacts to these species could include a possible increase in predation pressure where the Project provides new perching opportunities for raven and raptor species. This effect would only occur to species that are preyed upon by ravens and raptor species, and would be greatest in areas where other tall structures, including distribution and transmission lines, do not currently exist. An increase in the number of predatory bird species, or a consolidation of their populations along transmission lines, could result in an increase in mortality of prey species within these areas, as well as a possible increase in harassment to prey species. To limit the potential risk of increased predation pressures on sensitive prey species TESWL-1 would be implemented on federally managed lands, and the Proponents have indicated that they would also apply TESWL-1 to certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Impacts to avian shrub-steppe/mixed grass prairie species would also include the risk of collisions with transmission structures and lines (as was discussed for sage-grouse). To reduce the potential for avian collision with conductors, EPM WILD-7 (which requires the use of flight diverters in certain locations where avian collisions would be most likely to occur due to site-specific conditions such as terrain or habitat) would be implemented Project-wide. Furthermore, EPM WILD-6, which would require the use of flight diverters on all guy wires, would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). In addition, the Proponents have developed Avian Protection Plans (see the Proponents' Web sites) that would be implemented to reduce potential risk of avian electrocution. These plans are in compliance with APLIC suggested practices (see Section 3.10 – General Wildlife and Fish), and include measures to be taken if avian mortalities are discovered, and modification and/or additions to the line that can prevent the use of the line by avian species if elevated mortalities of avian species are discovered (see the discussion of grassland/shrubland avian species risk of electrocution in the "sage-grouse" section).

Habitat loss within any habitat type has the potential to result in fragmentation of populations and edge effects. However, due to the limited scope of permanent disturbance that would occur within shrub habitats, fragmentation and edge effects would not likely impact most of the shrub-dependent TES wildlife species considered (with some exceptions; see below). The transmission line itself would span shrub habitats, and no vegetative maintenance of shrub vegetation would be expected to occur below the line. In addition, access roads would be maintained at a width of 8 feet (with herbaceous vegetation likely present along the roads), which would not likely result in the isolation of populations for most shrub-dependent species. However, there are some exceptions to these assumptions, such as the sage-grouse and Columbian sharp-tailed grouse, which would likely experience adverse effects of fragmentation and edge effects resulting from the presence of the Project within shrub habitats (see discussion on impacts to sage-grouse and Columbian sharp-tailed grouse). Tables

D.10-3 through D.10-5 of Appendix D display the level of fragmentation that would occur due to proposed access roads as well as the transmission line itself (also see Section 3.10.2.2 for a general discussion of habitat fragmentation).

Conclusion
The Project would impact shrub-steppe/mixed grass habitats, and could result in increased predation pressures and fragmentation; however, EPMs would be applied to limit the potential impact of the Project on species that inhabit these habitats. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for shrub-steppe/mixed grass species (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Forest Species
The BLM or Forest Service sensitive mammalian species that inhabit forest habitat types and could potentially occur within the Analysis Area include the cliff chipmunk, snowshoe hare, and wolverine (see Table D.11-2 in Appendix D).

The BLM or Forest Service sensitive avian species that inhabit forest habitat types and could potentially occur within the Analysis Area include the boreal owl, Calliope hummingbird, flammulated owl, great gray owl, Hammond's flycatcher, Lewis's woodpecker, mountain quail, northern goshawk, olive-sided flycatcher, three-toed woodpecker, Virginia's warbler, and Williamsons sapsucker (see Table D.11-2 in Appendix D).

Construction-related Impacts
Impacts to these forest species would be similar to those discussed for other species that occur in these habitat types and would include direct mortality, disturbance, and loss or modification of habitat. The Project has been routed to avoid forest habitats to the greatest extent practical; however, some forested habitats would be impacted by both forest clearing and vegetation ROW maintenance (see Section 3.6 – Vegetation Communities). Table D.6-2 of Appendix D lists the acres of disturbance to forest habitats that would occur due to construction. These construction disturbances to forested habitats would result in both loss of habitat and disturbance to wildlife species present within adjacent habitats.

If avian species abandon nests due to these construction disturbances, then mortality of chicks could occur. To limit the potential impact of clearing on nesting birds found in forested habitat types, WILD-9 would be implemented on all land ownerships; this measure which would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season, to limit the potential impact of clearing on nesting birds. Impacts to snag habitats on federally managed lands would be minimized through implementation of EPM WILD-10.

Revegetation efforts would be conducted in all disturbed forested areas that do not need to be kept clear of trees during Project maintenance (see Section 3.6 – Vegetation

Communities); however, as revegetation and/or restoration of disturbed forested habitats could take decades, habitat loss due to construction in forest areas would be a long-term impact.

Typically, forest-dependent species are highly susceptible to habitat fragmentation and edge effects. Although the Project was routed to avoid forested areas to the extent practical, some habitat loss and fragmentation would still occur. This habitat fragmentation and the resulting edge effects would further reduce the amount of available habitat for species that utilize forests, beyond just the direct loss of habitat due to clearing and vegetative maintenance. Table D.10-5b in Appendix D displays the change in patch count and average patch size that would occur in forested habitats as a result of the Project.

Some forest-dependent species only occur in mature forests, and are uncommon or absent from younger forests. The extent of mature forests within the Analysis Area is likely limited; however, they could still occur. Section 3.6 – Vegetation Communities discusses what constitutes a mature forest and their potential extent within the Analysis Area, as well as the potential impacts that could occur to these forest types.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered structures occupied by sensitive species

Operations-related Impacts

Operations impacts to forest species would include loss of habitat from permanent vegetation maintenance in forested habitats (see Section 3.6 – Vegetation Communities), as well as avoidance of edge habitats. Table D.6-3 of Appendix D lists the acres of permanent disturbance to forest habitats that would occur due to Project operations. In addition, any new roads created by the Project could result in increased hunting pressures on forested species; however, construction of roads would be avoided within forested habitats to the extent practical. Furthermore, the Proponents have developed a Framework Traffic and Transportation Monitoring Plan (Appendix B) that includes measures to prevent unauthorized use of the new access roads. EPM VEG-2 would be implemented to limit the impact of roads on forest habitats, while VEG-6 would be implemented to ensure the proper revegetation of impacted forested habitats located outside of the permanent maintenance area (both measures would be implemented on federally managed lands as well as certain applicable state/private lands; see Table 2.7-1 in Chapter 2). However, as revegetation and/or restoration of disturbed forest habitats could take decades, impacts to forest species would be long term.

Impacts to avian species that inhabit forest would also include the risk of collisions with transmission structures and lines (as was discussed for the yellow-billed cuckoo). To reduce the potential for avian collision with conductors, WILD-7 (which requires the use of flight diverters in certain locations where avian collisions would be most likely to occur due to site-specific conditions such as terrain or habitat), would be implemented Project-wide. Furthermore, WILD-6, which would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2), would

require the use of flight diverters on all guy wires. In addition, the Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce potential risk of avian electrocution. These plans are in compliance with APLIC suggested practices (see Section 3.10 – General Wildlife and Fish), and include measures to be taken if avian mortalities are discovered, and modifications and/or additions to the line that can prevent the use of the line by avian species if elevated mortalities of avian species are discovered.

Conclusion

The Project would impact forest habitats, and could result in increased hunting pressures and fragmentation; however, EPMs would be applied to limit the potential impact of the Project on species that utilize these habitats. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for forest species (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Wetland/Riparian Species

The BLM or Forest Service sensitive mammalian species that inhabit wetland and/or riparian habitat types and could potentially occur within the Analysis Area include the Preble's meadow jumping mouse, and the river otter (see Table D.11-2 in Appendix D).

The BLM or Forest Service sensitive avian species that inhabit wetland and/or riparian habitat types and could potentially occur within the Analysis Area include the American bittern, American white pelican, bald eagle, black tern, long-billed curlew, northern harrier, peregrine falcon, purple martin, trumpeter swan, white faced ibis, willow flycatcher, and yellow-billed cuckoo (see Table D.11-2 in Appendix D).

The BLM or Forest Service sensitive amphibian and reptilian species that inhabit wetland and/or riparian habitat types and could potentially occur within the Analysis Area include the common garter snake, western ground snake, boreal toad, great basin spadefoot, northern leopard frog, spotted frog, and woodhouse toad (see Table D.11-2 in Appendix D).

Construction-related Impacts

Impacts to these wetland/riparian species would be similar to those discussed for other species that depend upon these habitat types (such as the yellow-billed cuckoo or the Columbia spotted frog) and include direct mortality, disturbance, and loss or modification of habitat.

The Project was routed to avoid wetland and riparian areas to the extent practical; therefore, these areas are not abundant within the Analysis Area. However, because this Project is approximately 1,000 miles long and crosses through multiple watersheds, some riparian and wetland habitat could not be avoided (see Section 3.9 – Wetlands and Riparian Areas). Impacts to wetland and riparian areas, which would occur due to construction activities, are listed in Table D.9-1 of Appendix D. To limit the potential impact to vegetation clearing in these areas, the Proponents would implement their

Framework Reclamation Plan (see Appendix B). However, as was discussed for the Columbia spotted frog, revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to wetland or riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, EPMs WET-1 through WET-4, FISH-3, and WQA-23 through WAQ-26 would be implemented to reduce impacts to riparian/wetland habitats. WET-2 through WET-4, FISH-3, and WQA-23 would be implemented on all lands regardless of land ownership, while the remaining measures would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, the Agencies have identified TESWL-14, which would be required on all federally managed lands to further reduce potential impacts to these sensitive habitats.

In addition to direct habitat loss, construction-related noise and dust disturbance could potentially make currently occupied habitat temporarily unsuitable for these species, and result in abandonment of habitats. If avian species abandon nests due to construction disturbances, then mortality of chicks would occur. To limit the potential impact of clearing on nesting birds found in forested habitat types, WILD-9 would be implemented on all land ownerships; this measure would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season to limit the potential impact of clearing on nesting birds. Impacts to snag habitats on federally managed lands would be minimized through implementation of EPM WILD-10.

Typically, wetland- and forested riparian-dependent species are highly susceptible to habitat fragmentation and edge effects. Although the Project was routed to avoid these areas to the extent practical, some habitat loss and fragmentation would still occur. This habitat fragmentation and the resulting edge effects would further reduce the amount of available habitat for species that utilize these areas, beyond just the direct loss of habitat due to clearing and vegetative maintenance. Tables D.10-3 through D.10-5 of Appendix D display the level of fragmentation that would occur due to proposed access roads and transmission lines.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered structures occupied by sensitive species.

Operations-related Impacts

Permanent habitat loss would primarily be associated with access roads; however, for the most part roads would be located outside of riparian zones. Table D.9-2 in Appendix D lists the operations impacts that would occur to riparian habitats.

Impacts to avian wetland/riparian species would also include the risk of collisions with transmission structures and lines (as was discussed for the yellow-billed cuckoo). To reduce the potential for avian collision with conductors, WILD-7, which would be

implemented Project-wide, specifies which areas would require bird flight diverters. Furthermore, WILD-6, which would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2), would require the use of flight diverters on all guy wires. In addition, the Proponents have developed Avian Protection Plans (see the Proponents' Web sites), which would be implemented to reduce potential risk of avian electrocution. These plans are in compliance with APLIC suggested practices (see Section 3.10 – General Wildlife and Fish), and include measures to be taken if avian mortalities are discovered, and modifications and/or additions to the line that can prevent the use of the line by avian species if elevated mortalities of avian species are discovered.

Conclusion

The Project would impact wetland and riparian habitats, and could result in increased predation pressures and fragmentation; however, EPMs would be applied to limit the potential impact of the Project on species that inhabit these habitats. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for forest species (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Rock, Caves, and Cliff Species

The BLM or Forest Service sensitive species that inhabit rock-, cave-, or cliff-habitat types and could potentially occur within the Analysis Area include the Brazilian free-tailed bat, spotted bat, Townsend's big-eared bat, fringed myotis, long-eared myotis, pallid bat, and various subspecies of bighorn sheep (see Table D.11-2 in Appendix D). Some species that utilize rock, cave, or cliff habitats for portions of this life have been discussed in previous habitat summary sections (e.g., the midget faded rattlesnake[15] utilizes rock outcrops for hibernacula and maternity den sites); however, the species discussed under this section are those primarily associated with and/or are specialized for caves or rock habitats that have substantial slopes (i.e., rock or cliff habitats).

Construction-related Impacts

The bat species listed above utilize rock and cliff faces or caves as roosting habitat, as well as buildings and tunnels. Although the locations of caves near the Analysis Area are not explicitly known, it is likely that caves are located near or within the Analysis Area. In Wyoming and southeast Idaho (Segments 1 through 4), there are limestone sedimentary formations that could be suitable for cave formation, given the right hydrologic regime. In the Snake River Plain of Idaho (Segments 5 through 10), there are vast areas of very recent sheet flow basalt. Prominent features within these basalts are large, often open vertical fractures, as well as lava tubes, that can be many feet in diameter and from several feet to up to several hundred feet long. In addition to cave and rock habitats, these BLM and Forest Service sensitive bat species utilize riparian and grasslands for foraging habitats, which are abundant throughout the Analysis Area.

[15] This species is discussed under the Shrub-Steppe section.

As the construction of the Project would not directly impact cliff faces or caves, impacts to cave- and cliff-dwelling bat species would be minimal. However, possible impacts could occur if construction-related noise occurs adjacent to occupied structures. In addition, impacts to forested habitats could potentially impact tree day roosting habitats.

Bats may forage for insects in grasslands, riparian areas, and wetlands; however, due to the abundance of grassland habitats in the Analysis Area, and the limited impacts that would occur to riparian and wetland habitats, Project-related effects to bat foraging habitats would be minimal. As a result, impacts to bat food sources would likely be minimal.

Limited winter habitat for bighorn sheep (steep rocky areas) would be impacted along Segments 7 and 9 (see Tables D.10-1, D.10-6, and D.10-8 in Appendix D). Potential impacts to bighorn sheep from Project construction would include vehicle collisions, noise, fugitive dust, habitat loss and alteration, and visual disturbance. Vegetation clearing is not expected to negatively impact bighorn sheep due to the small amount of habitat affected compared to the large home ranges of this species, and the stimulation of forage growth that vegetation clearing could induce (i.e., clearing of shrubs can increase herbaceous species growth by increasing light penetration to ground surfaces). WILD-2 and WILD-1 would be implemented to limit the potential impacts to big game by establishing speed limits for vehicles, and requiring adherence to time restrictions on construction within winter habitats (see further discussion in Section 3.10.2.2). These measures would be required on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known or newly discovered structures occupied by sensitive species.

Operations-related Impacts

The Project's operations would have only minimal impacts to cave- and cliff-dwelling bat species, resulting from limited impacts to foraging habitats due to permanent Project facilities/components (such as access roads and towers).

The Project's transmission line structures and access roads are not expected to limit the movement or distribution of bighorn sheep because they are likely to readily cross a double-track road or pass under a transmission line. Vehicle use of the roads would be very low; only one vehicle per year is expected in most areas for maintenance activities by Project personnel. To prevent an increase in big game harvest due to unauthorized use of Project-related roads, the Proponents would install gates.

Conclusion

The Project would not directly impact cave or cliff faces habitats, but could have indirect impacts (related to noise) on species that depend on these habitats. In addition, the Project would have limited impacts to habitat for bighorn sheep. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal

listing or cause a loss of viability for the species that inhabit rock, cave, or cliff habitats (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Invertebrates (Mollusks)

The BLM or Forest Service sensitive aquatic invertebrate species that could potentially occur within the Analysis Area include the California floater, Columbia pebble snail, and shortface lanx (see Table D.11-2 in Appendix D).

Construction-related Impacts

Construction-related impacts to BLM and Forest Service sensitive aquatic invertebrate species would be similar to those discussed previously for the federally listed aquatic invertebrate species.

Impacts to aquatic invertebrate species would be limited, as the transmission line would span aquatic habitats and transmission poles would not be constructed within these habitats. However, construction of access roads and any disturbance to riparian areas during construction could reduce riparian vegetation along the waterbodies; this could increase the temperatures of these waters, resulting in adverse impacts to aquatic species. Table D.9-1 in Appendix D lists the direct construction-related impacts that would occur to riparian habitats.

All areas disturbed during construction (with the exception of areas used as permanent access roads, substation footprints, and pole structure bases) would be revegetated following construction in accordance with the Framework Reclamation Plan. However, as was discussed for the Columbia spotted frog, revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, EPMs WET-1 through WET-4 would be implemented to reduce impacts to riparian/wetland habitats, FISH-3 to prevent the establishment of aquatic invasive species in these wetland/riparian habitats, and WQA-23 through WQA-26 to reduce potential impacts to waterbodies resulting from road crossings. WET-2 through WET-4 and WQA-23 would be implemented on all lands, regardless of land ownership. The remaining measures would be implemented on federally managed lands, as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, TESWL-14 would be required on all federally managed lands to further reduce potential impacts to riparian/wetland habitats.

Road crossings of rivers and springs would be avoided to the extent practical; however, any construction of a road crossing would result in a short-term increase in sedimentation, which could impact these species through burial of eggs, or mortality of their alga food supplies. These effects would impact species living both at the point where sedimentation increased (at the road crossing) and at points farther downstream, thereby affecting species that inhabit areas not directly crossed by the Project. In addition, general construction activities adjacent to river systems could result in an increase in short-term sediment loads, due to loss of vegetation and increased runoff.

Sedimentation would be controlled through implementation of the Proponents' SPCC Plan (Appendix B). In addition, the possibility of a spill of toxic materials into waterbodies would be limited due to the implementation of the Proponents' SWPPP (Appendix B).

Operations-related Impacts

Table D.9-2 in Appendix D lists the operations impacts that would occur to riparian habitats. As has been discussed earlier, revegetation efforts outlined in the Proponents' Framework Reclamation Plan (Appendix B) do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, the EPMs WET-1 through WET-4 and TESWL-14 would be implemented to reduce impacts to riparian habitats. However, as revegetation and/or restoration of disturbed forested riparian habitats could take decades, impacts to species that depend on contiguous riparian habitat (such as these aquatic invertebrates) would be long term.

Minor clearing of vegetation and weed control near water crossings would be conducted primarily via mechanical methods; however, some herbicides may be used. If herbicides are used inappropriately near waterbodies, they can enter the water column through direct contact, spray drift, or leaching through the soils or groundwater, and can adversely impact species that utilize the aquatic environment. To prevent adverse impact to these species resulting from potential herbicide use, the EPM OM-20 would be applied Project-wide.

Once installed, the transmission line and its associated structures would not serve as a barrier or hazard to aquatic invertebrates, as the line and its associated structures would not cross through their aquatic habitats. In addition, any culverts associated with roads would not serve as a barrier or hazard as long as they are designed and installed correctly; however, poorly designed culverts could result in fragmentation of habitats and isolation of upstream and downstream populations. Therefore, all culverts (both temporary and permanent) would be designed and installed to ensure the continued free flow of water, as well as to allow both the upstream and downstream movement of aquatic organisms (see the discussion on culvert installation requirements found in the ESA aquatic invertebrate species section above). To further reduce the risk to aquatic organisms created by the use of culverts, EPM FISH-1, as well as WQA-24 through WAQ-26 would be implemented to ensure culverts are designed and installed properly.

Conclusion

The Project would impact aquatic habitats; however, EPMs would be applied to limit the potential impact of the Project on aquatic invertebrates. Based on the potential for impacts and the implementation of EPMs, the Project's construction and operation may impact individuals or habitat, but is not likely to contribute to a trend toward federal listing or cause a loss of viability for aquatic invertebrates (Region 4 language). For the same reasons, the Project may adversely impact individuals, but is not likely to result in a loss of viability in the Planning Area or cause a trend towards federal listing (Region 2 language).

Invertebrate (Insects)

The BLM or Forest Service sensitive invertebrate insect species that could potentially occur within the Analysis Area include the Bruneau dunes tiger beetle, blind cave leiodid beetle, and the St. Anthony sand dunes tiger beetle (see Table D.11-2 in Appendix D).

Construction-related Impacts

Habitat preferences for Bruneau dunes tiger beetle, blind cave leiodid beetle, and St. Anthony sand dunes tiger beetle are limited to sand dune habitats (for the Bruneau dunes tiger beetle and the St. Anthony sand dunes tiger beetle) and lava tube caves (for the blind cave leiodid beetle). No impacts to sand dune or lava tube habitats are expected due to Project construction; therefore, no impacts to these species are anticipated.

Operations-related Impacts

Project operations would have no effect on the Bruneau dunes tiger beetle, blind cave leiodid beetle, and St. Anthony sand dunes tiger beetle, as no suitable habitat for these species would be impacted.

Conclusion

The Project's construction and operations would have no effect on Bruneau dunes tiger beetle, blind cave leiodid beetle, and St. Anthony sand dunes tiger beetle, as no habitats for these species are expected to be directly or indirectly impacted.

Forest Service Management Indicator Species

This section addresses potential impacts to Forest Service MIS. As stated earlier, there are 11 MIS that could occur within the Analysis Area, based on presence of suitable habitat or the co-location of the Project within the species range. This includes the American marten, Columbian sharp-tailed grouse, common trout, sage-grouse, golden-crowned kinglet, Lincoln's sparrow, northern goshawk, snowshoe hare, three-toed woodpecker, Yellowstone cutthroat trout, and Wilson's warbler. Impacts to the Columbian sharp-tailed grouse, sage-grouse, Yellowstone cutthroat trout, and the various common trout species are addressed above in the ESA and Sensitive Species sections. The remaining MIS will be discussed here.

American Marten (Medicine Bow Forest Plan MIS; Forest Service Sensitive)

Construction-related Impacts

There are no known occurrences of the American marten within the Analysis Area; therefore, it is possible that this species is not present and would not be affected. However, if it is present, then potential impacts to the American marten would include disturbance due to construction activities and loss or modification of habitat. The American marten is dependent on forested habitats, and the Project has been routed to avoid forest habitats to the greatest extent practical; however, some forested habitats would be impacted by both forest clearing and vegetation maintenance (see Section 3.6 – Vegetation Communities). Table D-6.2 of Appendix D lists the acres of disturbance to forest habitats that would occur due to construction.

As discussed earlier, the American marten is typically associated with mature forests. The extent of mature forests within the Analysis Area is likely limited; however,

they could occur. Section 3.6 – Vegetation Communities discusses what constitutes a mature forest and their potential extent within the Analysis Area, as well as the potential impacts that could occur to these forest types.

Operations-related Impacts

Operations impacts to the American marten would include loss of habitat from permanent vegetation maintenance in forested habitats (see Section 3.6 – Vegetation Communities), as well as avoidance of edge habitats. Table D.6-3 of Appendix D lists the acres of permanent disturbance to forest habitats that would occur due to Project operation. In addition, any new roads created by the Project could result in increased hunting pressures on the American marten; however, construction of roads would be avoided within forested habitats to the extent practical. In addition, as discussed for sage-grouse, the Proponents have developed a Framework Traffic and Transportation Monitoring Plan (Appendix B) that includes measures to prevent unauthorized use of new access roads. EPM VEG-2 would be implemented to limit the impact of roads on forest habitats, as well as VEG-6 to ensure the proper revegetation of impacted forested habitats located outside of the permanent maintenance area (this measure would be implemented on federally managed lands as well as certain applicable state/private lands; see Table 2.7-1 in Chapter 2). However, as revegetation and/or restoration of disturbed forest habitats could take decades, impacts to forest-dependent species would be long term.

The American marten is highly sensitive to habitat fragmentation. As a result, habitat loss would extend beyond just the forested habitat that is directly removed during construction and/or maintained clear of trees during operations. Edge effects would reduce the size of patches that the American marten would inhabit. Tables D.10-3a through D.10-5b in Appendix D lists the levels of habitat fragmentation that would occur to forested habitats.

Conclusion

If the American marten is present within or near the Analysis Area, then some negative impacts from the Project's construction and operations would likely occur due to habitat loss, fragmentation of habitats, increased access for hunters, and disturbance due to construction. However, measures aimed at limited road disturbances in forested habitats and successful revegetation of forested habitats would limit these impacts. Therefore, the Project is not expected to impact the viability of the American marten.

Golden-Crowned Kinglet (Medicine Bow Forest Plan MIS)

Construction-related Impacts

The golden-crowned kinglet has been observed within the Analysis Area and would likely be affected by the Project to some degree. Impact to this forest-dependent species would include disturbance, and loss or modification of habitat. As was discussed for the American marten, the Project has been routed to avoid forest habitats to the greatest extent practical; however, some forested habitats would be impacted by both forest clearing and vegetation maintenance. To limit the potential impact of clearing on nesting birds found in forested habitat types, WILD-9 would be implemented on all land ownerships; this measure would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction

surveys for avian nests be conducted if clearing is required during the nesting season to limit the potential impact of clearing on nesting birds. Impacts to snag habitats on federally managed lands would be minimized through implementation of WILD-10. Table D.6-2 of Appendix D lists the acres of disturbance to forest habitats that would occur due to construction.

Operations-related Impacts

Some permanent habitat loss would occur due to forest clearing and vegetation maintenance (see Section 3.6 – Vegetation Communities). Table D.6-3 of Appendix D lists the acres of permanent disturbance to forest habitats that would occur due to Project operation. Impacts to golden-crowned kinglet would also include the risk of collisions with transmission structures and lines, similar to those discussed for the yellow-billed cuckoo. EPM WILD-7 (which specifies areas that would require bird flight diverters) would be implemented Project-wide to reduce the potential for golden-crowned kinglet collision with Project components. EPM WILD-6 (which would require the use of flight diverters on all guy wires) and VEG-6 (which would ensure the proper revegetation of impacted forested habitats outside of the permanent maintenance area) would be implemented on federally managed lands as well as certain applicable state/private lands to further minimize impacts in forest habitats (see Table 2.7-1 in Chapter 2). However, as revegetation and/or restoration of disturbed forest habitats could take decades, impacts to forest-dependent species would be long term.

Conclusion

Because the golden-crowned kinglet is present within the Analysis Area, some negative impacts would likely occur to this species, due to the loss of habitat and possibility of collisions with transmission structures/lines. However, these impacts would be limited due to the mitigation measures proposed. Therefore, the Project is not expected to impact the viability of the golden-crowned kinglet.

Lincoln's Sparrow (Medicine Bow Forest Plan MIS)

Construction-related Impacts

There are no known occurrences of the Lincoln's sparrow within the Analysis Area; therefore, it is possible that this species is not present and would not be affected. However, if it is present, then impacts to the Lincoln's sparrow would be similar to those discussed for the yellow-billed cuckoo, and could include loss or modification of habitat, disturbance due to construction activities, and direct mortality.

Habitat for the Lincoln's sparrow consists of riparian areas, which are not abundant within the Analysis Area. Impacts to riparian areas from construction activities are listed in Table D.9-1 of Appendix D. To limit the potential impact to vegetation clearing in these areas, the Proponents would implement their Framework Reclamation Plan. However, as was discussed for the Columbia spotted frog, revegetation efforts are aimed primarily at reestablishing herbaceous or shrub cover, reestablishing original site configurations, and preventing erosion, but do not specifically address impacts to riparian zones, or the reestablishment of stream/wetland shade vegetation and/or LWD. Therefore, EPMs WET-1 through WET-4 would be implemented to reduce impacts to riparian/wetland habitats. WET-2 through WET-4 would be implemented on all lands regardless of land ownership, while WET-1 would be implemented on federally

managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2). For instances where impacts to riparian and wetland areas are unavoidable, the Agencies have identified TESWL-14, which would be required on all federally managed lands to further reduce potential impacts to these riparian habitats. In addition, to limit the potential impact of clearing on nesting birds found in forested habitat types, WILD-9 would be implemented on all land ownerships; this measure would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season to limit the potential impact of clearing on nesting birds. Impacts to snag habitats on federally managed lands would be minimized through implementation of WILD-10.

Operations-related Impacts
Permanent habitat loss would primarily be associated with access roads. For the most part, these would be located outside of riparian zones. Table D.9-2 of Appendix D lists the operations impacts that would occur to riparian habitats.

Impacts to Lincoln's sparrow would also include the risk of collisions with transmission structures and lines, similar to those discussed for the yellow-billed cuckoo; however, this species flies close to the ground, which would reduce the likelihood of collisions with Project components. To further reduce the potential for Lincoln's sparrow collision with conductors, WILD-7 (which requires the use of flight diverters in certain locations where avian collisions would be most likely to occur due to site-specific conditions such as terrain or habitat) would be implemented Project-wide. In addition, WILD-6 (which would require the use of flight diverters on all guy wires) would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

Conclusion
If the Lincoln's sparrow is present within or near the Analysis Area, then some negative impacts from the Project's construction and operation would likely occur, due to the loss of habitat and low possibility of co-locations with transmission structures/lines. However, these impacts would be limited due to the mitigation measures proposed. Therefore, the Project is not expected to impact the viability of the Lincoln's sparrow.

Northern Goshawk (Caribou and Medicine Bow Forest Plan MIS; Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts
The northern goshawk is located within the Analysis Area and would likely be affected by the Project to some degree. Impacts to the northern goshawk would be similar to those discussed for the bald eagle, and could include direct mortality, disturbance, and loss or modification of habitat. Nesting sites are vulnerable to construction disturbances because the adult goshawks may abandon the nest during periods of high human activity, resulting in mortality of eggs or nestlings; however, as required in EPM WILD-9, all construction clearing would be conducted outside of the typical avian breeding season to the extent practical.

There are five known northern goshawks nests that occur within one mile of the Proposed Route: one along Segment 1W, and four along Segment 4. There are also three nests located within 1 mile of Alternative 7K (see Appendix D, Table D.10-2). The nest along Segment 1W is located on the Medicine Bow-Routt NFs, and the four nests along Segment 4 are located in the Caribou-Targhee NF. The acreages of construction impacts that would occur within 1 mile of a northern goshawk nest are listed in Table D.10-7 (in Appendix D).

The Medicine Bow and Caribou Forest Plans have standards and guidelines regarding the northern goshawk that the Project would not comply with (as currently designed). These are as follows:

- **Medicine Bow Forest Plan Standard:** "Within each occupied northern goshawk territory, select three nests and protect 30 acres of dense vegetation surrounding each, defining the boundaries of each area based on habitat quality. If fewer than three nests are found within an occupied territory, substitute 30-acre areas with characteristics of nesting habitat."
- **Medicine Bow Forest Plan Standard:** "Within each occupied northern goshawk territory, designate a northern goshawk post-fledging area of a minimum of 200 acres that includes the three 30-acre nest sites selected. The large tree component within the post-fledging area should include snags, down dead wood, and clumps of trees with interlocking crowns. Within the post-fledging area, prohibit management activities that may degrade goshawk foraging habitat."
- **Caribou Forest Plan Standard/Guideline:** Goshawk Nesting Areas on the Caribou-Targhee NF are defined as areas greater than or equal to 200 acres centered on the nest, Post Fledging Family Areas are defined as areas greater than or equal to 400 acres centered on the nest, and Foraging Areas on the Caribou-Targhee NF are defined as areas greater than or equal to 5,400 acres areas around nests.
- **Caribou Forest Plan Standard/Guideline:** No created openings within goshawk nesting areas, and the maximum created opening is less than or equal to 40 acres within the Post Fledging Area and Foraging Area.

A historical goshawk nest site on the Medicine Bow-Routt NFs (located between Segments 1W[a] and 1W[c]) was determined to no longer be active during Project-specific surveys (Tetra Tech 2010d); however, these surveys also indicate that the area is still occupied by northern goshawks. Although no active goshawk nests were found near the Project on the Medicine Bow-Routt NFs, surveys have not been completed along all segments that cross this NF (i.e., Alternative 1W[a]-B). In addition, construction of the Project on the Medicine Bow-Routt NFs would result in loss of suitable goshawk foraging habitat near the historical goshawk nest (within the PFA); this would include about 1.4 acres of forested habitat impacted within 1 mile of historical nests along Segment 1W(a), and 17.5 acres along Segment 1W(c) on the Medicine Bow-Routt NFs. The initial clearing, as well as ROW maintenance, would also remove snags from the immediate footprint of the Project's ROW, thereby further reducing habitat for the northern goshawk (however, impacts to snag habitat would be minimized

through the implementation of WILD-10). Therefore, the Project is not in compliance with the Medicine Bow Forest Plan goshawk standards. For the Forest Service to grant a Special Use Authorization, the Project would either need to be altered so that it is in compliance with the Medicine Bow Forest Plan standards regarding the northern goshawk, or the Forest Plan would need to be amended (see Table 2.2-3).

To establish the goshawk Nesting Area, Post Fledging Family Area, and Foraging Area on the Caribou-Targhee NF, concentric circles of 0.3, 0.5, and 1.6 miles around goshawk nests were used to capture the 200-, 400-, and 5,400-acre areas defined in the Caribou Forest Plan. No Nesting or Post Fledging Family Areas would be crossed by the Proposed Route; however, the Foraging Areas of six nests would be crossed by the Proposed Route along Segment 4 (see Table 3.11-8). Most of the vegetation in these areas consists of continuous forested habitats with patches of sagebrush interspersed. The Caribou Forest Plan's guideline for goshawk Foraging Areas is that the maximum created opening must be less than or equal to 40 acres; however, more than 40 acres of continuous forested habitat (i.e., forested areas not broken by other vegetation types) would be cleared in the goshawk foraging area related to nests 308, 309, 349, TT CNF 1, and TT CNF 2. This 40-acre restriction on disturbance was originally established due to impacts related to timber harvesting, which typically creates wide non-linear cleared areas as opposed to the narrower clearings related to ROWs. It is uncertain if the clearings related to ROWs would have similar impacts to foraging habitats comparable to the timber harvesting that was originally considered when developing this restriction; however, goshawks are known to take prey from openings in forested habitats, and will typically hunt in these areas from perches located along the edge of the clearing (Graham et al. 1999). Furthermore, Reynolds et al. (1992), which established the 5,400-acre size used to define Foraging Areas, stated that openings up to 4 acres in size are desired in foraging areas located in ponderosa pine and mixed-species forests, and that a more open canopy is preferred in these areas because the foraging areas do not need to provide hiding cover. Therefore, the clearings along the ROW in goshawk Foraging Areas may not have adverse impacts to their foraging habitats (i.e., it could potentially improve the area's ability to serve as foraging habitat; Reynolds et al. 1992). However, as more than 40 acres of continuous forested habitat would be cleared in some goshawk Foraging Areas, the Project is not in compliance with the Caribou Forest Plan goshawk standards/guidelines. Furthermore, due to the

Table 3.11-8. Acres of Habitat within Caribou-Targhee NF's Goshawk Foraging Areas Impacted by the Proposed Route along Segment 4

Nest	Activity	Habitat Type			
		Conifer Forest	Deciduous Forest	Mixed Forest	Grass/ Shrubland
307	Active in 2011	4	<0.1	2	17
308	Last activity date unknown	56	35	25	4
309	Last activity date unknown	41	14	16	14
349	Found in 2010; however, not active at that time	39	17	19	2
TT_CNF_1	Last activity date unknown	41	5	18	14
TT_CNF_2	Last activity date unknown	54	34	16	6
Grand Total[1/]		**87**	**47**	**27**	**36**

1/ Combined total when the overlap between the nest buffers is taken into consideration.

clearing of forested habitat within the ROW, the Caribou Forest Plan goshawks guidelines related to stand rotation age, downed logs (in the long term), and thinning would not be met (see page 3-30 of the Caribou Forest Plan, as well as Appendix F-2 of this EIS). For the Forest Service to grant a Special Use Authorization, the Project would either need to be altered so that it is in compliance with the Caribou Forest Plan standards regarding the northern goshawk, or the Forest Plan would need to be amended (see Table 2.2-3).

This Project is unlikely to have population-level effects to goshawks. As stated earlier, clearing in foraging areas is not expected to adversely affect this species (although this clearing is still out of compliance with existing NF stipulations, and would require a plan amendment). In addition, measures would be taken to avoid or minimize impacts to nesting birds (i.e., conducting vegetative clearing outside of the nesting season). However, if nesting territories were disturbed, this disturbance is still unlikely to have population-level effects to goshawks. Nesting habitat would be available in adjacent areas, and birds would be able to find adjacent nesting habitat. Furthermore, goshawks do not typically utilize the same nest every year, indicating that they do not have high fidelity to a single nesting location.

As discussed earlier, impact values reported within this document are based on indicative engineering. TESWL-4 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure that the final engineering design is routed to avoid known locations of raptor nests as well as other structures occupied by sensitive species

Operations-related Impacts

Table D.11-8 in Appendix D lists the permanent operations impacts that would occur to northern goshawk habitats.

The Project's operations could result in a potential for collisions with transmission lines or structures, resulting in elevated mortality rates for the northern goshawk. To limit this potential effect, EPM WILD-7 (which requires the use of flight diverters in certain locations where avian collisions would be most likely to occur due to site-specific conditions such as terrain or habitat) would be implemented Project-wide. In addition, EPM WILD-6 (which would require the use of flight diverters on all guy wires) would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2).

In addition to collisions with transmission line and structures, raptors are vulnerable to mortality from electrocution by powerlines. Birds are electrocuted when they make contact between two energized conductors or between an energized conductor and any grounded hardware. The spacing between phases of the transmission lines is much larger than the bird wing spans for all species. Therefore, electrocution due to the transmission line is not a hazard for the northern goshawk. The distribution lines that serve the substations could provide an electrocution hazard to some avian species, although this would not be a risk for the northern goshawk hazard as all new distribution lines associated with this Project (i.e., at the Aeolus, Anticline, and Cedar Hill Substations) would be built in habitats that do not support the northern goshawk.

Conclusion
Some negative impacts would likely occur to the northern goshawk, due to the location of nests within 1 mile of the Project, the potential for disturbance during construction, loss of habitat, and the possibility of collisions and electrocutions resulting from the Project's operation. However, these impacts would be limited due to the timing restrictions on construction activities, EPMs, and the measures proposed in the Avian Protection Plans. Therefore, the Project is not expected to impact the viability of the northern goshawk.

Snowshoe Hare (Medicine Bow Forest Plan MIS)

Construction-related Impacts
There are no known occurrences of the snowshoe hare within the Analysis Area; therefore, it is possible that this species is not present and would not be affected. However, if it is present, impacts to the snowshoe hare would be similar to those discussed for the pygmy rabbit, and could include disturbance, and loss or modification of habitat. Unlike the pygmy rabbit, however, the snowshoe hare inhabits forest environments, which are not common in the Analysis Area. The Project has been routed to avoid forest habitats to the greatest extent practical; however, some forested habitats would be impacted by both forest clearing and vegetation maintenance (see Section 3.6 – Vegetation Communities). Table D.6-2 of Appendix D lists the acres of disturbance to forest habitats that would occur due to construction. These construction disturbances to forested habitats would result in both loss of habitat and disturbance to wildlife species present within adjacent habitats.

Operations-related Impacts
Operations impacts to the snowshoe hare would include loss of habitat from permanent vegetation maintenance in forested habitats (see Section 3.6 - Vegetation Communities), as well as a possible avoidance of edge habitats created by the clearing of forests for ROW maintenance and road paths. Table D.6-3 of Appendix D lists the acres of permanent disturbance to forest habitats that would occur due to Project operation. Any new roads created by the Project could result in increased hunting pressures by increasing human access to these areas; however, construction of roads would be avoided within forested habitats to the extent practical. In addition, as discussed for sage-grouse, the Proponents have developed a Framework Traffic and Transportation Monitoring Plan (Appendix B) that includes measures to prevent unauthorized use of new access roads. Furthermore, EPM VEG-2 would be implemented to limit the impact of roads on forest habitats, and VEG-6 to ensure the proper revegetation of impacted forested habitats located outside of the permanent maintenance area (both measures would be implemented on federally managed lands as well as certain applicable state/private lands; see Table 2.7-1 in Chapter 2). However, as revegetation and/or restoration of disturbed forest habitats could take decades, impacts to forest-dependent species would be long term.

Unlike the impacts to the pygmy rabbit (which inhabits shrub and grassland habitats), the snowshoe hare inhabits forested environments; therefore, the presence of the transmission line in not likely to increase the number of perch sites for raptor or raven

species, or increase the natural predation rate experienced by this species. In addition, the Project is unlikely to serve as a barrier to movement by this species.

Conclusion
If the snowshoe hare is present within or near the Analysis Area, then some negative impacts from the Project's construction and operations would likely occur due to habitat loss, fragmentation of habitats, increased access for hunters, and disturbance due to construction. However, EPMs aimed at limited road disturbances in forested habitats and successful revegetation of forested habitats would limit these impacts. Therefore, the Project is not expected to impact the viability of the snowshoe hare.

Three-Toed Woodpecker (Medicine Bow Forest Plan MIS; Forest Service Sensitive; BLM Sensitive)

Construction-related Impacts
There are no known occurrences of the three-toed woodpecker within the Analysis Area; therefore, it is possible that this species is not present and would not be affected. However, if it is present, then potential impacts to the three-toed woodpecker would include disturbance due to construction activities and loss or modification of habitat. The three-toed woodpecker is dependent on forested habitats, and the Project has been routed to avoid forest habitats to the greatest extent practical; however, some forested habitats would be impacted by both forest clearing and vegetation maintenance (see Section 3.6 – Vegetation Communities). Table D.6-2 of Appendix D lists the acres of disturbance to forest habitats that would occur due to construction. If woodpeckers are present within these impacted habitats, or if these habitats could serve as potential nesting or foraging habitats in the future, then the Project would result in some loss of woodpecker habitat. Construction activities could also disturb woodpeckers from adjacent habitats, if they are present during these activities. To limit the potential impact of clearing on nesting birds found in forested habitat types, WILD-9 would be implemented on all land ownerships; this measure would require that all vegetation clearing be conducted prior to the onset of the avian breeding season or that pre-construction surveys for avian nests be conducted if clearing is required during the nesting season to limit the potential impact of clearing on nesting birds. Impacts to snag habitats on federally managed lands would be minimized through implementation of WILD-10.

As discussed earlier, the three-toed woodpecker is typically associated with mature forests. The extent of mature forests within the Analysis Area is likely limited; however, they could occur. Section 3.6 – Vegetation Communities discusses what constitutes a mature forest and their potential extent within the Analysis Area, as well as the potential impacts that could occur to these forest types.

Operations-related Impacts
The Project would result in some permanent loss of forest habitat (see Table D.6-3 of Appendix D) resulting from vegetation removal and maintenance. EPM VEG-6 would be implemented on federally managed lands as well as certain applicable state/private lands (see Table 2.7-1 in Chapter 2) to ensure the proper revegetation of impacted forested habitats outside of the permanent maintenance area. However, as

revegetation and/or restoration of disturbed forest habitats could take decades, impacts to any forest-dependent species would be long term.

Because the Project would not alter the local fire regime, no impacts to the three-toed woodpecker's food supplies would occur due to the Project's operation.

Conclusion
If the three-toed woodpecker is present within or near the Analysis Area, then some negative impacts from the Project's construction and operation would likely occur, due to the loss of habitat. However, these impacts would be limited due to mitigation measures proposed to restore impacted forest habitats, and the species-specific EPM proposed for this species. Therefore, the Project is not expected to impact the viability of the three-toed woodpecker.

Wilson's Warbler (Medicine Bow Forest Plan MIS)

The Wilson's warbler is known to occur very near the Analysis Area (within 3.3 miles). Potential impacts to the Wilson's warbler would be the same as those described above for the Lincoln's sparrow, as they inhabit similar areas and have similar life history traits (see discussion for the Lincoln's sparrow). The Project is not expected to impact the viability of the Wilson's warbler, due to the EPMs and mitigation measures proposed.

Decommissioning (for all TES species)

All Project facilities that are not utilized for purposes other than the Gateway West Project would be removed at the end of the operational life of the transmission line (e.g., some substations and access roads are utilized for purposes other than this Project, and would therefore remain after the life of this Project). Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground foundation surfaces. All revegetation efforts would meet the requirements of the Federal Seed Act and applicable Idaho and Wyoming laws/regulations regarding seeds and noxious weeds. The Agencies would be given the option of entering into an agreement with the Proponents where the applicable agency would reclaim the portion of roads located on federal land, and the costs of this effort would be reimbursed by the Proponents.

Decommissioning of the Project could result in both temporary adverse effects and long-term beneficial effects to TES wildlife species. Temporary adverse effects would include disturbances to wildlife resulting from the presence of workers and construction equipment necessary for the removal of Project components, increased sedimentation to waterbodies created during road decommissioning or culvert removal, temporary loss of habitat if some vegetation needs to be cleared to remove Project components or temporarily widen roads, and the possibility of direct mortality during decommissioning actions. The extent of adverse impacts would be similar to those discussed for Project construction, and the mitigation measures discussed for construction would be required during decommissioning. Long-term beneficial effects would include the removal of tall structures (towers) from grouse habitats, and the decommissioning of Project facilities and access roads, both of which could increase the connectivity and size of wildlife habitat. Due to the potential for both adverse and beneficial effects to TES wildlife species, consultation with the USFWS would need to be initiated prior to decommissioning.

3.11.2.3 Comparison of Alternatives by Segment

Segment 1W

The preferred routes in Segment 1W are as follows:

Segment	Preferred Route	Agency
Segment 1W(a)	Proposed Route (Figure A-2)	BLM and State of Wyoming
Segment 1W(c)	Proposed Route (Figure A-2)	BLM and State of Wyoming

Segment 1W is composed of Segments 1W(a) and 1W(c), both of which consist of single-circuit 230-kV transmission lines. Generally, Segment 1W(a) would be a new 73.8-mile-long transmission line, and 1W(c) would involve reconstruction of a 73.6-mile-long portion of the existing Dave Johnston – Rock Springs 230-kV transmission line. However, in the area approximately 5 miles to the north and to the south of Ice Cave Mountain, the lines shift east to avoid the ice cave. In this area, 1W(a) would be the reconstruction of the existing line and 1W(c) would be the new line. Segment 1W(a) has one alternative, Alternative 1W(a)-B, which is located north and west of the town of Glenrock and was the Proponents' initial proposal. However, the Proposed Route was revised following the Draft EIS public comment period in order to avoid the more populated area around Glenrock. Figure A-2 in Appendix A shows the location of the Segment 1W routes.

The most common habitat along Segment 1W is shrubland (see Section 3.6 – Vegetation Communities). Of the TES species for which quantitative species-specific data are available, the bald eagle, black-footed ferret, black-tailed prairie dog, burrowing owl, sage-grouse, mountain plover, northern goshawk, northern leopard frog, Preble's meadow jumping mouse, and white-tailed prairie dog could occur along Segment 1W (see Table D.11-3 and D.11-4).

Tables 3.11-9a–k display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 1W would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Alternative 1W(a)-B would result in fewer impacts to bald eagle, northern leopard frog, and Preble's meadow jumping mouse habitat than the comparison portion of Segment 1W; however, it would cause more impacts to black-tailed prairie dog, burrowing owl, mountain plover, sage-grouse (both potential habitat and agency designated habitat), and white-tailed prairie dog habitat. As some habitat for these species would be impacted in areas of the Preferred/Proposed Route that do not currently contain a Route Alternative, selection of Alternative 1W(a)-B would not result in a complete avoidance of impacts for any of these species' habitats.

Construction of the Preferred/Proposed Route would impact approximately 17 acres of habitat within 1 mile of a single northern goshawk nest along Segment 1W(a) and 29 acres along Segment 1W(c); however, selection of Alternative 1W(a)-B would not result in the avoidance or an increase in impacts to areas near known northern goshawk nests. Construction of the Preferred/Proposed Route would impact approximately 21 acres of black-footed ferret habitat (within the Shirley Basin area) along Segment 1W(a) and 57 acres along Segment 1W(c); however, selection of Alternative 1W(a)-B would not result in the avoidance or an increase in impacts to these habitats.

Tables 3.11-9a–g. Alternative Comparison Tables for Segment 1W—BLM Special Status and Forest Service Sensitive Species

Table 3.11-9a. Acres of Suitable Bald Eagle Habitat (1-mile Buffer Around Nests and 1-mile Buffer Around Winter Roosts) Impacted during Construction and Operations of Segment 1W

Alternatives	1-mile Nest Buffer		1-mile Winter Roost Buffer	
	Construction Impacts (acres)	Operations Impacts (acres)	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	12	2	59	11
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	12	2	59	11
Alternative 1W(a)-B	–	–	29	7
1W(c) Preferred/Proposed – Total Length	20	2	79	9

Acreages are rounded to the nearest acre.

Table 3.11-9b. Acres of Suitable Black-Tailed Prairie Dog Habitat (Colonies and Complexes) Impacted during Construction and Operations of Segment 1W

Alternatives	Colony		Complex[1/]	
	Construction Impacts (acres)	Operations Impacts (acres)	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	23	4	122	23
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	17	3	99	18
Alternative 1W(a)-B	22	4	269	43
1W(c) Preferred/Proposed – Total Length	34	4	159	15

Acreages are rounded to the nearest acre.

[1/] The number of "colony" acres impacted represents colonies that are not part of complexes; the sum of the two numbers, "colonies" and "complexes," adds up to total acres of prairie dog habitat impacted.

Table 3.11-9c. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 1W

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	514	107
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	125	23
Alternative 1W(a)-B	236	37
1W(c) Preferred/Proposed – Total Length	703	84

Acreages are rounded to the nearest acre.

Table 3.11-9d. Acres of Suitable Mountain Plover Habitat Impacted during Construction and Operations of Segment 1W

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	494	112
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	101	18
Alternative 1W(a)-B	176	28
1W(c) Preferred/Proposed – Total Length	700	82

Acreages are rounded to the nearest acre.

Table 3.11-9e. Acres of Suitable Northern Goshawk Habitat (1-mile Buffer Around Nests) Impacted during Construction and Operations of Segment 1W		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
1W(a) Preferred/Proposed – Total Length	17	7
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	–	–
Alternative 1W(a)-B	–	–
1W(c) Preferred/Proposed – Total Length	29	23

Acreages are rounded to the nearest acre.

Table 3.11-9f. Acres of Suitable Northern Leopard Frog Habitat Impacted during Construction and Operations of Segment 1W		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
1W(a) Preferred/Proposed – Total Length	8	2
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	2	<1
Alternative 1W(a)-B	<1	t
1W(c) Preferred/Proposed – Total Length	12	1

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-9g. Acres of Suitable White-Tailed Prairie Dog Habitat Impacted during Construction and Operations of Segment 1W		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
1W(a) Preferred/Proposed – Total Length	534	108
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	74	13
Alternative 1W(a)-B	132	22
1W(c) Preferred/Proposed – Total Length	724	86

Acreages are rounded to the nearest acre.

Tables 3.11-9h–k. Alternative Comparison Tables for Segment 1W—Federal ESA Wildlife Species

Table 3.11-9h. Acres of Suitable Black-Footed Ferret Habitat (Shirley Basin Populations mapped by the WGFD) Impacted during Construction and Operations of Segment 1W		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
1W(a) Preferred/Proposed – Total Length	21	5
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	–	–
Alternative 1W(a)-B	–	–
1W(c) Preferred/Proposed – Total Length	57	5

Acreages are rounded to the nearest acre.

Table 3.11-9i. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 1W

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	515	124
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	63	11
Alternative 1W(a)-B	129	22
1W(c) Preferred/Proposed – Total Length	575	84

Acreages are rounded to the nearest acre.

Table 3.11-9j. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 1W

Alternatives	Construction Impacts (acres)			Operations Impacts (acres)		
	Core	PPH	PGH	Core	PPH	PGH
1W(a) Preferred/Proposed – Total Length	289	–	–	62	–	–
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	9	–	–	1	–	–
Alternative 1W(a)-B	137	–	–	23	–	–
1W(c) Preferred/Proposed – Total Length	298	–	–	34	–	–

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats

Table 3.11-9k. Acres of Suitable Preble's Meadow Jumping Mouse Habitat Impacted during Construction and Operations of Segment 1W

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
1W(a) Preferred/Proposed – Total Length	67	23
1W(a) Preferred/Proposed – Comparison Portion for Alternative 1W(a)-B	10	5
Alternative 1W(a)-B	7	1
1W(c) Preferred/Proposed – Total Length	93	15

Acreages are rounded to the nearest acre.

Medicine Bow-Routt National Forests Crossed by Segment 1W

The Preferred/Proposed Route along Segments 1W(a) and 1W(c) would cross the Medicine Bow-Routt NFs (see Section 3.17 – Land Use and Recreation). Representatives from the Medicine Bow-Routt NFs have indicated that the following Forest Service Region 2 sensitive species may occur along the portion of the Project that crosses through the Medicine Bow-Routt NFs: bald eagle, bighorn sheep, white-tailed prairie dog, Brewer's sparrow, chestnut-collared longspur, ferruginous hawk, flammulated owl, fringed myotis, grasshopper sparrow, sage-grouse, Lewis's woodpecker, loggerhead shrike, long-billed curlew, McCown's longspur, northern goshawk, northern harrier, northern leopard frog, olive-sided flycatcher, peregrine falcon, sage sparrow, short eared owl, three-toed woodpecker, and Townsend's big-eared bat (Medicine Bow NF 2012). Of the TES species for which quantitative species-specific data are available, construction of Segment 1W(a) would impact less than 1 acre of burrowing owl habitat, about 2 acres of sage-grouse habitat, 5 acres of mountain plover habitat, 11 acres of northern goshawk habitat, less than 1 acre of northern

leopard frog habitat, 3 acres of Preble's meadow jumping mouse habitat, and 16 acres of white-tailed prairie dog habitat on the Medicine Bow-Routt NFs.[16] Construction of Segment 1W(c) would impact about 5 acres of sage-grouse habitat, 9 acres of mountain plover habitat, 8 acres of northern goshawk habitat, and 18 acres of white-tailed prairie dog habitat on the Medicine Bow-Routt NFs. See the Medicine Bow Biological Evaluation for more details (Forest Service 2013b).

Segment 2

The preferred route in Segment 2 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-3)	BLM and State of Wyoming

Segment 2 consists of one single-circuit 500-kV transmission line between the proposed Aeolus Substation and the location of the originally planned Creston Substation near Wamsutter, Wyoming (a new substation at Creston is no longer needed due to changes in anticipated demand for oil and gas field electricity). The Preferred/Proposed Route has been revised to incorporate Alternative 2C, as analyzed in the Draft EIS. Segment 2 would be approximately 91.9 miles long. Alternative 2A is being considered by the BLM because this alternative route is within the WWE corridor. Alternative 2B was initially the Proponents' Proposed Route before they responded to local suggestions and relocated the Proposed Route farther to the south. Figure A-3 in Appendix A shows the location of the Segment 2 routes.

The most common habitat type along Segment 2 is shrubland (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the bald eagle, black-footed ferret, burrowing owl, sage-grouse, mountain plover, northern leopard frog, Preble's meadow jumping mouse, pygmy rabbit, white-tailed prairie dog, and Wyoming pocket gopher could occur along Segment 2 (see Tables D.11-3 and D.11-4).

Tables 3.11-10a–l display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 2 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Alternative 2A would result in an increase in impacts to habitats for all of the species assessed that have suitable habitat along this alternative. Alternative 2B would result in an increase in impacts to the bald eagle, mountain plover, northern leopard frog, Preble's meadow jumping mouse, and Wyoming pocket gopher habitat compared to the comparison portion of Segment 2; however, it would result in fewer impacts to the burrowing owl, sage-grouse, pygmy rabbit, and white-tailed prairie dog habitat. As some habitat for these species would be impacted in areas of the Preferred/Proposed Route that do not currently contain a Route Alternative, selection of an alternative would not result in a complete avoidance of impacts to any of these species' habitats.

[16] Species-specific modeling data may indicate impacts to habitats for species on the Medicine Bow-Routt NFs that are not known to occur on the Medicine Bow-Routt NFs, as these estimates and models take a conservative approach to predicting habitats and may include areas not know to contain these species.

Construction of the Preferred/Proposed Route would impact about 6 acres of habitat within the grizzly bear DPS. The impacts along the grizzly bear DPS would occur along portions of the route where Route Alternatives have not been proposed, and the Route Alternatives would not impact additional habitat for grizzly bears. Therefore, selection of any of the current Route Alternatives along Segment 2 would not have an effect on the amount of grizzly bear habitat that would be impacted.

Some of the alternatives would substantially affect the acreage of impacts compared to the comparison portion of the Preferred/Proposed Route. The increase in impacts to bald eagle and Wyoming pocket gopher habitat that would be experienced under Alternatives 2A and 2B would be substantial, indicating that the impact to these species could be substantially greater under these Route Alternatives. Alternative 2B would also result in a substantial increase in impacts to northern leopard frog and Preble's meadow jumping mouse habitat; and because habitats for these species (wetlands and riparian areas) are rare within the general area, even minor differences in the acreage of impacts can have a substantial effects on the availability of habitat or the species that depend on these habitats (Table D.9-1 in Appendix D lists the total impacts to all wetland habitats along each segment and Route Alternative; Section 3.9 discusses the distribution of wetlands and riparian areas within the general area).

Tables 3.11-10a–g. Alternative Comparison Tables for Segment 2—BLM Special Status and Forest Service Sensitive Species

Table 3.11-10a. Acres of Suitable Bald Eagle Habitat (1-mile Buffer Around Nests and 1-mile Buffer Around Winter Roosts) Impacted during Construction and Operations of Segment 2

Alternatives	1-mile Nest Buffer		1-mile Winter Roost Buffer	
	Construction Impacts (acres)	Operations Impacts (acres)	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1	<1	–	–
Preferred/Proposed – Comparison Portion for Alternative 2A	1	<1	–	–
Alternative 2A	43	5	–	–
Preferred/Proposed – Comparison Portion for Alternative 2B	1	<1	–	–
Alternative 2B	42	4	–	–

Acreages are rounded to the nearest acre.

Table 3.11-10b. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 2

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,351	164
Preferred/Proposed – Comparison Portion for Alternative 2A	202	16
Alternative 2A	239	24
Preferred/Proposed – Comparison Portion for Alternative 2B	147	12
Alternative 2B	131	11

Acreages are rounded to the nearest acre.

Table 3.11-10c. Acres of Suitable Mountain Plover Habitat Impacted during Construction and Operations of Segment 2

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,254	165
Preferred/Proposed – Comparison Portion for Alt. 2A	194	17
Alternative 2A	273	29
Preferred/Proposed Comparison Portion for Alt. 2B	154	14
Alternative 2B	166	15

"Acreages are rounded to the nearest acre.

Table 3.11-10d. Acres of Suitable Northern Leopard Frog Habitat Impacted during Construction and Operations of Segment 2

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	12	2
Preferred/Proposed – Comparison Portion for Alternative 2A	6	<1
Alternative 2A	14	1
Preferred/Proposed – Comparison Portion for Alternative 2B	6	<1
Alternative 2B	20	<1

Acreages are rounded to the nearest acre.

Table 3.11-10e. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 2

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,219	127
Preferred/Proposed – Comparison Portion for Alternative 2A	202	16
Alternative 2A	210	21
Preferred/Proposed – Comparison Portion for Alternative 2B	147	12
Alternative 2B	125	10

Acreages are rounded to the nearest acre.

Table 3.11-10f. Acres of Suitable White-Tailed Prairie Dog Habitat Impacted during Construction and Operations of Segment 2

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,457	174
Preferred/Proposed – Comparison Portion for Alternative 2A	228	18
Alternative 2A	252	25
Preferred/Proposed – Comparison Portion for Alternative 2B	171	13
Alternative 2B	135	11

Acreages are rounded to the nearest acre.

Table 3.11-10g. Acres of Suitable Wyoming Pocket Gopher Habitat Impacted during Construction and Operations of Segment 2		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred/Proposed – Total Length	521	57
Preferred/Proposed – Comparison Portion for Alternative 2A	9	1
Alternative 2A	23	5
Preferred/Proposed – Comparison Portion for Alternative 2B	9	1
Alternative 2B	26	4

Acreages are rounded to the nearest acre.

Tables 3.11-10h–l. Alternative Comparison Tables for Segment 2—Federal ESA Wildlife Species

Table 3.11-10h. Acres of Suitable Black-Footed Ferret Habitat Impacted during Construction and Operations of Segment 2		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred/Proposed – Total Length	22	7
Preferred/Proposed – Comparison Portion for Alternative 2A	–	–
Alternative 2A	–	–
Preferred/Proposed – Comparison Portion for Alternative 2B	–	–
Alternative 2B	–	–

Acreages are rounded to the nearest acre.

Table 3.11-10i. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 2		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred/Proposed – Total Length	1,643	228
Preferred/Proposed – Comparison Portion for Alternative 2A	261	24
Alternative 2A	289	33
Preferred/Proposed – Comparison Portion for Alternative 2B	191	17
Alternative 2B	164	15

Acreages are rounded to the nearest acre.

Table 3.11-10j. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 2						
Alternatives	**Construction Impacts (acres)**			**Operations Impacts (acres)**		
	Core	**PPH**	**PGH**	**Core**	**PPH**	**PGH**
Preferred/Proposed – Total Length	717	–	–	90	–	–
Preferred/Proposed – Comparison Portion for Alternative 2A	69	–	–	7	–	–
Alternative 2A	91	–	–	12	–	–
Preferred/Proposed – Comparison Portion for Alternative 2B	–	–	–	–	–	–
Alternative 2B	–	–	–	–	–	–

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats.

Table 3.11-10k. Acres of Habitat within the Grizzly Bear DPS Impacted during Construction and Operations of Segment 2		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred/Proposed – Total Length	6	2
Preferred/Proposed – Comparison Portion for Alternative 2A	–	–
Alternative 2A	–	–
Preferred/Proposed – Comparison Portion for Alternative 2B	–	–
Alternative 2B	–	–

Acreages are rounded to the nearest acre.

Table 3.11-10l. Acres of Suitable Preble's Meadow Jumping Mouse Habitat Impacted during Construction and Operations of Segment 2		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred/Proposed – Total Length	85	22
Preferred/Proposed – Comparison Portion for Alternative 2A	20	2
Alternative 2A	32	7
Preferred/Proposed – Comparison Portion for Alternative 2B	19	1
Alternative 2B	41	4

Acreages are rounded to the nearest acre.

Segment 3

The preferred route in Segment 3 is as follows:

Preferred Route	Agency
Proposed Route, including 3A (Figure A-4)	BLM and State of Wyoming

A single-circuit 500-kV line would link the former location of the Creston Substation, approximately 2.1 miles south of Wamsutter, Wyoming, to the proposed Anticline Substation near the existing Jim Bridger Power Plant. Segment 3 would be approximately 45.9 miles long. This segment also includes a 5.1-mile segment of 345 kV line to connect to the existing Jim Bridger Power Plant Substation (Segment 3A). There are no alternatives proposed along Segment 3. Figure A-4 in Appendix A shows the location of the Segment 3 routes.

The most common habitat type along Segment 3 is shrubland (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the burrowing owl, sage-grouse, grizzly bear, mountain plover, northern leopard frog, pygmy rabbit, white-tailed prairie dog, and the Wyoming pocket gopher could occur along Segment 3 (see Tables D.11-3 and D.11-4).

Construction of Segment 3 (including 3A) would impact approximately 559 acres of burrowing owl habitat, 705 acres of sage-grouse habitat, 585 acres of grizzly bear habitat (consisting only of lands within the DPS boundary), 762 acres of mountain plover habitat, 6 acres of northern leopard frog, 502 acres of pygmy rabbit habitat, 585 acres of white-tailed prairie dog habitat, and 689 acres of Wyoming pocket gopher habitat (Tables D.11-5 through D.11-8 in Appendix D).

Segment 4

The preferred routes in Segment 4 are as follows:

Preferred Route	Agency
Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF (see below)	BLM, State of Wyoming, and Lincoln County
Proposed Route within the NF incorporating Alternative 4G (Figure A-6)	Forest Service

Segment 4 would link the proposed Anticline Substation and the existing Populus Substation near Downey, Idaho with a single-circuit 500-kV line. Its proposed length is approximately 197.6 miles. The Segment 4 BLM-Preferred/Proposed Route was revised to follow Alternative 4A, as analyzed in the Draft EIS, based on public comments. This segment generally follows an existing transmission line corridor. Segment 4 has five Route Alternatives in the middle portion of its route; however the first 52 miles to the east and the last 61 miles to the west (in Idaho) do not have any route alternatives. The middle section of the Preferred/Proposed Route, for which alternatives are presented, is approximately 85.2 miles long, and its alternatives vary from approximately 87.5 to 102.2 miles long. Alternatives 4B through 4E were proposed by the BLM Kemmerer FO (with input from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical. Alternative 4F was proposed by the Proponents to avoid impacts to cultural resources while still remaining north of the existing Bridger Lines. Alternative 4G was proposed by the Forest Service in order to avoid unstable soils identified along the Proposed Route during the 2012 soil assessment (it is located within Sections 1 and 2, Township 12 South, Range 41 East). Figures A-5 and A-6 in Appendix A show the location of the Segment 4 routes in Wyoming and Idaho, respectively.

The most common habitat type along Segment 4 is shrubland (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the bald eagle, burrowing owl, Canada lynx, Columbian sharp-tailed grouse, Columbia spotted frog, sage-grouse, grizzly bear, mountain plover, northern goshawk, northern leopard frog, pygmy rabbit, white-tailed prairie dog, and the Wyoming pocket gopher could occur along Segment 4 (see Tables D.11-3 and D.11-4).

Tables 3.11-11a–o display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 4 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). In general, selection of any of the Route Alternatives along Segment 4 would result in an increase in impacts to most of the assessed species. An increase in impacts during construction would occur to habitat for the burrowing owl, Columbian sharp-tailed grouse, and pygmy rabbit under each of the five Route Alternatives over the comparison portion of the Preferred/Proposed Route. Impacts to mountain plover, white-tailed prairie dog, and sage-grouse habitat would increase under all alternatives except for Alternative 4F, which would affect the same amount of mountain plover habitat as the Preferred/Proposed Route, and less white-tailed prairie dog and sage-grouse habitat than the Preferred/Proposed Route (although impacts to PPH and Key sage-grouse areas would still increase under all alternatives). Each of the five Alternative Routes would result in a decrease in impacts to Columbia spotted frog habitat compared to the

Preferred/Proposed Route, while Alternatives 4B through 4E would reduce impacts to habitats within the grizzly bear DPS (with Alternative 4F slightly increasing impacts to the grizzly bear DPS).

Construction of Segment 4 would impact about 77 and 120 acres of habitat for the bald eagle and northern goshawk (within 1 mile of nests), respectively. Alternative 4F would impact a similar acreage of eagle habitat compared to the Preferred/Proposed Route, while no habitat for the northern goshawk would be impacted along the Segment 4 Route Alternatives or along the comparison portion of the Preferred/Proposed Route.

Construction of Segment 4 would impact about 160 acres of Wyoming pocket gopher habitat. No habitat would be impacted along the five Route Alternatives, or along the comparison portion of the Preferred/ Proposed Route.

No lynx LAUs would be impacted along the Preferred/Proposed Route for Segment 4; however, construction of Alternative 4F would impact about 139 acres of a LAU. The Preferred/Proposed Route and all other Route Alternatives would avoid this LAU.

Tables 3.11-11a–i. Alternative Comparison Tables for Segment 4—BLM Special Status and Forest Service Sensitive Species

Table 3.11-11a. Acres of Suitable Bald Eagle Habitat (1-mile Buffer Around Nests) Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	77	8
Preferred/Proposed – Comparison Portion for Alternatives 4B,C,D,E,F	<1	t
Alternative 4B	–	–
Alternative 4C	–	–
Alternative 4D	–	–
Alternative 4E	–	–
Alternative 4F	<1	t

"t" indicates value <0.1 acre. Acreages are otherwise rounded to the nearest acre.

Table 3.11-11b. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	2,079	278
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	949	114
Alternative 4B	1,451	195
Alternative 4C	1,525	197
Alternative 4D	1,408	191
Alternative 4E	1,465	190
Alternative 4F	979	118

Acreages are rounded to the nearest acre.

Table 3.11-11c. Acres of Suitable Columbian Sharp-Tailed Grouse Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,123	149
Preferred/Proposed -Comparison Portion for Alts. 4B,C,D,E,F	114	12
Alternative 4B	176	20
Alternative 4C	162	19
Alternative 4D	176	20
Alternative 4E	158	18
Alternative 4F	123	13

Acreages are rounded to the nearest acre.

Table 3.11-11d. Acres of Suitable Mountain Plover Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	1,421	208
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	701	82
Alternative 4B	812	109
Alternative 4C	812	109
Alternative 4D	814	110
Alternative 4E	814	110
Alternative 4F	701	82

Acreages are rounded to the nearest acre.

Table 3.11-11e. Acres of Suitable Northern Goshawk Habitat (1-mile Buffer around Nests) Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	120	106
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	–	–
Alternative 4B	–	–
Alternative 4C	–	–
Alternative 4D	–	–
Alternative 4E	–	–
Alternative 4F	–	–

Acreages are rounded to the nearest acre.

Table 3.11-11f. Acres of Suitable Northern Leopard Frog Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	131	10
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	77	5
Alternative 4B	54	3
Alternative 4C	50	2
Alternative 4D	54	3
Alternative 4E	50	3
Alternative 4F	59	3

Acreages are rounded to the nearest acre.

Table 3.11-11g. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	2,263	317
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	1,312	166
Alternative 4B	1,520	211
Alternative 4C	1,534	206
Alternative 4D	1,477	207
Alternative 4E	1,474	199
Alternative 4F	1,332	172

Acreages are rounded to the nearest acre.

Table 3.11-11h. Acres of Suitable White-Tailed Prairie Dog Habitat Impacted during Construction and Operation of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	2,210	291
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	1,417	178
Alternative 4B	1,683	227
Alternative 4C	1,753	226
Alternative 4D	1,688	231
Alternative 4E	1,743	227
Alternative 4F	1,379	177

Acreages are rounded to the nearest acre.

Table 3.11-11i. Acres of Suitable Wyoming Pocket Gopher Habitat Impacted during Construction and Operation of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	160	18
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	–	–
Alternative 4B	–	–
Alternative 4C	–	–
Alternative 4D	–	–
Alternative 4E	–	–
Alternative 4F	–	–

Acreages are rounded to the nearest acre.

Tables 3.11-11j–n. Alternative Comparison Tables for Segment 4—Federal ESA Wildlife Species

Table 3.11-11j. Acres of Suitable Canada Lynx Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	–	–
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	–	–
Alternative 4B	–	–
Alternative 4C	–	–
Alternative 4D	–	–
Alternative 4E	–	–
Alternative 4F	139	77

Acreages are rounded to the nearest acre.

Table 3.11-11k. Acres of Suitable Columbia Spotted Frog Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	54	4
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	53	4
Alternative 4B	34	2
Alternative 4C	30	2
Alternative 4D	34	2
Alternative 4E	30	2
Alternative 4F	35	2

Acreages are rounded to the nearest acre.

Table 3.11-11l. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	2,935	420
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	1,424	179
Alternative 4B	1,762	232
Alternative 4C	1,687	224
Alternative 4D	1,762	234
Alternative 4E	1,670	222
Alternative 4F	1,394	176

Acreages are rounded to the nearest acre.

Table 3.11-11m. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)			Operations Impacts (acres)		
	Core / Key	PPH	PGH	Core / Key	PPH	PGH
Preferred/Proposed – Total Length	792 / 284	157	127	101 / 33	18	15
Preferred/Proposed – Comparison Portion for Alternatives 4B,C,D,E,F	588 / 48	48	–	78 / 5	5	–
Alternative 4B	855 / 117	124	–	111 / 13	14	–
Alternative 4C	1024 / 104	110	–	131 / 12	14	–
Alternative 4D	880 / 118	124	–	117 / 13	14	–
Alternative 4E	1042 / 100	106	–	137 / 11	13	–
Alternative 4F	587 / 57	57	–	81 / 6	6	–

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats.

Table 3.11-11n. Acres of Habitat within the Grizzly Bear DPS Impacted during Construction and Operations of Segment 4

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred/Proposed – Total Length	2,594	356
Preferred/Proposed – Comparison Portion for Alts. 4B,C,D,E,F	1,443	181
Alternative 4B	386	50
Alternative 4C	571	66
Alternative 4D	388	51
Alternative 4E	573	67
Alternative 4F	1,494	190

Acreages are rounded to the nearest acre.

Caribou-Targhee National Forest Crossed by Segment 4

The Proposed Route along Segment 4 would cross the Caribou-Targhee NF (see Section 3.17 – Land Use and Recreation). Representatives from the Caribou-Targhee NF have indicated that the following Forest Service Region 4 sensitive species may occur along the portion of the Project that crosses through the Caribou-Targhee NF: gray wolf, Townsend's big-eared bat, wolverine, bald eagle, boreal owl, Columbian sharp-tailed grouse, flammulated owl, great gray owl, northern goshawk, sage-grouse, three-toed woodpecker, and Bonneville cutthroat trout (Caribou NF 2011). Of the TES species for which quantitative species-specific data are available, construction of Segment 4's Proposed Route through the Caribou-Targhee NF would impact about 29 acres of burrowing owl habitat, 149 acres of Columbian sharp-tailed grouse habitat, 39 acres of northern goshawk habitat, less than 1 acre of northern leopard frog habitat, 24 acres of pygmy rabbit habitat, and 44 acres of sage-grouse habitat on the Caribou-Targhee NF[17]; however, the Caribou-Targhee NF has indicated that the soil types in that portion of the Caribou-Targhee NF are not suitable for pygmy rabbit habitat, and that they are unaware of any burrowing owl habitat in that area either (Caribou NF 2011).

The roads analysis for the Caribou-Targhee NF travel plan categorizes roads regarding their level of risk to wildlife species (Forest Service 2005). Of the roads crossed or used by the Project on the Caribou-Targhee NF, Road 20401 has a low risk for goshawk, leopard frog, boreal toad, peregrine falcon, and overall wildlife. Roads 20404, 20425, 20438, 20463, 20466, and 21000 have a low risk for all categories assessed. Therefore, it is likely that the new roads, which would be revegetated and closed to the public following construction, would have a low risk to wildlife species as well.

There are two routes considered across the Caribou-Targhee NF (i.e., the Proposed Route discussed above, as well as Alternative 4G). The Forest Service soils assessment, which was completed in 2012, identified steep slopes and potentially unstable soils along a portion of the Proposed Route that crosses the Caribou-Targhee NF (i.e., in Sections 1 and 2, Township 12 South, Range 41 East). The Forest Service therefore identified an alternative route that avoids these areas (referred to as Alternative 4G). Alternative 4G is 2.6 miles long compared to 2.3 miles for the comparison portion of the Proposed Route (see Figure 2.4-3 in Chapter 2). The Forest Service's Preferred Route for the portion of Segment 4 within the Caribou Targhee NF is the Proposed Route with the inclusion of Alternative 4G. The Forest Service's Preferred Route for the ROW on the Caribou-Targhee NF would be 9.4 miles long and impact a total of 356 acres of land (28 acres more than the comparison portion of the Proposed Route). This increase in the acreage of disturbance associated with the Forest Service Preferred Route is mostly related to increases in the amount of disturbance to mixed forests and juniper woodlands. Table 3.6-9 in Section 3.6 lists the acres of impact (by Project component) that would occur along the portion of the Proposed Route that would be located on the Caribou-Targhee NF, Alternative 4G, as well as the portion of the Proposed Route that would be comparable to Alternative 4G.

[17] Species-specific modeling data may indicate impacts to habitats for species on the Caribou-Targhee NF that are not known to occur on the Caribou-Targhee NF, as these estimates and models take a conservative approach to predicting habitats and may include areas not known to contain these species.

Although Alternative 4G would avoid unstable soils, its route would result in additional impacts to goshawk territories on the Caribou-Targhee NF. As stated earlier, the Proposed Route would impact foraging areas associated with 6 known nests (see Table 3.11-8); however, Alternative 4G would impact foraging areas as well as nesting areas and post-fledging family areas associated with known goshawk nests. Construction of a new access road associated with Alternative 4G would impact 3 acres of coniferous forest, and 2 acres of grass/shrubland habitat within the nesting area of nest 309 (this would not met the standard in the Caribou Forest Plan, which requires that no clearing be conducted within goshawk nesting areas). As shown in Tables 3.11-11o and 3.11-11p, Alternative 4G would also impact post-fledging family area, and foraging area associated with known goshawk nests. The Project's crossing of these areas, as well as the vegetation type located along these crossings, is shown in the Caribou-Targhee NF Biological Evaluation (Forest Service 2013a).

Alternative 4G would also have a differential effect on the level of impact to sage-grouse habitats compared to the Proposed Route. The portion of the Proposed Route located on the Caribou-Targhee NF would impact about 44 acres of sage-grouse habitats (as discussed above), with 12 acres of impact occurring along the portion of the Proposed Route that would be comparable to Alternative 4G. Alternative 4G would impact about 9 acres of sage-grouse habitat, (i.e., Alternative 4G would reduce impacts to sage-grouse habitats by 3 acres).

Selection of Alternative 4G (over the Proposed Route) would not have a substantial differential effect to the remaining TES wildlife species with available quantitative information/data.

Table 3.11-11o. Acres of Habitat within Caribou-Targhee NF's Goshawk Foraging Areas Impacted by the Forest Service Preferred Route and Alternative 4G

Nest	Activity	Habitat Type (acres)			
		Conifer Forest	Deciduous Forest	Mixed Forest	Grass/ Shrubland
Impacts along Alternative 4G					
308	Last activity date unknown	21	<0.1	<0.1	<0.1
309	Last activity date unknown	40	9	<0.1	18
349	Found in 2010, but not active then	10	<0.1	<0.1	<0.1
TT_CNF_1	Last activity date unknown	40	5	<0.1	17
TT_CNF_2	Last activity date unknown	<0.1	–	–	–
	Grand Total[1/]	**40**	**9**	**<0.1**	**18**
Impacts along the Preferred Route for Segment 4 (which includes Alt. 4G)					
307	Active in 2011	3	–	2	17
308	Last activity date unknown	55	34	17	2
309	Last activity date unknown	52	17	8	20
349	Found in 2010, but not active then	41	16	16	2
TT_CNF_1	Last activity date unknown	52	6	10	19
TT_CNF_2	Last activity date unknown	55	34	16	6
	Grand Total[1/]	**98**	**47**	**19**	**41**

1/ Combined total when the overlap between the nest buffers is taken into consideration (see figures in Forest Service 2013a).

Table 3.11-11p. Acres of Habitat within Caribou-Targhee NF's Goshawk Post-Fledging Family Area Impacted by the Forest Service Preferred Route and Alternative 4G

Nest	Activity	Habitat Type			
		Conifer Forest	Deciduous Forest	Mixed Forest	Grass/ Shrubland
Impacts along the Preferred Route for Segment 4 and Alternative 4G					
308	Last activity date unknown	<0.1	<0.1	–	–
309	Last activity date unknown	11	2	–	4
TT_CNF_1	Last activity date unknown	7	2	–	1
	Grand Total[1/]	**11**	**2**	**–**	**4**

1/ Combined total when the overlap between the nest buffers is taken into consideration.

Segment 5

The preferred routes in Segment 5 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 5B and 5E[1/] (Figure A-7)	BLM and Power County
Proposed Route incorporating Alternatives 5C and 5E (Figure A-7)	Power County

1/ Assumes that Western Electricity Coordinating Council reliability issues associated with 5E are resolved.

Segment 5 would link the Populus and Borah Substations with a single-circuit 500-kV line that would be approximately 55.7 miles long. There are five Route Alternatives to portions of the Proposed Route in Segment 5. Alternatives 5A and 5B were proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternative 5C, which crosses the Fort Hall Indian Reservation, was proposed as the preferred route by Power County; however, the Fort Hall Business Council has voted not to permit the Project across the Reservation. Alternative 5D was originally the Proponents' Proposed Route. Alternative 5E was proposed by Power County as an alternative approach to the Borah Substation. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 5B and 5E (with the assumption that reliability issues associated with Alternative 5E can be resolved). The Segment 5 Preferred Route is 73.3 miles long, compared to 55.7 miles for the Proposed Route. Figure A-7 in Appendix A shows the location of the Segment 5.

The most common habitat type along Segment 5 is shrubland (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the bald eagle, burrowing owl, Columbian sharp-tailed grouse, sage-grouse, northern leopard frog, pygmy rabbit, and the yellow-billed cuckoo could potentially occur along Segment 5 (see Tables D.11-3 and D.11-4).

Tables 3.11-12a–h display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 5 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Unlike many of the other Project segments, there is no distinct trend regarding which Route Alternative along Segment 5 would result in either an increase or decrease in the acreage of impacts to TES habitat, with the exception of Alternative 5E (which would decrease impacts to all species that have available quantitative data). Alternatives 5A and 5B would result in an increase (over the comparison portion of the

Proposed Route) in impacts to all species with quantitative data that occur along this route alternative. Alternative 5C would increase impacts to burrowing owl, northern leopard frog, and pygmy rabbit, but would result in fewer impacts to Columbian sharp-tailed grouse and sage-grouse habitats. Alternative 5D would increase impacts to burrowing owl habitat, but would result in fewer impacts to bald eagle, Columbian sharp-tailed grouse, northern leopard frog, pygmy rabbit, and sage-grouse habitats.

Impacts to habitats within 1 mile of bald eagle nests would be almost entirely avoided along Segment 5 if Alternative 5E were selected. Selection of Alternative 5A, 5B, 5C, and 5D would result in impacts to TES habitats that would be otherwise avoided by the Proposed Route or Alternative 5E (e.g., agency designated sage-grouse habitats along 5A and 5B, and yellow-billed cuckoo habitats along these four alternatives).

The BLM has identified a Preferred Route along Segment 5 that includes portions of the Proposed Route incorporating Alternatives 5B and 5E (with the assumption that reliability issues associated with 5E can be resolved). The BLM Preferred Route along this Segment would result in an increased level of impact (compared to the Proposed Route) to burrowing owl, Columbia sharp-tailed grouse, northern leopard frog, pygmy rabbit, sage-grouse, and yellow-billed cuckoo habitat, but a decrease in the level of impact to bald eagle habitat.

Tables 3.11-12a–e. Alternative Comparison Tables for Segment 5—BLM Special Status and Forest Service Sensitive Species

Table 3.11-11a. Acres of Suitable Bald Eagle Habitat (1-mile Buffer Around Nests) Impacted during Construction and Operations of Segment 5

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	2	<1
Proposed – Total Length	31	1
Proposed – Comparison Portion for Alternatives 5A,B	–	–
Alternative 5A	–	–
Alternative 5B	–	–
Proposed – Comparison Portion for Alternative 5C	–	–
Alternative 5C	–	–
Proposed – Comparison Portion for Alternative 5D	31	1
Alternative 5D	25	3
Proposed – Comparison Portion for Alternative 5E	31	1
Alternative 5E	2	<1

Acreages are rounded to the nearest acre.

Table 3.11-12b. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 5

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	782	103
Proposed – Total Length	521	82
Proposed – Comparison Portion for Alternatives 5A,B	194	21
Alternative 5A	309	30
Alternative 5B	486	44
Proposed – Comparison Portion for Alternative 5C	272	27
Alternative 5C	316	32
Proposed – Comparison Portion for Alternative 5D	177	26
Alternative 5D	211	34
Proposed – Comparison Portion for Alternative 5E	92	18
Alternative 5E	61	16

Acreages are rounded to the nearest acre.

Table 3.11-12c. Acres of Suitable Columbian Sharp-Tailed Grouse Habitat Impacted during Construction and Operation of Segment 5

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	1,422	187
Proposed – Total Length	1,075	156
Proposed – Comparison Portion for Alternatives 5A,B	455	57
Alternative 5A	634	77
Alternative 5B	830	89
Proposed – Comparison Portion for Alternative 5C	719	91
Alternative 5C	504	54
Proposed – Comparison Portion for Alternative 5D	415	56
Alternative 5D	367	46
Proposed – Comparison Portion for Alternative 5E	112	18
Alternative 5E	84	17

Acreages are rounded to the nearest acre.

Table 3.11-12d. Acres of Suitable Northern Leopard Frog Habitat Impacted during Construction and Operations of Segment 5

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	8	2
Proposed – Total Length	8	2
Proposed – Comparison Portion for Alternatives 5A,B	<1	t
Alternative 5A	1	<1
Alternative 5B	1	<1
Proposed – Comparison Portion for Alternative 5C	3	1
Alternative 5C	6	<1
Proposed – Comparison Portion for Alternative 5D	6	2
Alternative 5D	4	2
Proposed – Comparison Portion for Alternative 5E	3	1
Alternative 5E	2	1

1/ "t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-12e. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 5		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	512	87
Proposed – Total Length	396	76
Proposed – Comparison Portion for Alternatives 5A,B	122	15
Alternative 5A	186	20
Alternative 5B	254	26
Proposed – Comparison Portion for Alternative 5C	187	22
Alternative 5C	244	26
Proposed – Comparison Portion for Alternative 5D	144	25
Alternative 5D	128	26
Proposed – Comparison Portion for Alternative 5E	67	16
Alternative 5E	51	16

Acreages are rounded to the nearest acre.

Tables 3.11-12f–h. Alternative Comparison Tables for Segment 5—Federal ESA Wildlife Species

Table 3.11-12f. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 5		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	674	117
Proposed – Total Length	549	99
Proposed – Comparison Portion for Alternatives 5A,B	206	26
Alternative 5A	318	38
Alternative 5B	346	44
Proposed – Comparison Portion for Alternative 5C	335	41
Alternative 5C	270	29
Proposed – Comparison Portion for Alternative 5D	217	35
Alternative 5D	114	24
Proposed – Comparison Portion for Alternative 5E	58	17
Alternative 5E	43	17

Acreages are rounded to the nearest acre.

Table 3.11-12g. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 5						
	Construction Impacts (acres)			**Operations Impacts (acres)**		
Alternatives	**Key**	**PPH**	**PGH**	**Key**	**PPH**	**PGH**
Preferred Route – Total Length	166	42	200	23	4	29
Proposed – Total Length	–	–	–	–	–	–
Proposed – Comparison Portion for Alternatives 5A,B	–	–	–	–	–	–
Alternative 5A	46	2	42	7	1	6
Alternative 5B	166	42	200	23	4	29
Proposed – Comparison Portion for Alternative 5C	–	–	–	–	–	–
Alternative 5C	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 5D	–	–	–	–	–	–
Alternative 5D	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 5E	–	–	–	–	–	–
Alternative 5E	–	–	–	–	–	–

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats

Table 3.11-12h. Acres of Suitable Yellow-Billed Cuckoo Habitat Impacted during Construction and Operations of Segment 5		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	<1	<1
Proposed – Total Length	–	–
Proposed – Comparison Portion for Alternatives 5A,B	–	–
Alternative 5A	<1	<1
Alternative 5B	<1	<1
Proposed – Comparison Portion for Alternative 5C	–	–
Alternative 5C	1	1
Proposed – Comparison Portion for Alternative 5D	–	–
Alternative 5D	2	1
Proposed – Comparison Portion for Alternative 5E	–	–
Alternative 5E	–	–

Acreages are rounded to the nearest acre.

Segment 6

The BLM's Preferred Route in Segment 6 is as follows:

Preferred Route	Agency
The proposal to upgrade the line voltage from 345-kV to 500-kV (Figure A-8)	BLM

Segment 6 is an existing transmission line linking the Borah and Midpoint Substations; it is now operated at 345 kV but would be changed to operate at 500 kV. This segment has no Route Alternatives. Existing support structures would be used and impacts would be limited to within approximately 0.25 mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Changes at the Borah and Midpoint Substations would allow Segment 6 to be operated at 500 kV. Figure A-8 in Appendix A shows the Preferred/Proposed Route for Segment 6.

Ground-disturbing activities along this segment would be limited to the immediate vicinity of the Borah and Midpoint Substations. Although these areas have already been disturbed by the past construction and operation of these substations, some wildlife may utilize adjacent habitats, and as such, modifications made to these substations could temporarily disturb adjacent wildlife. Of the TES species where quantitative species-specific data are available, habitat for the burrowing owl, Columbian sharp-tailed grouse, sage-grouse, northern leopard frog, and pygmy rabbit could occur along Segment 6 (see Tables D.11-3 and D.11-4).

Modifications made to the substations along Segment 6 would impact approximately 43 acres of burrowing owl habitat, 17 acres of Columbian sharp-tailed grouse habitat, 42 acres of sage-grouse habitat, 9 acres of northern leopard frog habitat, and 43 acres of pygmy rabbit habitat (Tables D.11-5 through D.11-8 in Appendix D).

Segment 7

The preferred routes in Segment 7 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be microsited to avoid Preliminary Priority Sage-grouse Habitat (PPH).	BLM
Alternative 7K (Figure A-9)	Power and Cassia Counties

Segment 7 would link the Populus Substation and the proposed Cedar Hill Substation with a single-circuit 500-kV line that would be approximately 118.2 miles long. Several alternatives to the Proposed Route are being considered. Route Alternatives 7A and 7B have been proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternatives 7C, 7D, 7E, 7F, and 7G were proposed by local landowners to avoid private agricultural lands. Alternative 7K (also called the Goose Creek Alternative) was identified during the public comment period as a shorter alternative to the Proposed Route than either 7I or 7J (refer to Chapter 2 of the Draft EIS for a description of these routes). The alignment for Alternative 7K was developed in cooperation with Cassia County. Alternatives 7H, 7I, and 7J, which were analyzed in the Draft EIS, are no longer under consideration. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 7B, 7C, 7D, and 7G. The Segment 7 Preferred Route is 130.2 miles long, compared to 118.2 miles for the Proposed Route. Figure A-9 in Appendix A shows the location of the Segment 7 routes.

The most common habitat type along Segment 7 is agriculture (see Section 3.6 – Vegetation Communities). Of the TES species for which quantitative species-specific data are available, the burrowing owl, Columbian sharp-tailed grouse, sage-grouse, northern leopard frog, pygmy rabbit, and the yellow-billed cuckoo could occur along Segment 7 (see Tables D.11-3 and D.11-4).

Tables 3.11-13a–h display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 7 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Alternatives 7A, 7B, 7E, 7G, and 7K would increase impacts to habitat (over the comparison portion of the Proposed Route) for all species assessed that occur along these routes; except for the northern leopard frog (where Alternative 7B would result in similar impacts to the Proposed Route), the sage-grouse (where Alternative 7G would reduce impacts to potential habitat and PPH, but would increase impacts to Key and PGH), and the yellow-billed cuckoo (where Alternative 7B would entirely avoid the impacts that would occur along the comparison portion of the Proposed Route). Alternative 7C would increase impacts to burrowing owl, Columbian sharp-tailed grouse, and pygmy rabbit habitats, but would result in fewer impacts to northern leopard frog and sage-grouse habitats. Alternative 7D would increase impacts to burrowing owl, Columbian sharp-tailed grouse, pygmy rabbit, and sage-grouse Key and PGH habitats, but would result in fewer impacts to potential sage-grouse habitats as well as PPH; with similar impacts occurring to northern leopard frog and yellow-billed cuckoo habitat compared to the comparison portion of the Proposed Route. Alternative 7F would increase impacts to sage-grouse potential habitats and PPH, but would result in fewer

impacts to pygmy rabbit, as well as sage-grouse Key Areas and PGH, with similar impacts occurring to burrowing owl and northern leopard frog habitats.

The BLM Preferred Route along this Segment would result in an increased level of impact (compared to the Proposed Route) to burrowing owl, Columbia sharp-tailed grouse, northern leopard frog, pygmy rabbit, and sage-grouse habitat.

Some of the alternatives would substantially increase impacts over the comparison portion of the Proposed Route, while others would entirely avoid impacts to certain TES species. Alternative 7K would substantially increase the expected impacts to all TES species with quantitative data along this route; this alternative would also impact habitats for the northern goshawk and the yellow-billed cuckoo that would be otherwise avoided by the comparison portion of the Proposed Route and other Route Alternatives. Alternatives 7A and 7B would result in substantial impacts to sage-grouse Key Areas, PPH, and PGH that would otherwise be avoided by the comparison portion of the Proposed Route. Alternative 7C would avoid the impacts to northern leopard frog habitat that would otherwise occur along the comparison portion of the Proposed Route.

Tables 3.11-13a–e. Alternative Comparison Tables for Segment 7—BLM Special Status and Forest Service Sensitive Species

Table 3.11-13a. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	1,509	157
Proposed – Total Length	1,184	139
Proposed – Comparison Portion for Alternatives 7A,B	285	25
Alternative 7A	386	37
Alternative 7B	537	46
Proposed – Comparison Portion for Alternative 7C	276	29
Alternative 7C	313	24
Proposed – Comparison Portion for Alternative 7D	77	8
Alternative 7D	96	10
Proposed – Comparison Portion for Alternative 7E	28	2
Alternative 7E	33	3
Proposed – Comparison Portion for Alternative 7F	106	11
Alternative 7F	105	11
Proposed – Comparison Portion for Alternative 7G	37	3
Alternative 7G	54	3
Proposed – Comparison Portion for Alternative 7K	1,183	139
Alternative 7K	1,544	188

Acreages are rounded to the nearest acre.

Table 3.11-13b. Acres of Suitable Columbian Sharp-Tailed Grouse Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	1,702	191
Proposed – Total Length	1,349	168
Proposed – Comparison Portion for Alternatives 7A,B	639	68
Alternative 7A	756	89
Alternative 7B	909	94
Proposed – Comparison Portion for Alternative 7C	285	30
Alternative 7C	333	26
Proposed – Comparison Portion for Alternative 7D	28	1
Alternative 7D	47	3
Proposed – Comparison Portion for Alternative 7E	–	–
Alternative 7E	–	–
Proposed – Comparison Portion for Alternative 7F	–	–
Alternative 7F	–	–
Proposed – Comparison Portion for Alternative 7G	51	4
Alternative 7G	67	3
Proposed – Comparison Portion for Alternative 7K	1,348	167
Alternative 7K	1,878	244

Acreages are rounded to the nearest acre.

Table 3.11-13c. Acres of Suitable Northern Goshawk Habitat (1-mile Buffer Around Nests) Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	–	–
Proposed – Total Length	–	–
Proposed – Comparison Portion for Alternatives 7A,B	–	–
Alternative 7A	–	–
Alternative 7B	–	–
Proposed – Comparison Portion for Alternative 7C	–	–
Alternative 7C	–	–
Proposed – Comparison Portion for Alternative 7D	–	–
Alternative 7D	–	–
Proposed – Comparison Portion for Alternative 7E	–	–
Alternative 7E	–	–
Proposed – Comparison Portion for Alternative 7F	–	–
Alternative 7F	–	–
Proposed – Comparison Portion for Alternative 7G	–	–
Alternative 7G	–	–
Proposed – Comparison Portion for Alternative 7K	–	–
Alternative 7K	68	61

Acreages are rounded to the nearest acre.

Table 3.11-13d. Acres of Suitable Northern Leopard Frog Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	7	<1
Proposed – Total Length	6	<1
Proposed – Comparison Portion for Alternatives 7A,B	1	<1
Alternative 7A	9	1
Alternative 7B	1	<1
Proposed – Comparison Portion for Alternative 7C	<1	t
Alternative 7C	–	–
Proposed – Comparison Portion for Alternative 7D	4	t
Alternative 7D	4	t
Proposed – Comparison Portion for Alternative 7E	–	–
Alternative 7E	–	–
Proposed – Comparison Portion for Alternative 7F	<1	t
Alternative 7F	<1	t
Proposed – Comparison Portion for Alternative 7G	t	t
Alternative 7G	1	t
Proposed – Comparison Portion for Alternative 7K	6	<1
Alternative 7K	18	3

"t" indicates values <0.1.
Acreages are otherwise rounded to the nearest acre.

Table 3.11-13e. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	976	109
Proposed – Total Length	781	100
Proposed – Comparison Portion for Alternatives 7A,B	196	17
Alternative 7A	268	26
Alternative 7B	296	27
Proposed – Comparison Portion for Alternative 7C	187	22
Alternative 7C	248	19
Proposed – Comparison Portion for Alternative 7D	66	7
Alternative 7D	86	9
Proposed – Comparison Portion for Alternative 7E	28	2
Alternative 7E	32	3
Proposed – Comparison Portion for Alternative 7F	81	7
Alternative 7F	76	8
Proposed – Comparison Portion for Alternative 7G	37	3
Alternative 7G	51	3
Proposed – Comparison Portion for Alternative 7K	780	100
Alternative 7K	1,376	179

Acreages are rounded to the nearest acre.

Tables 3.11-13f–h. Alternative Comparison Tables for Segment 7—Federal ESA Wildlife Species

Table 3.11-13f. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	909	124
Proposed – Total Length	766	112
Proposed – Comparison Portion for Alternatives 7A,B	223	29
Alternative 7A	333	43
Alternative 7B	417	50
Proposed – Comparison Portion for Alternative 7C	124	14
Alternative 7C	93	8
Proposed – Comparison Portion for Alternative 7D	51	5
Alternative 7D	49	5
Proposed – Comparison Portion for Alternative 7E	50	4
Alternative 7E	62	7
Proposed – Comparison Portion for Alternative 7F	123	13
Alternative 7F	151	15
Proposed – Comparison Portion for Alternative 7G	36	3
Alternative 7G	18	<1
Proposed – Comparison Portion for Alternative 7K	764	112
Alternative 7K	1844	259

Acreages are rounded to the nearest acre.

Table 3.11-13g. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 7

Alternatives	Construction Impacts (acres)			Operations Impacts (acres)		
	Key	PPH	PGH	Key	PPH	PGH
Preferred Route – Total Length	372	149	680	48	17	76
Proposed – Total Length	219	145	463	27	14	56
Proposed – Comparison Portion for Alternatives 7A,B	–	–	–	–	–	–
Alternative 7A	70	16	53	10	2	8
Alternative 7B	127	38	174	20	6	26
Proposed – Comparison Portion for Alternative 7C	2	–	222	<1	–	25
Alternative 7C	t	–	211	–	–	16
Proposed – Comparison Portion for Alternative 7D	27	40	61	4	5	4
Alternative 7D	34	19	80	5	3	6
Proposed – Comparison Portion for Alternative 7E	50	11	46	4	–	4
Alternative 7E	70	68	16	7	7	1
Proposed – Comparison Portion for Alternative 7F	97	53	65	9	4	8
Alternative 7F	63	105	9	7	10	1
Proposed – Comparison Portion for Alternative 7G	61	14	47	5	1	4
Alternative 7G	82	1	82	5	–	5
Proposed – Comparison Portion for Alternative 7K	218	144	462	27	14	56
Alternative 7K	946	1386	826	131	175	112

"t" indicates values <0.1. Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats.

Table 3.11-13h. Acres of Suitable Yellow-Billed Cuckoo Habitat Impacted during Construction and Operations of Segment 7		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	<1	t[1/]
Proposed – Total Length	<1	t[1/]
Proposed – Comparison Portion for Alternatives 7A,B	t[1/]	t[1/]
Alternative 7A	<1	<1
Alternative 7B	–	–
Proposed – Comparison Portion for Alternative 7C	–	–
Alternative 7C	–	–
Proposed – Comparison Portion for Alternative 7D	<1	t[1/]
Alternative 7D	<1	t[1/]
Proposed – Comparison Portion for Alternative 7E	–	–
Alternative 7E	–	–
Proposed – Comparison Portion for Alternative 7F	–	–
Alternative 7F	–	–
Proposed – Comparison Portion for Alternative 7G	–	–
Alternative 7G	–	–
Proposed – Comparison Portion for Alternative 7K	–	t[1/]
Alternative 7K	<1	t[1/]

1/ "t" indicates values <0.1.
Acreages are otherwise rounded to the nearest acre.

Sawtooth National Forest Crossed by Alternative 7K

Alternative 7K would cross the Sawtooth NF (see Section 3.17 – Land Use). Representatives from the Sawtooth NF have indicated that the following Forest Service Region 4 sensitive species may occur along the portion of the Project that crosses through the Sawtooth NF (although habitat for these species may not have been identified along the route): bald eagle, boreal owl, bighorn sheep, Columbian sharp-tailed grouse, great gray owl, pygmy rabbit, sage-grouse, spotted bat, Townsend's big-eared bat, bald eagle, boreal owl, great gray owl, northern goshawk, yellow-billed cuckoo, Yellowstone cutthroat trout, and northern leatherside chub (Sawtooth NF 2011). Of the TES species for which quantitative species-specific data are available, construction of Alternative 7K would impact about 19 acres of burrowing owl habitat, 236 acres of Columbian sharp-tailed grouse habitat, 141 acres of sage-grouse habitat, 51 acres of pygmy rabbit habitat, 2 acres of northern leopard frog habitat, and less than 1 acre of yellow-billed cuckoo habitat on the Sawtooth NF.[18]

Segment 8

The preferred route in Segment 8 is as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 8B (Figure A-10)	BLM and IDANG

Segment 8 would link the Midpoint and Hemingway Substations. This 131.5-mile single-circuit 500-kV transmission line would stay north of the Snake River generally parallel to

[18] Species specific modeling data may indicate impacts to habitats for species on the Sawtooth NF that are not known to occur on the Sawtooth NF, as these estimates and models take a conservative approach to predicting habitats and may include areas not know to contain these species.

an existing 500-kV transmission line, before ending at the Hemingway Substation. There are five Route Alternatives to the Proposed Route. Alternative 8A follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area). Alternatives 8B and 8C were originally proposed by the Proponents as parts of the Proposed Route but were later dropped from the Proposed Route to avoid planned developments near the cities of Kuna and Mayfield, respectively. Alternative 8D would rebuild a portion of an existing 500-kV transmission line to move it away from the National Guard Maneuver Area. Alternative 8D would be constructed within the ROW currently occupied by the existing line. Alternative 8E was proposed by the BLM in order to avoid crossing the Halverson Bar non-motorized portion of a National Register Historic District (see the discussion of 8E under Segment 9). The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 8B and generally avoids the SRBOP. The Segment 8 Preferred Route is 132.0 miles long, compared to 131.5 miles for the Proposed Route. Figure A-10 in Appendix A shows the location of the Segment 8 routes.

The most common habitat type along Segment 8 is disturbed grasslands and shrublands (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the bald eagle, burrowing owl, Columbia spotted frog, sage-grouse, northern leopard frog, pygmy rabbit, and the yellow-billed cuckoo could occur along Segment 8 (see Tables D.11-3 and D.11-4).

Tables 3.11-14a–g display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 8 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Alternative 8A would result in an increase in impacts to burrowing owl habitats, but fewer impacts to northern leopard frog, sage-grouse, and pygmy rabbit habitats; with similar impacts occurring to yellow-billed cuckoo habitat compared to the comparison portion of the Proposed Route. Alternative 8B would result in increased impacts to northern leopard frog, and Columbia spotted frog habitat, but fewer impacts to burrowing owl, pygmy rabbit, and sage-grouse habitat, with similar impacts occurring to yellow-billed cuckoo habitat. Alternative 8C would result in fewer impacts to burrowing owl, northern leopard frog, pygmy rabbit, and sage-grouse habitat. Alternative 8D would result in increased impacts to burrowing owl and pygmy rabbit habitat, but decreased impacts to sage-grouse habitats, with similar impacts occurring to northern leopard frog habitat. Alternative 8E would result in an increase in impacts for all species assessed that occur along this route.

The Preferred Route along this Segment would result in an increased level of impact (compared to the Proposed Route) to northern leopard frog and Columbia spotted frog habitat, while it would reduce impacts to burrowing owl, pygmy rabbit, and sage-grouse habitats.

Some of the alternatives would substantially increase impacts over the comparison portion of the Proposed Route, while others would entirely avoid impacts to certain TES species. Alternative 8E would substantially increase the expected impacts to all TES species with quantitative data along this route; this alternative would also impact habitats for the northern leopard frog and Columbia spotted frog that would be

otherwise avoided by the comparison portion of the Proposed Route. Alternative 8B would substantially increase the expected impacts to northern leopard frog habitat compared to the comparison portion of the Proposed Route. Alternative 8A would avoid impact to Key and PPH habitats that would otherwise occur along the comparison portion of the Proposed Route.

Tables 3.11-14a–c. Alternative Comparison Tables for Segment 8—BLM Special Status and Forest Service Sensitive Species

Table 3.11-14a. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 8

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	1,908	192
Proposed – Total Length	2,113	215
Proposed – Comparison Portion for Alternative 8A	684	80
Alternative 8A	694	80
Proposed – Comparison Portion for Alternative 8B	798	77
Alternative 8B	593	54
Proposed – Comparison Portion for Alternative 8C	159	15
Alternative 8C	122	15
Proposed – Comparison Portion for Alternative 8D	141	13
Alternative 8D	148	12
Proposed – Comparison Portion for Alternative 8E	99	8
Alternative 8E	311	24

Acreages are rounded to the nearest acre.

Table 3.11-14b. Acres of Suitable Northern Leopard Frog Habitat Impacted during Construction and Operation of Segment 8

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	20	1
Proposed – Total Length	11	1
Proposed – Comparison Portion for Alternative 8A	4	<1
Alternative 8A	2	<1
Proposed – Comparison Portion for Alternative 8B	1	<1
Alternative 8B	10	<1
Proposed – Comparison Portion for Alternative 8C	<1	t
Alternative 8C	t	t
Proposed – Comparison Portion for Alternative 8D	t	t
Alternative 8D	t	t
Proposed – Comparison Portion for Alternative 8E	–	–
Alternative 8E	<1	–

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-14c. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 8		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	1,869	190
Proposed – Total Length	2,078	212
Proposed – Comparison Portion for Alternative 8A	674	79
Alternative 8A	595	71
Proposed – Comparison Portion for Alternative 8B	776	75
Alternative 8B	567	53
Proposed – Comparison Portion for Alternative 8C	159	15
Alternative 8C	122	15
Proposed – Comparison Portion for Alternative 8D	141	13
Alternative 8D	148	12
Proposed – Comparison Portion for Alternative 8E	99	8
Alternative 8E	311	24

Acreages are rounded to the nearest acre.

Tables 3.11-14d–g. Alternative Comparison Tables for Segment 8—Federal ESA Wildlife Species

Table 3.11-14d. Acres of Suitable Columbia Spotted Frog Habitat Impacted during Construction and Operations of Segment 8		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	7	<1
Proposed – Total Length	<1	t
Proposed – Comparison Portion for Alternative 8A	–	–
Alternative 8A	–	–
Proposed – Comparison Portion for Alternative 8B	<1	t
Alternative 8B	7	<1
Proposed – Comparison Portion for Alternative 8C	–	–
Alternative 8C	–	–
Proposed – Comparison Portion for Alternative 8D	–	–
Alternative 8D	–	–
Proposed – Comparison Portion for Alternative 8E	–	–
Alternative 8E	<1	–

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-14e. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 8		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	1,304	141
Proposed – Total Length	1,397	150
Proposed – Comparison Portion for Alternative 8A	562	71
Alternative 8A	475	60
Proposed – Comparison Portion for Alternative 8B	443	43
Alternative 8B	350	34
Proposed – Comparison Portion for Alternative 8C	75	9
Alternative 8C	67	8
Proposed – Comparison Portion for Alternative 8D	55	5
Alternative 8D	52	4
Proposed – Comparison Portion for Alternative 8E	43	4
Alternative 8E	201	14

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-14f. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 8

Alternatives	Construction Impacts (acres)			Operations Impacts (acres)		
	Key	PPH	PGH	Key	PPH	PGH
Preferred Route – Total Length	251	127	408	29	12	43
Proposed – Total Length	251	127	408	29	12	43
Proposed – Comparison Portion for Alternative 8A	114	127	246	16	12	29
Alternative 8A	–	–	238	–	–	28
Proposed – Comparison Portion for Alternative 8B	–	–	–	–	–	–
Alternative 8B	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 8C	–	–	–	–	–	–
Alternative 8C	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 8D	–	–	–	–	–	–
Alternative 8D	–	–	–	–	–	–
Proposed – Comparison Portion for Alternative 8E	–	–	–	–	–	–
Alternative 8E	–	–	–	–	–	–

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats

Table 3.11-14g. Acres of Suitable Yellow-Billed Cuckoo Habitat Impacted during Construction and Operations of Segment 8

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	<1	<1
Proposed – Total Length	<1	t
Proposed – Comparison Portion for Alternative 8A	t	t
Alternative 8A	t	t
Proposed – Comparison Portion for Alternative 8B	<1	–
Alternative 8B	<1	<1
Proposed – Comparison Portion for Alternative 8C	t	–
Alternative 8C	–	–
Proposed – Comparison Portion for Alternative 8D	–	–
Alternative 8D	–	–
Proposed – Comparison Portion for Alternative 8E	–	–
Alternative 8E	–	–

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Segment 9

The preferred routes in Segment 9 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 9E,which was revised to avoid PPH and Murphy (Figure A-11)	BLM
Alternative 9D (Figure A-11)	Owyhee County

Segment 9 would link the Cedar Hill and Hemingway Substations with a 162.2-mile single-circuit 500-kV transmission line which skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering the Hemingway Substation. There are eight Route Alternatives proposed. Alternative 9A was the Proponents' Proposed Route until that route was revised to avoid the Hollister area. Alternative 9B is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors. Alternative 9C was the Proponents'

Proposed Route until that route was revised to avoid the Castleford area. Alternatives 9D through 9G were proposed by the Owyhee County Task Force in order to reduce impacts to private land. Alternatives 9F and 9H were proposed to avoid crossing the non-motorized area south of C.J. Strike Reservoir and as an alternate route if Alternative 8E is selected. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 9E. Figure A-11 in Appendix A shows the location of the Segment 9 routes. A portion of Alternative 9D/F uses the same path as Alternative 8E in Segment 8; therefore, 8E and 9D/F could not both be selected. Alternative 9E has been revised to avoid sage-grouse PPH and to incorporate a recommended route change submitted by Owyhee County that avoids a planned subdivision near Murphy. The Segment 9 Preferred Route is 171.4 miles long, compared to 162.2 miles for the Proposed Route.

The most common habitat type along Segment 9 is disturbed or developed lands (see Section 3.6 – Vegetation Communities). Of the TES species where quantitative species-specific data are available, the bald eagle, burrowing owl, Columbian sharp-tailed grouse, Columbia spotted frog, sage-grouse, northern leopard frog, pygmy rabbit , and the yellow-billed cuckoo could potentially occur along Segment 9 (see Tables D.11-3 and D.11-4).

Tables 3.11-15a–h display a comparison of the impacts to habitat for the species in which the various Route Alternatives in Segment 9 would have a differential effect and where quantitative data were available (also see Tables D.11-5 through D.11-8 in Appendix D). Alternative 9A would result in increased impacts to burrowing owl, pygmy rabbit, and sage-grouse habitats, but fewer impacts to yellow-billed cuckoo habitat; with similar impacts occurring to northern leopard frog habitat compared to the comparison portion of the Proposed Route. Alternative 9B would result in increased impacts to northern leopard frog habitat, but fewer impacts to burrowing owl, pygmy rabbit, Columbia spotted frog, and sage-grouse habitats. Alternative 9C would result in fewer impacts to burrowing owl, northern leopard frog, pygmy rabbit, and sage-grouse habitats. Alternative 9E (revised) would result in increased impacts to burrowing owl, pygmy rabbit, and sage-grouse habitats (including agency designated sage-grouse habitats),[19] but fewer impacts to northern leopard frog and Columbia spotted frog habitats.

Alternatives 9D, 9F, 9G, and 9H are all compared to the same comparison portion of the Proposed Route; each of these alternatives would result in increased impacts to burrowing owl and pygmy rabbit habitats, while they would result in fewer impacts to Columbia spotted frog habitats. Impacts to northern leopard frog habitat would be increased under Alternatives 9F and 9H, but reduced under Alternative 9D. Impacts to sage-grouse habitats would be reduced under Alternatives 9D, 9F, 9G, and 9H. Impacts to yellow-billed cuckoo habitat would be increased under Alternatives 9G and 9H.

[19] The revised version of Alternative 9E (i.e., what is assessed in the Final EIS) was modified from the version compared in the Draft EIS in order to minimize impacts to agency designated sage-grouse habitats (i.e., the original version of Alternative 9E impacted more PPH than the current version). Alternative 9E was proposed in part to avoid impacts to the SRBOP that would occur along the Proposed Route (see Chapter 2).

Construction of the Proposed Route would impact about 34 acres of Columbian sharp-tailed grouse habitat. These impacts would occur along portions of the route where Route Alternatives have not been proposed. Furthermore, the Route Alternatives would not impact additional habitat for this species. Therefore, selection of any of the current Route Alternatives along Segment 9 would not have an effect on the amount of habitat that would be impacted for this species.

The Preferred Route along this Segment would result in an increased level of impact (compared to the Proposed Route) to burrowing owl, pygmy rabbit, and sage-grouse habitat, while it would reduce impacts to northern leopard frog and Columbia spotted frog habitat.

Some of the alternatives would substantially affect the acreage of impacts compared to the comparison portion of the Proposed Route, while others would entirely avoid impacts to certain TES species. Alternative 9A would avoid the impacts to yellow-billed cuckoo habitat that would otherwise occur along the comparison portion of the Proposed Route. Alternative 9B would avoid the impacts to sage-grouse Key and PPH that would otherwise occur along the comparison portion of the Proposed Route, and substantially reduce the acres of impact to PGH. Alternatives 9G and 9H would result in less than 0.1 acre of impact to yellow-billed cuckoo habitat, which would otherwise be avoided by the comparison portion of the Proposed Route.

Tables 3.11-15a–d. Alternative Comparison Tables for Segment 9—BLM Special Status and Forest Service Sensitive Species

Table 3.11-15a. Acres of Suitable Burrowing Owl Habitat Impacted during Construction and Operations of Segment 9

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	2,853	322
Proposed – Total Length	2,593	291
Proposed – Comparison Portion for Alternative 9A	128	13
Alternative 9A	137	13
Proposed – Comparison Portion for Alternative 9B	937	115
Alternative 9B	726	68
Proposed – Comparison Portion for Alternative 9C	274	23
Alternative 9C	221	20
Proposed – Comparison Portion for Alts. 9D,F,G,H	783	76
Alternative 9D	932	73
Alternative 9F	939	75
Alternative 9G	939	77
Alternative 9H	942	79
Proposed – Comparison Portion for Alt. 9E (revised)	851	83
Alternative 9E (revised)	1,111	114

Acreages are rounded to the nearest acre.

Table 3.11-15b. Acres of Suitable Columbian Sharp-Tailed Grouse Habitat Impacted during Construction and Operations of Segment 9

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	34	3
Proposed – Total Length	34	3
Proposed – Comparison Portion for Alternative 9A	–	–
Alternative 9A	–	–
Proposed – Comparison Portion for Alternative 9B	–	–
Alternative 9B	–	–
Proposed – Comparison Portion for Alternative 9C	–	–
Alternative 9C	–	–
Proposed – Comparison Portion for Alts. 9D,F,G,H	–	–
Alternative 9D	–	–
Alternative 9F	–	–
Alternative 9G	–	–
Alternative 9H	–	–
Proposed – Comparison Portion for Alt. 9E (revised)	–	–
Alternative 9E (revised)	–	–

Acreages are rounded to the nearest acre.

Table 3.11-15c. Acres of Suitable Northern Leopard Frog Impacted during Construction and Operations of Segment 9

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	5	<1
Proposed – Total Length	8	1
Proposed – Comparison Portion for Alternative 9A	1	t
Alternative 9A	1	<1
Proposed – Comparison Portion for Alternative 9B	<1	t
Alternative 9B	4	<1
Proposed – Comparison Portion for Alternative 9C	<1	t
Alternative 9C	t	t
Proposed – Comparison Portion for Alts. 9D,F,G,H	6	1
Alternative 9D	3	t
Alternative 9F	11	1
Alternative 9G	6	<1
Alternative 9H	11	1
Proposed – Comparison Portion for Alt. 9E (revised)	6	1
Alternative 9E (revised)	3	<1

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-15d. Acres of Suitable Pygmy Rabbit Habitat Impacted during Construction and Operations of Segment 9		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	2,618	294
Proposed – Total Length	2,225	252
Proposed – Comparison Portion for Alternative 9A	128	13
Alternative 9A	137	13
Proposed – Comparison Portion for Alternative 9B	900	111
Alternative 9B	689	66
Proposed – Comparison Portion for Alternative 9C	236	19
Alternative 9C	202	19
Proposed – Comparison Portion for Alts. 9D,F,G,H	501	46
Alternative 9D	917	72
Alternative 9F	881	70
Alternative 9G	900	74
Alternative 9H	860	71
Proposed – Comparison Portion for Alt. 9E (revised)	568	53
Alternative 9E (revised)	961	95

Acreages are rounded to the nearest acre.

Tables 3.11-15e–h. Alternative Comparison Tables for Segment 9—Federal ESA Wildlife Species

Table 3.11-15e. Acres of Suitable Columbia Spotted Frog Habitat Impacted during Construction and Operations of Segment 9		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	4	<1
Proposed – Total Length	7	t
Proposed – Comparison Portion for Alternative 9A	–	–
Alternative 9A	–	–
Proposed – Comparison Portion for Alternative 9B	t	–
Alternative 9B	–	–
Proposed – Comparison Portion for Alternative 9C	–	–
Alternative 9C	–	–
Proposed – Comparison Portion for Alternatives 9D,F,G,H	6	t
Alternative 9D	<1	–
Alternative 9F	5	1
Alternative 9G	1	<1
Alternative 9H	6	1
Proposed – Comparison Portion for Alt. 9E (revised)	6	t
Alternative 9E (revised)	3	<1

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Table 3.11-15f. Acres of Suitable Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 9

Alternatives	Construction Impacts (acres)	Operations Impacts (acres)
Preferred Route – Total Length	2,235	239
Proposed – Total Length	1,925	210
Proposed – Comparison Portion for Alternative 9A	78	6
Alternative 9A	103	9
Proposed – Comparison Portion for Alternative 9B	727	84
Alternative 9B	425	38
Proposed – Comparison Portion for Alternative 9C	257	24
Alternative 9C	165	13
Proposed – Comparison Portion for Alternatives 9D,F,G,H	550	54
Alternative 9D	522	39
Alternative 9F	531	43
Alternative 9G	523	41
Alternative 9H	525	45
Proposed – Comparison Portion for Alt. 9E (revised)	623	61
Alternative 9E (revised)	933	90

Acreages are rounded to the nearest acre.

Table 3.11-15g. Acres of Agency Designated[1/] Greater Sage-Grouse Habitat Impacted during Construction and Operations of Segment 9

Alternatives	Construction Impacts (acres)			Operations Impacts (acres)		
	Key	PPH	PGH	Key	PPH	PGH
Preferred Route – Total Length	233	299	650	30	31	84
Proposed – Total Length	226	292	507	28	29	66
Proposed – Comparison Portion for Alternative 9A	10	10	48	<1	–	6
Alternative 9A	40	40	26	3	3	3
Proposed – Comparison Portion for Alternative 9B	122	222	246	14	22	32
Alternative 9B	–	–	5	–	–	–
Proposed – Comparison Portion for Alternative 9C	103	222	29	12	22	3
Alternative 9C	–	–	19	–	–	1
Proposed – Comparison Portion for Alts. 9D,F,G,H	–	–	16	–	–	2
Alternative 9D	–	–	9	–	–	<1
Alternative 9F	–	–	9	–	–	<1
Alternative 9G	–	–	10	–	–	<1
Alternative 9H	–	–	10	–	–	<1
Proposed – Comparison Portion for Alt. 9E (revised)	–	–	97	–	–	10
Alternative 9E (revised)	7	7	240	2	2	28

Acreages are rounded to the nearest acre.
1/ See Tables D.11-14 and D.11-15 for acres of impact to R1, R2, and R3 habitats.

Table 3.11-15h. Acres of Suitable Yellow-Billed Cuckoo Habitat Impacted during Construction and Operation of Segment 9		
Alternatives	**Construction Impacts (acres)**	**Operations Impacts (acres)**
Preferred Route – Total Length	t	t
Proposed – Total Length	t	t
Proposed – Comparison Portion for Alternative 9A	t	–
Alternative 9A	–	–
Proposed – Comparison Portion for Alternative 9B	–	–
Alternative 9B	–	–
Proposed – Comparison Portion for Alternative 9C	–	–
Alternative 9C	–	–
Proposed – Comparison Portion for Alts. 9D,F,G,H	–	–
Alternative 9D	–	t
Alternative 9F	–	t
Alternative 9G	t	t
Alternative 9H	t	t
Proposed – Comparison Portion for Alt. 9E (revised)	–	–
Alternative 9E (revised)	–	–

"t" indicates values <0.1. Acreages are otherwise rounded to the nearest acre.

Segment 10

The BLM's Preferred Route in Segment 10 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-12)	BLM

Segment 10 would link the Cedar Hill and Midpoint Substations with a 34.4-mile single-circuit 500-kV line. Segment 10 would follow a WWE corridor for most of the route. The Preferred/Proposed Route would also be adjacent to the existing 345-kV line most of this length and has been sited to follow the same alignment of the planned SWIP. Either the SWIP or Gateway West would be built, but not both. There are no Route Alternatives proposed along this segment. Figure A-12 in Appendix A shows the location of the Preferred/Proposed Route in Segment 10.

Most of the lands crossed by the segment consist of developed lands (see Section 3.6 – Vegetation Communities. Of the TES species where quantitative species-specific data are available, the bald eagle, burrowing owl, sage-grouse, northern leopard frog, and pygmy rabbit could potentially occur along Segment 10 (see Tables D.11-3 and D.11-4). There are no Route Alternatives proposed along Segment 10.

Construction of Segment 10 would impact approximately 319 acres of burrowing owl habitat, 128 acres of sage-grouse habitat, 5 acres of northern leopard frog habitat, and 319 acres of pygmy rabbit habitat (Tables D.11-5 through D.11-8 in Appendix D). Although Segment 10 would cross less than 0.1 mile of habitat located within 1 mile of a bald eagle winter roost, no direct habitat loss would occur because this habitat would be spanned.