

FINAL Biological Assessment for the Kemmerer Field Office Proposed Resource Management Plan



September 2008



**Final Biological Assessment
for the
Kemmerer Field Office Proposed Resource Management Plan**

**U.S. Department of the Interior
Bureau of Land Management
Kemmerer Field Office, Wyoming**

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit	MMTA	Mechanically Mineable Trona Area
ACEC	Area of Critical Environmental Concern	MOA	Memorandum of Agreement
AML	abandoned mine land	MOU	Memorandum of Understanding
APD	application for permit to drill	mph	miles per hour
APHIS	Animal and Plant Health Inspection Service	msl	mean sea level
AQRV	Air Quality-related Value	NAAQS	National Ambient Air Quality Standards
AUM	animal unit month	NE	no effect
BA	biological assessment	NEPA	National Environmental Policy Act
BLM	Bureau of Land Management	NHT	National Historic Trail
BMP	best management practice	NI	no impact to a candidate species
CCF	hundred cubic feet	NLAA	not likely to adversely affect
CBNG	coalbed natural gas	NMFS	National Marine Fisheries Service
CEQ	Council on Environmental Quality	NO ₂	nitrogen dioxide
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NRHP	National Register of Historic Places
CFR	Code of Federal Regulations	NSO	no surface occupancy
CO	carbon monoxide	O ₃	ozone
CRMP	cultural resource management plan	OHV	off-highway vehicle
CSU	controlled surface use	R&PP	recreation and public purposes
DDT	dichlorodiphenyltrichloroethane	RMP	resource management plan
DEQ	Department of Environmental Quality	ROW	rights-of-way
DPS	distinct population segment	SO ₂	sulfur dioxide
EIS	environmental impact statement	SRMA	Special Recreation Management Area
ERMA	Extensive Recreation Management Area	SRP	Special Recreation Permit
ESA	Endangered Species Act	TLS	timing limitation stipulation
FLPMA	Federal Land Policy Management Act	USACE	United States Army Corps of Engineers
GAP	Gap Analysis Program	USC	United States Code
HAP	hazardous air pollutant	USDA	United States Department of Agriculture
HAZMAT	hazardous materials	USEPA	United States Environmental Protection Agency
HMP	habitat management plan	USFS	United States Forest Service
HMRRP	Hazard Management and Resource Restoration Program	USFWS	United States Fish and Wildlife Service
IMPROVE	Inter-agency Monitoring of Protected Visual Environments	USGS	United States Geological Survey
INNS	invasive nonnative species	VOC	volatile organic compounds
LAA	likely to adversely affect	VRM	Visual Resource Management
LCAS	Lynx Conservation Assessment Strategy	WAAQS	Wyoming Ambient Air Quality Standards
MA	Management Area	WGFD	Wyoming Game and Fish Department
MBF	thousand board feet	WOGCC	Wyoming Oil and Gas Conservation Commission
MI	may impact, but not likely to contribute to the need to list a candidate species	WSFD	Wyoming State Forestry Division
MMBF	million board feet	WSA	wilderness study area
		WSR	Wild and Scenic River
		WYDOT	Wyoming Department of Transportation
		WYNDD	Wyoming Natural Diversity Database

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1.0 INTRODUCTION

Section 7 of the Endangered Species Act (ESA) requires that federal agencies (such as the Bureau of Land Management [BLM]) consult with the U.S. Fish and Wildlife Service (USFWS) and address the potential effects of their proposed actions on plant and animal species listed or proposed for listing in accordance with the ESA. The list of species protected by the ESA is provided to the BLM by the USFWS (USFWS 2007a). Species listed or proposed for listing in accordance with the ESA occurring in the assessment area (i.e., planning area) that may be affected by the agency's proposed action require the BLM to conduct informal consultation and (or) to prepare a Biological Assessment (BA). The initial determination of effect is documented in the BA by the lead agency, in this case the BLM (50 Code of Federal Regulations [CFR] Part 420). If the BA determines that the proposed action may adversely affect a listed species or adversely modify its critical habitat, the BLM must enter into formal consultation with the USFWS. Following receipt of the BA, the USFWS prepares a Biological Opinion (BO), which determines whether the proposed action would jeopardize the continued existence of listed species or adversely modify their critical habitats. The process of formal and informal consultation with the USFWS ensures that BLM actions minimize impacts to listed species and designated critical habitats.

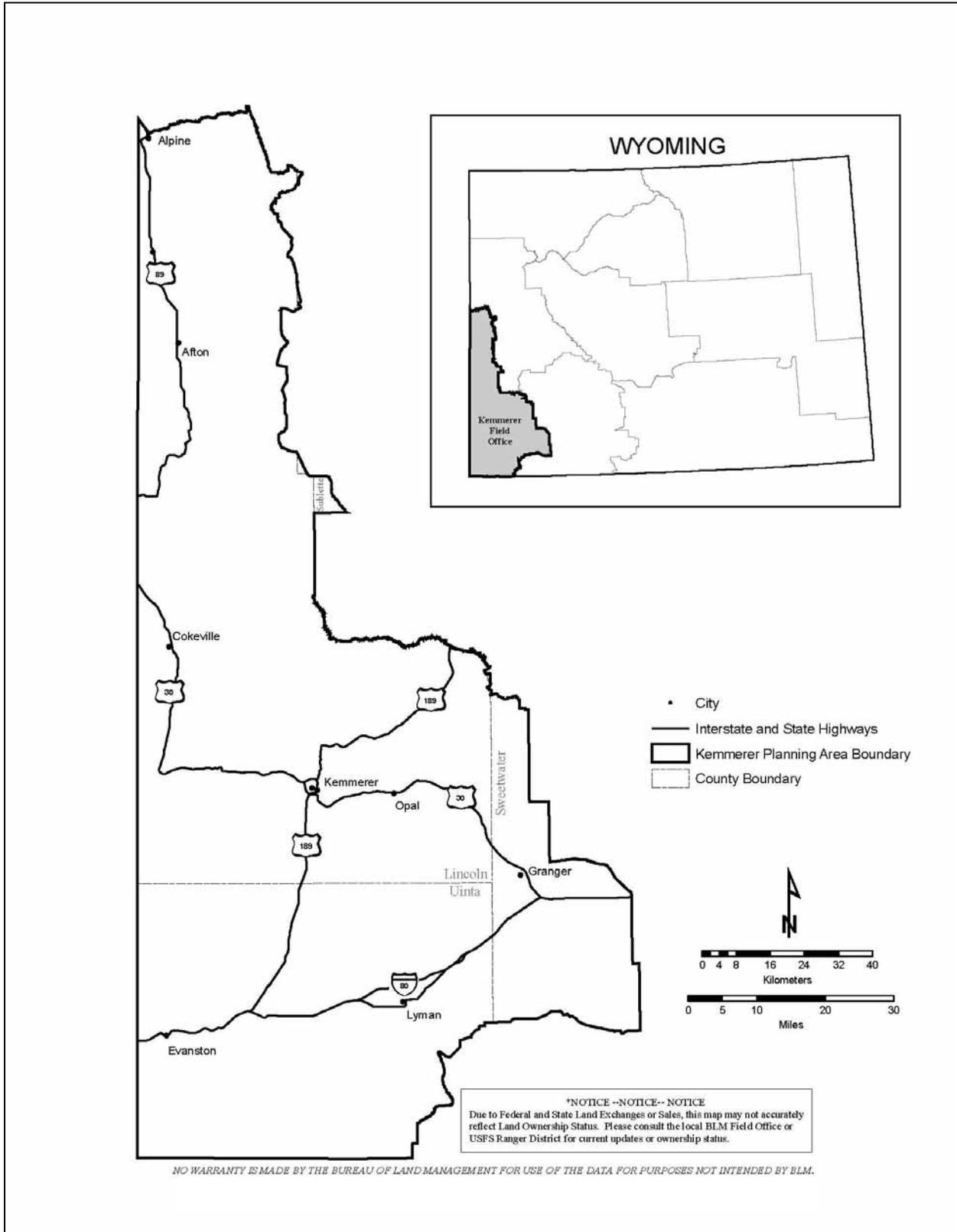
The BLM Kemmerer Resource Management Plan (RMP) and associated Environmental Impact Statement (EIS) analyze the proposed action to revise the existing Kemmerer land use plan for the Kemmerer, Wyoming planning area (BLM 2008a). The process for the development, approval, maintenance, and amendment or revision of an RMP and associated EIS is initiated under the authority of Section 202(f) of the Federal Land Policy and Management Act (FLPMA) of 1976 and Section 202(c) of the National Environmental Policy Act (NEPA). The process is guided by BLM planning regulations in Title 43 of the CFR, part 1600 (43 CFR 1600) and the Council on Environmental Quality (CEQ) regulations in 40 CFR 1500. The purpose, or goal, of the land use plan is to ensure lands administered by the BLM are managed in accordance with the FLPMA and the principles of multiple use and sustained yield.

Revising an existing land use plan is a major federal action for the BLM. The NEPA of 1969, as amended, requires federal agencies to prepare an EIS for major federal actions. The Draft EIS analyzed the impacts of four alternative RMPs for the planning area, including the No Action Alternative, the agency Preferred Alternative, and two other action alternatives. The Proposed RMP and Final EIS presents the analysis of the four alternatives with the Preferred Alternative being considered the Proposed RMP. Only the effects of the Proposed RMP on species listed and proposed for listing are analyzed in the BA.

The Kemmerer Proposed RMP and Final EIS is to provide a comprehensive and environmentally adequate framework for managing and allocating uses of the BLM-administered public lands and resources in the vicinity of Kemmerer, Wyoming, including portions of Lincoln, Uinta, and Sweetwater counties (Figure 1). The Kemmerer Proposed RMP and Final EIS will provide future direction for managing approximately 1.4 million acres of BLM surface lands and 1.6 million acres of BLM-administered mineral estate managed by the BLM in the planning area.

The objectives of the Kemmerer Proposed RMP and Final EIS are to provide specific management direction to prevent or address potential conflicts among energy resources development, recreational activities, livestock management, important wildlife habitats, and other important land and resource uses in the planning area, as well as to determine the appropriate levels and timing of these activities. Section 7.0—Analysis of Proposed Management Actions and Effects—in this document briefly describes the actions for each major functional activity or resource (i.e., air quality, cultural resources, livestock grazing, etc.), their interrelated and interdependent actions, and their general occurrence in the planning area.

Figure 1. Kemmerer Field Office Planning Area



1.1 Proposed RMP

The Proposed RMP increases conservation of physical, biological, and heritage resources compared to current management, including actions that limit habitat fragmentation, and newly established Special Designation Areas. The latter areas include two new Management Areas (MAs), considerations for additional Areas of Critical Environmental Concern (ACECs), and two additional Wild and Scenic River segments. The Proposed RMP also emphasizes moderate constraints on leasing for oil and gas and other solid leasable minerals.

1.1.1 Physical, Biological, and Heritage Resources

Physical resources under the Proposed RMP are managed with an emphasis toward conserving air, water, and soil resources and a similar emphasis toward supporting resource uses. For example, the BLM will enhance existing criteria pollutant and Air Quality Related Value monitoring on a project-specific or as-needed basis under the Proposed RMP. To conserve soil and water resources, the Proposed RMP places the following additional restrictions on resource uses, including avoiding surface disturbance on slopes of 20 percent or greater on sensitive soil types; avoiding disturbances on fragile soils and soils with chemical or biological crusts, highly erodible characteristics, or low reclamation potential; lining all reserve pits unless other, more effective methods are necessary to prevent impacts; and requiring a BLM-approved disposal plan to dispose of water produced from federal oil and gas wells on BLM-administered land.

Fire and fuels management under the Proposed RMP places increased emphasis on protection of soil, water, and special status species. Under the Proposed RMP, use of prescribed fire, unplanned wildland fire, and chemical, mechanical, and biological treatments to meet fire and fuels management objectives, to improve plant community health, and to reintroduce fire to its natural role in the ecosystem. Vegetation treatments will be based on acreage thresholds set by the BLM resource specialists.

Biological resources management under the Proposed RMP places emphasis on conservation of habitat for fish and wildlife, ecosystem management, protection of natural functions in riparian areas, control of invasive nonnative species (INNS), and more constraints on resource uses that may impact biological resources. For example, the Proposed RMP manages large, contiguous blocks of federal land by maintaining or enhancing sagebrush, aspen, and mountain shrub communities and by maintaining connections between these communities. In addition, the Proposed RMP avoids habitat fragmentation in identified special status species habitat; identifies and works collaboratively to develop management of migration corridors for big game, migratory birds, and special status species; and retains old growth forest areas.

Under the Proposed RMP, fish and wildlife, and special status wildlife species constraints on resource uses include seasonal limitations for surface-disturbing activities in fish-bearing streams to protect fish resources on a case-by-case basis. To deter birds from perching on overhead powerlines, the Proposed RMP requires burying all new utility lines or requires installation of BLM-approved anti-perch devices on all new utility lines within sagebrush and (or) semiarid shrub-dominated habitats. To protect special status species from predation, the Proposed RMP avoids new, permanent high profile structures within 1 mile of occupied sagebrush obligate habitats, unless anti-perch devices are installed. The Proposed RMP also prohibits these structures from relying on guy wires for support in these habitats; however, exceptions can be granted. The Proposed RMP eliminates or modifies existing fences on a case-by-case basis to reduce conflicts with wildlife movement.

Protections for special status plant species under the Proposed RMP include closing known locations of special status plant species to surface-disturbing activities that could adversely impact the plants or their habitat for example: mining claim locations; mineral material sales; off-road vehicle use; and explosives and blasting. The current No Surface Occupancy (NSO) restriction for fluid minerals in four populations

of a BLM sensitive plant is removed; instead, the NSO restriction for fluid minerals is retained relative to all representative cushion plant communities under the Proposed RMP.

Special status wildlife species protections under the Proposed RMP include avoiding surface occupancy within 0.6 mile of occupied greater sage-grouse leks, and avoiding surface-disturbing and disruptive activities in greater sage-grouse nesting and early brood-rearing habitats within 3 miles of occupied greater sage-grouse leks, or in identified nesting or brood-rearing habitats outside the 3-mile buffer from March 15 through July 15. The Proposed RMP also requires avoiding disturbing and disruptive activities in occupied greater sage-grouse winter habitats from November 15 through March 14.

Prohibiting surface-disturbing and disruptive activities to protect active raptor nests continues under the Proposed RMP, but with the following spatial and temporal buffers:

- 1-mile buffer for ferruginous hawk nests within the entire planning area; $\frac{3}{4}$ -mile buffer for all other raptors
- February 1 through July 15 or whenever the young have fledged

When nesting raptor species is known, the following specific temporal restrictions apply:

- February 1 through July 15 (golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors)
- March 1 through July 31 (short-eared, long-eared, and screech owl, ferruginous hawk, peregrine falcon)
- April 1 through July 31 (osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk)
- April 15 through September 15 (burrowing owl)
- April 1 through August 31 (northern goshawk)

The Proposed RMP includes specific decisions to protect pygmy rabbits and white-tailed prairie dogs. Protections include avoidance of development in occupied pygmy rabbit habitats and avoidance of disruptive activities that could collapse burrows in occupied white-tailed prairie dog colonies or complexes greater than 200 acres. To minimize the impacts of continuous noise on species that rely on aural cues for successful breeding, the Proposed RMP requires that facilities do not exceed 49 decibels (dB) as measured 900 feet from the noise source.

Heritage resources benefit from more protection under the Proposed RMP, including the timing and degree of Native American consultation. This is determined by the presence of known site types and tribal concerns for specific types of projects until such time that zones of high, medium, and low probability of heritage resource occurrence are established. The current Class I overview will be used to proactively identify zones of high, medium, and low probability, and Class III inventories will be conducted in zones with the greatest threats to cultural resources. The Proposed RMP protects 640 acres of federal mineral estate containing the Bridger Antelope Trap by implementing an NSO restriction for fluid minerals and by restricting off-highway vehicle (OHV) use to established roads in this area. To protect cultural resources from surface-disturbing activities on seven designated sites, the Proposed RMP implements an NSO restriction for fluid minerals on newly issued leases, restricts OHV use to established roads, and designates these sites as rights-of-way (ROW) exclusion areas (see Proposed RMP and Final EIS, BLM 2008a). All significant historical, archeological, and cultural sites and paleontological localities are protected or mitigated under the Proposed RMP. The Proposed RMP provides a narrower corridor to protect the physical evidence of National Historic Trail (NHT) segments; this protective buffer

on either side of NHTs depends on the trail segment and includes ¼ mile for Class 1, 500 feet for Class 2, and 100 feet for Class 3 trail segments.

Visual Resource Management (VRM) under the Proposed RMP specifies the Raymond Mountain Wilderness Study Area (WSA) as Class I. VRM Classes II, III, and IV comprise other specific parts of the planning area (Table 2-3, Proposed RMP and Final EIS, BLM 2008a). To protect the viewshed within 3 miles of the Bridger Antelope Trap juniper fence, the Proposed RMP manages this area to retain the existing character of the landscape in federal sections so developments do not dominate the visible area. The Proposed RMP also protects the viewshed within 3 miles of select archeological sites (BLM 2008a). Viewshed protection for NHT segments increases under the Proposed RMP up to 3 miles (Class 1 segments), up to ½ mile (Class 2 segments), and in accordance with the surrounding VRM class for Class 3 segments.

1.1.2 Resource Uses and Support

Locatable mineral resource use constraints under the Proposed RMP include withdrawals of developed campgrounds, the BLM-administered surface of the Bridger Antelope Trap, areas with special status plant species, and the withdrawal of Cokeville Meadows National Wildlife Refuge from operation of the mining laws, in addition to existing withdrawals. Disposals of BLM-administered land parcels under the Proposed RMP are considered on a case-by-case basis in addition to those already identified (BLM 2008a).

Under the Proposed RMP, 181,716 acres of federal mineral estate are administratively unavailable for oil and gas leasing. The remaining federal mineral estate in the planning area is administratively available for oil and gas leasing subject to the following constraints: 64,171 acres are subject to standard stipulations; 1,042,502 acres are subject to moderate constraints; and 290,973 acres are subject to major constraints. Fluid mineral leasing constraints include areas set aside for public recreation that are administratively unavailable for oil and gas leasing. New fluid mineral leasing is withheld and existing leases continue to be suspended indefinitely in the Mechanically Mineable Trona Area (MMTA) under the Proposed RMP; however, the withholding could be lifted if future technology provides the ability to safely develop the oil and gas leases.

Coal leasing under the Proposed RMP is subject to constraints similar to those under current management. Federal mineral estate within the Haystack Lease By Application area is determined to be acceptable for further consideration for coal leasing. Areas with special status plant or wildlife species are not closed to sodium or phosphate leasing consideration under the Proposed RMP. Mineral material sales and (or) free use permits are prohibited within the Raymond Mountain WSA, within developed campgrounds (unless impacts to campground users are minimal), and within actual special status plant species locations.

Forest use under the Proposed RMP restricts the annual treatment (i.e., mechanical methods or prescribed fire) of forestlands and woodlands to approximately 75 acres each year (750 acres each per decade) in order to manage stocking levels to more historical conditions. In addition, the Proposed RMP identifies an annual allowable probable sale quantity of 667 hundred cubic feet (CCF) (300 thousand board feet [MBF]); or per decade, 6,670 CCF (3 million board feet [MMBF]). Under the Proposed RMP, management of approximately 3,000 acres of combined forestland and woodland within the Raymond Mountain WSA includes prescribed fire or wildland fire use to simulate natural alteration of vegetation to meet wilderness and healthy forest landscape objectives. No mechanical and (or) surface-disturbing activities are prescribed. No forest products are removed from this area. The forestlands and woodlands within the WSA are called “reserved forest ecosystem management areas”.

Preferred ROW corridors under the Proposed RMP can be up to 2 miles wide, but prohibited in seven archeological sites identified in the RMP and EIS (refer to Table 2-3 in the Final EIS) to protect heritage resource values. Consolidated communication sites are considered by type in 23 designated areas; other communication sites are considered on a case-by-case basis. The Proposed RMP identifies preferred areas for wind-energy development and considers other renewable energy projects on a case-by-case basis throughout the planning area. Under the Proposed RMP, legal access across private land is sought if a need is identified in support of resource programs and in areas of emphasis.

Livestock grazing continues to be managed on the current 224 grazing allotments according to the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* (BLM 1998) under the Proposed RMP. The same area currently available for livestock grazing remains available under the Proposed RMP. Issuance of temporary nonrenewable permits for unallotted parcels is a discretionary decision for the BLM under the Proposed RMP. Additional sustained yield forage could be activated for livestock use on a case-by-case basis. In addition, under the Proposed RMP, the Christy Canyon Allotment is designated as a forage reserve (BLM 2008a). The Proposed RMP increases the buffer prohibiting livestock salt or mineral supplements to ¼ mile from water sources, riparian areas, aspen stands, or special status plant species. Range-improvement projects are not allowed on special status plant species populations under the Proposed RMP.

Recreational facilities are maintained and enhanced and additional recreational facilities are developed, where appropriate, under the Proposed RMP. An NSO restriction for fluid minerals within 1 mile of developed campgrounds is in place under the Proposed RMP. The Pine Creek Canyon, Raymond Mountain, Oregon-California NHT, and select BLM-administered lands in the Dempsey Ridge area are designated as Special Recreation Management Areas (SRMAs) within the planning area under the Proposed RMP. All other areas not included in one of the SRMAs are included in the Extensive Recreation Management Area (ERMA) and managed as such (for management specifics, refer to Proposed RMP and Final EIS). Dispersed camping (according to recreational use rules) continues to be allowed under the Proposed RMP.

Travel Management Areas are established and travel management plans will be completed under the Proposed RMP following signing of the Record of Decision. Motor vehicle travel in the planning area under the Proposed RMP generally is limited to existing roads and trails. Motorized travel is not allowed in sensitive areas, such as those that support special status plant species populations, and seasonally limited in designated crucial big game winter ranges. The Proposed RMP also opens some new areas to OHV use, retains groomed snowmobile trails, and new trails are considered on a case-by-case basis in the planning area. Snowmobile use under the Proposed RMP is not allowed in the Raymond Mountain WSA.

1.1.3 Special Designations

Under the Proposed RMP, the existing Raymond Mountain WSA and ACEC are retained, ACECs for special status plant species habitats and cushion plant communities are considered on a case-by-case basis, the Bridger Butte ACEC is designated, and the Rock Creek/Tunp and Bear River Divide MAs are established (BLM 2008a). The Proposed RMP also recommends two waterway segments for inclusion in the National Wild and Scenic Rivers system.

2.0 CONSULTATION AND BIOLOGICAL ASSESSMENT OBJECTIVES

Under provisions of the federal ESA of 1973, as amended (16 United States Code [USC] Section 1531 et seq.), federal agencies are directed to conserve threatened and endangered species and the habitats in which these species are found. Federal agencies also are required to ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of endangered and threatened species or their critical habitats. The ESA requires action agencies, such as the BLM, to consult or confer with the USFWS and (or) the National Marine Fisheries Service (NMFS) when there is discretionary federal involvement or control over the action. Formal consultation becomes necessary when the action agency requests consultation after determining the Proposed RMP is likely to adversely affect listed species or critical habitats, or the aforementioned federal agencies do not concur with the action agency's finding (USFWS 1998). Under the 1994 Memorandum of Understanding (MOU) and the 2000 Memorandum of Agreement (MOA) among the BLM, the U.S. Forest Service (USFS), the USFWS, and the NMFS, all four agencies agreed to promote the conservation of candidate and proposed species and streamline the section 7 consultation and coordination process.

This programmatic Final BA provides documentation for the Kemmerer Proposed RMP and Final EIS to meet federal requirements and agreements set forth among the four federal agencies listed above. It addresses federally listed threatened and endangered, candidate, and proposed species and is prepared under 1973 ESA section 7 regulations, in accordance with the 1998 procedures set forth by the USFWS and the NMFS, and in accordance with the 1994 and 2000 MOU and MOA, respectively. As appropriate, the BLM will conduct site-specific evaluations for activities authorized under the Kemmerer Proposed RMP and Final EIS. The BLM will consult with the USFWS for activities authorized by the Kemmerer Proposed RMP and Final EIS that may affect threatened, endangered, candidate, or proposed species. In addition, in compliance with BLM Manual 6840, the BLM will address potential effects to special status species.

Objectives of this BA follow:

- Summarize the biology, distribution, and habitats of species occurring in the planning area that are listed, candidates or proposed for listing as threatened or endangered.
- Assess the past, current, and future effects (direct and indirect) of the proposed RMP actions to the species.
- Assess the cumulative effects of state and private actions on the subject species.
- Make an effects determination for each species based on the actions identified in the RMP.
- Document conservation measures to foster the welfare of the subject species.
- Predict the expected future status of the subject species based on the effects analysis.

The outcome of this BA will determine the need for, and type of, conferencing and consultation necessary with the USFWS. In addition, during implementation of specific actions identified in the RMP, the potential effects to federally listed species will be evaluated again, and any necessary consultation with the USFWS will be initiated, as appropriate.

Emergency consultation may be necessary when emergency actions (i.e., wildland fires, disasters, casualties, national defense or security emergencies, including response activities taken to prevent imminent loss of human life or property) are required that may affect listed species and (or) critical habitats, or when the federal action agency may not have the time for the normal administrative work required by the ESA or NEPA under nonemergency conditions. Emergency consultations will consider the action agency's critical mission, while ensuring that anticipated actions will not violate sections 7(a)(2) or 7(d) of the ESA.

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3.0 OVERVIEW OF THE PLANNING AREA

The planning area comprises 1,424,005 acres of BLM-administered surface land and 1,579,362 acres of federal mineral estate primarily in Lincoln, Uinta, and Sweetwater counties in eastern-central Wyoming. Within Lincoln County, large contiguous areas of BLM-administered lands are intermingled with state, private, and parcels of other federal surface (USFS, U.S. Bureau of Reclamation, and USFWS) lands. Southeastern Lincoln County, most of Uinta County and most of the planning area lands in Sweetwater County are affected by the “checkerboard” land ownership pattern. There are no Kemmerer Field Office BLM-administered surface lands in Sublette County; however, a small portion of this county lies within the planning area and contains mineral estate under USFS jurisdiction.

The planning area encompasses the intersection of two physiographic regions—the Wyoming Basin to the southeast and the Middle Rocky Mountains to the north and west. The Wyoming Basin comprises broad intermountain basins interrupted by isolated hills and low mountains that merge to the south into a dissected plateau. The Wyoming Basin is a shrubsteppe area, dominated by sagebrush and shadscale, interspersed with areas of shortgrass prairie. Higher elevations are in mountain shrub vegetation, with coniferous forest occurring on the highest areas. The Middle Rocky Mountains area generally is made up of complex mountains with many intermontane basins and plains. Elevations in the planning area range from approximately 6,070 feet above mean sea level (msl) at the eastern extent of the planning area in Sweetwater County to approximately 10,770 feet above msl at Rock Lake Peak in the Salt River Range in northern Lincoln County. The planning area generally has a dry, windswept, rain-shadow climate like much of Wyoming, but the variations in elevation have a substantial effect on vegetation types and suitability of areas for agriculture and grazing. The region generally has cold winters and dry summers below mountain slopes and cool summers and snowy winters in mountainous environments (Pitcher 1997).

Vegetative and other land cover was determined using GIS analyses of available Gap Analysis Program (GAP) vegetation data (Merrill et al. 1996). The Kemmerer planning area is comprised of primarily rangeland, with a majority (62 percent of vegetative cover) that includes shrublands. Another 21 percent supports forests and woodlands, and about 4 percent is considered grassland and meadows. The remaining areas are covered by riparian habitats; open water; urban, agricultural, mining, and other development; and bare ground (e.g., sparsely vegetated or rock).

The climate of the planning area is classified as semiarid with areas of mid-latitude highland (Trewartha and Horn 1980; Martner 1986). A semiarid continental climate is characterized by seasonal variations in temperature (cold winters and warm summers) and precipitation levels that are low, but sufficient for the growth of short, sparse grass. Summer temperatures average 81-degrees Fahrenheit (°F), while winter temperatures average 4.5 °F.

3.1 Lincoln County

Lincoln County comprises approximately 2,274,285 surface acres in the planning area, of which the BLM administers approximately 834,888 acres. In addition, the BLM administers approximately 922,700 acres of federal mineral estate in Lincoln County.

State highways 30 and 189 are the main roads through Lincoln County and both connect Kemmerer with Interstate Highway 80 (I-80). State highway 30 bisects the planning area as it generally traverses east west through the county, including the town of Kemmerer. State Highway 89, in the northern portion of the planning area, runs through the towns of Afton and Alpine.

The primary economic activities in Lincoln County are sheep and cattle ranching and coal mining. Three important rivers pass through Lincoln County: the Bear River, Snake River, and Green River. The Bear River flows into the Great Salt Lake. The Snake River, which originates in Yellowstone National Park, crosses the northern tip of the county and joins the Columbia River before flowing into the Pacific Ocean. The Green River, which passes the eastern border of the county, flows southward into Utah, where it joins the Colorado River. Fontenelle Reservoir, on the Green River system, is located in Lincoln County and primarily surrounded by U.S. Bureau of Reclamation lands.

The Green River basin uplands in the southern portion of the county comprise a broken landscape dominated by low ridges, erosional sideslopes, and alluvial fans. Badlands and sand dune uplands are interspersed in association with Cottonwood, Shute, and Muddy creeks. Many soils in this area have poor surface water infiltration, high runoff potential, and high carbonate levels that create good conditions for water erosion. Wind erosion is also a concern in the area, as are saline soil conditions in low topographic areas.

In the northern portion of Lincoln County within the KFO planning area, mountainous terrain and soils occur as an extension of the Wasatch and Uinta Mountains in Utah. Mass wasting in the form of landslides and slumping occurs on steeper, moister slopes. Coniferous and aspen forests are present on these north-facing slopes.

3.2 Uinta County

Uinta County comprises approximately 1,237,489 surface acres in the planning area, of which the BLM administers approximately 404,785 acres. In addition, the BLM administers approximately 489,269 acres of federal mineral estate in the county. State Highway 189 traverses north from I-80 between Evanston and Lyman toward Kemmerer.

Agriculture and energy production are also important as primary economic commodities in Uinta County. I-80 generally traverses east west through Uinta County. The Upper Bear River watershed drains the western portion of Uinta County. The Upper Green River watershed drains the central and eastern portions of the county.

The western portion of the county consists of north-south trending steep ridges with narrow valleys that occur in association with the Overthrust Belt soil group. Red soils in areas such as the Bear River Divide are highly susceptible to water erosion when disturbed. Lower areas consist of saline soils, which provide a challenge for revegetation and are a water quality concern in the Colorado River basin.

Southern Uinta County is an area of old alluvial terraces, fans, and pediments as a result of materials that flushed out of nearby mountains. Glacial till also occurs on high, relatively level outwash terraces, such as Levitt Bench. These soils are deep with rock and cobbles throughout the profile, which may affect land uses and revegetation if disturbed.

3.3 Sweetwater County

Sweetwater County comprises approximately 405,604 surface acres in the planning area, of which the BLM administers approximately 184,143 surface acres. In addition, the BLM administers approximately 167,172 acres of federal mineral estate in Sweetwater County. I-80 traverses east west through Sweetwater County. State Highway 30 traverses northwest from I-80 near Granger to Kemmerer.

Agriculture is an important economic commodity in Sweetwater County, as is mineral development, such as coal and trona. The Upper Green River watershed drains all of Sweetwater County located in the

planning area. The Seedskaadee National Wildlife Refuge is located in Sweetwater County and is primarily surrounded by U.S. Bureau of Reclamation land.

Sweetwater County landscape and soils that occur in the planning area are similar to those described for southern Lincoln County as a continuation of the Green River basin broken uplands to the west. Interspersed badlands and sand dunes also occur in upland areas.

3.4 Sublette County

Sublette County comprises approximately 13,187 surface acres in the planning area. No BLM-administered surface lands in Sublette County occur within the planning area. Federal mineral estate in Sublette County occurs under the USFS's jurisdiction.

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4.0 CURRENT STATUS AND HABITAT USE OF SPECIAL STATUS SPECIES

Special status species are defined in this document (and in the Proposed RMP and Final EIS) as those listed as threatened or endangered, are proposed for listing, or are candidates for listing under the ESA; or those designated by the BLM State Director as sensitive. The USFWS Ecological Service office in Cheyenne, Wyoming, provided a list of six threatened, endangered, proposed, and candidate species protected under ESA that may occur in the planning area dated April 25, 2007 (USFWS 2007a). During BA production, three of those species were delisted from ESA (the grizzly bear, bald eagle and gray wolf). The bald eagle and grizzly bear are not considered in this BA; however, ESA protection was subsequently reinstated for the northern Rocky Mountain population of the gray wolf in July 2008, so this species will be evaluated in the BA. The BLM will adhere to the 5-year monitoring process for delisted species and apply conservation measures where necessary. One endangered, two threatened, one nonessential/experimental, and one candidate species listed in Table 1 are considered in this BA (USFWS 2007a). No species proposed for listing were identified by the USFWS as potentially occurring within the planning area.

Table 1. Federally Listed Threatened, Endangered, and Candidate Species that Occur or Have Suitable Habitat in the Kemmerer Planning Area

Common Name	Scientific Name	Status*	Expected Occurrence
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	Prairie dog towns
Canada lynx	<i>Lynx canadensis</i>	Threatened	Montane forests
Gray wolf	<i>Canus lupus</i>	Nonessential/Experimental	Greater Yellowstone ecosystem
Ute ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	Seasonally moist soils and wet meadows of drainages below 7,000 feet in elevation
Western yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Riparian areas west of the Continental Divide; open woodlands, streamside willow, and alder groves

*Status refers to federal status in accordance with the Endangered Species Act (as of June 2008)

Additional details regarding each listed species can be found in the statewide programmatic BAs, used as sources for this analysis, and referenced at the end of each species' status description. When available, the corresponding USFWS Biological Opinions (BOs) were included as references.

In addition, the USFWS requested consideration of several listed species that inhabit the Colorado River downstream of and outside the planning area. Because proposed actions in the Kemmerer Proposed RMP and Final EIS have the potential to deplete water in the Colorado River system, potential impacts to the following endangered species (not included in Table 1) that inhabit the downstream reaches of this system also are evaluated in this BA:

- Bonytail chub (*Gila elegans*)
- Colorado pikeminnow (*Ptychocheilus lucius*)
- Humpback chub (*Gila cypha*)
- Razorback sucker (*Xyrauchen texanus*)

A description of the status, life history, habitat requirements (including designated critical habitat), distribution, and threats to each species identified by the USFWS for this BA follows.

4.1 Black-footed Ferret

4.1.1 Status

The black-footed ferret (*Mustela nigripes*) was first listed as endangered on March 11, 1967, as a precursor to the ESA of 1973 (USFWS 2000a). To date, no critical habitat is designated; however, a captive breeding program began in 1985 and continues today. Subsequently, the USFWS designated nonessential experimental populations in northwestern Colorado and northeastern Utah, north-central South Dakota, Arizona, Montana, Kansas, and Wyoming (including the Shirley Basin) for the purpose of reintroducing ferrets to these areas (BLM 2005a). This designation allows for more flexibility in managing new populations. In Wyoming, the black-footed ferret's state conservation status is S1, meaning it is critically imperiled (NatureServe 2006).

On February 2, 2004, a block clearance letter and map were issued by the USFWS indicating that ferret surveys are no longer necessary in black-tailed prairie dog colonies statewide or in white-tailed prairie dog (*Cynomys leucurus*) colonies except those areas noted in an attachment to the letter, which includes a large portion of the Kemmerer planning area (BLM 2005a, USFWS 2004b). The 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 the USFWS is necessary to ensure the most recent information is assessed. 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. Thus, while an action proposed in a cleared area needs no survey and is not likely to result in take of individuals, the action could have an adverse effect on the value of a prairie dog town as a future reintroduction site and should be evaluated to determine the significance of that effect.

Wyoming BLM's Final *Statewide Programmatic Biological Assessment: Black-footed Ferret (Mustela nigripes)* (BLM 2005a) was completed in August 2005. This was followed by the BO entitled *Consultation for the Impacts from the Wyoming Bureau of Land Management Resource Management Plans and their Effects to the Black-footed ferret (Mustela nigripes)* (USFWS 2006). Consideration of effects and conservation measures identified in these documents are included in this BA where appropriate.

4.1.2 Life History

A member of the weasel family (*Mustelidae*), the black-footed ferret is a long, slender-bodied animal with relatively short limbs. Black-footed ferrets have a black-masked face, black legs, and a black-tipped tail, and are the only ferret native to North America (USFWS 1988). Black-footed ferrets are nearly 2 feet long and weigh up to 2.5 pounds (USFWS 1988).

Black-footed ferrets generally are nocturnal carnivores (USFWS 1988), but occasionally are active aboveground during the day (USFWS 2000a). The ferrets are practically obligate predators of prairie dogs (USFWS 1988). Though prairie dogs make up the majority of the black-footed ferret's diet, these animals also feed on rabbits, mice, voles, ground squirrels, pocket gophers, birds, and insects (BLM 2005a).

Black-footed ferrets are solitary except during the breeding season or when females are caring for young. Breeding occurs in April or May. After a gestation period of 41 to 45 days, a litter of four or five young is born. The young come aboveground when they are 6-weeks old and remain with their mother until about mid-August (USFWS 2000a). From August through early September, the juveniles become more solitary, and by early October, they are able to take care of themselves (USFWS 2000a). The lifespan of the black-footed ferret in the wild is likely less than 5 years (BLM 2005a).

Predators of the black-footed ferret include great-horned owls (*Bubo virginianus*), golden eagles (*Aquila chrysaetos*), and coyotes (*Canis latrans*). Potential, but undocumented predators, include badgers (*Taxidea taxus*), bobcats (*Lynx rufus*), red foxes (*Vulpes vulpes*), prairie falcons (*Falco mexicanus*), and ferruginous hawks (*Buteo regalis*) (BLM 2005a).

4.1.3 Habitat Requirements

Black-footed ferrets are almost exclusively associated with prairie dogs and prairie dog towns (USFWS 1988). In addition to using prairie dogs as a food source, black-footed ferrets utilize prairie dog burrows for shelter, breeding, and brood-rearing. The size and density of prairie dog towns may be the most important factors comprising suitable habitats for black-footed ferrets. Black-footed ferrets are not normally found in black-tailed prairie dog towns or complexes less than 80 acres in size, or in white-tailed prairie dog towns or complexes less than 200 acres in size (BLM 2005a).

4.1.4 Regional and Local Distribution

Historically, the black-footed ferret's range mirrored that of the prairie dog and occurred throughout the Great Plains from Texas to southern Saskatchewan, Canada (USFWS 2000a). The black-footed ferret's range extended from the Rocky Mountains east through the Dakotas and south through Nebraska, Kansas, Oklahoma, Texas, New Mexico, and Arizona.

In the 1970s, the only documented population of black-footed ferrets occurred in South Dakota. However, in 1981, a black-footed ferret population was discovered near Meeteetse, Wyoming (USFWS 2000a). During fall 1986 and spring 1987, the last of the black-footed ferrets were taken from the wild and placed in a captive breeding program (USFWS 2000a). The goal of the captive breeding program is to establish 240 breeding adults, and then return black-footed ferrets to the wild. By 2010, the program hopes to have placed 1,500 black-footed ferrets in the wild.

Black-footed ferrets were reintroduced to the Shirley Basin in central Wyoming in 1991. Reintroduction efforts in Wyoming were suspended in 1995 due to the sylvatic plague, which kills both prairie dogs and black-footed ferrets (USFWS 2000). As described under 4.1.1 Status, reintroductions, however, have since continued and the population continues to expand. Other reintroduction areas within the planning area are currently being evaluated, but to date no black-footed ferrets have been released.

Currently, all black-tailed prairie dog towns in Wyoming are considered unlikely for occurrence of the black-footed ferret (BLM 2005a). Sixteen white-tailed prairie dog complexes in Wyoming are considered to potentially contain black-footed ferrets. Only white-tailed prairie dogs occur in Kemmerer planning area. Three of these complexes are substantially large enough to support black-footed ferrets (Carter, Cumberland, and Moxa Arch).

There are two records of black-footed ferret historical occurrences and sightings within the Kemmerer planning area, one from Lincoln County (1972) and one from Uinta County (1979) (BLM 2005a). Twenty-seven, 6, and 25 black-footed ferret surveys were conducted in 2002, 2003, and 2004, respectively, for projects in the Kemmerer planning area (BLM 2005a).

One hundred and sixty-one white-tailed prairie dog colonies were mapped from 1992 to 1994, encompassing 47,664 acres within the Kemmerer planning area (BLM 1995). When the towns were delineated according to USFWS 1989 guidelines for burrow densities (at least 8 burrows per acre), 3,982 acres met the burrow density guidelines, exceeding the 1,000-acre minimum set by USFWS for potential black-footed ferret reintroduction sites. Despite being one of the three substantial prairie dog complexes in the planning area, the Moxa Arch site exhibits a level of surface-disturbing activities that may not be

compatible with black-footed ferret reintroduction. Other prairie dog complexes in the Kemmerer planning area may provide better reintroduction sites (BLM 2005a).

Extensive mapping of prairie dog complexes has been conducted more recently by the BLM within the Kemmerer planning area (BLM 2005a). During the summers of 2003 and 2004, 850,000 acres were surveyed for potential habitat for the black-footed ferret. This included surveying for white-tailed prairie dog activity and mapping colonies greater than 40 acres. The total number of active colonies mapped over the 2 years encompassed 51,046 acres. Such acreage estimates are only a snapshot in time of larger landscape-level prairie dog complexes whose dynamics cause ongoing shifting of boundaries. Furthermore, the delineation of boundaries and densities of white-tailed prairie dog colonies is a somewhat subjective process.

4.1.5 Threats

Black-footed ferret decline and virtual extirpation in the last century stemmed from impacts to prairie dog complexes included habitat conversion for farming, prairie dog eradication efforts, sylvatic plague, oil and gas development, recreational shooting, and distemper (BLM 2005a). These same threats, in addition to urbanization, remain today (USFWS 2000a).

With agricultural land use expansion, prairie dogs were seen as rodent pests and funding was allocated to eliminate them. These massive prairie dog eradication efforts, funded by the U.S. Government during the twentieth century, succeeded in eliminating prairie dogs from the vast majority of their historic range. Although prairie dog control programs have declined after these earlier control efforts, 95 percent of Wyoming landowners have been involved in some form of prairie dog control and 54 percent have attempted to eliminate prairie dogs from their property. Most landowner sentiment is well-established and will likely be slow to change (BLM 2005a). Reduction in prairie dog populations affects colony size and, therefore, potential to support black-footed ferrets.

The sylvatic plague, a disease that has wiped out large numbers of prairie dogs, has also affected black-footed ferrets. The sylvatic plague kills black-footed ferrets and reduces prey abundance. Black-footed ferrets also are susceptible to canine distemper, which can be fatal to infected individuals.

Loss of habitat due to oil and gas development appears to present a significant threat. Much of the range of the white-tailed prairie dog in Wyoming occurs on BLM land (an estimated 70%). However, 77 percent of the white-tailed prairie dog predicted range in Wyoming is being developed at some level for oil and gas, which includes every major complex identified in the early 1990s (BLM 2005a).

Recreational shooting of prairie dogs remains a popular activity, especially in black-tailed populations in eastern Wyoming. Whereas large populations may be able to withstand recreational shooting, smaller populations already impacted by disease and disturbance may suffer additive losses from recreational shooting (BLM 2005a). Recreational shooting also contributes to population fragmentation, which further reduces the habitat quality for black-footed ferrets. Recreational shooting pressure is greatest at colonies with easy road access, as compared to more remote colonies (BLM2005a). Increased access to remote areas by recreational shooters and OHV users occurs as a result of new roads (such as for oil and gas development).

4.2 Canada Lynx

4.2.1 Status

The Canada lynx (*Lynx canadensis*) was proposed for listing as threatened under the ESA in 1998 (*Federal Register* Volume 63, No. 130). On March 24, 2000, the final rule listing the lynx as threatened

within the contiguous United States Distinct Population Segment (DPS) was issued (*Federal Register* Volume 65, No. 58). The status of lynx in Wyoming is as a furbearer with no harvest allowed, as well as a state Native Species Status (NSS) 1, which signifies populations are greatly restricted or declining, extirpation appears possible, or there is ongoing significant loss of habitat. Lynx are a protected nongame species (BLM 2005b). The BLM committed to mapping Lynx Analysis Units (LAUs), which are management areas that contain suitable lynx habitat and approximate the size of a female home range, as well as key linkage areas. BLM also coordinates with USFWS on approaches to the programmatic planning process for lynx management.

Wyoming BLM's *Final Statewide Programmatic Canada Lynx (*Lynx canadensis*) Biological Assessment* (BLM 2005b) was completed in July 2005. The BO for this species was entitled *Consultation for the Impacts from the Wyoming Bureau of Land Management's Resource Management Plans to the Canada Lynx (*Lynx canadensis*)* (USFWS 2005). Consideration of effects and conservation measures identified in these documents are included in this BA where appropriate.

4.2.2 Life History

The lynx is a medium-sized, short-bodied cat with long legs and an overall stocky build. The carnivore's primary diet is snowshoe hares (35-97%) supplemented with other small mammals, such as squirrels, porcupines, beavers, muskrats, mice, voles, and shrews. Other occasional food sources are larger mammal carrion and fish.

Lynx in southern Rockies boreal forests live in isolated island habitats of mountainous areas surrounded by less suitable lower elevation habitats, often shrubsteppe in Wyoming. Movement between suitable habitats is essential, but poorly understood. In the southern portion of the species' range, the complexity of metapopulation dynamics, a set of local populations that interact via dispersal of individuals moving among populations and where local extinctions and recolonizations occur, are assumed to function in lynx populations (BLM 2005b). Movement between habitat patches occurs as dispersal of subadults and in response to low hare abundance. Functioning metapopulations require such occasional movements of individuals between subpopulations for species persistence. Smaller scale movements occur as animals travel between hunting grounds within a home range. Because of the patchiness of lynx habitats in the southern portion of the distributional range, lynx may include travel corridors within their home ranges (BLM 2005b).

Multiple natal dens are typically used for Canada lynx breeding. Not much is known about lynx breeding habits; however, the season usually occurs from April or May into July (BLM 2005b). Habitat used for denning is discussed in the next section.

4.2.3 Habitat Requirements

Canada lynx inhabit coniferous or mixed forests of northern latitudes and high mountains. Cool, moist forests with cold snowy winters and abundant snowshoe hares define the required habitat of lynx. Primary vegetation in lynx habitat is lodgepole pine, subalpine fir, and Engelmann spruce (BLM 2005b). Secondary habitat includes cool, moist Douglas-fir, grand fir, western larch, and aspen forests. Dry forests, such as ponderosa pine and climax lodgepole pine, do not provide habitat for lynx (Ruediger et al. 2000). In Wyoming, the elevational range for all lynx occurrences is 4,920 to 11,480 feet (BLM 2005b). Lynx observed in shrubsteppe habitat are thought to be taking advantage of jackrabbit population spikes as alternate prey and (or) traveling between suitable habitat patches, especially within riparian vegetation corridors.

Lynx require a complex mosaic of vegetation within their home range to meet the different habitat needs. Snowshoe hares are the primary prey of Canada lynx, and snowshoe hare abundance is a limiting factor

for Canada lynx. Prey habitat includes areas with high stem density and dense shrubby and coniferous growth with stems and branches that protrude above the snow. Canada lynx den in areas with large woody debris in the form of downed logs or root wads near enough to foraging habitat to feed kittens (BLM 2005b). Older and mixed-age forests with a patchwork of well-developed shrubs and young trees provide the dense understory and large downed logs required for foraging, denning, and travel or dispersal habitats required by Canada lynx.

4.2.4 Regional and Local Distribution

The Canada lynx lives in the boreal forests of North America from Alaska to Newfoundland, descending into the lower 48 states in northern New England (Maine, New Hampshire, New York, Vermont), the western Great Lakes region (Michigan, Minnesota, Wisconsin), the Pacific Northwest (Oregon, Washington), and the Rocky Mountains (Colorado, Idaho, Utah, Montana, Wyoming) (BLM 2005b).

Lynx have been present in Wyoming prehistorically as well as in historic times to the present. The best contiguous lynx habitat in Wyoming is in the northwestern portion of the state. The remainder suitable habitat is highly fragmented, widely dispersed, and typically separated by shrublands. The distributions of lynx specimens and reports in Wyoming indicate that they occurred in the mountains of western and northern Wyoming, including the Salt River, Wyoming, Teton, northern Wind River, Gros Ventre, and Absaroka ranges (BLM 2005b). Canada lynx also occurred in small numbers in the Uinta Range (Utah) and the Bighorn Range, with occasional occurrences in eastern Wyoming.

The Wyoming Natural Diversity Database (WYNDD) lists lynx as present in Fremont, Lincoln, Park, Sublette, Teton, Uinta, and, possibly, Big Horn counties. There are 24 LAUs designated for the planning area encompassing 60,153 acres, including 2 stand-alone LAUs at the south end of the Bridger-Teton National Forest, Commissary Ridge and Dempsey Ridge (BLM 2005b). In addition, 900 acres not occurring within LAUs were designated as lynx habitat within the planning area. Several occurrences of Canada lynx are documented in the northern edge of the planning area, where coniferous forests occur. As of 2003, there were 50 lynx records in the WYNDD database from the Kemmerer planning area (BLM 2005b). The recent reintroduction of lynx in Colorado has resulted in a number of collared animals taking residence in Wyoming. Because lynx can move great distances, it is possible that additional animals from Colorado will appear in Wyoming.

4.2.5 Threats

Alteration of natural disturbance regimes, some forest management practices, road building, and some recreational activities may affect Canada lynx habitat suitability. The patchiness and distribution of Canada lynx habitats are factors in the vulnerability of the species. The habitat within good patches and the travel corridors between patches is essential for Canada lynx dispersal, including maintaining connectivity between states. The southern populations of Canada lynx in the United States in general are not large, and some may function as sources, whereas others function as sinks, with the necessity of dispersal potential between them. If a source population is put at risk, extinction in both the source and adjacent sink populations can occur.

In aspen stands and high-elevation riparian willow communities, extensive grazing by domestic livestock or wild ungulates may reduce forage and cover availability for snowshoe hares, in some cases dramatically. This may also be true for high elevation shrubsteppe habitat (sagebrush communities) that lynx may need and use in highly fragmented forest stands. Although not documented, the abundance of white-tailed jackrabbits as a significant alternate prey in sagebrush habitats may be a critical factor. Unfortunately, white-tailed jackrabbits appear to be on the decline, as attested by their disappearance from Jackson Hole since 1979 (BLM 2005b). Other alternate prey in shrubsteppe habitats also may have experienced declines (e.g., the greater sage-grouse, ground squirrels) (BLM 2005b).

Forest management activities that reduce habitat for snowshoe hares and (or) red squirrels will negatively affect lynx. Retention of live and dead trees and coarse woody debris are important factors for maintenance of lynx, and habitats for lynx and their prey species (e.g., early successional habitat for snowshoe hares) (BLM 2005b). Certain timber harvest practices increase edges and openings within forest stands, which may improve foraging conditions for predators and (or) competitors, such as mountain lions, coyotes, bobcats, and great-horned owls that compete with lynx for prey. Wildfire suppression in the west has resulted in forests that are more homogeneous and composed of shade-tolerant species with more canopy layers compared to historic conditions. As a result, current forests are more susceptible to severe fires, insects, and disease and provide unsuitable lynx habitats. Salvage logging after a fire may have an adverse effect if many or most large-diameter trees are removed (BLM 2005b).

Recreational trails created by snowmobiles and even cross-country skiers create packed snow conditions that allow other predators and competitors into what would otherwise be exclusive lynx habitat. It appears that lynx have some degree of tolerance to human activities (BLM 2005b); however, during denning in the spring, lynx are more vulnerable and require more secure habitats and fewer disturbances than might be tolerated at other times of year. This type of vulnerability to human disturbance also may be exacerbated during periods when food is scarce; starvation is not uncommon.

Roads into areas occupied by lynx may pose a threat to lynx from incidental harvest or poaching, increased access during winter for competing carnivores, especially coyotes, disturbance or mortality from vehicles, and loss of habitat (BLM 2005b). However, lynx are also known to follow road edges for considerable distances and have home ranges that encompass roads or sometimes use them to define the boundary. The size, type, and amount of use of the road are all likely factors affecting the degree and types of impacts on lynx, as well as the increased vulnerability during denning. Infrastructure associated with mineral extraction can be harmful to lynx, mostly as a consequence of new roads created to access areas for exploration and development (BLM 2005b).

The Canada Lynx Conservation Assessment Strategy (LCAS) was developed by the USFS, the BLM, and the USFWS in 2000 to provide a consistent and effective approach to conserve Canada lynx on federal lands in the conterminous United States (BLM 2005b).

4.3 Gray Wolf

4.3.1 Status

The gray wolf was listed as endangered under the ESA in 1974 in the conterminous 48 states. In 1978, the USFWS published a rule that relisted the gray wolf at the species level (*C. lupus*) as endangered throughout the lower 48 states and in Mexico (*Federal Register* Volume 43, Number 47, March 9, 1978). A wolf recovery team for the Northern Rocky Mountain region was appointed in 1974 and a Recovery Plan was approved in 1987 (BLM 2004c). The USFWS has defined a recovered wolf population in the northern Rocky Mountain Recovery Area as one that contains at least 30 breeding pairs with an equitable and uniform distribution throughout Idaho, Montana, and Wyoming for 3 consecutive years.

In 1995 and 1996, the USFWS reintroduced 66 wolves from Alberta and British Columbia into the wilderness areas of central Idaho and Yellowstone National Park as nonessential, experimental populations with the goal of reestablishing a sustainable gray wolf population in the northern Rocky Mountains (Wyoming, Idaho, and Montana). The USFWS established a rule that provided flexibility in responding to wolf-human conflicts outside of the experimental population areas. The rule allowed landowners and permittees who have federal grazing allotments to control problem wolves in various ways.

On April 1, 2003, the USFWS identified three DPSs of gray wolves in the lower 48 states; Eastern, Western, and the Southwestern. The USFWS found that each of these segments comprised a group of wolves geographically separated from the other groups and demonstrated unique evolutionary lineages with the loss of any one group resulting in a substantial range gap. The USFWS concluded that these three DPS represent separate “reservoirs of diversity” and, thus, warrant reclassification reflecting this uniqueness (BLM 2004c).

By the end of 2002, there were 663 wolves, including 43 breeding pairs, the third year in which there were 30 or more breeding pairs documented within the northern Rocky Mountain recovery area. These numbers being greater than the minimum recovery goals, the USFWS delisted this wolf DPS in February 2008. A preliminary injunction issued by the Montana Federal District Court reinstated ESA protection to the gray wolf northern Rocky Mountain DPS on July 18, 2008 as the species’ status is being reviewed.

The Wyoming BLM’s *Final Statewide Programmatic Gray Wolf Biological Assessment* (BLM 2004c) was completed in September 2004. Consideration of effects identified and conservation measures in the *Final Statewide Programmatic Gray Wolf Biological Assessment* are included in this BA where appropriate.

4.3.2 Life History

The gray wolf is the largest of the wild canids. Wolves are opportunistic predators that feed primarily on ungulates, though they also will prey upon beavers and other small mammals. In Yellowstone National Park and adjacent areas, elk have been the primary ungulate taken, followed by bison, deer, moose, and pronghorn (BLM 2004c). The kill success rate varies seasonally. Wolves also will prey upon livestock. In the western United States, the real and perceived impact of predation on livestock was a major factor in the extirpation of wolves. Across the livestock industry losses due to wolf depredation are few; however, individual ranchers can, for a variety of reasons, sustain substantial loss (BLM 2004c).

The first wolf den found in recent years in the United States consisted of five den openings on a flat forested knoll adjacent to a meadow. The den openings were hidden in Engelmann spruce, Douglas-fir, and lodgepole pines; the meadow was thought to be used as a rendezvous site (BLM 2004c). Dens in northwest Montana and the Canadian Rockies typically are located in valley bottoms and lower slopes, at sites close to trails, far from human habitation and activity, and close to meadows and other openings. Dens are frequently used repeatedly and, thus, den sites represent a significant habitat element for wolves.

Wolves expand their range via dispersal, usually settling into unoccupied territories within 30 to 60 miles of their natal pack; these dispersing animals account for 10 to 30 percent of individuals in a wolf population (BLM 2004c). Longer distance dispersals are not unknown; dispersers in the Central Rocky Mountain recovery area moved up to 500 miles. January through February and May through June are peak dispersal times. This mobility of wolves provides for significant genetic exchange across regions, repopulation following wolf reductions, and source animals for recolonization. Dispersal paths cross international boundaries, state boundaries, public and private land boundaries, different land uses, and agency jurisdictions.

Wolves do not typically tolerate human activity near dens and pups, but may be adapting to human disturbances (BLM 2004c). Flexible food habits, high annual productivity, and dispersal capabilities enable wolves to respond to natural and human-induced disturbances. These traits confer a high degree of resiliency on behalf of wolves.

4.3.3 Habitat Requirements

Wolves are habitat generalists and historically occupied most habitats in the Northern Hemisphere including all of Wyoming. Populations flourished in areas with plentiful large prey (BLM 2004c). The presence of abundant prey and relatively low levels of human activity are the main habitat requirements for wolves. In the Central Rocky Mountains of Canada, wolves were affected by topographic complexity and elevation. Wolves converged in broad river valleys in winter, where movement was less restricted by snow and where elk converged (BLM 2004c). In the central Rockies, colonizing wolves moved over large-scale landscapes rather than defined corridors. Consequently, it is not possible to define dispersal habitat. Rather, the alternative approach is to eliminate non-used habitat, such as areas with high road density and human activity (BLM 2004c).

4.3.4 Regional and Local Distribution

As recently as the mid-nineteenth century, gray wolves existed throughout most of North America exclusive of the Gulf Coast region, where the red wolf (*Canis rufus*) was found (BLM 2004c). Wolves were present throughout the northern Rocky Mountain region prior to colonization by Europeans, which resulted in reduction of native ungulate populations, introduction of livestock, and persecution of wolves. By the 1940s, wolves persisted only in isolated locations in the United States. In the late 1970s, wolves were dispersing into the mountainous areas in Alberta, Canada, just across the border (BLM 2004c). In 1985, a pack of 12 wolves crossed the border from Alberta to Glacier National Park and breeding was documented in 1986 for the first time in 50 years in the western United States (BLM 2004c). By 1992, at least 50 individual wolves were known to reside in at least four packs along the continental divide of Montana. Wolves were documented in Idaho since the early 1980s. Prior to reintroduction, lone wolves ventured into the Greater Yellowstone Area (GYA) on a number of occasions, and a single wolf was documented in northwestern Wyoming in 1992 (BLM 2004c).

After many years of effort and planning, wolves were reintroduced into the GYA in 1995-1996. This effort targeted large tracts of federal public lands (e.g., Yellowstone National Park) and the surrounding USFS wilderness areas that supported large populations of wild ungulates and had a relatively low likelihood for wolf-human conflicts. Gray wolf dispersals have been documented among and between all three recovery areas in the northern Rockies and into adjacent states (Washington, Oregon, and Utah).

Wolves are currently found in the northwestern portion of Wyoming, largely in the GYA. There were 14 packs in Yellowstone National Park and 7 that spend most of their time in Wyoming in 2004 (BLM 2004c). Numerous sightings of wolves suggest that they roam over much of western Wyoming. The known distributional extent of these wandering wolves is the Bighorn Mountains and Ten Sleep to the east, Morgan, Utah (outside Ogden) to the south and into Idaho to the west. Wolves have been sighted southwest of Meeteetse and around Worland and Thermopolis, as well as around Kemmerer, Cokeville, and Lander, and have been observed east of Rock Springs. In the southern portions of the Red Desert, the wild prey density is very low and cattle and sheep density is higher; the wolves switch to available prey and conflicts result.

4.3.5 Threats

Human-caused mortality, including legal and illegal harvest, depredation control, and vehicle collisions are the greatest causes of mortality in gray wolves (BLM 2004c). Researchers have found that if annual mortality exceeds 30 to 40 percent, population growth of wolves may be suppressed. The response of wolves to humans is variable, as can be expected in a long-lived animal with a large degree of social transmission (BLM 2004c). Wolves are sensitive to human predation and harassment, which influence the distribution and survival of wolves. Loss of habitat is a trend to be expected as human populations increase and more development occurs.

Human activities associated with highways, roads, and other linear corridors cause fragmentation of wolf ranges and result in the death of wolves (BLM 2004c). Persistent habitat occupancy by wolves is usually assured at road densities below 0.4 miles per square mile. Road density is the measurable manifestation of human activity, and wolf mortality is caused by humans using roads, rather than road density *per se*. Roads with low use can provide travel corridors for wolves. Wolves also appear to avoid snow machine activity.

Natural mortality factors include intraspecific conflicts between neighboring wolf packs, starvation, disease, and injury; however, these factors do not regulate populations in the northern Rockies (BLM 2004c). Wolf populations will fluctuate as a result of management actions, natural mortality, legal harvest, illegal take, wolf productivity, and ungulate population fluctuations.

4.4 Ute Ladies'-tresses

4.4.1 Status

Ute ladies'-tresses (*Spiranthes diluvialis*) was listed as threatened under the ESA on January 17, 1992 (USFWS 1992). Ute ladies'-tresses is considered to be globally imperiled (G2) and critically imperiled (S1) in the State of Wyoming (Keinath et al. 2003; NatureServe 2006). The state conservation status for Ute ladies'-tresses outside of Wyoming is critically imperiled (S1) in Idaho, Nebraska, Utah, and Washington; imperiled (S2) in Colorado and Montana; and possibly extirpated (SH) in Nevada (NatureServe 2006).

The Wyoming BLM's *Statewide Programmatic Biological Assessment: Ute Ladies'-tresses Orchid (Spiranthes diluvialis)* (BLM 2005c) was completed in October 2005. The BO for this plant was entitled *Programmatic Biological Opinion for the Impacts for the Wyoming Bureau of Land Management's Resource Management Plans with Bureau-Committed Conservation Measures and the Effects to the Ute Ladies'-tresses Orchid (Spiranthes diluvialis)* (USFWS 2007c). Consideration of effects and conservation measures identified in these documents are included in this BA where appropriate.

4.4.2 Life History

Ute ladies'-tresses is a perennial forb 4.8 to 19.7 inches tall with linear, mostly basal leaves (Fertig et al. 1994). Its inflorescence is a loose spike 1.2- to 5.9-inches long with small white to ivory flowers arranged in a loose spiral (Fertig 2000). Though the Ute ladies'-tresses may not bloom every year, when it does, the Wyoming populations are reported to typically bloom from early August to early September. Pollinators of Ute ladies'-tresses in Utah and Colorado are reported to be bumblebees (*Bombus* sp.), though no direct observations of pollination in Wyoming have been made (Fertig 2000). As with most orchids, the Ute ladies'-tresses has mycorrhizal symbionts to facilitate water and nutrient uptake (Fertig 2000).

4.4.3 Habitat Requirements

Ute ladies'-tresses is endemic to moist soils in mesic or wet meadows near springs, lakes, or perennial streams (USFWS 1992; Fertig 2000), and is considered to have a national wetland indicator status of facultative wetland (USFWS 1996a). In Wyoming, it is reported to occur at elevations between 4,650 to 5,420 feet, primarily on flat floodplain terraces or abandoned oxbows within 1.6 to 50 feet of a stream (Fertig 2000). These sites are subirrigated or seasonally flooded and remain moist into the summer months. The known occurrences of this orchid in Wyoming are in moist meadows dominated by redtop (*Agrostis stolonifera*), quackgrass (*Elymus repens*), wiregrass (*Juncus balticus*), switchgrass (*Panicum virgatum*), and foxtail barley (*Hordeum jubatum*) (Fertig 2000). The vegetative cover of these meadows is reported to range between 75 and 90 percent, and is relatively short, less than 18 inches tall. Because of this habitat feature, some amount of grazing by wildlife or livestock can be beneficial to keep the

canopy shorter for Ute ladies'-tresses to be able to compete. Plant species commonly associated with the orchid in Wyoming are shown in Table 2.

Table 2. Plant Species Commonly Associated with Ute ladies'-tresses (*Spiranthes diluvialis*) in Wyoming

Common Name	Scientific Name
Horsetail	<i>Equisetum laevigatum</i>
Wild licorice	<i>Glycyrrhiza lepidota</i>
Yellow sweetclover	<i>Melilotus officinalis</i>
White sweetclover	<i>Melilotus albus</i>
Scratchgrass	<i>Muhlenbergia asperifolia</i>
Knotted rush	<i>Juncus nodosus</i>
Arrowgrass	<i>Triglochin maritimum</i>
Meadow lousewort	<i>Pedicularis crenulata</i>
Narrowleaf blue-eyed grass	<i>Sisyrinchium angustifolium</i>
Common three-square	<i>Scirpus pungens</i>

Source: Fertig 2000

4.4.4 Regional and Local Distribution

Ute ladies'-tresses is known from sporadic occurrences in lower-elevation wet meadow habitats in the interior western United States, including Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, and Wyoming (NatureServe 2006). Rangelwide, it is known from over 50 extant populations in eight states (Fertig et al. 2005). Several historic populations in Nevada, Utah, and Colorado are presumed to be extirpated due to loss and degradation of riparian habitats caused by urbanization and stream channelization for agriculture and development (NatureServe 2006; Fertig et al. 2005). Most surviving populations are small and appear to be relict in nature. Currently, the largest documented population occurs in Colorado.

In Wyoming, nine populations of the the Ute ladies'-tresses occur in eight sites in the southeastern portion of the state in Converse, Goshen, Laramie, and Niobrara counties (Keinath et al. 2003; Fertig et al. 2005; BLM 2005c). Three of these, the Converse County populations, are on BLM land in the Casper Field Office planning area. The population in Goshen County is on state land, and the other five populations are on state or private land. Two populations on private land are in the Newcastle and Rawlins planning areas. The populations that are not on BLM land also do not occur on federal mineral estate (BLM 2005c). Federal involvement by the BLM would occur only on the three known populations in Converse County. The total number of orchids (in 2003) from known populations within the state was estimated at approximately 3,000 to 4,000 plants in an area of about 50 acres, although the population numbers may fluctuate year to year. Populations range in size from small patches of 12 to 35 individuals to the largest population of 1,000 to 2,000 plants (BLM 2005c).

No known Ute ladies'-tresses populations have been recorded in the Kemmerer planning area. These conclusions are based on a sensitive plant survey conducted in 1996 (Hartman et al. 1996), a survey of potential habitat completed in 1999 (Burns & McDonnell 1999), and two project-level inventories in 2001 (Intermountain Ecosystems 2001) and 2002 (TRC Mariah 2002).

Sub-basins that underlie areas near the Kemmerer planning area (the Green River watershed around Flaming Gorge Reservoir in the Rock Springs planning area, and the northern Pinedale planning area) have had documented Ute ladies'-tresses occurrences in adjacent states. Because the orchid may not

flower or emerge every year, additional unknown populations may exist throughout the state. As further surveys are conducted, previous and current factors affecting areas with Ute ladies'-tresses orchids will be addressed on a case-by-case basis.

4.4.5 Threats

Orchids, in general, are not common plants and most are rare in their distribution. This makes it difficult to assess the stability of any given orchid population. Furthermore, the naturally occurring low population numbers make the species susceptible to localized extinction caused by natural or manmade disasters. Historical accounts typically help realize the population trends, but populations in Wyoming were not discovered until 1993. Although no trend data are available, populations in Wyoming are considered stable (Fertig et al. 2005). Continued presence/absence surveys and population studies will provide additional data necessary to quantify statewide trends in distribution and populations (BLM 2005c).

As of January 2000, none of the four known Wyoming populations of Ute ladies'-tresses was under conservation easements or other forms of protection from development (Fertig 2000). According to Fertig (2000), the primary threats to this orchid throughout its range include the following:

- Habitat loss and (or) degradation due to urbanization
- Grazing, especially in late summer; however, some populations have persisted under grazing pressure for more than 75 years
- Mowing prior to fruit ripening or if the cutting height is too low (however, mowing after the fruits have ripened may be one of the best management tools for maintaining habitats for this species)
- Flood control may adversely affect the Ute ladies'-tresses because it allows dense shrub stands to become established
- Herbicides applied for broad-leaf weeds may adversely affect the orchid, in addition, insecticides may affect its bumblebee pollinators
- Noxious weed encroachment may displace or out-compete this species
- Natural herbivory by voles
- Loss of pollinators by actions other than insecticides
- Recreation impacts to stream banks may impact habitat or individuals
- Collection/harvest by orchid hunters and others

Other threats identified in the *Statewide Programmatic Biological Assessment: Ute Ladies'-tresses Orchid (Spiranthes diluvialis)* (BLM 2005c) include water diversions, channelization, and irrigation development. Threats specific to the Kemmerer planning area potential habitat for Ute ladies'-tresses include the following:

- Existing and proposed wind farms
- Hard rock mining (including coal, trona, and phosphates)
- Livestock grazing on private lands
- Non-federal oil and gas and related energy development
- OHV crushing (particularly in Nugget Canyon)

4.5 Western Yellow-billed Cuckoo

4.5.1 Status

In 1887, two subspecies of yellow-billed cuckoo were described as geographically separated by the Continental Divide, and the western subspecies, *Coccyzus americanus occidentali*, was distinguished from the eastern subspecies *Coccyzus americanus americanus* (BLM 2003c). In the late 1980s, the USFWS requested an avian taxonomist to evaluate the validity of the cuckoo subspecies in response to a 1986 petition to list the yellow-billed cuckoo populations in California, Washington, Oregon, Idaho, and Nevada under the ESA. Evidence was found that western birds are larger than eastern birds and that the two populations could be separated by utilizing discriminant analysis. The evaluation also determined that the timing of migration and breeding differed between the two populations. The western DPS of the yellow-billed cuckoo was accepted as a candidate species under the ESA on October 30, 2001. Paramount to this bird qualifying to maintain its candidate designation is its taxonomic status. The western yellow-billed cuckoo remains a candidate species for listing under the ESA pending the outcome of future studies. The USFWS objective is to maintain a viable breeding population distributed throughout its historical range. The cuckoo also carries a Global Heritage Status Rank of G5T3.

The Wyoming BLM's *Final Programmatic Biological Evaluation for the Western Yellow-billed Cuckoo Found in Wyoming* was completed in October 2003 (BLM 2003c). Consideration of effects and conservation measures identified in this evaluation are included in this BA where appropriate.

4.5.2 Life History

The western yellow-billed cuckoo is a long-tailed, robin-sized bird with a stout, moderately long, decurved bill. It is approximately 12 inches long and approximately 2 ounces. Sexes are similar, with juveniles exhibiting a less distinct tail pattern and a duller cinnamon color in the wing coverts than adults (BLM 2003c).

Cuckoos eat primarily large insects, such as caterpillars, cicadas, and grasshoppers. They will occasionally take frogs and small lizards. Cuckoos also have been known to take eggs and the young of other birds, and will sometimes eat small fruits and nuts. Generally, cuckoos will sit inconspicuously and scan surrounding vegetation for prey. They often will glean insects from leaves and stems while perched, but will also run along branches to secure prey (BLM 2003c).

Western yellow-billed cuckoos are long-distance migrants. Peak breeding periods for western populations occur during mid July to early August (BLM 2003c). Both members of the pair build a well-concealed nest in dense foliage within 5 to 40 feet off the ground. Breeding periods may vary seasonally and often coincide with the appearance of massive numbers of insects. Nesting occurs almost exclusively close to water, and biologists hypothesize that the species may be restricted to nesting in moist river bottoms in the west because of humidity requirements for nesting and the rearing of the young. In Wyoming, western yellow-billed cuckoos arrive during late May and depart for wintering grounds during late August through September. Currently, the western yellow-billed cuckoo is considered an uncommon summer resident, but this designation is uncertain given the lack of survey data (BLM 2003c).

4.5.3 Habitat Requirements

The western yellow-billed cuckoo prefers open woodland with clearings and thick, scrubby undergrowth along watercourses (BLM 2003c). Surveys in California in various areas of their summer range indicate that they prefer large tracts (in excess of 49 acres) of deciduous riparian woodland and that they are generally absent from heavily forested and urban areas. Tangled willow habitat generally is utilized for nesting, while areas of tall cottonwood stands are utilized for foraging. While willows are usually used for nesting, other trees, shrubs or vines also may be utilized. Canopy cover of at least 50 percent in both

the understory and overstory is preferred according to habitat models established for the western population. Winter habitat preferences for the western yellow-billed cuckoo include various types of tropical and subtropical lowlands and woody/scrubby vegetation along watercourses in Central and South America (BLM 2003c).

The cuckoo in southwestern Wyoming selects relatively large stands of cottonwood riparian habitat below approximately 7,000 feet (BLM 2003c). This habitat is limited in western Wyoming, occurring mainly in the areas mentioned below under Regional and Local Distribution and along the Snake, Sweetwater (above Mud Spring), Bear (Woodruff Narrows area), and New Fork river systems. Some marginal habitat also exists along Cottonwood Creek and Horse Creek on land managed by the BLM Pinedale Field Office (BLM 2003c).

4.5.4 Regional and Local Distribution

Based on historical accounts, the western yellow-billed cuckoo was widespread and locally common in California and Arizona, locally common along a few river systems in New Mexico, common very locally in Oregon and Washington, generally local and uncommon in scattered drainages of the arid and semiarid portions of western Colorado, western Wyoming, Idaho, Nevada, and Utah, and was probably uncommon in specific areas in British Columbia (BLM 2003c). Wyoming, west of the Continental Divide, is included in the historical breeding range of this population.

Because of extensive habitat loss, the overall range of the western yellow-billed cuckoo decreased and the last birds sighted in British Columbia were in 1920, in Washington in the 1930s, in Oregon in the 1940s, and in California north of the Sacramento Valley in the 1950s (BLM 2003c). A 1986 study showed a 93 percent decline in population from the baseline 1975-1979 Lower Colorado Valley population inventory, with additional documented declines in other areas.

Population status and trends of the yellow-billed cuckoo in Wyoming are unknown, with suitable cottonwood/willow riparian habitat very limited in the state and not adequately surveyed (BLM 2003c). Breeding is considered unconfirmed, although observations and other anecdotal evidence suggest that breeding may occur in the Green River basin and along the Snake River within the state. Element occurrence records within the WYNDD support five occurrences of this subspecies in southwestern Wyoming, as recorded during Breeding Bird Surveys from 1977 to 1981. Existence was documented with three sightings on the Seedskaadee National Wildlife Refuge in the Green River basin in Sweetwater County (BLM 2003c). Two of the observations reported pairs exhibiting courtship behavior. One adult was observed on June 26, 1980, in the vicinity of Beaver Creek (a tributary of the Henry's Fork of the Green River) in Uinta County. This individual also demonstrated courtship behavior. The fifth record for this subspecies occurred in the vicinity of Abert Creek, Uinta County, approximately 1½ miles southeast of I-80 in 1979. This is the only verified report of the western yellow-billed cuckoo on BLM land in Wyoming.

4.5.5 Threats

Millions of acres of riparian habitat were available along western waterways historically, but as human populations spread across North America, much of the riparian habitat was lost to agriculture, livestock grazing pressure, and use of vegetation for fuel. Up to 90 percent of the historic natural riparian ecosystems in the western United States is gone (BLM 2003c). The health of the majority of the remaining riparian areas is endangered by human activities, such as grazing pressure, lowered water tables from high water demand, and pesticide use. Likely, the largest contributor to the decline of cuckoo habitat in the western United States in recent history was the human management of the flow regimes of the major rivers, which formed the center of the western riparian habitat (BLM 2003c).

5.0 SPECIES WITH HABITAT DOWNSTREAM (COLORADO RIVER) THAT MAY BE AFFECTED BY WATER DEPLETION RESULTING FROM BLM-AUTHORIZED ACTIONS WITHIN THE KEMMERER PLANNING AREA

5.1 Introduction

Water depletions to the Colorado River watershed may jeopardize the existence of one or more federally listed threatened or endangered species and adversely modify designated critical habitats. In 1988, the USFWS developed an agreement that federal agency actions resulting in water depletions to the upper Colorado River basin greater than 100 acre-feet annually require section 7 consultation and can be offset by a one-time contribution made by the water project, which goes to Recovery Program efforts (USFWS 2001). There is no charge for existing depletions or for new depletions of less than 100 acre-feet of water. Under this agreement, as long as sufficient progress is being made toward endangered fish recovery, the USFWS will issue favorable BOs on water depletions of fewer than 3,000 acre-feet of water (USFWS 2001). When reviewing projects that deplete more than 3,000 acre-feet of water per year, the USFWS determines on a case-by-case basis the recovery actions that are needed to warrant a favorable BO.

Four endangered fish species (bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker), occurring as residents or migrants in the Colorado River watershed (inclusive of major tributaries), have experienced significant declines in abundance, distribution, and the availability of suitable habitats since the turn of the twentieth century. The primary reasons for these declines are water developments, including dam construction, diversion and consumptive use of water; changes in river flow and channel characteristics; and habitat loss and degradation.

The BLM historically has authorized several types of actions and associated infrastructure within the planning area that may result in water depletion to the Colorado River watershed. These actions include the development of livestock watering facilities, irrigation projects, wetlands, reservoirs for recreational fisheries, habitat restoration projects, fire suppression, and oil and gas development. Water depletions are considered a long-term adverse effect because implementation of management actions projected to cause water depletion is anticipated to occur over the life of the plan. Water depletion analyses assume all water used for drilling and completion of wells and evaporation from reservoirs in the Green River watershed within the planning area contribute to surface flows of the Colorado River or its tributaries.

For Colorado River watershed species analyzed in this BA, the assessment area includes the portion of the planning area with streams that are a part of the Green River system, as well as areas of the Colorado River watershed downstream of the planning area.

5.2 Bonytail Chub

5.2.1 Status

The bonytail chub (*Gila elegans*) was proposed for listing in 1978 and listed as endangered on April 23, 1980. The final revision of the bonytail chub Recovery Plan was completed in 2002 (USFWS 2002a), and critical habitat was designated in 1994 for this species and the other three endangered fish species in the Colorado River (USFWS 2007b). The bonytail chub Heritage Rank is G3/S3, critically imperiled globally, and rare or found locally in a restricted range (WYNNND 2007).

5.2.2 Life History

As a member of the minnow family, the bonytail chub can reach 24 inches (61 cm) with a short head, depressed rounded snout, and a hump on the nape in adults. This species spawns from mid-June to early July. The bonytail chub is a surface feeder and adults primarily eat terrestrial insects, plant debris, and algae. The young feed mainly on aquatic insects (USFWS 2002a).

5.2.3 Habitat Requirements

The bonytail chub usually occurs in or near deep swift water, in flowing pools and backwaters, or over mud or rocks; it also has occurred in reservoirs. This fish is most frequently associated with eddies just outside the main current and has a high tolerance for turbidity (USFWS 2002a).

Designated critical habitat downstream of the planning area for this species includes portions of the Green River in Uinta and Grand counties, Utah, and Moffat County, Colorado. Also included are portions of the Colorado River in Grand, Garfield, and San Juan counties, Utah, and Mesa County, Colorado, plus counties further downstream in Nevada, Arizona, and California.

5.2.4 Regional and Local Distribution

Historic range of the bonytail chub includes the Colorado River system from southwest Wyoming to Mexico (USFWS 2002a). The current known range of the bonytail chub includes limited reaches of the Colorado River system where it flows through five states – Colorado, Utah, Arizona, Nevada, and California (USFWS 2007b). Presently, the bonytail chub is rare and (or) near extinction. The species was most recently found only in the Yampa River (Dinosaur National Monument), the Green River (Gray and Desolation canyons), the Colorado River (Black Rocks and Cataract Canyon), Lake Mohave (Arizona-Nevada border), and Lake Havasu (Arizona-California). As of the early 1990s, bonytail chub populations were being established in urban lakes in Tempe, on the Buenos Aires National Wildlife Refuge (NWR), and at The Nature Conservancy's Hassayampa Reserve, all in Arizona (USFWS 2002a). This species has not occurred in Wyoming since the impoundment of the Flaming Gorge Dam in 1963.

5.2.5 Threats

The Glen Canyon, Hoover, Davis, Parker, and Imperial dams created large, still reservoirs with calm, silty bottoms, which are unsuitable foraging grounds for the bonytail chub. The dams blocked migratory routes, and water released from the bottoms of the dams was too cold for the fry of these species. The remaining river stretches are frequently too warm for the river fish. Now small in number and size, these native species exist chiefly in hatcheries and upstream branches of the river (USFWS 2002a). Other threats to the bonytail chub include the introduction of non-native fish that compete for food and habitat, and may be predators on this species or hybridize with it (USFWS 2002a).

5.3 Colorado Pikeminnow

5.3.1 Status

The Colorado pikeminnow (*Ptychocheilus lucius*) formerly known as the Colorado squawfish, was listed as endangered throughout its range in 1967, except in the Salt and Verde river drainages of Arizona, where the population is considered experimental, non-essential. A Recovery Plan was completed in 2002 (USFWS 2002b) and critical habitat designated in 1994 (USFWS 2007b). The Colorado pikeminnow Heritage Rank is G1/SX, critically imperiled globally, and known to be extinct Wyoming (WYNND 2007).

5.3.2 Life History

The largest minnow in North America, the Colorado pikeminnow has declined in both number and size; whereas it once reached 6-feet long and weighed 80 pounds, it now rarely surpasses 3 feet (USFWS 2002b). The Colorado pikeminnow is an elongate fish with a long flattened head, small eye, and slightly oblique mouth. This species spawns under a decreasing flow regimen with increasing temperatures in summer. In the Green River of Wyoming, the pikeminnow spawns from July until August, apparently when water temperature warms. In the lower Yampa River of western Colorado, this fish apparently spawned as early as mid-June or as late as August in different years. Once hatched, larvae enter the stream drift and are transported downstream to reach low gradient nursery areas. The Colorado pikeminnow is sexually mature in 5 to 7 years and may live 30 years or more (USFWS 2002b).

5.3.3 Habitat Requirements

The Colorado pikeminnow prefers large streams with turbid to nearly clear water and moderate current over sand, gravel, or rock. The young inhabit quieter backwater pools along the edges of streams (USFWS 2002b). Adults also may use strongly flowing water, eddies, runs, flooded bottoms, or backwaters (especially during high flow). Lowlands, inundated during spring high flow, also appear to be important habitats (USFWS 2002b).

Designated critical habitat downstream of the planning area for the Colorado pikeminnow includes portions of the Green River in Uintah, Carbon, Grand, Emery, Wayne, and San Juan counties, Utah, and Moffat County, Colorado. Also included are portions of the Colorado River in Grand, Wayne, Garfield, and San Juan counties, Utah, and Mesa and Garfield counties, Colorado.

5.3.4 Regional and Local Distribution

Historically, the Colorado pikeminnow occurred from southwest Wyoming into western Colorado and eastern Utah, south to southern Arizona, southeast California, and northwestern Mexico (USFWS 2002b). By the mid-1980s, the species occurred only in the Upper Colorado River basin of Colorado, Utah, New Mexico, and Wyoming, mainly in the Green River in Utah and in the Yampa and Colorado rivers in Colorado and portions of Utah. The present distribution of the Colorado pikeminnow is substantially reduced from its historic range. The species has not been documented below Glen Canyon Dam since 1968 (USFWS 2002b). Adults predominate in the White and Yampa rivers, and young in the Green River; however, juveniles have been reported as rare in the Green River system. Spawns have been recorded in the Green River sub-basin in the lower Yampa River and in Gray Canyon (a segment of the Green River above its confluence with the Price River). Nursery areas include the Green River between the Colorado River and the San Rafael River, and a segment of the Green River upstream and downstream from the confluences of the Duchesne and White rivers (USFWS 2002b). The Colorado pikeminnow was reintroduced into the Salt and Verde rivers of Arizona in the mid-1980s (USFWS 2002b). This species was recorded in the Little Snake River, which flows into Colorado from Wyoming (USFWS 2002b). This species has not been documented in the planning area.

5.3.5 Threats

Like many river fish, the Colorado pikeminnow has suffered from the introduction of exotic fishes into its environment and from water management practices in the West. Dams, impoundments, and the diversion of waterways have altered the species' ecosystem by causing changes in water temperature and volume of waterflow and blocking migration routes. The Colorado River Fish Recovery Team and other groups are working to help this and other native species recover (USFWS 2002b).

5.4 Humpback Chub

5.4.1 Status

The humpback chub (*Gila cypha*) was listed as endangered in 1967 throughout its range. The species Recovery Plan was completed in 2002 (USFWS 2002c) and critical habitat was designated in 1994 (USFWS 2007b). Heritage Rank for this species is G1/SX, critically imperiled globally, and known to be extinct in Wyoming (WYNND 2007).

5.4.2 Life History

The humpback chub is a relatively large minnow species growing up to 20 inches in length. The species is a moderately elongate fish with a distinctive hump on the nape (in adults) and an overhanging head (USFWS 2002c). This chub species spawns shortly after peak flow in May, June, or July, the exact time period depending on location. Spawning occurs when water temperatures approach 68°F. Recapture data and radio telemetry indicate limited movements for this species, particularly from summer through winter (USFWS 2002c).

5.4.3 Habitat Requirements

The humpback chub was specially adapted to the turbulent waters, the temperatures, and the food sources of the Colorado River and its tributaries. Adults use various habitats, including deep currents, shaded canyon pools, areas under shaded ledges in moderate current, riffles, and eddies (USFWS 2002c). The young have been recorded in backwaters over nonrocky substrate. In the Yampa River, Colorado, adults were most often captured in eddy habitat (average depth 6.6 feet), particularly in shoreline eddies created by large boulders and rapids. Most young were captured in shoreline eddies and runs, although more data are needed on feeding habits (USFWS 2002c). This species is known to feed on planktonic crustaceans and algae (USFWS 2002c).

Designated critical habitat downstream of the planning area for this species includes portions of the Green River in Uintah and Grand counties, Utah, and Moffat County, Colorado. Also included are portions of the Colorado River in Grand, Garfield, and San Juan counties, Utah, and Mesa County, Colorado, plus counties further downstream in Arizona.

5.4.4 Regional and Local Distribution

The historic range of the humpback chub formerly included much of the Colorado River basin, from western Colorado and southwestern Wyoming to northern Arizona and perhaps California. Known occupied rivers included the Colorado, Green, lower Yampa, White (in Utah), and Little Colorado rivers (USFWS 2002c). Humpback chub numbers have declined throughout their original range and have disappeared in some areas. In the lower basin, the largest remaining population occurs in the Little Colorado and Colorado rivers in the Grand Canyon. In the upper basin, concentrations are now in the Colorado River in west-central Colorado and in limited areas of the Green and Yampa rivers (USFWS 2002c). Suspected humpback chub were captured in the Little Snake River in Colorado in 1988, which crosses into Wyoming (USFWS 2002c). This species has not been documented in the planning area.

5.4.5 Threats

Similar to the other endangered fish species in the Colorado River system, declines in the humpback chub can be attributed to impoundments, water diversions, and the introduction of exotic fish predators. The Colorado River Fish Recovery Team and other groups are working to bring native species back to stretches of river between the dams (USFWS 2002c).

5.5 Razorback Sucker

5.5.1 Status

The razorback sucker (*Xyrauchen texanus*) was proposed for listing as threatened in 1978, proposed for listing as endangered in 1990, and listed as endangered in 1991. The species Recovery Plan final revision occurred in 2002 (USFWS 2002d) and critical habitat was designated in 1994 (USFWS 2007b). The Heritage Rank for this species is G1/SX, critically imperiled globally; the razorback sucker is known to be extinct in Wyoming (WYNND 2007).

5.5.2 Life History

This member of the sucker family can reach 3 feet in length (91 cm) and its back has a high, sharp ridge from head to dorsal fin (USFWS 2002d). The razorback sucker has a long rounded head, long snout, and fleshy mouth. Sexual maturity occurs as early as the second year (males) or third year (females) under fish hatchery conditions, or in fifth or sixth year under other captive regimes (USFWS 2002d). Spawning groups for this species can include hundreds of individuals that gather in late January into April (rarely to May or June) in the lower Colorado River basin (reservoirs). This is earlier, and the spawning season is longer, than in riverine habitat. Spawning occurs when water levels rise or peak and water is beginning to warm. Limited data indicate that young tend to remain along shorelines, in embankments along sandbars, or in tributary mouths (USFWS 2002d). Razorback suckers eat algae, planktonic crustaceans, and aquatic insect larvae.

5.5.3 Habitat Requirements

The razorback sucker inhabit deep, clear to turbid waters of large rivers and occasional reservoirs that include mud, sand, or gravel areas necessary for spawning (USFWS 2002d). Habitats for this species include slow water areas, backwaters, and eddies of medium to large rivers. Currently, three of the four remaining populations of greater than 100 individuals are in reservoirs. Flooded lowlands and lower portions of tributary streams presumably served as resting or feeding areas during breeding season in the Green River basin (USFWS 2002d).

Designated critical habitat downstream of the planning area for the razorback sucker includes portions of the Green River in Uintah, Carbon, Grand, Emery, Wayne, and San Juan counties, Utah, and Moffat County, Colorado. Also included are portions of the Colorado River in Grand, Wayne, Garfield, and San Juan counties, Utah, and Mesa and Garfield counties, Colorado, plus counties further downstream in Nevada and Arizona.

5.5.4 Regional and Local Distribution

The historic range of the razorback sucker was throughout the Colorado River basin, from Wyoming and Colorado to Sonora and Baja California (USFWS 2002d). The current range of the razorback sucker includes limited areas in seven western states of the Colorado River system: Wyoming, Colorado, New Mexico, Utah, Arizona, Nevada, and California (USFWS 2007b). The largest population occurs in Lake Mohave; small numbers occur in Lake Mead and the Grand Canyon. The species is widely distributed in the Green River basin, especially in the upper basin, rarely occurring upstream as far as the Little Snake River. A small reproducing population exists in the lower Green River. In the upper Colorado River, most razorback suckers occur in the Grand Valley. Ongoing reintroduction efforts have occurred in Arizona and in the San Juan River Basin, increasing razorback sucker numbers in New Mexico (USFWS 2002d). This species has not been documented in the planning area.

5.5.5 Threats

Damming of the Colorado River system has diminished available habitat for the razorback sucker (USFWS 2002d). Water-management practices such as damming and channeling not only change the speed, location, and volume of flow, but also changes the temperature and the clarity of the water and block migration routes.

5.6 Impact Analysis and Effect Determination for Colorado River Fish Species

Given the rarity of Colorado River fish species and the potential cumulative effects of water depletions from the Proposed RMP and other projects, the USFWS has expressed concern about these effects, however small, on water level in the Colorado River. Projected development of water impoundments, springs, and wells for livestock, fish, and wildlife are anticipated to deplete water in the Colorado River watershed. Table 3 summarizes the estimated average annual depletion for select actions identified for the Proposed RMP of the Kemmerer Proposed RMP and Final EIS.

Table 3. Projected BLM Actions and Potential Water Depletions in the Colorado River Watershed During Implementation of the Kemmerer Field Office Proposed Resource Management Plan

Projected Action*	Projected Number Over 20 years	Average Annual Depletion (acre-feet)
Oil and Gas Drilling	963	96.3
Livestock Water Wells and Springs	41	0.6
Total		96.9

*Note: Due to the programmatic nature of RMP alternatives, key assumptions made for calculating projected water depletion in the Colorado River watershed over the life of the RMP include the following:

- (1) The Green River watershed comprises 58 percent of the planning area.
- (2) All Moxa Arch, CBNG wells, and 58 percent of the Overthrust Belt wells are within the Colorado River watershed.
- (3) Livestock wells and springs are evenly distributed throughout the planning area.
- (4) All wells and springs projected for development over the life of the RMP are constructed and completed in year 1.
- (5) Water depletions associated with conventional oil and gas drilling are calculated using an average depletion of 2 acre-feet per well occurring in the Colorado River watershed by alternative. Oil and gas well numbers were derived from the RFD Scenario for Oil and Gas (BLM 2006b; 2008b).
- (6) Potential water depletion for fire management is not included in calculations due to the nonpredictive nature of unplanned fire and the negligible water depletion associated with planned fire.

CBNG coalbed natural gas
RFD Reasonable Foreseeable Development
RMP Resource Management Plan

Based on the projected water depletions in Table 3, implementation of the Kemmerer Proposed RMP and Final EIS *may affect, and is likely to adversely affect* (LAA), the bonytail chub, Colorado pikeminnow, humpback chub, and razorback sucker. All other activities (listed in Section 7 below) not listed in Table 3 are not anticipated to deplete waters from the Colorado River system and will, therefore, result in a *no effect* (NE) determination for these endangered fish.

5.7 Conservation Measures

For actions projected to deplete water from the Colorado River watershed, the BLM will initiate formal consultation with the USFWS prior to activity approval. The BLM will continue to participate in the Cooperative Agreement for the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (USFWS 2001).

5.8 Best Management Practices

When developing or improving water sources in the Colorado River watershed, the BLM considers development designs, such as water wells and guzzlers, rather than surface impoundments to minimize impacts to surface water hydrology.

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6.0 METHODS AND CONTEXT OF THE ANALYSIS

The Kemmerer Proposed RMP and Final EIS was reviewed to identify projected actions with a potential to affect listed species in the planning area. The USFWS and the BLM conferred for additional information on each species and actions occurring within the planning area. Much of the information used in the analyses for this BA was drawn from the Wyoming BLM statewide programmatic BAs for affected species. In some cases, ground surveys and inventories were conducted by the BLM, the USFWS, the WYNDD, the Wyoming Game and Fish Department (WGFD), and other consultants as part of other planning documents or projects. Moreover, species Recovery Plans and relevant websites were reviewed for further information on habitats, occurrences, life histories, and conservation measures.

6.1 Activity Description

Each resource program (i.e., air quality, cultural resources, livestock grazing, etc.) occurring on the public lands in the planning area where management actions are identified is briefly described in section 7.0 of this document.

6.2 Effects Analysis

The BA analyzes the effects of a proposed *federal action*. A *federal action* is defined as anything authorized, funded, or carried out by the federal agency. *Direct impacts* are those effects on the species or its habitats caused by an action, occur at the same time, and place as the action. *Indirect impacts* are those effects on the species or its habitat caused by an action occurring later in time or further removed in distance than direct impacts, but which are still reasonably foreseeable. The analysis of all impacts includes the effects of interrelated and interdependent actions.

For the purposes of effects analysis under the ESA, *cumulative effects* are defined as those impacts of future state, tribal, and private actions reasonably certain to occur. Future *federal actions* will be subject to the consultation requirements established in section 7 of the ESA and, therefore, are *not* considered cumulative to the proposed action.

Factors considered when analyzing effects include, among others, proximity of the action to the species or habitat of concern, geographic distribution of the action disturbance, timing of the action, nature of the action effect, action disturbance frequency, duration of the affecting action, action disturbance intensity, and action disturbance severity.

The BA process is focused primarily on *adverse impacts* to the species of concern. Even though impacts may have both beneficial and detrimental effects on the subject species in either the long or short-term, the effects determination of the assessment will be based on and controlled by the likelihood of adversely affecting the species. In other words, for a BA, the impacts analysis is not an averaging process.

6.3 Effects Determinations

No species in the planning area are proposed for listing under the ESA. Determinations for each resource program (i.e., air quality, cultural resources, livestock grazing, etc.) are based on the impacts of the management actions, the proposed protections for these actions, and conservation measures committed to by the BLM. Best Management Practices (BMPs) would provide an additional level of protection, but are not considered in the effects determination.

Determination categories for this BA for federally listed threatened and endangered species are defined below:

No effect (NE) – The appropriate conclusion when the BLM determines its proposed action will not affect listed species or critical habitats. The principle factors for this determination are (1) that “suitable habitat” or the species does not exist in the analysis area or (2) the very nature of the action will not have any effect on an individual or its habitat. In this situation, no further contact with the USFWS is required.

May affect, but is not likely to adversely affect (NLAA-b, -i, -d) – The appropriate conclusion when effects on listed species or its critical habitats are expected to be completely beneficial (-b), or insignificant (-i), or discountable (-d). Beneficial effects have contemporaneous positive effects without adverse effects to the species or its critical habitat. For example, there cannot be “balancing” where the benefits of the action would outweigh the adverse effects. Insignificant effects relate to the size of the impact and should not reach the scale where take occurs. Discountable effects are extremely unlikely to occur. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur (USFWS 1998). This type of effect requires informal section 7 consultation with the USFWS and their concurrence with the determination.

May affect, is likely to adversely affect (LAA) – The appropriate conclusion if any adverse effect to the listed species or its critical habitats may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. In the event the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects to even just one individual plant or animal, then the proper effect determination for the proposed action “is likely to adversely affect” the listed species. An “is likely to adversely affect” determination requires formal section 7 consultation with the USFWS.

One candidate species is known to occur in the Kemmerer planning area. Determination categories for candidate species are as follows:

- No impact
- May impact, but is not likely to contribute to the need for federal listing
- Likely to contribute to the need to list

The USFWS established that the reintroduced wolves in the Northern Rocky Mountain region would comprise an experimental, nonessential population. Federal agencies are only required to confer with the USFWS when they determine that an action they authorize, fund, or carry out “is likely to jeopardize the continued existence” of the species. Thus, the decision by the acting agency for each management action for the gray wolf is whether the action:

- **Is likely to jeopardize the continued existence of the species – “Jeopardy”**
- Or
- **Is not likely to jeopardize the continued existence of the species – “No Jeopardy”**

To “jeopardize the continued existence of” is to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (BLM 2004c).

A summary of the effects determinations of this BA is shown in Section 9.0 of this document.

6.4 Coordination and Conservation Measures

Section 7(a)(1) of the ESA requires the federal agency (i.e., the BLM) to utilize all of its authorities in furthering the purposes of the ESA by implementing programs for the conservation of threatened and endangered species. To meet the requirements of section 7(a)(1), the BLM needs to consider conservation programs for the management of threatened and endangered species separate from any consultation requirements for actions affecting other special status species (e.g., BLM-sensitive species, state or federal species of concern). Those conservation programs that are adopted need to be incorporated into the approved RMP.

Conservation recommendations serve several purposes, including (1) presenting ways the BLM can assist species conservation in furtherance of statutory responsibilities, (2) minimizing or avoiding the adverse impacts of a proposed action on threatened or endangered, and (3) identifying and recommending studies aimed at improving the understanding of a species' biology or ecology.

Managing listed threatened and endangered species is addressed in four primary ways:

- Through conservation measures identified as part of a species listing package, as reasonable and prudent measures recommended in the BO from the USFWS in response to a BA, and through species protection measures determined through collaborative interagency and multidiscipline efforts.
- Through BLM-Wyoming Field Offices' incorporation of the *Wyoming BLM Mitigation Guidelines for Surface-Disturbing and Disruptive Activities* (refer to Proposed RMP and Final EIS, Appendix N). These guidelines state that prior to conducting activities in known or suspected critical or essential habitats, the lessee or permittee is required to conduct inventories or studies in accordance with the BLM and (or) USFWS guidelines to verify the presence or absence of federally listed threatened and endangered species. In the event the presence of one or more of these species is verified, the operation plans of a proposed action will be modified to include the protection of the species and its habitat, as necessary. Possible protective measures may include seasonal or activity limitations or other surface management and occupancy constraints.
- Through the BLM's incorporation of the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* (BLM 1998). As stated, the "standards apply to all resource uses on public lands," while the "guidelines apply specifically to livestock grazing management practices on the BLM-administered public lands." The development and application of these standards and guidelines are intended to achieve the following four fundamentals of rangeland health: (1) proper functioning of air and watersheds; (2) proper cycling of air, water, soil nutrients, and energy; (3) attainment of state water quality standards; and (4) sustained maintenance and management of the native fauna and flora of the area, including federally listed threatened and endangered species. These fundamental goals are achieved through inventory of the natural resources, appropriate management actions aimed at these resources, monitoring and evaluation of the effectiveness of these management actions, and land management adjustments as necessary.
- By abiding by the *Special Status Species Management, BLM Manual 6840*, which directs field office managers to implement special status species programs within their areas of jurisdiction by (1) conducting and maintaining current inventories, including surveys for occupancy of special status species on public lands; (2) providing for the conservation of special status species in the preparation and implementation of Recovery Plans with which the BLM has concurred,

interagency plans, and conservation agreements; (3) ensuring that all actions comply with the ESA, its implementing regulations, and other directives associated with conserving special status species; (4) coordinating field office activities with federal, state, and local groups to ensure the most effective programs for special status species conservation; (5) ensuring actions are evaluated to determine if special status species objectives are being met; (6) ensuring all actions authorized, funded, or carried out by the BLM follow the interagency consultation procedures as outlined in 50 CFR, Part 402; and (7) ensuring results of formal section 7 (of the ESA) consultations, including terms and conditions in incidental take statements, are implemented. Implementation will ensure that actions authorized by the BLM do not contribute to the need for a species to become listed.

The conservation measures described below in Section 6.5 Conservation Measures Common to All Species are intended to minimize adverse impacts likely to result from implementing the management actions provided in the Kemmerer Proposed RMP and Final EIS. Conservation measures can take three forms: (1) the existing conservation measures in the Kemmerer Proposed RMP and Final EIS (Proposed Protections); (2) BLM-implementation of additional conservation measures that would reduce impacts to listed species; and (3) an additional group of measures that the BLM will consider implementing that include any appropriate BMPs to further protect the species and its habitats. In the event new populations of the species are discovered, these measures would apply until such time that further investigation and subsequent consultation with the USFWS results in more appropriate management prescriptions.

6.5 Conservation Measures Common to All Species

The following general conservation measures for all listed threatened and endangered species will be applied under all resource programs and are not repeated in this BA under each management program. Conservation measures specific to species are identified in Section 10.0 of this document.

- The *Wyoming BLM Mitigation Guidelines for Surface Disturbing Activities* (Appendix N in BLM 2008a) requires any lessee or permittee to conduct inventories or studies in accordance with BLM and USFWS guidelines to verify the presence or absence of threatened or endangered species before any activities can begin onsite. In the event the presence of one or more of these species is verified, the operation plans of a proposed action will be modified to include the protection of the species and its habitat, as necessary. Possible protective measures may include seasonal or activity limitations or other surface management and occupancy constraints.
- Grazing management will consider threatened and endangered species and their habitats. Grazing management practices will incorporate the kinds and amounts of use that will restore, maintain, or enhance habitats to assist in the recovery of federally threatened and endangered species or the conservation of federally listed species of concern and other state-designated special status species. Grazing management practices will maintain existing habitats or facilitate vegetation change toward desired habitats by considering the hydrology, physical attributes, and potential for the watershed and the ecological site (BLM 1998).
- When project proposals are received, the BLM shall initiate coordination with the USFWS at the earliest possible date so the USFWS can advise on project design. This will minimize the need to redesign projects at a later date to include conservation measures determined appropriate by the USFWS.
- The BLM will manage all public lands in the planning area to conserve and (or) improve the habitats of special status species. The objectives are to prevent the need for listing of species under the ESA and to maintain or improve conservation of special status species habitats.

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- Water developments and placement of salt, mineral, and forage supplements for livestock will not be allowed on areas inhabited by special status plant species.
 - Proposed habitat expansion, introductions, reintroductions, and translocations of native and nonnative fish and wildlife species (including special status species) would be considered on a case-by-case basis.
 - To avoid collision and electrocution of raptors and other avifauna, powerlines will continue to be constructed in accordance with standards outlined in the *Avian Protection Plan Guidelines* (APLIC and USFWS 2005).
 - Wetland and riparian habitats will be maintained, enhanced, or preserved to provide wildlife habitat, improve water quality, and enhance forage conditions. When planting or seeding vegetation in areas identified as threatened and endangered or special status species habitat, only native species will be selected.
 - In areas where powerlines go over wetland habitats, the observability of the lines will be enhanced for avian species, including bald eagles and whooping cranes, through the addition of “flappers” or other visibility enhancing devices attached to the lines.
 - New powerline construction or communication towers with guy lines over or adjacent to wetland habitats will not be allowed.
 - The BLM will participate with the development of species-specific Recovery Plans in coordination with the USFWS and other agencies. Populations and habitats on BLM-administered lands will be monitored to determine if recovery objectives are being met.
 - In the event a dead or injured threatened or endangered species is discovered during project activities, the BLM will notify the USFWS Ecological Field Office (307-772-2374) or Law Enforcement Office (307-261-6365) within 24 hours of the discovery.
 - BLM-administered public lands that contain identified habitat for threatened and endangered species will not be exchanged or sold, unless it benefits the species.
 - The statewide programmatic BAs and corresponding BOs authorized for each species, including all reasonable and prudent measures and terms and conditions, will be implemented for the Kemmerer planning area.

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7.0 ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The following program analyses follow a linear process that starts with the resource activity description and runs through to a listing of effect determinations. For the purposes of this BA, this section is divided into a discussion of each major functional resource activity occurring on the public lands in the planning area. For each major activity, a brief description of the resource activity, its interrelated and interdependent actions, and its general occurrence in the planning area is provided. Following the resource activity description are conservation strategies. These conservation strategies are divided into three categories: (1) proposed protections identified for the Kemmerer Proposed RMP and Final EIS, (2) conservation measures currently committed to by the BLM, and (3) BMPs. The proposed protections identified in the Kemmerer Proposed RMP and Final EIS (BLM 2008a, Chapter 2) are those protections designed for the resource that are anticipated to also benefit threatened and endangered species. The conservation measures currently committed to by the BLM are current practices for species protection that are not identified in the Kemmerer Proposed RMP and Final EIS but are found in the statewide programmatic BAs or BOs. The BMPs include standard BLM BMPs already in use that could further protect the associated resource. This information provides the basis for the impacts analysis and effect determinations presented by species and their respective habitats, and the potential direct, indirect, and cumulative effects of the activity. Determinations are based on existing conservation measures that protect the species, as well as BLM adherence to their statutory responsibility under the National Environmental Policy Act (NEPA) to assess potential environmental impacts, including those to federally listed and candidate species under the ESA. In this document, Section 10.0 identifies existing species-specific coordination and conservation measures.

Nonessential, Experimental Gray Wolf Population Analysis

The nonessential/experimental gray wolf population analysis must address whether the activities described in the Kemmerer Draft RMP and EIS could jeopardize the continued existence of the gray wolf, rather than potential impacts to individuals. With this higher threshold, the analysis results in the conclusion that all of the BLM programs evaluated in this document present *No Jeopardy* to the species, as this is a nonessential, experimental population and by definition any effects to this population will not jeopardize the continued existence of the species. This single determination will serve for the gray wolf population, and will not be repeated for each program.

7.1 Air Quality

The BLM's air quality program includes monitoring efforts in cooperation with the USFS, Wyoming Department of Environmental Quality (DEQ), and the U.S. Environmental Protection Agency (EPA), and evaluating and restricting surface development. Monitoring for air quality components (i.e., carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter, visibility, and atmospheric deposition) is conducted from various facilities around Wyoming. Regional air quality is influenced by the interaction of several factors, including meteorology, climate, the magnitude and spatial distribution of local and regional air pollutant sources, as well as the chemical properties of emitted air pollutants. Air quality management actions typically are associated with limiting, reducing, and monitoring pollutant levels and dust during other BLM management actions.

The planning area is located in a semi-arid midcontinental climate typified by dry windy conditions, limited rainfall, and long cold winters (Trewartha and Horn 1980; Martner 1986). A semiarid continental climate is characterized by seasonal variations in temperature (cold winters and warm summers) and precipitation levels that are low, but sufficient for the growth of short, sparse grass. Air quality in the planning area generally is considered to be good based on the limited amount of air quality monitoring

currently being conducted in the area. The planning area has no regions designated as nonattainment for National Ambient Air Quality Standards (NAAQS) or Wyoming Ambient Air Quality Standards (WAAQS).

Pollutant concentration refers to the mass of pollutant present in a volume amount of air. The BLM supports ambient air quality monitoring programs within Wyoming for criteria pollutants, visibility, and air quality-related values in Class I pristine areas. The BLM works cooperatively with several other federal agencies to measure visibility with the Inter-Agency Monitoring of Protected Visual Environments (IMPROVE) network. The IMPROVE station operating in the Class I area nearest to the planning area, approximately 40 miles to the east, is in the Bridger Wilderness Area. The most recent representative ambient air quality data available for nitrogen dioxide (NO₂) and ozone is from the Green River Basin Visibility Study site in Sweetwater County (about 20 miles southwest of Farson). Other data have been reported since 2004 from the Jonah oil and gas field that show NO₂ and sulfur dioxide (SO₂) in compliance, with elevated ozone levels but no violations of the NAAQS or the WAAQS. The planning area has no regions designated as nonattainment for NAAQS or WAAQS. Atmospheric deposition refers to processes in which air pollutants are removed from the atmosphere and deposited into terrestrial and aquatic ecosystems. Much of the concern about deposition is due to secondary formation of sulfur and nitrogen compounds, which may contribute to acidification of lakes, streams, and soils and affect other ecosystem characteristics, including nutrient cycling and biological diversity.

Hazardous air pollutants (HAPs) include air pollutants that can produce serious illnesses or increased mortality, even in low concentrations. HAPs are compounds that do not have established federal ambient standards, but may have thresholds established by some states and are typically evaluated for potential chronic inhalation and cancer risks. Existing sources of HAPs within the planning area include (1) fossil fuel combustion that emits HAPs, such as formaldehyde, and (2) oil and gas operations that emit volatile organic compounds (VOCs) and may emit hydrogen sulfide. These data show that the main contributors to emissions include oil and gas development and production, salable minerals, locatables, and coal mines.

7.1.1 Proposed Protections for Air Quality in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Enhance existing criteria pollutant and Air Quality Related Value (AQRV) monitoring on a project-specific or as-needed basis. Locations of AQRV monitors will be determined through a cooperative process. Suggest Wyoming DEQ Air Quality Division consider adding new criteria pollutant monitors.
- Consider implementing mitigations within the BLM's authority to reduce emissions from current levels in the planning area. Facilitate discussions with stakeholders to implement mitigations beyond the BLM's authority to reduce emissions from current levels in the planning area, such as considering a program to offset emissions proposed by the RMP and reducing emissions from existing sources (by techniques such as more stringent Best Available Control Technologies).

7.1.2 Conservation Measures Currently Committed to by the BLM

Site selection is initiated by the Air Quality Specialist in the BLM Wyoming State Office. BLM specialists in the Kemmerer Field Office are contacted by the Air Quality Specialist and the preferred site undergoes a preliminary analysis to determine if there will be a significant impact to important resource values. Concurrent with the preliminary analysis, a records check will be performed to identify any concerns relating to listed species or habitat that may be in the area of the proposed location. If there is

no indication of the presence of species or habitats that will be affected, a clearance will be issued for the project by the BLM.

7.1.3 Best Management Practices

No specific BMPs apply to air quality management.

7.1.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets currently are known to occur within the planning area. The construction and maintenance of air quality monitoring stations could conceivably cause a direct mortality to ferrets if they were above ground during the action, and if the operators were negligent and unaware in the conduct of their actions. It is also conceivable the air monitoring equipment could provide a perch for avian predators of the ferret. However, no plans to construct an air quality monitoring system in black-footed ferret habitat exist. Implementing air quality management actions will result in *no effect (NE)* to the black-footed ferret. This determination is based on the absence of air quality monitoring stations in black-footed ferret habitat and the lack of plans to construct an air quality monitoring station in black-footed ferret habitat.

Canada Lynx – Actions related to air quality management will result in no impacts to lynx behavior, denning habitat, or foraging habitat. The actions associated with air quality management are relatively small in scope, of short duration, and unlikely to occur in lynx habitat. No monitoring stations are currently in any lynx LAUs on BLM lands within the Kemmerer planning area. Implementation of air quality management actions, as presented in the Kemmerer Proposed RMP and Final EIS, will have *no effect (NE)* on the lynx, due to a lack of overlap of management activities and lynx habitat.

Ute Ladies'-tresses – Currently no air quality monitoring stations exist in Ute ladies'-tresses habitats. Typically, air quality monitoring stations are not located in riparian habitats. Actions associated with dust abatement potentially could occur near Ute ladies'-tresses habitats, reducing the dust settling on these plants and benefiting the plants through improved photosynthesis and pollination success. However, these effects will be localized and, overall, minimal to the populations. No air quality monitoring stations are anticipated to be constructed near Ute ladies'-tresses habitats. Implementing air quality management actions will result in *no effect (NE)*. This determination is based on the absence of air quality monitoring stations in riparian habitat, the lack of plans to construct an air quality monitoring station near Ute ladies'-tresses habitats, and the limited dust-abatement activities occurring near habitats for this species.

Yellow-billed Cuckoo – There are no current or planned air quality monitoring stations in riparian habitats that yellow-billed cuckoos typically would use. Because there is a low likelihood of western yellow-billed cuckoo occurrence in the planning area, and since BLM actions are primarily in monitoring and planning, air quality management in the planning area is expected to have *no impact* on the species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Actions authorized by the BLM on BLM-administered lands that may affect air quality are anticipated to also occur on state, tribal, local, or private lands in the planning area. Increased emissions anticipated in the planning area from non-BLM actions are not expected to adversely impact threatened and endangered species in the planning area because the additive effects of these emissions are not anticipated to cause the exceedance of national or state ambient air quality standards (BLM 2008a). Moreover, no cause and effect has been established between projected emission levels and adverse impacts to threatened and endangered species in the planning area.

7.2 Cultural Resources

Cultural resource management actions within the planning area that could affect threatened or endangered species include (1) protecting and preserving significant cultural resources and (2) conducting inventories and data collection for documenting and developing mitigation plans prior to surface-disturbing activities of other resource programs. These activities are analyzed in this section for their potential impacts to threatened and endangered species in the planning area.

Cultural resource investigations began in the Kemmerer planning area in 1967. From 1967 to 2003, approximately 4,400 cultural resource investigations were conducted within the Kemmerer planning area (BLM 2004b). Surveys have been conducted on more than 192,000 acres, about 4.75 percent of the planning area. These investigations have included inventory, project monitoring, site testing, evaluation of eligibility for nomination to the National Register of Historic Places (NRHP), and mitigation of potential adverse effects through data recovery and other documentation. Most recently, the BLM completed a Class I Regional Overview of the planning area that reviewed and summarized past cultural resource investigations, the numbers and kinds of recorded resources, and cultural resource management actions. Investigations to date have recorded more than 8,400 cultural resources within the planning area (BLM 2004b).

The BLM normally conducts cultural resource inventories in response to other surface-disturbing activities. Inventory actions are usually small in scale, short-term, involve a small number of people, and require no surface disturbing activities other than the occasional use of hand tools for manual probing. Most inventories are considered to have no effect on potential endangered species in the area. If a significant cultural site is documented during the inventory, a large-scale excavation may be necessary. Excavations can entail heavy equipment, large numbers of people, and could take months. Before an excavation begins, the area will be evaluated to determine the potential effects to species listed under the ESA. The BLM will consult with the USFWS on any large-scale cultural project that may affect a listed species.

The BLM performs a variety of actions to preserve, protect, and restore cultural and historical resources. During inventory actions, the BLM inventories, categorizes, and preserves cultural resources, conducts field actions, performs excavations, maps and collects surface materials, researches records, and photographs sites and cultural resources. Data collection actions are used for documenting and developing mitigation plans prior to surface-disturbing activities of other resource programs. Land management actions associated with cultural resources involve managing sites for scientific, public, and sociocultural use; developing interpretive sites; restricting certain land uses; closing certain areas to exploration; prohibiting some surface-disturbing activities; and preparing interpretive materials. The BLM also seeks listing of eligible sites on the NRHP, installs protective fencing of trail segments, stabilizes deteriorating buildings, acquires access to sites when necessary, performs certain surface-disturbing activities, pursues withdrawal of areas from exploration and development of locatable minerals, designates avoidance areas, pursues cooperative agreements, and identifies and interprets historic trails.

Surface-disturbing and other activities associated with the cultural resource program include, but are not limited to, the following actions: record cultural resources; inventory cultural resources; develop interpretive sites; use hand tools, power tools, and heavy machinery; stabilize deteriorating buildings and resources; fence cultural resources; and construct temporary campgrounds.

7.2.1 Proposed Protections for Cultural Resources in the Kemmerer Proposed RMP and Final EIS

No proposed protections for cultural resources management program that would benefit threatened and endangered species are identified.

7.2.2 Conservation Measures Currently Committed to by the BLM

- Four areas of NSO have been designated: bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile radius of perennial streams in the Raymond Mountain ACEC. Protection of these areas also may benefit threatened and endangered species that use the areas.

7.2.3 Best Management Practices

No BMPs for cultural resources management that would affect threatened and endangered species are identified.

7.2.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Most actions associated with cultural resource inventories, including surface surveys, record searches, and artifact characterization, will not affect black-footed ferrets or prairie dog complexes. More intensive excavation efforts and development of interpretive sites could disturb prairie dogs if such actions occur in occupied habitats. A pre-construction assessment of black-footed ferret and prairie dog presence will be conducted in potentially suitable habitats prior to project authorization. Direct and indirect effects to prairie dog habitats will be avoided through pre-construction assessments and the implementation of conservation measures. These measures include the commitment to survey for ferrets and suspend activities immediately if ferrets are found outside of the reintroduction area.

Developing interpretive sites will, of necessity, occur where the cultural objects and sites themselves are located. If such a site were discovered or occurred in a prairie dog colony, it could create a conflict; however, the likelihood of this event taking place is low. Implementing cultural resource management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the fact that, while white-tailed prairie dog towns frequently occur in the vicinity of cultural sites, completion of pre-construction surveys and implementation of conservation measures make it unlikely that construction will proceed where black-footed ferrets exist in the KFO area. In addition, before an excavation begins, the area will be evaluated and the BLM will consult with the USFWS on any large-scale cultural site excavation that may affect black-footed ferret.

Canada Lynx – Actions associated with cultural resource management are unlikely to occur in occupied lynx habitat, are typically confined to a small area, have a localized impact, and are of short duration. In the event that more intensive excavation efforts and development of interpretive sites occurred in a lynx occupied habitat or LAU, a pre-construction assessment of lynx presence will be conducted prior to authorization. Impacts to lynx will depend on the number of people conducting the investigation, the time of year, duration of the field actions, use of heavy machinery or hand tools, and the types of habitats affected (e.g., foraging vs. denning); appropriate timing and surface use restrictions may be applied. Implementing cultural resource management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *discountable effects (NLAA-d)*. This determination is based on the relatively small amount of suitable lynx habitat and LAUs on BLM-administered lands in the planning area, the protections in place for lynx, and the low potential for cultural resource management actions to cause harassment, displacement, injury, and mortality of lynx.

Ute Ladies'-tresses – Cultural resource management may affect the Ute ladies'-tresses or potential habitat by excavating soils and removing or trampling vegetation in areas where management actions are implemented. Surface-disturbing activities associated with cultural resource investigations can vary in size and degree of disturbance. Impacts to the Ute ladies'-tresses will depend on the number of people conducting the investigation, the time of year, duration of the field actions, use of heavy machinery or hand tools, and the type of habitat affected. Disturbance to potential Ute ladies'-tresses habitat will only likely occur if large-scale excavation takes place. Implementing cultural resource management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the BLM's commitment to the conservation measures that make these management actions unlikely to occur in potential Ute ladies'-tresses habitats. In addition, the BLM requires surveys to determine the presence or absence of the Ute ladies'-tresses if surface disturbance is planned in potential habitats.

Yellow-billed Cuckoo – Cultural resource inventories may cause temporary disturbances associated with on-the-ground surveys that may occur close to or within potential yellow-billed cuckoo habitats. These include soil disturbance and human presence. Disturbances could result in adverse impacts on the cuckoos and their habitat if they occur during nesting season and the birds are present. However, because there is a low likelihood of the western yellow-billed cuckoo occurrence, cultural resources management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. The cumulative effects of cultural resource programs on nonfederal lands are anticipated to be limited across the planning area and, therefore, not result in a significantly adverse affect on threatened, endangered, or candidate species.

7.3 Fire Management and Ecology – Unplanned/Wildland Fire

The planning area is included within the Rawlins Interagency Dispatch Center jurisdiction, the western fire suppression response zone, and the area covered by the Southwestern Wyoming Zone Fire Management Plan (BLM 2004a). An annual operating plan is developed between the BLM field office and Lincoln, Uinta, and Sweetwater counties to establish operating procedures for coordinated responses and cooperative sharing of resources. The BLM coordinates its fire management program with the USFS; other federal agencies (e.g., National Park Service); state agencies, such as WGFD and Wyoming State Forestry Division (WSFD); county fire departments; and local fire protection districts to ensure compliance with interagency policy and procedure requirements.

The BLM fire management program focuses on two categories of fires: unplanned (or wildland fire) and planned (or prescribed fire). Unplanned or wildland fire occurs as the result of an act of nature, such as lightning, human accident, or by intent to cause damage. Lightning accounts for most wildland fires in the planning area followed by human-caused fires from fireworks, woodcutting, and campfires. An average of five to six wildland fires per year have occurred in the planning area over the period 1980 to 2002. Acres burned have ranged in size from less than 1 acre to more than 13,000 acres. From 1980 to 2003, an average of one fire per year has occurred in the eight planning area Fire Management Units (BLM 2004a). Vegetative communities and their respective fire regimes vary throughout the planning area.

An essential component of the fire management program in the planning area is protection of the public and property from the adverse impacts of wildland fires. Fire suppression on public lands is guided by objectives in the existing Fire Management Plan and clarified by the annually updated plans. The 2003 Risk Assessment and Mitigation Strategy, The Healthy Forests Initiative, Healthy Forest Restoration Act

(USC 2003), and the National Fire Plan 2000 also influence the BLM's approach to forest health and fire management in the planning area.

The BLM has identified site-specific fire management practices for multiple sites within the planning area. These practices vary from site to site, but generally identify the acreage designated for full fire suppression, limited fire suppression, and sites designated for prescribed burns. Full suppression is a strategy requiring immediate and aggressive attack of the fire and typically relies heavily on mechanized equipment on or off roads. In contrast, limited suppression is a less aggressive strategy, generally used to keep a fire within a specified area.

Fire suppression activities depend on the severity and size of the fire and the resources determined to be in danger from the fire. Initial attack of a wildland fire will consist of a ground crew (or smoke-jumper crew if the fire is in a remote location) dispatched to the site to evaluate the fire and estimate the suppression requirements needed. Ground access to the site may be by road or trail, cross-country, by vehicle, or on foot. If the fire is small, the crew will immediately extinguish the fire using hand and power tools (e.g., pulaskis, shovels, and chainsaws), and sometimes water from an engine pumper unit or backpack pumps. If additional firefighting resources are needed, more personnel and equipment will be dispatched to the site. Additional work may include building fire lines by scraping a line down to mineral soil around the fire with hand tools. Hand-built fire lines (hand lines) typically are about 2-feet wide and generally surround the fire perimeter. If the fire increases in size or burns across the hand line, additional measures may be taken where appropriate including cutting trees, constructing wider fire lines with mechanized equipment, filling water pumper trucks from water bodies and spraying the water onto burning vegetation, water drops from helicopter buckets with water obtained at the nearest source accessible to helicopters, or air tanker drops of chemical retardant (a slurry of water, chemical fertilizers, and a binding agent, such as clay). If additional personnel are required to fight the fire, a camp will be established in a safe location close enough to the fire to allow efficient movement of personnel and equipment. Camps may require areas large enough to accommodate personnel, cooking facilities, equipment areas, and sufficient area for storage of supplies and equipment needed to suppress the fire. Following containment and control of the fire, "mop-up" operations will begin and continue until the fire is declared extinguished. Mop-up is a tactic to extinguish burning materials that could cause a fire to spread beyond the control lines. During mop-up operations, hazardous snags within the fireline are felled, and all remaining burning embers are extinguished until cold. Rehabilitation, salvage, and erosion control currently are conducted on a case-by-case basis in the planning area.

7.3.1 Proposed Protections for Wildland Fire in the Kemmerer Draft RMP and EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- In areas of low-density urban and (or) industrial interface where BLM-administered lands occur in large contiguous blocks, fire suppression objectives will follow the appropriate management response in an approved fire management plan for the planning area to provide first for human health and safety, while allowing for achievement of resource objectives.
- During suppression activities in the planning area, soil disturbance on public lands is not allowed without consent from a Kemmerer Field Office authorized officer (per an approved fire management plan for the Kemmerer Field Office).
- Wildland fire can be used to meet fire and fuels management objectives, such as to allow fire to return to its natural role in the ecosystem, to meet fire and fuels resource management objectives based on acreage thresholds and areas found in an approved fire management plan, to reduce hazardous fuels in areas of resources at risk, and to improve plant community health and meet other resource objectives.

7.3.2 Conservation Measures Currently Committed to by the BLM

The BLM is committed to the following conservation measures:

- Due to the immediacy of fire suppression operations, site-specific ESA section 7 consultation prior to a wildland fire suppression mobilization and activities is not performed. Moreover, effects determinations for species are made after the emergency fire suppression action has occurred. Emergency consultation with the USFWS is initiated as soon as practical during or following a wildland fire to determine if necessary measures need to be implemented to avoid adverse impacts to listed species both during suppression efforts and during rehabilitation efforts. The BLM uses the “Emergency Consultations for Wildfire Activities” memorandum (USFWS 2004a) when establishing operating guidelines for emergency consultation.
- Coordination between BLM biologists and fire-suppression crews through the fire resource advisor will help promote exchanges of knowledge regarding known threatened, endangered, or candidate species and their habitats at a fire location.
- If reseedling is necessary for reclamation following fire, native grass and forb species will be used.

7.3.3 Best Management Practices

The BLM will utilize minimum impact suppression tactics in wildfire situations, when possible.

7.3.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Wildland fires are not expected to directly affect the black-footed ferret because such fires typically do not occur in prairie dog towns where vegetation and fuels to support a fire are limited. Heavy machinery associated with fire suppression and fire prevention could potentially destroy habitats and burrows; however, because wildland fires in prairie dog towns are rare events, this type of impact is unlikely to occur. Implementing wildland fire-management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *insignificant effects (NLAA-i)*. This determination is based on the current absence of ferrets in the planning area and the unlikely event of fire or fire suppression activities in prairie dog towns.

Canada Lynx – Fire management actions, particularly actions associated with wildfire suppression and prescribed fire, whether planned or unplanned, have the potential to occur in habitats occupied by lynx. Road construction associated with fire suppression can lead to increased access into higher altitude sites by generalist predators, such as coyotes, wolves, and bobcats. These species can be predators of and competitors with lynx. Conservation measures in place for the lynx include the assessment of habitat in suitable and unsuitable conditions and the ensuing limitations on percentage of disturbance allowable to habitats. In addition, post-disturbance assessments are required prior to salvage to evaluate the potential for lynx denning and foraging habitat and the minimization of roads and fire lines, as well as the requirement of revegetation after fire suppression activities. These measures and protections presented in the RMP will provide protection for lynx and their habitat and *may affect, but are not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. In the event a wildfire and immediate suppression is required in an LAU, as many conservation measures as possible will be applied that do not hinder safety or property protection. The USFWS will be contacted and emergency consultation will take place at the earliest possible time if LAUs or lynx habitats are affected.

Ute Ladies'-tresses – Direct impacts to the Ute ladies'-tresses from wildland fires are not anticipated because the habitats in which the Ute ladies'-tresses occur are subirrigated, alluvial soils. Wildland fire is infrequent in these areas due to the presence of surface and subsurface water. Ute ladies'-tresses habitats could be altered from the equipment used for wildland fire suppression activities, but is unlikely due to

the rarity of wildland fire events in these habitats. Implementing fire-management actions *may affect, but is not likely to adversely affect*, the Ute Ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event of wildland fire suppression activities occurring in Ute ladies'-tresses habitat.

Western Yellow-billed Cuckoo – Wildland fire rarely occurs in potential cuckoo habitats, but if it did, fire may destroy undergrowth vegetation and increase erosion in the short-term. Air quality may be temporarily degraded from smoke during fires in or near suitable habitats that may disrupt breeding, nesting, or foraging behavior of the cuckoos. Long-term health of riparian areas may be improved following fire if regeneration of woody plants is stimulated. However, because there is a low likelihood of the western yellow-billed cuckoo occurrence, prescribed fire in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Buildup of hazardous fuels on private lands could increase the risk of wildland fire in the planning area, potentially directly and indirectly impacting threatened, endangered, or candidate species and their habitats. Individuals may be displaced or killed and suitable habitats may be altered due to suppression activities. Indirect effects include the potential for wildland fire to improve some habitats for threatened, endangered, or candidate species.

7.4 Fire Management and Ecology – Planned/Prescribed Fire

Prescribed, or planned, fire (as well as some wildland fires) is a management tool used to maintain or increase age-class diversity within vegetative types (e.g., big sagebrush/grassland); rejuvenate fire-dependent vegetative types (e.g., true mountain mahogany/ponderosa pine); maintain or increase vegetation productivity, nutrient content, and palatability; and maintain or improve wildlife habitats, rangeland, and watershed conditions. Fire also is considered a management tool for disposal of timber slash, seedbed preparation, reduction of hazardous fuel, control of disease or insects, grazing management, thinning, or plant species manipulation.

Over the past 100 years, fire exclusion in the planning area caused the general buildup of vegetative fuels and deadwood. In addition, drought conditions in recent years have caused vegetation to be less resistant to fire. Historic fire exclusion in the planning area has altered composition of vegetation communities, as well as natural fire regimes. For example, fire exclusion has allowed sagebrush and juniper communities to dominate some sites, causing a reduction in grass and forb production. In forested areas, suppression activities have increased fuel buildup, saplings, and small, early seral stage trees, making these areas more prone to catastrophic fires. In recent years, prescribed fire has been used extensively and successfully to reverse this trend in the planning area. From 1995 to 2005, prescribed burns averaged 4,300 acres per year in the Kemmerer planning area.

Prior to conducting a prescribed burn, fuel loads are identified and a burn plan is developed as to how the burn will be conducted and what safeguards must be in place to keep the fire under control. Vegetation thinning is sometimes used to reduce the fuel levels before a prescribed fire. Prescribed fire sites are usually accessed by road. The burn site is typically prepared prior to the actual prescribed fire by construction of firebreaks (often by black lining) and sometimes the windrowing or piling of the fuels to be burned within the firebreak. Fire engines generally are stationed on the site for emergency fire control, if needed, and for mop-up operations. Qualified fire personnel conduct the prescribed fire under stringent guidelines of temperature conditions, humidity, and wind speed and direction to minimize the chance of the fire escaping. If all site conditions are favorable, and the weather forecast for the time of the burn is favorable, the fuels to be burned are ignited and burned in small increments until the desired area is

burned over. Once the fire burns out or is extinguished, the area is monitored to be sure the fire is out and will not start up again or spread to areas not included in the burn plan.

7.4.1 Proposed Protections for Prescribed Fire in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Prescribed fire, along with chemical, biological, and mechanical treatments, can be used to meet fire and fuels management objectives such as to reintroduce fire in its natural role back into the ecosystem, to meet fire and fuels resource management objectives based on acreage thresholds and areas found in an approved fire management plan, to reduce hazardous fuels in areas of resources at risk, and to improve plant community health and meet other resource objectives.

7.4.2 Conservation Measures Currently Committed to by the BLM

The BLM is committed to the following conservation measures:

- Coordination will take place between the Fire Management Officer and BLM biologists during the planning process to ensure the most desirable effects for wildlife habitats will be realized and to reduce possible negative results to wildlife or habitat values.
- Prior site selection for water collection locations (used for fire suppression) will be conducted with BLM biologists for the conservation of threatened, endangered, or candidate species and their habitats.
- If reseeded is necessary for reclamation following fire, native grass and forb species will be used.

7.4.3 Best Management Practices

The BLM will utilize minimum impact suppression tactics during prescribed burns.

7.4.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Prescribed fire, if planned in suitable occupied habitats (e.g., prairie dog towns), may impact black-footed ferrets. It is unlikely that prescribed fires will be planned in these habitats, however, because prairie dog towns typically do not have the necessary fuel loading to successfully carry a fire. Implementing prescribed fire-management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *insignificant effects (NLAA-i)*. This determination is based on the current absence of ferrets in the planning area and the unlikely event of prescribed fire in prairie dog towns.

Canada Lynx – Prescribed burning, construction of firelines, use of off-road vehicles, and use of hand tools and heavy equipment all have the potential for disturbing lynx if conducted in occupied lynx habitat, and may negatively affect lynx behavior by causing them to abandon or avoid habitats. In addition, terrestrial habitats, including lynx foraging, denning, and linkage habitats, may be disturbed and altered through these activities. Prescribed fire also may benefit lynx by providing regenerative growth that, in time, will be favorable to snowshoe hares. Therefore, prescribed fire *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. The USFWS will be contacted and emergency consultation will take place at the earliest possible time if LAUs or lynx habitat are affected.

Ute Ladies'-tresses – Prescribed fire is not common in Ute ladies'-tresses habitats due to the presence of surface and subsurface water in these areas. Actions associated with fire suppression could destroy habitats and individual plants, if present; however, this type of impact is unlikely due to the rare occurrence of prescribed fire in these areas. Implementing prescribed fire-management actions *may*

affect, but is not likely to adversely affect, the Ute ladies'-tresses due to discountable effects (NLAA-d). This determination is based on the unlikely event of prescribed fire occurring in Ute ladies'-tresses habitat.

Western Yellow-billed Cuckoo – The BLM prescribed burning program serves to reduce fuel loads to prevent wildfires, improve wildlife habitat diversity, and manipulate vegetation on public lands (BLM 2003c). Although it is unusual, prescribed fire that occurs in potential cuckoo habitats could, in the short-term, destroy undergrowth and increase erosion. Air quality may be temporarily degraded from smoke during prescribed fires in or near suitable habitats that may disrupt breeding, nesting, or foraging behavior of the cuckoos. Long-term health of riparian areas may be improved following use of prescribed fire. Because there is a low likelihood of western yellow-billed cuckoo occurrence, prescribed fire in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Prescribed fire on nonfederal lands could reduce hazardous fuel loads and, therefore, the risk of catastrophic wildland fire, as well as improve habitat for threatened, endangered, or candidate species. Such impacts are anticipated to be minimal.

7.5 Fish and Wildlife Resources

Through wildlife and fisheries habitat management, the BLM seeks to maintain and enhance habitats for a diversity of fish and wildlife species and provide habitats for threatened, endangered, candidate, proposed, and special status species in compliance with the ESA, approved species Recovery Plans, and BLM Manual 6840. The BLM wildlife habitat management program supports population objective levels in the WGFD strategic plan. Big game crucial winter range is an important component of habitat management in the planning area. BLM-administered lands in the planning area provide the majority of crucial winter range for pronghorn, mule deer, and elk populations that occur between the Wyoming and Uinta mountain ranges. There are 1,211,767 acres of designated crucial winter range in the planning area, 50 percent (606,297 acres) of which are on BLM-administered lands.

Wildlife program actions may include inventory and monitoring, habitat improvement projects, developing habitat management plans (HMPs), developing stipulations and protective measures, and acquiring land and easements. The BLM develops stipulations and protective measures for fish and wildlife resources, including the authorization of withdrawals of some areas from mineral entry; limiting access of OHV use, snowmobiles, horseback riders, and pedestrians; prohibiting surface development; and implementing road closures. Habitat improvement projects include, but are not limited to, developing water sources, constructing and maintaining fences, managing other resource programs to conserve forage and protect habitats, improving forage production and quality of rangelands, and treating vegetation (e.g., prescribed fires; mechanical, chemical, and biological treatments; and cutting, thinning, planting, seeding, and pitting).

Other wildlife management actions include monitoring habitats; developing habitat islands; managing access; authorizing agricultural entry and disposal; using surface protection measures; modifying existing projects; constructing artificial nesting structures; using heavy equipment and hand tools; documenting resource damage; allowing new prairie dog towns to become established; improving aquatic and riparian habitat; reestablishing willows; implementing stream improvement practices; developing cooperative agreements to facilitate species transplants; chemically controlling pests; removing exotic fish; constructing instream barriers to protect species from nonnative invaders; installing revetments, fish passage structures, and logs; sampling macroinvertebrate; cabling junipers; building gabion baskets; and placing large boulders instream for fish habitats. BLM wildlife educational programs include the

distribution of information to landowners, the public, and lessees, as well as developing public education programs.

7.5.1 Proposed Protections for Fish and Wildlife Resources in the Kemmerer Proposed RMP and Final EIS

The following list contains proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Protect critical life stages for game and nongame fish species by limiting disturbance activities in fish-bearing streams on a case-by-case basis. Coordination with the WGFD will occur for specific projects to determine crucial dates. Exceptions can be made if the NEPA analysis shows little or no impact.
- Remove human-caused barriers to fish passage, where appropriate and (or) feasible, to provide for more genetic diversity and population stability. Human-caused barriers may be placed in some situations to protect conservation populations of fish species from hybridization or competition.
- Apply BLM fencing standards to newly constructed fences on BLM-administered lands within the planning area; eliminate or modify existing fences to reduce conflicts on a case-by-case basis.
- Identify and work collaboratively to develop management of migration corridors for big game wildlife species and migratory birds to reduce conflicts with human activities.
- Bury new utility lines or install BLM-approved anti-perch devices on all new utility lines within sagebrush and (or) semiarid shrub-dominated habitats, unless NEPA analysis shows little or no impact without burial or modification.

7.5.2 Conservation Measures Currently Committed to by the BLM

The BLM is committed to the following conservation measures:

- In addition to the conservation measures identified throughout this document, all projects will be evaluated for the presence of threatened, endangered, or candidate species and associated impacts.
- In the event a dead or injured threatened or endangered species is discovered during project activities, the BLM will notify the USFWS Ecological Field Office (307-772-2374) or Law Enforcement Office (307-261-6365) within 24 hours of the discovery.
- Each year the BLM will verify the status of known threatened, endangered, and candidate species habitats on lands administered by the BLM within the planning area. As a matter of maintaining inventory information, the BLM will coordinate annually with the USFWS, WGFD, and other appropriate entities to determine the status. Known threatened, endangered, and candidate species habitats will be assumed active if their status has not been verified.

7.5.3 Best Management Practices

The following is a list of BMPs:

- The BLM will continue monitoring game, nongame, raptor, and special status species and their habitats on an annual basis.
- The BLM will continue prairie dog town inventory on at least a 10-year cycle.
- The BLM will continue to monitor for the occurrence of sylvatic plague, West Nile virus, and other epizootic disease outbreaks.

7.5.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Wildlife habitat management may influence potential habitats for black-footed ferrets. Protection of greater sage-grouse breeding areas and big game crucial winter range could benefit ferret prey by protecting associated prairie dog habitats. Limiting access to specific areas for OHVs, horseback riding, and pedestrians; prohibiting surface development; and imposing road closures could benefit black-footed ferret prey by protecting prairie dog habitats and reducing human access, which could in turn reduce shooting. Implementing wildlife habitat management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *beneficial effects (NLAA-b)*. This determination is based on protection of, and potential improvements to, black-footed ferret habitats.

Canada Lynx – Actions associated with wildlife habitat management have potential impacts that depend on several factors, including the number of people involved with each field effort, the time of year, duration of field activities, use of heavy machinery versus hand tools, and type of lynx habitat affected. Lynx have a reasonable tolerance for human presence and, as a consequence, may not alter how they use the landscape. Precautionary measures for endangered species should provide additional protection. The implementation of these actions will likely have positive effects by maintaining or improving existing habitat conditions, especially riparian areas, which will benefit lynx and their prey. In some cases, however, lynx will likely avoid areas where activities are taking place due to the temporary disturbance created by these activities. Implementing of wildlife habitat management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the low probability that lynx will be disturbed by specific management actions, the low potential for these actions to alter lynx behavior, and the fact that many of these actions may actually improve lynx habitat.

Ute Ladies'-tresses – Fish and wildlife management actions may influence potential habitats for the Ute ladies'-tresses. Wildlife projects are expected to be developed in areas outside of potential habitats. Fish and wildlife management actions are not expected to deplete groundwater, which may impact the Ute ladies'-tresses. Positive effects, including maintaining and improving existing habitat conditions for the Ute ladies'-tresses, also may occur. Potential impacts depend on the time of year, duration of field actions, use of heavy machinery, and the types of habitats affected. Implementing fish and wildlife management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the protections of and potential improvements to the Ute ladies'-tresses habitats, implementing conservation measures, and the lack of actions planned within or near Ute ladies'-tresses habitats.

Western Yellow-billed Cuckoo – Wildlife habitat management objectives for riparian areas are currently twofold: (1) to achieve a healthy and productive condition for long term benefits and values in concert with range, watershed, and wildlife needs; and (2) to enhance or maintain riparian habitats by managing for deep-rooted native herbaceous or woody vegetation. Managing for these objectives could have beneficial impacts for this species. Because there is a low likelihood of the western yellow-billed cuckoo occurrence in the planning area, and enhancement of wildlife habitat could benefit the species, wildlife management in the planning area *may impact, but is not likely to contribute to the need to list* the species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Fish and wildlife management actions on nonfederal lands may result in temporary impacts to threatened, endangered, and candidate species, but are anticipated to benefit these species overall through habitat improvements.

7.6 Forests, Woodlands, and Forest Products

The conifer forest communities that occur in the planning area include lodgepole pine, Douglas-fir, spruce-fir, spruce-fir/lodgepole pine mixed aspen, and clearcut areas. Douglas-fir forests are found along the foothills of most of the major mountain ranges in Wyoming, but are most common and extensive in the northwest portion of the state. Engelmann spruce and (or) subalpine fir are dominant or co-dominant in the canopy of the spruce-fir forest, which is an important forest type in the mountain ranges of Wyoming. Subalpine fir tends to be dominant at lower elevations, with Engelmann spruce gaining importance toward the tree line. The logged areas may be in early succession stages, but are not classified as forest until regenerated new trees achieve 25 percent canopy closure. Sawtimber-sized trees are found on approximately 56 percent of the forestlands. Bark beetles cause mortality throughout the entire range of forestlands, with pockets of bark beetles in epidemic levels located in various areas of the Commissary and Dempsey Ridge areas.

Based on vegetation GIS data, the conifer forestland within the planning area on BLM surface comprises about 41,965 acres (about 14 percent of the planning area) and includes stringers and fringe areas bordering larger contiguous blocks of forest on adjacent USFS-administered land (Merrill et al. 1996). Aspen communities occur in mountain foothills and in high valleys throughout Wyoming wherever the environment is sufficiently mesic. Aspen also can be found in riparian zones in foothills. Aspen stands typically exhibit a diversity of understory vegetation and are utilized by wildlife and livestock. Aspen stands appear to be declining throughout the interior west due to advanced age and (or) conifer invasion; approximately 36,274 acres occur within the planning area (Merrill et al. 1996). Juniper woodlands are found in foothills and rocky outcrops in most of Wyoming in association with big sagebrush, limber pine, and mountain mahogany species. There are approximately 36,075 acres of juniper woodlands within the planning area (Merrill et al. 1996).

The BLM manages its forest resources to achieve optimal stand health, productivity, and biological diversity, while also providing a balance of natural resource benefits and uses, including a sustainable flow of wood products, watershed health and stability, wildlife, recreation, and livestock grazing. Under the Proposed RMP, the BLM will manage for desired forest conditions where all age classes are represented, insects are endemic rather than epidemic, and sanitation cuts are used to remove trees infected with mistletoe and blister rust. Silvicultural treatments could include thinnings, clearcutting, shelterwood, seed tree cutting, release cutting, improvement and salvage cuttings, prescribed fire, chemical treatments, and planting/seeding. Clearcuts will be limited to 20 acres or less with meandering boundaries. Ponderosa pine stands will be managed to achieve a sustainable flow of wood products. Forest treatments will be allowed within bald eagle roost areas to manage the stands for old growth; any constructed roads and trails will be closed and reclaimed following harvest.

Forest management involves timber harvesting, cutting and removal of diseased trees, disease treatment by spraying, and the spraying of grasses and shrubs. The BLM allows precommercial thinning, chaining, and shearing. The BLM allows timber harvesting, permits clearcuts, ensures slash disposal, and allows commercial thinning, logging, and skidder-type yarding, as well as cable yarding. The BLM permits the construction of roads and landings for use in forest management operations. Slash is lopped and scattered, roller chopped, or burned. The BLM also permits helicopter logging. Noncommercial forest management involves collecting and cutting of firewood, Christmas trees, posts, poles, and wildlings. During restoration efforts following forest management, the BLM ensures site regeneration and stand replacement, fences regeneration areas, and conducts rehabilitation surveys. The BLM also assesses effects of prescribed burning and grazing and manages forests for recreation, livestock grazing, and wildlife habitats. Forest management actions that the BLM engages in that involve all uses of the forest include acquiring easements, pursuing legal access, allowing road development, and installing drain culverts and water bars.

In summary, surface disturbance and other actions associated with the forestry management program include, but are not limited to, the following actions: rehabilitation surveys; timber harvesting; artificial regeneration (e.g., planting harvested areas, including new seedlings); fencing regenerated areas; clearcutting (including stand replacement); selective cutting; slash disposal; site regeneration (natural); precommercial thinning; collection of firewood, posts, poles, Christmas trees, and wildings; commercial thinning; skidder-type yarding; logging operations; cable yarding; road and landing construction; shearing; installing drain culverts, water bars, or ditches; cutting and removing diseased trees; lopping, scattering, roller chopping, or burning slash; helicopter logging; disease treatment sprayings; and spraying of grasses and shrubs.

7.6.1 7.6.1 Proposed Protections for Forests and Woodlands and Forest Products in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- An average of 75 acres of forestland (“forestland ecosystem management areas”) and approximately 75 acres of woodland (“woodland ecosystem management areas”) are treated annually (per decade, approximately 750 acres of forestland and 750 acres of woodland) by mechanical methods (partial cut or clearcut) or prescribed fire to reduce stocking levels and structure and (or) composition to more historical conditions.
- Approximately 19,008 acres of forestland would be actively managed and called “forest ecosystem management areas,” with an annual allowable probable sale quantity of 667 CCF (300 MBF) or per decade, 6,670 CCF (3 MMBF).
- Approximately 3,000 acres of forestland and woodland within the Raymond Mountain WSA are managed by prescribed fire or wildland fire use to simulate natural alteration of vegetation to meet wilderness and healthy forest landscape objectives. No mechanical and (or) surface-disturbing activities are prescribed. No forest products are removed from this area. The forestlands and woodlands within the WSA are called “reserved forest ecosystem management areas.”
- Approximately 15,000 acres of woodland (aspen and juniper) are actively managed to create more historical conditions and called “woodland ecosystem management areas.” No specified annual sale quantity is identified. Forest products are provided as a byproduct consistent with forest health, landscape restoration, and reduction of forest fuels objectives.
- Old growth forest areas are retained and other forested areas may be restored to old growth conditions at appropriate locations and distribution levels, as evaluations occur, using an adaptive management approach. Connectivity of existing or potential old growth areas are adopted whenever feasible.

7.6.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM:

- Coordination occurs between BLM forestry personnel and BLM biologists on forestry management plans and projects.
- The speed limit on all project roads will not exceed 35 miles per hour (mph), where possible.
- Timing stipulations on forestry management plans and projects to reduce the impacts to species during nesting, roosting, or flowering seasons will be used.

7.6.3 Best Management Practices

- Wyoming silvicultural BMPs will be utilized to prevent, limit, and mitigate erosion, sedimentation, and water degradation and, as needed, to control spread of INNS.

7.6.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Actions associated with forest resources generally occur on forested lands. Black-footed ferrets and prairie dogs occur on lower-elevation short-grass prairie and semi-desert shrublands and, therefore, will not be disturbed by actions associated with forest resource management. Implementing forest management actions has *no effect (NE)* on the black-footed ferret. This determination is based on the absence of the species in forested areas.

Canada Lynx – Forestland management actions occur in all forest types, including the aspen and coniferous habitats used by lynx. Forest management can reduce habitat quality and quantity for lynx and their prey, and may reduce large woody debris, which may eliminate potential denning sites, reduce kitten survival, and reduce availability of snowshoe hares and red squirrels. Pre-commercial thinning has a direct adverse effect on hare habitats, at least in the short term. Clearcutting, logging operations, road and landing construction, shearing, helicopter logging, and disease-treatment sprayings all have the potential to disturb lynx by eliminating lynx and hare habitats and cover, or by causing heavy disturbance in habitats used by lynx and their prey. Conservation measures in place include the assessment of habitats in suitable and unsuitable conditions and the ensuing limitations on percentage of disturbance allowable to habitats, as well as restrictions on pre-commercial thinning, salvage, harvest prescriptions in aspen stands, improvement harvests, and the protection of linkages and connectivity. These measures will provide protection for lynx and their habitats. Implementing forest management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*.

Ute Ladies'-tresses – The Ute ladies'-tresses is associated with wetland and riparian areas, which are not areas targeted for forest management. Riparian tree species typically are not included in commercial harvests or fuel-reduction efforts. Roads built to access timber sale areas, however, have the potential to disturb or remove potential Ute ladies'-tresses habitats. Implementing forest management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *insignificant effects (NLAA-i)*. This determination is based on the rarity of forest management areas within or near Ute ladies'-tresses habitats but the potential for access road construction to affect potential habitat.

Western Yellow-billed Cuckoo – Forest management actions are restricted to coniferous trees in the planning area and are not likely to occur in yellow-billed cuckoo habitats; therefore, this species is not expected to experience detrimental effects from these actions. New roads built to access timber sale areas have the potential to disturb potential yellow-billed cuckoo habitats. Noncommercial woodlands (e.g., riparian areas) are managed to optimize cover and enhance habitat for wildlife and to protect the soil and watershed values. Noise, dust, habitat fragmentation, and increased human access from activities associated with road building in riparian areas could adversely affect the cuckoo; however, these activities are expected to occur rarely in suitable cuckoo habitats. Therefore, because there is a low likelihood of the western yellow-billed cuckoo occurrence and few forestry management actions occur in riparian areas, these actions *may impact, but are not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Road building in riparian areas may affect potential Ute ladies'-tresses and yellow-billed cuckoo habitats.

7.7 Health and Safety

The BLM is required to address hazards that create safety risks to visitors to BLM-administered lands. The Hazard Management and Resource Restoration Program (HMRRP) is designed to manage hazards on public lands to reduce risks to visitors and employees, restore contaminated lands, and carry out emergency-response actions. Actions that may have health and safety concerns in the Kemmerer planning area are primarily associated with Abandoned Mine Lands (AML) and hazardous materials and waste. The BLM coordinates with appropriate regulatory agencies to reduce hazards associated with these concerns.

The HMRRP allows the BLM to provide warnings; secure and dispose of hazardous waste discharged on public lands; report, secure, and clean up public lands contaminated with hazardous wastes; use precautionary measures; establish precautions; and respond to emergencies. The HMRRP allows the BLM to seek to protect public and environmental health and safety on BLM-administered public lands, comply with federal and state laws, prevent waste contamination due to any BLM-authorized actions, minimize federal exposure to the liabilities associated with waste management on public lands, and integrate hazardous materials and waste management policies and controls into all BLM programs. Hazardous waste sources may be from illegal dumping, mine tailings, and abandoned waste.

7.7.1 Proposed Protections for Health and Safety in the Kemmerer Proposed RMP and Final EIS

No proposed protections for health and safety that would benefit threatened, endangered, and candidate species are identified.

7.7.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM:

- Due to the immediacy of hazardous materials (HAZMAT) emergency incident operations, site-specific ESA section 7 consultation prior to an incident will not be performed. Effects determinations for species will be made after the emergency HAZMAT incident action has occurred. Emergency consultation with the USFWS will be initiated as soon as practical during or following an incident to determine if necessary measures are needed to avoid adverse impacts to listed species both during cleanup efforts and during rehabilitation efforts.
- For HAZMAT sites that are not addressed as needing emergency actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), routine ESA section 7 consultation is required, as is adherence to other federal and state regulatory requirements.
- If revegetation is necessary after a HAZMAT cleanup activity, species native to the adjacent area will be used to reclaim the area.

7.7.3 Best Management Practices

No BMPs for health and safety are identified.

7.7.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – There are no known AML sites occurring within potential threatened, endangered, or candidate species habitats in the Kemmerer planning area. HAZMAT situations occurring on public lands are nondiscretionary events in which the cleanup of such events will be handled under emergency consultation if they occurred near threatened or endangered species habitats.

Implementing health and safety management actions will have *no effect (NE)* on threatened or endangered species and *no impact* on the candidate species within the planning area. This determination is based on the BLM having no discretionary authority over these actions, and because there are no known AML sites within potential threatened, endangered, or candidate species habitats.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Disposal of or accidental spills of hazardous materials on nonfederal land could be detrimental to threatened or endangered species if the disposal or spill occurs in or adjacent to their habitats.

7.8 Invasive Nonnative Species (INNS) and Pest Control

The BLM works cooperatively with the State of Wyoming and the Lincoln, Uinta, Sweetwater, and Sublette County weed control districts through the cooperative weed and pest management program to conserve and enhance all resources within the planning area. The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) is currently the BLM's agent for pest control.

INNS, both plants and animals, are not indigenous to the planning area and typically are detrimental to native ecosystems and human welfare. Noxious weeds are undesirable native or nonnative plants that have either been “designated” by the State of Wyoming or “declared” by the county weed control districts. For the purpose of this discussion, nonnative noxious weeds are a subset of INNS. In addition to vascular plants classified as INNS, other invasive nonnative pests include any biological life form that poses a threat to human or ecological health and welfare, such as insects and rodents.

There are 25 noxious and prohibited weeds on the State of Wyoming Weed and Pest Control Act Designated List (Wyoming Weed and Pest Council 2008). The state also lists four insects and two rodents as Weed and Pest Control Act Designated Pests. Individual counties declare additional INNS that are a problem within their jurisdictions. The Lincoln County 2008 list includes three other plant species, three insects, and a rodent; Uinta County adds three plants and two insects, and Sweetwater County includes three insects and four plants as INNS of concern.

BLM's resource users prepare pesticide-use proposals incorporating weed control district INNS control guidelines (BLM 2003b). In addition, BLM participates fully with three Noxious Weed Resource Management working groups within Lincoln and Uinta counties. The Bear River Divide Coordinated Weed Management Area includes both Lincoln and Uinta counties and covers approximately 400,000 acres. The Highlands Cooperative Weed Management Area includes the portion west of Lincoln County not included in the Bear River Divide Weed management Area. The Four Rivers Cooperative Weed Management Area covers the remaining portion of Uinta County not covered in the Bear River Divide Cooperative Management Area. Numerous educational programs have been implemented to make the public aware of weeds. In addition, in November 2005, the BLM issued the Draft Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States (BLM 2005d) to analyze the use of herbicides on the human and natural environment.

Several INNS pests and pathogens presently are associated with the forestlands in the Kemmerer planning area, including dwarf mistletoe and mountain pine beetle in the lodgepole pine component, western balsam bark beetle and root diseases in subalpine fir, and Douglas-fir bark beetle and root diseases in the Douglas-fir component. Epidemic levels of mountain pine beetle can be found on the lower east slope of Commissary Ridge in the Bartlett Creek area and on Dempsey Ridge just north of Coke Mountain. Subalpine forests are in a widespread general decline throughout their range as a result of the western

balsam bark beetle and various root diseases (Schiche 2003). Not included on the state weed list, but nonnative invading annual grasses in the planning area include cheatgrass (*Bromus tectorum*) and Japanese brome (*B. japonicus*). Invasives such as these can reduce the fire-return interval that affects species composition of sagebrush communities. A woody invader, salt cedar or tamarisk, (*Tamarix* spp.) has affected health of riparian and wetland areas; this species is currently being mapped in the planning area. Infestations of INNS spread sporadically throughout the planning area. Plant INNS (weeds) are a high priority for control and management because they contribute to the loss of rangeland productivity, increased soil erosion, reduced water quantity and quality, reduced species diversity, and loss of wildlife habitats. The Kemmerer Field Office treats an average of 1,000 acres of various weed species each year. The BLM uses an integrated weed management program that involves grazing, fire management, chemical, mechanical, and biological controls (BLM 1990; BLM 1992).

Select biocontrol agents are being used in Lincoln and Uinta counties. Some nonnative organisms introduced as biological control agents are known to diminish native biological diversity and may adversely affect populations of special status species. Biological control agents that diminish native biological diversity and (or) may adversely affect populations will not be used within the planning area.

The weed program is continually growing as a result of changing priorities, new INNS introductions, discovery of new infestations, and the rapid growth of known infestations. Geographic Information System mapping of weed locations is ongoing to determine locations of known weeds, as well as to locate new infestations. Potential new threats that may need to be addressed in the future include West Nile virus, avian influenza, tree pathogens, and other invasive plants and animals.

Nonplant pest control primarily includes controlling prairie dogs and outbreaks of insects, particularly Mormon crickets and grasshoppers. APHIS is the only authorized agent for controlling predators, treating epizootic outbreaks, and controlling prairie dogs and insect infestations. These actions are subject to established procedures and policies as outlined in the national and state level MOUs between BLM and USDA-APHIS. The BLM cooperates with USDA-APHIS to assist with inspections of BLM-administered lands where potential outbreaks may occur and assists in developing and implementing control plans. When outbreaks occur, USDA-APHIS conducts control operations and is reimbursed for its expenses on BLM lands when these expenses exceed funding available to USDA-APHIS for this work. Prairie dogs may be controlled where public health and safety risks are documented; BLM works with adjacent landowners on a case-by-case basis to prevent prairie dog degradation of private land.

7.8.1 Proposed Protections for INNS and Pest Control in the Kemmerer Proposed RMP and Final EIS

The following list contains proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Aerial application of chemicals will not be allowed within 100 feet of wetlands, riparian areas, and aquatic habitats. Exceptions could be applied to manage riparian weed species. Applications of chemicals will follow label requirements.
- Vehicle and hand application of chemicals will not be allowed within 25 feet (by vehicle) or 10 feet (by hand) of wetlands, riparian areas, and aquatic habitats. Application of chemicals will be done in accordance with label instructions. Exceptions could be applied to manage riparian weed species.
- Chemicals will be mixed a minimum of 500 feet away from riparian areas, water sources, floodplains, and known special status plant species populations.
- Application of chemicals around special status plant species will be determined on a case-by-case basis in coordination with the BLM authorized officer.

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- The use of certified weed-free forage and feeds will be required to prevent establishment of new weed areas. The use of certified weed-free seed and mulch will be required for rehabilitation projects.

7.8.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM.

- Application of chemicals will be in accordance with EPA guidelines and follow the U.S. Department of the Interior's restricted chemical use list. Only chemicals approved by the USDI for use on public land will be authorized.
- Chemical applications will be timed so that they will not occur during nesting, brooding, or roosting seasons.
- Where possible, chemicals will be chosen that will have *no effect (NE)* on other species in the area, such as birds or mammals.
- Buffer zones along waterways and riparian areas will preclude the use of herbicides, unless the chemical is safe for use in these areas.
- The Kemmerer Field Office manager will meet annually with the local USDA-APHIS wildlife services supervisor to review the proposed animal damage management program actions for the coming year and to assure they are in compliance with the RMP.
- The BLM requires the local USDA-APHIS wildlife services supervisor to provide the Kemmerer Field Office manager with a report of the actions conducted for the prior year. The Kemmerer Field Office manager is responsible for reviewing this document and assessing whether actions are in compliance with applicable laws, regulations, and agreements.
- The Kemmerer Field Office manager is responsible for ensuring that the USDA-APHIS wildlife service is consulting with the USFWS for animal damage control actions on public lands within the planning area.

7.8.3 Best Management Practices

No BMPs for INNS management are identified.

7.8.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the Kemmerer planning area. Control of INNS on BLM-administered lands and the development of a comprehensive INNS management program could improve habitats for the black-footed ferret and prairie dogs. Chemical control of prairie dogs is not likely to occur on public lands in areas identified for ferret reintroduction, as both the white-tailed and black-tailed prairie dog are listed as BLM sensitive species, which under the BLM 6840 manual requires the conservation of these species. Implementing INNS and pest control management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the current absence of ferrets in the planning area and the conservation of prairie dog species.

Canada Lynx – Control of INNS on BLM-administered lands and the development of a comprehensive INNS management program could improve habitats for Canada lynx and their prey species. Chemical control of prairie dogs or other rodents, if conducted, is not likely to occur within snowshoe hare or other lynx prey species habitats. Suitable lynx habitat may be affected by actions such as timber salvage following bark beetle infestations. Implementing INNS and pest control management actions *may affect*,

but is not likely to adversely affect, the lynx due to *discountable effects (NLAA-d)*. This determination is based on the likelihood that INNS control measures and pest control will not occur or have beneficial effects in lynx habitats.

Ute Ladies'-tresses – INNS control measures will be limited in wetland and riparian habitats as buffers for applications of herbicides are established, protecting the Ute ladies'-tresses. In areas where habitats are unsuitable for the Ute ladies'-tresses because of INNS, control measures may benefit the Ute ladies'-tresses by improving habitats. Developing a comprehensive INNS management program could improve habitats. Implementing INNS and pest control management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *insignificant effects (NLAA-i)*. This determination is based on the protections for riparian and wetland habitats and the conservation measures for the Ute ladies'-tresses.

Western Yellow-billed Cuckoo – Chemical control of INNS will be limited in wetland and riparian habitats as buffers for application of herbicides are established, limiting effects to the yellow-billed cuckoo. Relatively few compounds are approved for use or are used in riparian areas. While care is practiced in applying the chemicals, adverse impacts can occur if toxic herbicides drift, wash, or leach into riparian areas after application. A pesticide spill in a riparian area could have a catastrophic effect on potential habitats for the western yellow-billed cuckoo. Pesticide use may directly affect the species by poisoning nestlings if sprayed where the birds are nesting, or indirectly by reducing prey numbers. Mechanical control of tamarisk may occur in riparian areas once populations are mapped, which could improve yellow-billed cuckoo habitat. Erosion also can occur if vegetation is completely removed in an area. However, because there is a low likelihood of the western yellow-billed cuckoo occurrence and minimal INNS control in riparian areas, INNS management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Surface-disturbing activities and soil disturbance contribute to the spread of INNS. While much of the surface disturbance from non-BLM actions is anticipated to be reclaimed, the potential for spread of INNS remains from both short-term and long-term impacts. Surface disturbance is anticipated to continue on nonfederal lands. The spread of INNS could affect threatened, endangered, and candidate species habitats, making them unsuitable for these species.

The long-term effectiveness of INNS control measures on all public and private lands in the planning area depends on continued cooperation, available funding, agency priorities, and the effectiveness and periodic assessment of weed-management actions in accordance with a comprehensive weed management plan. Unchecked INNS could overwhelm attempts at control and substantially impact fire management and ecology, biological resources, livestock grazing (by reducing rangeland productivity), and recreation (by impacting wildlife habitats and scenic quality) throughout the planning area.

7.9 Lands and Realty

The Kemmerer Field Office lands and realty program is aimed at managing the underlying land base that hosts and supports all resources and management programs. The program's objectives are to (1) manage public lands to support goals and objectives of other resource programs, (2) provide for uses of public lands according to regulations and compatibility with other resources, and (3) improve management through land-tenure adjustments. The key actions of the lands and realty program include (1) land use authorizations (e.g., leases and permits, airport leases); (2) land tenure adjustments (e.g., sales, exchanges, donations, purchases); and (3) withdrawals, classifications, and other segregations. The BLM works cooperatively to execute the lands and realty program with other federal agencies, the State of Wyoming, counties and cities, and other public and private landholders in the planning area.

In its lands and realty management program, the BLM implements stipulations and protective measures. These actions include processing stock trail withdrawals and locatable mineral entry withdrawals, establishing protective withdrawals, and developing stipulations. The BLM also pursues cooperative agreements, develops recreation site facilities, considers offsite mitigation, minimizes access in wildlife habitats, fences revegetation sites, blocks linear ROWs to vehicle use, considers temporary use permits, considers new withdrawals, and leases acres for landfills.

Land sales are disposals or transfers of public lands through desert land entry, public sale, exchange, State of Wyoming indemnity selection, or recreation and public purposes (R&PP) leases or patents. The Kemmerer Field Office has received a few inquiries from local communities to develop R&PP leases, but does not have any applications on file at the present time.

Under the Proposed RMP, approximately 1,388,182 acres of BLM surface lands are identified for retention and 35,823 acres are identified for potential disposal within the planning area.

Withdrawals are used to preserve sensitive environmental values, protect major federal investments in facilities, support national security, and provide for public health and safety. Withdrawals segregate (closes) federal land to the operation of all or some of the public land laws and (or) mineral laws. The effect of a withdrawal is to accomplish one or more of the following:

- Transfer total or partial jurisdiction of federal land between federal agencies.
- Dedicate federal land for a specific public purpose.

Withdrawals in the Kemmerer planning area can be categorized into two major types:

- Congressional – legislative withdrawals made by Congress in the form of public laws. Examples include designation for national parks, wild and scenic rivers, or wilderness.
- Administrative – withdrawals made by the President, Secretary of the Interior, or other officers of the executive branch of the federal government. Examples include stock trails and public water reserves.

There are five existing withdrawals administered by the BLM in the planning area. It is now federal policy to restrict all withdrawals to the minimum time required to serve the public interest, maximize the use of withdrawn lands consistent with their primary purpose, and eliminate all withdrawals that are no longer needed. In addition, the lands and realty program authorizes renewable energy development, primarily wind and solar energy. At present, there is one wind farm located within the planning area. The Uinta County Wind Project, administered by Uinta County Wind Farm, LLC, a subsidiary of FPL Energy Wyoming, LLC, comprises 80 windmills, all located on private and state lands. While no windmills are located on BLM-administered lands, there are 14 miles of associated access roads and powerlines permitted on BLM-administered lands, totaling 136.4 acres. An additional 27 miles of access roads and powerlines are located on adjoining private and state lands.

In the planning area under the Proposed RMP, wind-energy development will be allowed on 780,714 acres of BLM surface lands rated as outstanding/superb and good/excellent for wind-energy potential. Wind turbines authorized by the BLM typically are up to 180 feet in height with an 80-foot turbine diameter. Each turbine will encompass about 1.2 acres. Ancillary uses will include meteorological towers, roads, and powerlines. Although the demand for solar energy is currently low in the planning area, the BLM will evaluate solar energy development on a case-by-case basis, as it does for other renewable energy projects, with consideration of other resource values and generally to support national energy plans and policies. These actions are included in the alternatives description in the RMP/EIS.

ROW permits granted by the BLM for access roads, pipelines, communication sites, irrigation ditches, and electrical and fiber optic distribution lines are primarily associated with oil and gas wells and production facilities in the planning area. An important component of the ROW program is the intrastate and interstate transportation of commodities that ultimately are delivered as utility services (e.g., natural gas, electricity) to residential and commercial customers. Equally important on the local level is the growing demand for legal access to private homes and ranches using ROW grants. These ROWs may be temporary or extended for 2 years or longer and are for a specific use of the land. Over the past 20 years, 1,150 ROWs on BLM-administered lands in the planning area have been issued on approximately 45,000 acres for roads to support oil, gas, and mineral resource exploration and development, and for powerlines, telecommunication cables and sites, pipelines and associated facilities, such as compressor stations. On the average, 100 to 125 new or amended ROW applications are processed annually. Under the Proposed RMP, new communication sites will be considered by type in specific areas (refer to Proposed RMP and Final EIS, BLM 2008a), and other sites will be developed on a case-by-case basis.

7.9.1 Proposed Protections Lands and Realty in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Lands identified for potential disposal include 35,823 acres; additional parcels will be considered on a case-by-case basis. Lands identified for disposal under Sections 203 and 206 of the Federal Land Policy and Management Act (FLPMA) and identified as such in this plan are hereby classified for disposal under section 7 of the Taylor Grazing Act of 1934, as amended (43 USC 315f).
- Desert Land Entries will be considered on a case-by-case basis, based on soil characteristics, irrigation requirements, salinity issues, and the practicability of farming the lands as an economically feasible operating unit.
- Utility corridors (i.e., powerlines, pipelines, and fiber optic lines) will be based on use.
- Preferred utility corridors will be up to 2-miles wide (width is determined based on resource values) and are designated as follows, but variances are allowed based on application where conflicts with other resources are minimal or can be mitigated through resource specific stipulations:
 - High-voltage powerline corridors are established north of and parallel to I-80, and along Wyoming State Highway 89 from the junction of I-80 and the Wyoming state line.
 - Fiber optic and low-voltage powerline corridors are to be located along currently established road systems (e.g., interstate or state highways and paved county roads).
- Communication sites will be considered in 23 designated areas (refer to the Proposed RMP and Final EIS). Other communication site areas could be developed on a case-by-case basis. Prior to approving new authorizations, the proponents must demonstrate to the BLM that they adequately considered sharing sites and multiple uses of existing facilities.
- Renewable energy projects (other than wind energy) will be considered throughout the planning area on a case-by-case basis.
- Wind-energy development will be allowed on 780,714 acres of BLM-administered surface determined suitable for wind-energy development (refer to Proposed RMP and Final EIS).
- Legal access will be sought across private land if a need is identified in support of resource programs. Emphasis will be placed on the following areas: Redeye Basin, Commissary Ridge, Raymond Mountain WSA, Dempsey Basin, Slate Creek crucial winter habitat area, Emigrant

Springs Slate Creek, Rock Creek area, Little Muddy Creek, Meeks Cabin, Westfork, Graham Reservoir, Church Buttes, Wildcat Butte, Porter Hollow, Lincoln Highway, and Bridger Antelope Trap.

7.9.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM:

- Coordination will take place between BLM realty staff and BLM biologists to identify land exchanges that will benefit listed species or their habitats.
- The BLM must conduct surveys for threatened and endangered species prior to disposal of any BLM-administered lands.
- Evaluation of effects on key special status species linkage areas will be taken in situations of proposed land exchanges, land sales, and special use permits.

7.9.3 Best Management Practices

The following BMP has been identified:

- Speed limits on access roads will be limited to 35 mph, where possible.

7.9.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Land disposal and transactions for recreation, exchanges, wind energy, and disposal and establishment of corridors for utility/transportation systems may adversely impact black-footed ferret habitats if such actions occur near suitable prairie dog towns. Although possible, the BLM rarely conveys properties with high resource value, such as those with known threatened, endangered, or sensitive species. Conversely, land acquisitions and protective withdrawals may provide benefits to black-footed ferrets by acquiring additional land around prairie dog complexes that could contribute to reintroduction sites for black-footed ferrets, as suggested in the conservation strategies section. Implementing actions associated with lands and realty *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the low potential for land disposal of suitable prairie dog habitats, the existing safeguards in the conservation strategies for protection and avoidance of prairie dog towns, and the low potential for other land management actions to disturb or remove black-footed ferret habitats. Existing conservation measures should minimize the effects of lands and realty program activities on black-footed ferret habitats.

Canada Lynx – Current BLM land holdings would be evaluated prior to disposal, including suitability and use by lynx. Lands identified as LAUs or important travel corridors would not likely be available for disposal. Lands not under BLM jurisdiction that are suitable or occupied lynx habitats may be targeted for acquisition and subsequent management by BLM, which would provide benefits to lynx that may not be afforded under nonfederal ownership. Disposal or transfer of public lands may affect the lynx's ability to utilize suitable habitats and travel corridors linking desirable habitats. The acquisition of access easements and issuance of ROWs and leases for utility corridors may affect the lynx if the associated construction is within the vicinity of travel corridors. This may cause short-term behavioral avoidance of these areas by the lynx due to the presence of human activity. The establishment of withdrawals, acquisition of conservation easements, and road closures/rehabilitation would close areas to certain activities that could have a beneficial effect on lynx. Implementation of land resource management actions with the associated conservation measures as provided in the Kemmerer Draft RMP *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*.

Ute Ladies'-tresses – Land disposal, exchanges, and establishment of corridors for utility or transportation systems may impact Ute ladies'-tresses habitats. However, the BLM rarely conveys properties with high resource values, especially those with known threatened or endangered species. Land acquisitions and protective withdrawals may benefit the Ute ladies'-tresses by providing

conservation measures for threatened, endangered, and candidate species and their habitats. Implementing the lands and realty program management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on low potential for land disposal under BLM management and implementing conservation measures for the Ute ladies'-tresses and its habitats. Land acquisition of potential Ute ladies'-tresses habitats may provide beneficial effects to this species.

Western Yellow-billed Cuckoo – Aquatic, wetland, and riparian habitats are not deemed suitable for disposal unless opportunities exist for land exchange for lands of equal or better value (BLM 2003c). The BLM will consider acquiring additional lands along perennial water and wetlands to enhance riparian area management. While the BLM has a policy of no surface-disturbing activities within 500 feet of riparian areas, occasional ROWs may be routed through riparian areas, causing noise and dust from construction and maintenance activities and habitat fragmentation from removal of cottonwood or willow vegetation. This would cause temporary disruptions to the cuckoos, if present. Because there is a low likelihood of the western yellow-billed cuckoo occurrence, lands and realty management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Land acquisitions, exchanges, and protective withdrawals have the potential to benefit threatened or endangered species. Proposed wind farms could alter or remove threatened or endangered species suitable habitats, especially that for prairie dogs and consequently, black-footed ferrets. Wind farms and utility system transmission lines also could cause additive mortality to migrating avifauna, including western yellow-billed cuckoos.

7.10 Livestock Grazing

Approximately 1.4 million BLM-administered surface acres are available for grazing within 224 grazing allotments that overlap the planning area. Grazing allotments typically contain a combination of federal, state, and private lands and range in size from approximately 7 acres to 470,680 acres. The BLM administers 229 grazing permits/leases, with approximately 157,249 currently active animal unit months (AUMs) of livestock forage. Actual AUM use in the planning area is considered to correspond with authorized AUM use. A 5-percent decrease in the amount of AUMs authorized in the current plan is expected under the Proposed RMP due primarily to long-term disturbance and loss of forage. Currently, approximately 12,934 acres of BLM-administered public land are closed to grazing and under the Proposed RMP considerations for leasing this land may occur. Livestock use of vacant grazing allotments and unallotted parcels will be left to the discretion of the BLM.

Grazing systems used on public lands within the planning area fall into the following six categories: yearlong, season long, early season, late season, split season, and rotation (i.e., deferred rotation, rest rotation, and time-controlled grazing systems). Approximately 21 percent (57) of the grazing leases authorize yearlong use, which is a reflection of the intermingled land pattern that exists across the planning area, as well as the small percentage of public land found in the majority of allotments. Cattle are the predominant class of livestock grazed on the planning area, but sheep, horses, goats, and bison are authorized.

The BLM's livestock management program includes livestock management actions; range management; range improvements, such as fencing and water sources; detrimental impacts management; and lease management. Livestock management includes converting to new types of livestock, and authorizing livestock grazing, such as adjusting season of use, distribution, kind, class, and number of livestock. One method that livestock producers can use to change the distribution of livestock is to provide salt or mineral supplements in specified areas. Range management actions include using prescribed fire,

vegetation-manipulation projects, changing composition of existing vegetation, using noxious weed control, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and herbicide treatment of sagebrush. Fencing actions include fence construction and repair, designing and implementing grazing systems, and building livestock enclosures for important riparian habitats. Water management actions include developing reservoirs, springs, pipelines, and wells, and providing access to these developments. Managing detrimental impacts include documenting, treating, and preventing resource damage. Potential detrimental impacts include the degradation of streambanks, the introduction and spread of INNS, increasing soil erosion, and a reduction in cottonwood tree recruitment. Lease management actions include conducting monitoring studies, performing project work to enhance and improve riparian zones, designating stock trails, managing leases, developing management plans and agreements, and canceling or changing livestock trails.

7.10.1 Proposed Protections for Livestock Grazing in the Kemmerer Proposed RMP and Final EIS

The following list describes the proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Livestock operators in the Lost Creek/Ryan Creek allotments will be held to the current permitted use. The 827 AUMs associated with the newly acquired federal lands in the Lost Creek/Ryan Creek area will be allocated for wildlife use.
- The Christy Canyon allotment will be designated as a forage reserve. Up to 1,248 active federal AUMs may be available and are to be managed within priority criteria listed. Future voluntary forage reserve allotments will be implemented within the planning area on a case-by-case basis.
- Grazing within the Mike Mathias Wetlands at Wheat Creek Meadows will be allowed only as a management tool for enhancement of wildlife values on a temporary nonrenewable basis.
- Range conditions on I allotments will be improved and M and C allotments will be maintained. Grazing systems and range improvements will be designed to achieve management objectives.

7.10.2 Conservation Measures Currently Committed to by the BLM

The following list describes the conservation measures currently committed to by the BLM:

- Use stipulations will be applied when grazing permits come up for renewal.
- Grazing management practices will restore, maintain, or improve plant communities. Grazing management strategies consider hydrology, physical attributes, and potential for the watershed and the ecological site (*Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* [BLM 1998]).
- Grazing management practices will incorporate the kinds and amounts of use that will restore, maintain, or enhance habitats to assist in the recovery of federally threatened, endangered, and candidate species or the conservation of federally listed species of concern and other state-designated special status species. Grazing management practices will maintain existing habitats or facilitate vegetation change toward desired habitats. Grazing management will consider threatened, endangered, and candidate species and their habitats (*Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* [BLM 1998]).
- BLM will utilize livestock grazing, mowing/haying, and prescribed burning as management tools to maintain favorable habitat conditions for Ute ladies'-tresses, where feasible. Mowing and

grazing, with proper timing and intensity, may reduce competition from other vegetation (USFWS 2007c).

- Salt, mineral, or forage supplements will not be allowed within ¼ mile of water, wetlands, and riparian areas, unless written analysis shows that watershed, riparian, wetlands, wildlife, and vegetative values will not be adversely affected. Forage supplements will be required to be certified weed-free.
- Coordination will occur between BLM biologists and range conservationists prior to authorizing grazing actions.

7.10.3 Best Management Practices

The following BMPs have been identified.

- Riparian corridors should be surveyed for cottonwood regeneration; areas where grazing is impacting the regeneration of cottonwoods should be fenced.
- When developing or improving water sources for livestock in the Colorado River watershed, the BLM should consider development designs, such as water wells and guzzlers, rather than surface impoundments to minimize impacts to surface water hydrology resulting from attenuation of flood peaks and evaporative loss.

7.10.4 Impact Analysis and Effect Determinations

Black-footed Ferret – If an undiscovered population of black-footed ferrets is found on an allotment, the use of vehicles or OHVs for livestock management could result in a collision with a black-footed ferret; however, the nocturnal habit of black-footed ferrets will likely preclude such an event. Dogs used in livestock operations could carry distemper and potentially transmit the disease to an unknown black-footed ferret population. Fences used in livestock grazing could provide additional perches for raptors, which could prey on prairie dogs and black-footed ferrets. However, the conservation measures will preclude such a location for these actions. Livestock grazing generally is compatible with prairie dog habitats and can provide a positive effect if managed correctly. Grazing reduces vegetation height, thereby improving habitat for prairie dogs. Implementing livestock grazing management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *insignificant effects (NLAA-i)*. This determination is based on the current absence of the black-footed ferret in the planning area, the unlikely event of a black-footed ferret colliding with a vehicle or becoming infected by canine distemper from a dog, the small number of prairie dogs that will be consumed by perching raptors, the potential benefit of livestock grazing in prairie dog habitats, and the incorporation of existing conservation measures.

Canada Lynx – Domestic livestock grazing in riparian areas can alter the structure and composition of aspen and riparian shrubs that hares—the primary prey of the lynx—depend on. Cattle and sheep grazing in excess of the designated amount of forage may create competition for forage and reduction in escape cover for hares and other small mammals. Grazing in shrubsteppe communities within the elevational range of lynx also may have impacts on lynx prey species. Predator control activities conducted by permittees on the range they graze, such as shooting, trapping, and poisoning to control coyotes, cougar, bear, and bobcat, may lead to incidental lynx mortality, especially in the higher-elevation allotments. Improper grazing also may lead to other adverse environmental effects, including increased soil erosion, degradation of stream bank conditions, and the introduction of INNS. Modifications in grazing to improve riparian habitats, including a reduction in grazing, fencing of riparian areas, weed control, and other improvements in riparian ecological function, may benefit the lynx. Implementation of livestock grazing management actions, as presented in the Kemmerer Proposed RMP and Final EIS *may affect, but*

is not likely to adversely affect, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the small likelihood of improper grazing within the suitable lynx habitat in this planning area, and the conservation measures in place that will preclude adverse effects to the lynx or its habitats.

Ute Ladies'-tresses – Livestock grazing in riparian areas could increase soil erosion, stream bank degradation, and the spread of INNS; however, implementing the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming* (BLM 1998) will reduce these impacts. Livestock grazing may adversely impact the Ute ladies'-tresses potential habitats in the planning by trampling riparian areas. Fencing, development of alternative water supplies for livestock, herding, placing feed and mineral supplements away from water sources, and adjusting pasture boundaries and season of use will minimize the impacts to riparian areas that may be potential habitats. Implementing livestock grazing management actions *may affect, but are not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (MA-NLAA-d)*. This determination is based on the fact that this species has not been recorded in the planning area in previous inventories and surveys (Hartman et al. 1996, Norman et al. 1999, Intermountain Ecosystems 2001, TRC Mariah 2002). If the plant is found on BLM-administered lands, conservation measures will be implemented to protect the plant and its habitats (USFWS 2007c).

Western Yellow-billed Cuckoo – Improper livestock grazing has been a major factor in the degradation and modification of riparian habitats in the western United States (BLM 2003c). The effects of this overuse include changes in plant community structure and species composition, relative abundance of species, and plant density. Livestock grazing in riparian habitats typically results in the reduction of plant species diversity and density, especially of palatable broadleaf plants, such as cottonwood and willow saplings, and is one of the most common causes of riparian degradation (BLM 2003c). The loss of tree regeneration could have the greatest effect on potential or existing yellow-billed cuckoo habitats. Conservation measures that reduce livestock damage to riparian areas minimize these effects. Development of water sources (e.g., springs, tanks, groundwater pumping), as well as salt/mineral placement away from riparian areas and fencing, reduces compaction and soil erosion in these areas. BLM grazing objectives will be maintained through implementation of allotment management plans and these range improvements. Because there is a low likelihood of the western yellow-billed cuckoo occurrence, livestock grazing management actions in the planning area *may impact, but are not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Livestock grazing on private lands may adversely affect threatened or endangered species. Grazing in riparian areas could impact stream bank stability, trample vegetation, and increase sedimentation, all of which could adversely impact threatened, endangered, and candidate species that occur in these habitats. Livestock grazing in listed plant species habitat on nonfederal lands could adversely impact these species.

7.11 Mineral Resources – Locatable

The BLM's mineral development program is divided into three categories: locatable, leasable, and salable minerals. Leasables are further divided into coal, sodium (trona), oil and gas, and other solid leasables. The BLM has the statutory authority under the Mineral Leasing Act of 1920, the Mineral Leasing Act for Acquired Lands, and the Federal Land Policy and Management Act of 1976 to take reasonable measures to avoid or minimize adverse environmental impacts that may result from federally authorized mineral lease activities. This authority exists regardless of whether the surface is federally owned.

All public lands are open to exploration for locatable minerals, except those withdrawn to protect other resource values and uses or those lands with acquired mineral status. The BLM has limited management authority and discretion over mining claim operations for locatable minerals conducted under the General Mining Law of 1872. These operations are managed using the surface regulations in 43 CFR 3809. Activity authorized under the General Mining Law is not subject to many of the special stipulations that are used in the salable and leasable mineral programs to protect sensitive resources from surface disturbance caused by mineral development. Under the Proposed RMP, an additional 1,558 acres are withdrawn from locatable mineral entry over existing withdrawals.

Potentially locatable metallic (e.g., gold, silver, titanium, copper, uranium, and chromitum) and nonmetallic (e.g., fire clay and bentonite) minerals exist in the planning area. Precious and semiprecious stones that exist or potentially exist include diamond, pyrope garnet, and chromium diopside. The BLM considers common varieties of sand, gravel, specialty stone (e.g., moss rock), most clays, limestone, and sandstone to be salable minerals.

Although mining claims recently have been staked for building and specialty stone, none of the deposits has been determined to be locatable under the *Mining Law of 1872* at this time. Unlike leasable minerals (e.g., oil, gas, or coal) or salable minerals (e.g., sand and gravel), where issuance of a lease or permit is at the BLM's discretion, the discovery and location of a locatable mineral claim is at the discretion of the claimant. The only current mining activities involving locatable minerals are for fire clay in Uinta County, north of Evanston, Wyoming. The planning area has seen little development of gemstones, and minimal production is expected in the future. Mining claims and associated exploration for diamonds occurred recently in the southeast portions of the planning area; however, no major discoveries are known to have occurred.

Actions associated with commercial locatable minerals include surface disturbance for mining, reclamation, and construction of access roads, buildings, and utility lines. Small scale mining may occur in the planning area, but individual casual use actions do not require an environmental assessment unless actions become significant. All lands must be reclaimed after closure of the mine.

7.11.1 Proposed Protections for Locatable Minerals in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed in the Kemmerer Proposed RMP and Final EIS:

- BLM will manage locatable minerals on all BLM-administered lands within the planning area while minimizing impacts to other resources. This includes new areas withdrawn from operation of the mining laws, including areas for special status plants, in addition to existing withdrawals.

7.11.2 Conservation Measures Currently Committed to by the BLM

No additional conservation measures exist for coal resources.

7.11.3 Best Management Practices

The following BMPs have been identified:

- Speed limits will not exceed 35 mph on all project roads, where possible.
- Regular removal of road-killed animals along project roads will be encouraged.

7.11.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – The only current mining activities involving locatable minerals are for fire clay in Uinta County; minimal production is expected in the future for locatable minerals. The BLM’s *Final Reasonable Foreseeable Development Scenario for Oil and Gas* did not identify any locatable resources within the Kemmerer planning area (BLM 2006b). Therefore, locatable mineral leasing management actions will have *no effect (NE)* on threatened or endangered species and *no impact* on the candidate species within the planning area.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Additional surface disturbance from locatable mineral actions on nonfederal lands could adversely impact threatened, endangered, and candidate species by further fragmenting the habitats, increasing road densities, spreading INNS, and degrading habitats for these species.

7.12 Mineral Resources – Leasable – Coal

Wyoming produces approximately one-third of all coal produced in the United States. The Powder River Basin in northern Wyoming contains some of the largest low-sulfur coal deposits in the world. Primary coal reserves occur in the Adaville, Evanston, and Frontier formations of the Cretaceous age. Outcrops of coal-bearing formations in the planning area are confined to the Overthrust portion of the area and occur mainly in three north-south-trending belts. The reserves in the Adaville Formation are estimated at 1-billion tons, based on 13 of the formation’s coal seams. Coal reserves in the planning area occur in two major regional coal fields: the Hams Fork Coal Field and the western portion of the Green River Coal Field. Coal production currently is occurring only in the Hams Fork Coal Field. The Green River Coal Field covers the largest area in Wyoming, with 16,800-square miles containing more than 1.46-trillion tons of coal. The far western edge of this coal region overlaps the eastern portion of the planning area; however, coal deposits in the Green River coal region portion of the planning area are buried by younger formations, and no surface or underground mining of those coalbeds has occurred. The Hams Fork Coal Field is Wyoming’s fifth largest coal region. The field extends from southwestern Teton County into Lincoln County, western Sublette County, and the western half of Uinta County. The Proposed RMP will consider new coal leasing on BLM-administered lands within the proposed Haystack Lease By Application area because coal development potential was shown to exist on these lands.

New coal lease applications will be processed using the coal-screening process. The leasable minerals resource program allows coal exploration on all federal mineral lands within the planning area except within the Raymond Mountain WSA. Exploration on federal mineral lands is subject to the requirements and conditions of the coal exploration license process, the result being a set of project-specific stipulations and conditions designed to limit impacts from exploration on other resources. Before the area can be considered for leasing, the amount of overburden, volume and quality of coal, and other information needed to plan a mine must be gathered. The Solid Minerals Group in the Rock Springs Field Office has the primary responsibility for all coal operations within both the Rock Springs and Kemmerer planning areas, including inspection and enforcement on federal lands.

Coal in Wyoming generally is extracted using surface mining methods, although in the past, some coal was mined underground. Surface mining involves the use of large equipment, such as draglines, shovels, and haul trucks. Small drill rigs are used for exploration to determine the location and thickness and to obtain cores (for determining quality). Extracting coal using surface mining methods often results in large areas of surface disturbance from road construction, removal of topsoil and overburden, and stock piling of these materials. Once an area is mined out, reclamation begins and includes recontouring as closely to the original landscape as possible, reconstruction of drainages, and reseeding and monitoring to ensure the habitats are useable.

7.12.1 Proposed Protections for Coal Resources in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed in the Kemmerer Proposed RMP and Final EIS:

- The BLM will manage coal leasing and exploration on BLM-administered land within the planning area, while minimizing impacts to other resource values. New coal lease applications will be processed using the coal-screening process.

7.12.2 Conservation Measures Currently Committed to by the BLM

- No additional conservation measures exist for coal resources.

7.12.3 Best Management Practices

The following BMPs have been identified:

- Speed limits on all project roads will not exceed 35 mph, where possible.
- Encourage removal of road-killed animals as soon as practical.

7.12.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Mining actions, surface disturbance, and development of roads and ancillary facilities could occur in occupied prairie dog habitats. However, no black-footed ferrets are presently known to exist within the planning area. Mining actions could result in habitat loss and alteration. New road development could result in increased human access and, thereby, create a potential increase in recreational shooting, the probability of distemper being transferred from a domestic dog to a ferret, and the potential for black-footed ferrets to be run over by a vehicle. An increase in avian predation on prairie dogs and black-footed ferrets could occur due to the use of extraction and ancillary facilities as perches by raptors. However, these impacts are anticipated to be minimal due to the stipulations and conservation measures that limit surface-disturbing activities. Implementing coal management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event for new or existing BLM-approved coal-development actions to impact black-footed ferrets directly through mortality resulting from collisions with vehicles or distemper and the stipulations and conservation measures associated with surface-disturbing activities.

Canada Lynx – Human activity associated with mineral development can adversely impact lynx behavior by causing them to avoid or abandon these areas. Construction of roads and other facilities may alter or destroy existing terrestrial habitats suitable for lynx foraging habitats or travel linkages between suitable habitats. Increased vehicle traffic associated with mineral and geology exploration, development, and operation may lead to increases in vehicle collisions with lynx and increased intrusion by competing predators, such as bobcat, coyote, and wolf. Additional impacts are a consequence of increased human access into habitat and fragmentation, loss of snowshoe hare and red squirrel habitat, associated noise and human activity, associated hazards (such as chemical toxins), and temporal and spatial project considerations. BLM-committed conservation measures include the assessment of habitat in suitable and unsuitable conditions and the ensuing limitations on percentage of disturbance allowable to habitats. Also, stipulations and conditions of approval for minerals development place limits on timing and surface use and occupancy that are developed at the exploratory, leasing and mine plan approval stages, and the minimization of snow compaction when authorizing and monitoring developments. Implementation of coal management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect* the lynx, due to *insignificant effects (NLAA-i)*. This determination is based

on the conservation measures in place that will preclude, minimize or remove adverse effects to the lynx or its habitat and LAUs.

Ute Ladies'-tresses – Direct effects to the Ute ladies'-tresses are unlikely as there are none known in the planning area, and effects to potential habitats are minimized by the incorporation of conservation measures applied to mineral development in areas of threatened and endangered species. Indirect effects to the Ute ladies'-tresses potential habitat may occur, including increased human use in the area, potential spread of INNS, elevated dust levels, and degradation or loss of the habitat. Implementing coal-development management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on no known populations of Ute ladies'-tresses in the planning area. In addition, conservation measures for the Ute ladies'-tresses will help to protect yet-to-be discovered populations.

Western Yellow-billed Cuckoo – The BLM policy of avoiding surface-disturbing activities within 500 feet of wetlands or riparian areas would minimize the effects of coal management to the yellow-billed cuckoo. The stipulations on new permanent facilities in 100-year floodplains, wetlands, and riparian areas also preserve cuckoo potential habitats. Potential adverse impacts to the western yellow-billed cuckoo include the construction of infrastructure, such as roads within potential habitat that further fragments available habitat; noise from the activities, which may disturb nesting or foraging behavior; and temporary effects of dust from the activities. Any of these would be likely to have an adverse impact on the western yellow-billed cuckoo; however, because there is a low likelihood of the western yellow-billed cuckoo occurrence, coal management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Coal-mine operations occur on both state and private lands. These mines potentially remove habitats for prairie dogs, black-footed ferrets, and lynx, and associated infrastructure may affect riparian habitats for yellow-billed cuckoos.

7.13 Mineral Resources – Leasable Sodium (Trona)

Trona is a hydrous sodium carbonate mineral refined into soda ash, sodium bicarbonate, sodium sulfite, sodium tripolyphosphate, and chemical caustic soda (WSGS 2002). Soda ash is used in a wide variety of applications: glass production, the chemical industry, soap and detergents, and other users, such as pulp and paper, water treatment industries, and the manufacturing of baking soda. Trona resources found on federal lands are considered leasable minerals.

Ninety percent of the Nation's trona production and 30 percent of the world's soda ash production comes from southwestern Wyoming extending into the eastern portion of the planning area. Four of the five working underground mines are in the planning area. The area where trona is known to exceed 4 feet in thickness is part of the Mechanically Mineable Trona Area (MMTA), which covers about 1,100 square miles, half of which is in the eastern portion of the planning area. All public lands within the MMTA currently not leased are available for leasing consideration. Prospecting permits outside of the MMTA are considered and modified, when necessary, to ensure consistency with the objectives of protecting other resources. Prospecting permits may be denied if it is determined that exploration or development impacts are inconsistent with other resource management objectives. In addition to prospecting permits for sodium, exploration licenses may be issued within the MMTA for sodium lands that are not currently leased. The Kemmerer Field Office is involved in developing mitigating measures for prospecting permits, trona leases, and surface-disturbing activities on those leases. In addition, the Solid Minerals group in Rock Springs is responsible for managing trona in the MMTA, including operations within the planning area.

Solution mining for trona involves flooding the conventionally operated mine workings with water; therefore, the saturated solution is pumped to the soda ash plant for recovery. Solution mining represents only a small fraction of total production. Most trona production is by conventional room and pillar, as well as longwall mining. Mining activities involving sodium minerals are limited to the eastern planning area in Sweetwater County.

7.13.1 Proposed Protections for Sodium (Trona) Resources in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed in the Kemmerer Proposed RMP and Final EIS:

- No new sodium leases or exploration licenses may be issued on lands within the Raymond Mountain WSA. This applies to public lands, including split-estate lands where federal mineral estate underlies nonfederal surface, within the boundaries of the WSA.

7.13.2 Conservation Measures Currently Committed to by the BLM

No additional conservation measures exist for trona resources.

7.13.3 Best Management Practices

No BMPs for sodium management have been identified.

7.13.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – As the current mining activities involving sodium minerals are limited to the eastern planning area, most of the suitable habitats for the threatened endangered, and candidate species discussed in this BA occur outside the sodium mining area. With the existing conservation measures and protections in place for those species that may be present and for riparian areas, sodium mineral leasing management actions will have *no effect (NE)* on threatened or endangered species within the planning area and *no impact* on the yellow-billed cuckoo.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Any new sodium management disturbance is likely to occur within the current area of disturbance (MMTA) on both federal and private lands in the planning area; therefore, no cumulative effects on nonfederal lands are anticipated for threatened or endangered species.

7.14 Mineral Resources – Leasable – Oil and Gas

The Mineral Leasing Act of 1920 states that all public lands are open to oil and gas leasing unless a specific order has been issued to close an area. Oil and gas exploration and development is one of the major industries in the planning area. Under the Proposed RMP, approximately 62,036 acres of federal mineral estate are administratively available to oil and gas leasing subject to the terms and conditions of the standard lease form, 797,504 acres are open with moderate constraints, 537,341 acres are open with major constraints, and approximately 182,481 acres of federal mineral estate are administratively unavailable for oil and gas leasing.

Geophysical exploration is a tool of the oil and gas industry that bounces shock waves off subsurface rock layers to determine their thickness and geometry. The energy typically comes from the detonation of explosives in a shallow drill hole or from a heavy weight either dropped or vibrated on the ground surface. Seismic operations use existing roads, when feasible, but also require off-road travel, which may include new surface disturbance. Geophysical exploration (primarily three-dimensional) is expected to continue through the life of the plan.

The BLM is responsible for authorizing and administering geophysical exploration operations on all public surface lands within the planning area, while the Wyoming Oil and Gas Conservation Commission (WOGCC) is responsible for authorizing all operations on state and private surface land. Once acreage in the planning area is nominated by the public to be included in an oil and gas lease sale, the acreage description is sent to the Kemmerer Field Office via the parcel list to be reviewed, and stipulations for protection of wildlife and other sensitive resources are developed. These stipulations become part of the lease. After an oil and gas lease is acquired, and prior to development, an APD must be filed with the WOGCC and the Kemmerer Field Office if the well is located on a federal oil and gas lease in the planning area. Once the permit is approved, the company may proceed with drilling according to the conditions of the permit's approval.

The majority of the federal mineral estate in the planning area is considered by the BLM to have low development potential. High production in the planning area occurs in eastern Lincoln and Uinta counties and western Sweetwater County associated with the La Barge Platform-Moxa Arch trend, and in the Thrust Belt Province near Evanston and to the north, primarily in Uinta County.

Coalbed natural gas (CBNG) has become one of the largest contributors to the total natural gas production in Wyoming, and the coals of the Powder River Basin (northern Wyoming) are the largest source of CBNG. Within the Kemmerer planning area, CBNG potential is estimated to be limited. Exploration activity for CBNG in southwestern Wyoming has been low to moderate with drilling activity focused outside the planning area. Several wells have been drilled on fee or state lands and one well on federal mineral estate. Additional CBNG well developments may occur in the planning area if pilot-scale testing is successful.

Ancillary oil and gas development involves allowing the construction of roads, pads, pipelines, and other facilities, such as aboveground powerlines. Stipulations involve implementing leases with NSO or controlled surface use (CSU) restrictions, timing limitation stipulations (TLSs), or with other standard surface protection restrictions; negotiating mitigated impacts between lessees and the BLM authorized officer; and deciding mitigation measures and limitations, as well as reclamation plans. Reclamation actions take place following the expiration of a lease and may include reseeding, reshaping land contours, well pad and road closure, and revegetation.

Surface-disturbing and other activities associated with the minerals program include, but are not limited to, the following actions: applying dust-control measures; restricting flaring of natural gas; controlling or limiting emissions; constructing and reclaiming well pads, access roads, and reserve pits; constructing reservoirs associated with water disposal; constructing compressor stations, product enhancements and disposal facilities; building pipelines associated with leases or units; installing powerlines associated with leases or units; building wind-power facilities and turbines associated with leases or units; and conducting geophysical exploration.

7.14.1 Proposed Protections for Oil and Gas in the Kemmerer Proposed RMP and Final EIS

The following is a list of proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Oil and gas leasing, exploration, operation, and development will be managed within the planning area, while minimizing impacts to other resource values.
- The BLM will consider lease applications on a case-by-case basis. Leases will be issued with the least restrictive stipulations needed to protect other resource values. Stipulations to protect important resource values will be based on interdisciplinary review of individual proposals and environmental analysis.

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- Approximately 182,481 acres of federal mineral estate will be made administratively unavailable for oil and gas leasing.
 - OHV use for geophysical exploration on public land will be subject to OHV designations, unless determined to be acceptable through site-specific NEPA analysis.

7.14.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM:

- The completion of oil and gas conditions of approval is ensured prior to authorizing an APD and enforcement of site-specific APD condition of approval.
- Four areas of NSO have been designated: 1-mile bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile radius of perennial streams in the Raymond Mountain ACEC, which also may benefit threatened or endangered species that use these areas.
- The objectives of the proposed Woodruff Narrows mitigation plan are to improve riparian habitat used as a bald eagle winter roost and to mitigate possible habitat loss from the construction of a low-head hydro power plant. This also may protect suitable habitat for yellow-billed cuckoo.
- All new powerlines must be constructed in conformance with Avian Power Line Interaction Committee standards (BLM 2003a).

7.14.3 Best Management Practices

The following BMPs have been identified:

- BLM Instruction Memorandum No. 2004-194 regarding *Integration of BMPs into APD Approvals and Associated ROWs* will be considered in all NEPA documents and on-the-ground actions to mitigate anticipated impacts to surface and subsurface resources. Oil and gas operators will be actively encouraged to consider adopting acceptable BMPs as part of their application and operations.
- Speed limits on all project access roads will not exceed 35 mph, where possible.
- Regular removal of road-killed animals on access or project roads will be encouraged.

7.14.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are currently known to exist within the planning area. If prairie dogs and black-footed ferrets were present in an oil and gas development area, they may be displaced, or their habitats degraded by the extraction of these resources. It is conceivable that any black-footed ferrets present could be run over by vehicles, though being nocturnal decreases the chances of this event. A slight increase in avian predation is possible in developed areas where structures provide raptor perches near prairie dog colonies. Oil and gas development may result in the reduction of potential future reintroduction sites due to habitat loss and alteration and changes in prey abundance, thus compromising successful recovery of the black-footed ferret. Implementing management actions associated with oil and gas development *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the current absence of black-footed ferrets in the planning area, the current clearance requirements, project review, and existing conservation measures.

Canada Lynx – Human activity associated with oil and gas development can adversely impact lynx behavior by causing them to avoid or abandon these development areas. Construction of roads, pads, and other facilities associated with development or access by OHVs during exploration may alter or destroy existing terrestrial habitats that may be suitable for lynx foraging or as travel linkages between suitable habitats. Increased vehicle traffic associated with mineral and geology exploration, development, and operation may lead to increases in vehicle collisions with lynx and increased intrusion by competing predators, such as bobcat, coyote, and wolf. Additional impacts are a consequence of increased human access into habitat and fragmentation, loss of snowshoe hare and red squirrel habitats, associated noise and human activity, associated hazards (such as chemical toxins), and temporal and spatial project considerations. BLM-committed conservation measures include the assessment of habitats in suitable and unsuitable conditions and the ensuing limitations on percentage of disturbance allowable to habitats, as well as stipulations and conditions of approval for minerals development that place limits on timing and surface use and occupancy that are developed at the leasing and APD stages, and the minimization of snow compaction when authorizing and monitoring developments. Implementing of oil and gas management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the conservation measures in place that will preclude, minimize, or remove adverse effects to the lynx or its habitat and LAUs.

Ute Ladies'-tresses – Oil and gas development near riparian areas could increase soil erosion, stream bank degradation, and the spread of INNS; however, implementing the *Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Land Administered by the Bureau of Land Management in the State of Wyoming* (BLM 1998) and the *Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities* (BLM 2008a, Appendix N) should reduce these impacts. Oil and gas development may adversely impact the Ute ladies'-tresses potential habitat through surface discharge of produced water into drainages; however, produced water discharge to streams or other flow-connected surface features on public lands requires a BLM-approved discharge plan. Implementing oil and gas development actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses potential habitat *due to discountable effects (NLAA-d)*. This determination is because no known populations of Ute ladies'-tresses occur in the planning area and stipulations for protecting riparian and wetlands would reduce effects to potential habitats. In addition, conservation measures for the Ute ladies'-tresses will help to protect yet-to-be discovered populations.

Western Yellow-billed Cuckoo – The BLM policy of avoiding surface-disturbing activities within 500 feet of wetlands or riparian areas would minimize the effects of oil and gas development on the yellow-billed cuckoo. The stipulations on new permanent facilities in 100-year floodplains, wetlands, and riparian areas also preserve cuckoo potential habitats. Potential adverse impacts to the western yellow-billed cuckoo include the construction of infrastructure, such as pads, pipelines, and roads within potential habitats that further fragments available habitat; noise from the activities, which may disturb nesting or foraging behavior; and temporary effects of dust from the activities. Any of these are likely to have an adverse impact on the western yellow-billed cuckoo; however, because there is a low likelihood of the western yellow-billed cuckoo occurrence, oil and gas management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Oil and gas development on private lands is expected to continue. Although most energy development in the planning area occurs on federal mineral estate, there are opportunities for this activity on state and private (fee) mineral estate, potentially impacting threatened, endangered, and candidate species.

7.15 Mineral Resources – Leasable – Other Solid Leasables

Other solid leasable minerals include phosphate and oil shale. Access to BLM-administered leasable minerals is at the BLM's discretion. Under the Proposed RMP, federal mineral estate is open to leasing of other solid leasable minerals, except in areas identified as necessary for the protection of specific resource values or uses. The Green River basin contains an estimated 244-billion barrels of shale oil. The most notable oil shale resources in the Kemmerer Field Office are located toward the southeastern boundary of the area around Flaming Gorge Reservoir. Other important oil shale beds are slightly to the east of the southeast border of the Kemmerer planning area.

At present, no regulations are in place for leasing oil shale, nor are there any existing oil shale leases. Lands containing oil shale resources were originally identified through an inventory that portrayed the occurrence of the Green River geologic formation in Utah, Wyoming, and Colorado. Once identified, lands containing oil shale resources were withdrawn from mineral entry through a 1930 Executive Order, which was later modified to allow for oil, gas, and sodium leasing. Since that time, the economic potential for the oil shale resource has been further defined, now comprising a smaller area in the three states.

When the Kemmerer Proposed RMP and Final EIS (revision) was initiated in 2003, there was no reasonable foreseeable development expectation for oil shale over the life of the plan. The mineral report identified this resource, but did not foresee any future leasing or development due to lack of regulations, as well as prevailing and anticipated economic factors. In light of this legislative requirement, all decisions related to oil shale leasing in this RMP are being deferred to the ongoing Programmatic EIS on Oil Shale and Tar Sands Leasing (USDI 2005). The Record of Decision on the final Programmatic EIS will amend the RMP by making allocation decisions on whether to allow leasing and future development of oil shale on public lands for those areas where the resource is present. Site-specific requirements will be addressed in future NEPA analyses for individual project applications after the Programmatic EIS is completed. Areas containing known deposits of oil shale are available for oil shale lease consideration where they are not inconsistent with existing laws and regulations, Executive Orders, and ACECs.

Phosphate rock and associated vanadium occurs in the Overthrust portion of the planning area. Mining has occurred in the past in various surface and underground mines, beginning with an underground mine near Cokeville in 1906, which had the first production in Wyoming. The last federal phosphate leases in the Kemmerer Field Office planning area, relinquished in 1995, were located in the Sublette Range north of Cokeville. Currently, no production of phosphate occurs in the planning area. Prospecting permits for phosphate will be considered in all areas. Appropriate stipulations will be added to protect other resources. Prospecting permits for phosphate may be denied if it is determined that impacts from exploration or development are inconsistent with the objectives of the RMP. If prospecting eventually leads to leasing, those leases will be conditioned to avoid adverse impacts to other resources.

7.15.1 Proposed Protections for Other Solid Leasables in the Kemmerer Proposed RMP and Final EIS

The following list includes proposed protections in the Kemmerer Proposed RMP and Final EIS:

- The leasing and development of other minerals on acquired lands will be managed within the planning area, while minimizing impacts to other resource values.
- Stipulations to protect sensitive resource values will be based on interdisciplinary review of individual proposals and environmental analysis.

7.15.2 Conservation Measures Currently Committed to by the BLM

No additional conservation measures exist for other solid leasables.

7.15.3 Best Management Practices

No BMPs for other solid leasables have been identified.

7.15.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – No effects from phosphate management are anticipated because no production of phosphate occurs in the planning area. If prospecting eventually leads to leasing for phosphate, those leases will be conditioned to avoid adverse impacts to other resources. The Record of Decision on the final Programmatic Oil Shale EIS will amend the existing RMP by making allocation decisions on whether to allow leasing and future development of oil shale on public lands for those areas where the resource is present. Site-specific requirements will be addressed in future NEPA analyses for individual project applications. Areas containing known deposits of oil shale are available for oil shale lease consideration where it is not inconsistent with existing laws and regulations, Executive Orders, and ACECs. With the existing conservation measures and protections in place for those species that may be present and for riparian areas, other solid leasable mineral management actions will have *no effect (NE)* on any threatened, endangered or candidate species within the planning area.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Mineral development of other solid leasables on nonfederal lands in the planning area could adversely impact threatened, endangered, or candidate species.

7.16 Mineral Resources – Salable

Salable minerals, also known as mineral materials, include common variety materials, such as sand, stone, gravel, pumice, pumicite, cinders and clay, as well as petrified wood. The Kemmerer Field Office administers the permits for salable minerals. The office maintains two community pits and one common use area, which provide relatively small amounts of mineral materials to the public using nonexclusive contracts, generally for sand and gravel, shale, moss rock, and boulders. The Kemmerer Field Office also issues exclusive use permits when the request is to obtain mineral materials from a specific location as an exclusive permittee. This is done as a “free use permit” (usually for government entities, such as city, county, or state) or as a commercial sale. Depending on the size and nature of a sale or free use permit, a mining and reclamation bond may be required. Another method to dispose of mineral materials, particularly borrow material and sand and gravel, is the Material Site ROW. The Wyoming Department of Transportation (WYDOT) uses Material Site ROW to obtain salable minerals from the BLM for road construction involving federal funds. Most salable minerals are common construction materials; the demand for these materials is linked to the area’s economy. Aggregate (sand and gravel) demand is expected to remain high. Aggregate is one of the most widely used salable resources in Wyoming and in the planning area. There are three free use permit areas for county governments and numerous Material Site ROWs issued to the WYDOT for sand and gravel. The Kemmerer Field Office has averaged 14 salable mineral authorizations per year over the last 4 years. Numerous older gravel pits occur throughout the area, many of which were originally issued to the WYDOT. Currently, building stone and moss rock is being produced, though other varieties of decorative stone have been produced in the past. An active market has developed for moss rock and current production and demand for it, as well as building stone, is expected to continue at their current rates. About 1,000 tons of moss rock has been sold from public land in the planning area since 1998. Substantial commercial limestone or sandstone production (other than decorative stone) in the planning area is not expected. Salable limestone is an abundant resource within the planning area; however, currently there is minimal production.

Mineral materials are basic natural resources used in construction; however, they are generally bulky and have low unit prices. The sheer weight of mineral materials results in high transportation costs. Adequate local supplies of these basic resources are important to the area's economy. The BLM's policy is to make these materials available to the public and local government agencies whenever possible and wherever it is environmentally acceptable.

Before issuing contracts or free use permits for salable minerals, the BLM conducts appropriate environmental assessments. These include studies or inventories of threatened or endangered plant and wildlife species. Stipulations or conditions may be included in the terms of the contract to ensure protection of the natural resource found there and reclamation of the land following project completion. Site reclamation is required following any surface-disturbing mining activity for salable minerals.

7.16.1 Proposed Protections for Salable Minerals in the Kemmerer Proposed RMP and Final EIS

The following list includes proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Salable mineral permitting and development on BLM-administered lands within the planning area will be managed while minimizing impacts to other resource values.
- No mineral material sales and (or) free use permits be will authorized within the Raymond Mountain WSA, within 1/2-mile of developed campgrounds, and on special status plant species locations.
- Stipulations to protect important resource values will be based on interdisciplinary review of individual proposals.

7.16.2 Conservation Measures Currently Committed to by the BLM

Conservation measures currently committed to by the BLM follow:

- Stipulations or conditions will be included in the terms of the contract to ensure protection of the natural resource found there and reclamation of the land following project completion.
- Reclamation plans will be developed to restore disturbed areas to conditions as close to pre-disturbance conditions as possible.
- If crucial wildlife habitats are disturbed, these disturbed areas will be reclaimed to approximate original conditions (i.e., topography, vegetation, hydrology, etc.) after completion of actions in the area, in part to ensure suitable habitats are present on the reclaimed landscape. Reclamation will attempt to return the plant community to the pre-existing condition as soon as possible.
- All reclamation proposals will conform to federal and state agency permit requirements and be approved by the BLM.
- The sale and disposal of salable minerals will be prohibited in areas occupied by threatened and endangered species.

7.16.3 Best Management Practices

The following BMPs have been identified:

- Encourage the removal of road-killed animals on project access roads.
- Enforce speed limits of no greater than 35 mph, where possible, on access and project roads.

7.16.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Within occupied black-footed ferret habitats, the sale and disposal of salable minerals is prohibited. Salable mineral mining actions, surface disturbance, and developing roads and ancillary facilities could occur in occupied prairie dog habitats. However, no black-footed ferrets are presently known to exist within the planning area. Mining actions could result in habitat loss and alteration. New road development could result in increased human access and, thereby, create a potential increase in recreational shooting and the probability of distemper being transferred from domestic dogs. An increase in avian predation on prairie dogs and black-footed ferrets could occur due to the use of extraction and ancillary facilities as perches by raptors. However, these impacts are anticipated to be minimal due to the stipulations and conservation measures that limit surface disturbing activities. Implementing salable mineral management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event for new or existing BLM-approved salable mineral development actions to impact black-footed ferrets directly by mortality from collisions with vehicles or mortality by distemper and the stipulations and conservation measures associated with surface-disturbing activities.

Canada Lynx – Human activity associated with mineral development can adversely impact lynx behavior by causing them to avoid or abandon habitats. Construction of roads and other facilities may alter or destroy existing suitable lynx foraging habitats or travel linkages between suitable habitats. Increased vehicle traffic associated with salable mineral development and operation may lead to increases in vehicle collisions with lynx and increased intrusion by competing predators, such as bobcat, coyote, and wolf. Additional impacts may result from increased human access into habitats and fragmentation, loss of snowshoe hare and red squirrel habitat, associated noise and human activity, associated hazards (such as chemical toxins), and temporal and spatial project considerations. BLM-committed conservation measures include the assessments of habitats in suitable and unsuitable conditions and the ensuing limitations on the percentage of disturbance allowable to habitats. Also, stipulations and conditions of approval for minerals development place limits on timing and surface use and occupancy that are developed at the leasing and APD stages, and the minimization of snow compaction when authorizing and monitoring developments. Implementing salable mineral management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the conservation measures in place that will preclude, minimize or remove adverse effects to the lynx or its habitat and LAUs.

Ute Ladies'-tresses – No effects to the Ute ladies'-tresses are expected, as this species has not been recorded in the planning area. Indirect effects to the Ute ladies'-tresses potential habitats may occur, including increased human use in the area, potential spread of INNS, and elevated dust levels. Implementing management actions associated with salable minerals *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the unlikely potential for populations of Ute ladies'-tresses to be discovered in the same area as proposed salable minerals. In addition, conservation measures for riparian areas and Ute ladies'-tresses potential habitats will help to protect yet-to-be discovered populations.

Western Yellow-billed Cuckoo – The BLM policy of avoiding surface-disturbing activities within 500 feet of wetlands or riparian areas would minimize the effects of salable minerals management to the yellow-billed cuckoo. The stipulations on new permanent facilities in 100-year floodplains, wetlands, and riparian areas also preserve cuckoo potential habitats. Potential adverse impacts to the western yellow-billed cuckoo include the construction of infrastructure, such as roads, within potential habitats that further fragment available habitats, noise from the activities, which may disturb nesting or foraging behavior; and temporary effects of dust from the activities. Any of these would be likely to have an adverse impact on the western yellow-billed cuckoo; however, because there is a low likelihood of the

western yellow-billed cuckoo occurrence, salable minerals management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Cumulative effects from sand and gravel operations along major river corridors on nonfederal lands could occur, which may impact federally listed species.

7.17 Off-highway Vehicles

For legislative purposes, 42 CFR 480 defines an OHV as “any motorized vehicle capable of or designated for, travel on or immediately over land, water, or other terrain.” Road networks within the planning area include a series of county roads, BLM-maintained roads, two-track trails, and snowmobile trails. The use of these travel ways is an integral part of public land management, as these roads are used for both recreational and nonrecreational purposes. In the planning area, the most common vehicles used are four-wheel drive trucks and sport utility vehicles. The national objectives for OHV management are to provide for OHV use while protecting natural resources, promoting safety of all users, and minimizing conflicts among the various users of public lands. Travel management is an ongoing process and includes inventorying, rerouting, upgrading, and closures of roads, as well as the addition of roads and trails.

Road networks within the planning area comprise a series of county roads, BLM-maintained roads, two-track trails, and snowmobile trails. The maintenance and use of these travel ways has become an integral part of public land management, as these roads are used for both recreational and nonrecreational purposes. Typical recreational OHV activities within the planning area include enduro races, trial competitions, all-terrain vehicle and motorcycle trail riding, and snowmobiling. OHV use, in itself, has become a popular method to exploring public lands. In addition, OHV use provides access for nonmotorized recreational purposes, such as fishing, hiking, mountain biking, horseback riding, and primitive camping opportunities. People with disabilities may be allowed to travel on OHVs in otherwise closed areas on a case-by-case basis. Nonrecreational OHV use of the planning area includes agricultural management, energy development, and land management activities. The BLM uses OHVs for range inspections, vegetation treatments, surveying and mapping, inventories, monitoring, fire management, project construction, and maintenance.

The OHV use designations for the majority of public lands within the planning area are either “limited to existing roads and trails” or “limited to designated roads and trails.” While these designations provide for a wide variety of OHV use and there are a number of travel routes on public lands throughout the planning area, the majority of recreational OHV use occurs in areas with legal and physical access in conjunction with large blocks of public lands. OHV operators may go off of roads and trails to perform necessary tasks. Areas where OHV access is restricted or substantially limited include the Raymond Mountain WSA and the seasonal closure of 287,160 acres in crucial big game winter range from January 1 to April 30. There are 23 miles of groomed snowmobile trails in the planning area.

The popularity and use of OHVs has grown substantially in a relatively short period of time. Areas that were once infrequently visited are now popular places for recreational touring and other OHV-related activities. However, off-road or other inappropriate use of these vehicles can cause environmental degradation and increased conflicts among user groups. Certain environments are more susceptible to OHV damage, including crucial winter ranges, wildlife breeding areas, riparian habitats, and areas with steep slopes or sensitive soils. OHV use in the planning area is expected to continue. The lack of appropriate signage, a shortage of law enforcement personnel, the increase in OHV use throughout the planning area, and a general lack of understanding of land-use ethics have increased inappropriate uses of OHVs on federal lands and represent management challenges for the BLM.

BLM actions concerning OHV use include designating closed, limited, or open areas for OHV use; posting signs and developing maps or brochures; permitting OHV rallies, cross-country races, and outings; monitoring OHV use; and performing necessary tasks requiring OHV use. Under normal conditions and when OHV travel is limited, there is no substantial surface disturbance associated with OHV use. However, excessive use, cross-country travel, or use in sensitive habitats (e.g., wet soils) can result in soil compaction and erosion, increased stream sedimentation, increase and spread of INNS, habitat fragmentation, and disruption to visual resources.

7.17.1 Proposed Protections for OHVs in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Designated roads would not be upgraded. Any improvements to the roadways would require further analysis.
- New unpaved roads could be allowed within 250 feet of special status plant species populations only if NEPA analysis indicates the road will not adversely impact the species.
- Motor vehicle travel in the majority of the planning area will be limited to existing roads, two-tracks, and trails.
- The following areas will be open for OHV use: part of the hill climb area in Section 33, T15 North, R114 West - 60 acres (see Proposed RMP and Final EIS, BLM 2008a).
- New proposals for open OHV use areas will be considered and could be approved, provided they do not cause a substantial impact to other resources.
- The following areas will be designated limited to existing roads and trails pending resource surveys and travel management planning to support an open designation: Oakley Draw and Leavitt Bench/Crooked Canyon.
- Specific roads will be closed seasonally to motor vehicles to protect important resource values (e.g., big game crucial winter range).
- The following will be closed to motorized vehicles and OHV use:
 - Raymond Mountain WSA
 - Green Hill (near town of Kemmerer)
 - The trail to Commissary Ridge from the Commissary Ranch development (T24N, R116W, Sections 15, 20)
 - The following NHT segment to motorized vehicle and OHV use: a ¼-mile segment of the Oregon/California trail on the west slope of the Bear River Divide.
 - Riparian and wetland areas, except for designated road crossings
 - Special status plant species populations.

7.17.2 Conservation Measures Currently Committed to by the BLM

Listed below are conservation measures currently committed to by the BLM:

- If relatively high OHV use is documented in any location on public land, an analysis to determine if the area needs special designation to protect listed species or their habitats will be performed.
- Site management plans will be developed for high-intensity OHV use areas.

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- Areas will be closed to off-road travel if sensitive areas are identified that require this protective measure.

7.17.3 Best Management Practices

No BMPs for OHV management have been identified.

7.17.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to presently exist within the planning area. OHV use, where authorized, is restricted to existing roads and trails or designated routes. Since OHV use will be restricted to existing or designated routes, it is unlikely that impacts to black-footed ferrets would occur. Two-track roads through prairie dog towns could result in a ferret being killed; however, this is highly unlikely since ferrets are nocturnal. Implementing OHV use management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the current absence of the ferret in the planning area and the existing protections and conservation measures.

Canada Lynx – Much of the Kemmerer planning area is not subject to open OHV use. OHV use is best characterized as limited in frequency and intensity, and no major new recreational programs or activities are anticipated. OHV management is not expected to result in detrimental effects to lynx behavior, denning, travel, or foraging habitats. The BLM-committed conservation measures in place for all activities include the assessment of lynx habitats in suitable and unsuitable conditions and the ensuing limitations on percentage of disturbance allowable to habitats. Implementing OHV management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the low likelihood that effects from OHV use could result in take and the conservation measures in place that will preclude adverse effects to lynx or their habitats, including LAUs.

Ute Ladies'-tresses – No authorized OHV use is allowed in riparian and wetland areas, thereby protecting Ute ladies'-tresses potential habitats. However, OHV use on roads and trails adjacent to riparian areas may lead to increased erosion and the spread of INNS, reducing the suitability of the habitats for the Ute ladies'-tresses. In addition, unauthorized trails in riparian areas and potential stream crossings could adversely impact the Ute ladies'-tresses by altering the habitat. Implementing OHV use management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the prohibition of OHV use in Ute ladies'-tresses suitable habitats and existing conservation measures in place to protect this species, if recorded in the planning area.

Western Yellow-billed Cuckoo – Under the Proposed RMP, OHVs are primarily limited to existing roads and trails. In newly open areas and areas where unauthorized use of OHVs occurs in or near riparian habitats, degraded air quality, vegetation destruction, and noise disturbance could result and may affect yellow-billed cuckoos, if present. However, because there is a low likelihood of western yellow-billed cuckoo occurrence, OHV management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. OHV use on nonfederal lands and unauthorized use on federal lands could contribute to disturbance of soils, removal of vegetation, and the spread of INNS. These actions could contribute to degradation of habitats for threatened, endangered, and candidate species.

7.18 Paleontology

Paleontological resources, usually thought of as fossils, include the bones, teeth, body remains, traces, or imprints of plants and animals preserved in the earth through geologic time. All fossils offer scientific information, but not all fossils offer significant scientific information. Among paleontologists, fossils generally are considered scientifically significant if they are unique, unusual, rare, diagnostically or stratigraphically important, or add to the existing body of knowledge in a specific area of science. Most fossils occur in sedimentary rock formations. Although experienced paleontologists generally can predict which formations will contain fossils and what types of fossils will be found based on the age of the formation and its depositional environment, predicting the exact location where fossils will be found without field surveys is usually not possible. In the planning area, the Bridger, Green River, Wasatch, and Evanston formations are the only formations rated as Class 5 geologic units, highly fossiliferous geologic units that regularly produce vertebrate fossils or significant nonvertebrate fossils that are at risk of natural degradation or human-caused adverse impacts. Class 5 areas receive the highest level of management focus.

Collecting fossils from public lands is allowed with some restrictions, depending on the significance of the fossils. Hobby collection of common invertebrate or plant fossils by the public for personal use is allowed in reasonable quantities using hand tools. Some commercial quarries exist on private land within the planning area. Commercial collecting of paleontological resources on public land is not permitted. Collecting significant fossils (all vertebrate and any administratively designated plant or invertebrate fossils) may occur only under permits issued by the BLM to qualified researchers.

The BLM performs a variety of actions to preserve, protect, and restore paleontological resources. During inventory actions, the BLM inventories, categorizes, and preserves paleontological resources, conducts field actions, performs excavations, maps and collects surface materials, researches records, and photographs sites and paleontological resources. Management actions involve managing sites for scientific and public use, developing interpretive sites, restricting certain land uses, closing certain areas to exploration, prohibiting some surface-disturbing activities, stabilizing erosion (e.g., burying exposed sites), preparing interpretive materials, allowing hobby collection of common invertebrate or plant fossils, and permitting collecting for scientific research. Inventory data-collection actions are used for documentation and development of mitigation plans prior to surface-disturbing activities of other resource programs. Inventory actions commonly entail the use of hand tools, power tools, or heavy machinery; collecting invertebrate and plant fossils; inventoring paleontological resources; developing interpretive sites; and stabilizing erosion.

7.18.1 Proposed Protections for Paleontological Resources in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed in the Kemmerer Proposed RMP and Final EIS:

- For paleontological resource use permits, stipulations will protect other resources on a case-by-case basis.

7.18.2 Conservation Measures Currently Committed to by the BLM

No specific conservation measures apply to the management of paleontological resources.

7.18.3 Best Management Practices

No BMPs for paleontological resources have been identified.

7.18.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the planning area. Collection of fossils on public land will have minimal effects on black-footed ferrets and their habitats. Possible effects include increased human activity and minor surface disturbances associated with fossil retrieval. Implementing paleontological resources management *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event that paleontological resources management actions will occur within prairie dog complexes, the existing conservation measures, and the relatively small amount of surface disturbance associated with fossil collection.

Canada Lynx – Implementing management actions associated with paleontological resources *may affect, but is not likely to adversely affect*, the Canada lynx due to *discountable effects (NLAA-d)*. This determination is based on the relatively small amount of surface disturbance associated with fossil collection and existing conservation measures.

Ute Ladies'-tresses – Collecting fossils on public land will have minimal effects on the Ute ladies'-tresses potential habitats. Potential impacts depend on the number of people conducting the investigation, the time of year, duration of the field actions, use of heavy machinery or hand tools, and the type of habitats affected. Surveys for Ute ladies'-tresses will be conducted in potentially suitable habitats prior to any surface-disturbing activity taking place. Implementing paleontological management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event that these management actions will occur in Ute ladies'-tresses habitats. In addition, existing conservation measures in place will minimize impacts to the species.

Western Yellow-billed Cuckoo – On-the-ground surveys for paleontological resources could cause disturbances to riparian habitat and nesting cuckoos, if present. Because there is a low likelihood of western yellow-billed cuckoo occurrence, paleontological resource management in the planning area *may impact, but is not likely to contribute to the need to list* this species. This determination is based on the relatively small amount of surface disturbance associated with fossil collection and existing conservation measures for riparian areas.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. No actions associated with paleontology on nonfederal lands that could affect threatened, endangered, or candidate species are anticipated.

7.19 Recreation

Categories of recreation management actions include allowing recreational access and use by the public, administering special recreational permits, developing recreational areas and campsites, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. The BLM allows recreational actions, including sightseeing, touring, photography, wildlife viewing, floating, mountain biking, camping, fishing, and hunting. Large recreational events may include organized group hikes, motocross competitions, or horse endurance rides. Recreational land and access acquisition actions involve maintaining public access, pursuing ROW, providing continued access, and pursuing land acquisition. Recreational site development includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreational sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites.

Development and enforcement of stipulations and protective measures include designating OHV use, enforcing recreational-oriented regulations, patrolling high-use areas, and contacting users in the field. The BLM places boundary signs, identifies hazards on rivers, restricts recreational uses, limits motorized vehicles to existing trails, designates road use and recreational areas, requires facilities to blend with the natural environment, and conducts field inventories. Special recreation permits (SRP) are processed on a case-by-case basis; categories include competitive, vending, individual or group use in identified areas, organized group activity, and event use.

Four Special Recreation Management Areas (SRMAs) are identified in the planning area for the Proposed RMP: Oregon-California NHT, Dempsey Ridge, Pine Creek Canyon, and Raymond Mountain. The remaining portions of the planning area will be managed as an ERMA. Refer to the Proposed RMP and Final EIS for details regarding recreation areas.

While assessing adverse effects of recreational actions to the environment, the BLM analyzes actions that increase human activity, especially in riparian areas. The BLM monitors recreational use, develops management plans, and evaluates and updates recreational potential in the planning area.

Surface disturbance and other activities associated with the recreational resources program include, but are not limited to, the following actions: (1) managing recreational use, (2) permitting competitive recreational events, (3) developing recreational trails, (4) constructing recreational sites, (5) maintaining developed and undeveloped recreational sites (campgrounds), (6) placing boundary signs and interpretive markers, (7) allowing commercial recreational uses, and (8) developing public water sources for recreational facilities.

7.19.1 Proposed Protections for Recreation in the Kemmerer Proposed RMP and Final EIS

The following bulleted items list proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Areas within ¼ mile of developed campgrounds will be NSO for oil and gas leasing.
- Only dispersed camping within 200 feet of a water source, except where developed camping facilities currently exist, will be allowed.
- Dempsey Ridge area would be managed to provide quality dispersed recreation opportunities.
- The Pine Creek Canyon SRMA would be managed to enhance recreational opportunities while protecting the riparian, water, and wildlife values that exist in the area.
- The Raymond Mountain SRMA would be managed to provide back-country (nonmotorized) dispersed recreational experiences.

7.19.2 Conservation Measures Currently Committed to by the BLM

Below is a list of conservation measures currently committed to by the BLM:

- To conserve and protect natural areas, planned trails are created to control human traffic.
- No SRP will be issued for organized prairie dog shooting competitions or other commercial activities involving the shooting of prairie dogs.
- No preprinted maps indicating the location of prairie dog colonies will be provided to the public for the purpose of recreational shooting.

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- Recreational use will be monitored as an aid in deciding what level of management is needed, as well as what development opportunities could be pursued. Coordination with other federal and state agencies to determine where recreational uses are occurring will take place to monitor intensity and season of use in potential listed species habitats.
 - Public land areas with the potential for water-based recreation will be monitored to determine intensity and season of use in potential listed species habitats.

7.19.3 Best Management Practices

The following BMP has been identified:

- BLM programs will strive to protect Ute ladies'-tresses habitats and prevent new trails from being constructed through known orchid occurrences.

7.19.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the planning area. Recreational sites, trails, and actions do not typically occur in or near prairie dog complexes. The Wyoming BLM philosophy is that prairie dog shooting should not be encouraged and no SRPs will be issued for organized prairie dog shooting events (BLM 2006a). Unorganized recreational shooting of prairie dogs is not a BLM discretionary action. Implementing recreational management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the current absence of the black-footed ferret in the planning area, the unlikely choice of prairie dog towns for recreational development, and the conservation measures in place to protect the species.

Canada Lynx – Actions associated with recreational management and use have the potential to impact lynx behavior and habitats. Activities that create compacted snow conditions, such as snowshoeing and cross-country skiing, reduce the special advantage that lynx have to move through deep snow with their large paws. This allows for the intrusion of less-specialized predators, such as bobcats, wolves, and coyotes, into areas that would otherwise be the exclusive domain of the lynx. These other predators compete for prey and can prey on lynx. An increase in human activity associated with management actions or use may cause lynx to avoid or abandon otherwise suitable habitats. Recreational use is often concentrated in riparian areas. Impacts to these habitats may reduce or eliminate foraging habitats for snowshoe hares. Implementing recreation management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the conservation measures in place that will preclude adverse effects to lynx or their habitat.

Ute Ladies'-tresses – No known populations of the Ute ladies'-tresses occur in the planning area. Extensive trail systems in riparian areas are not common due to the potential flooding in these areas. Potential habitats for Ute ladies'-tresses may be indirectly impacted by the unintentional spread of INNS from recreational actions. Implementing recreational management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event BLM-authorized actions will occur in Ute ladies'-tresses habitats and the conservation strategies implemented if surface-disturbing activities were to occur in suitable habitats.

Western Yellow-billed Cuckoo – Hunting and snowmobiles do not usually take place during the timeframe when cuckoos are in Wyoming. The riparian habitat preferred by the cuckoo is not authorized for use by mountain bikes or OHVs, and activity resulting in noise or dust near potential cuckoo habitat may cause temporary disturbance for nesting and foraging. While some established campgrounds and recreation areas are currently located in riparian habitat, only dispersed camping is allowed within 200

feet of water. In general, areas currently used for recreation or campgrounds are not likely also used by cuckoos for breeding purposes because of constant noise and disturbance. Most streams near western yellow-billed cuckoo occurrences in Wyoming are utilized for fishing, which generally does not disturb cuckoos. Any recreational activity could disturb cuckoo behavior, life patterns, or habitat if it occurred in large numbers or over time in the same habitat (BLM 2003c). In some areas, roads have been built through riparian habitats to allow access to recreational activities either within the riparian area or beyond it. Roads allow access to off-road activities, random camping, and wood gathering for fuel within the riparian habitat, each of which could disrupt breeding cuckoos. However, because there is a low likelihood of the western yellow-billed cuckoo occurrence, recreation management in the planning area *may impact, but is not likely to contribute to the need to list this species.*

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Dispersed recreation on nonfederal lands may impact threatened, endangered, or candidate species, especially if this action occurs in riparian areas. However, these types of actions are anticipated to be localized in nature and dispersed throughout the planning area.

7.20 Socioeconomic Resources

In this discussion, socioeconomic resources include social and economic conditions, environmental justice, and tribal treaty rights. The BLM has the capacity, through its decision-making responsibilities, to manage resource development in the planning area and thereby influence the economy of the wider region. Industries most affected by BLM land management policies and programs are agriculture (especially livestock grazing), mining and mineral development, and recreation and tourism. Impacts to special status species from these management actions are discussed in the respective management sections (i.e., Livestock Grazing, Minerals, and Recreation).

Environmental justice pertains to fair treatment and meaningful involvement of minority and low-income populations. Where the impacts of a proposed federal action may involve such populations, an analysis of the potential for disproportionate impacts and meaningful community outreach and public involvement is required.

It is the policy of the USDI to recognize and fulfill its legal obligation to identify, protect, and conserve the trust resources of federally recognized American Indian tribes and tribal members, and to consult with tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal health and safety (USDI 1995). No known American Indian trust lands, no reservation lands, and no tribal properties currently exist for the planning area.

7.20.1 Proposed Protections for Socioeconomic Resources in the Kemmerer Proposed RMP and Final EIS

No proposed protections for socioeconomic resources that would benefit threatened, endangered, or candidate species have been identified.

7.20.2 Conservation Measures Currently Committed to by the BLM

No specific conservation measures apply to the management of socioeconomic resources.

7.20.3 Best Management Practices

No BMPs for socioeconomic resources have been identified.

7.20.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – Implementing socioeconomic resource management will have *no effect (NE)* on threatened or endangered species and *no impact* on candidate species. This determination is based on the lack of specific actions in the Proposed RMP and Final EIS related to socioeconomic resources that would impact the natural environment potentially supporting these species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Housing developments on private lands could expand into threatened, endangered, or candidate species habitats, especially near Kemmerer. Housing developments could remove, degrade, or fragment habitats for these species. Development into prairie dog habitats could remove habitat, introduce distemper through domestic dogs, and increase recreational shooting of prairie dogs and the potential for illegal take of black-footed ferrets by shooting. Development along the Green River could adversely affect suitable habitat for yellow-billed cuckoo.

7.21 Soil

The primary regional or national demand placed on soils in the planning area results from surface-disturbing actions. Extraction of minerals generally involves surface-disturbing activities, including road building, well pad construction, pipeline installation, and vegetation treatments. Other actions that affect soils are a variety of surface uses that disturb native topsoil and remove vegetation or other ground cover, such as mining and energy development, concentrated grazing and browsing by animals, OHV use, development of trails and campgrounds and ROWs, fire-suppression activities, and the use of prescribed fire. Soil compaction resulting from surface-disturbing activities and associated development can reduce infiltration, increase runoff, and hamper reclamation.

Protection of soil resources is accomplished through the application of use restrictions or preferred management practices intended to limit soil erosion and loss of soil productivity. Some restrictions may be general, such as programmatic constraints, which are applied to all surface-disturbing activities, including limitations during periods of wet or frozen soils or prohibition of operations on steep slopes. Typically, the protection of soil resources is accomplished through the application of site-specific management techniques. These mitigation measures are designed to conserve topsoil, minimize erosion, and reestablish vegetation on disturbed areas with a long-term goal of maintaining soil productivity. Examples of site-specific mitigation measures include exclusion of mechanized vehicle use on highly erodible soils, use of water bars or diversion channels to control surface water runoff around a disturbed area or off a road, or development of a specific seed mixture or seeding technique appropriate to the area and soil type being reclaimed. Additional mitigation measures typically are required on highly erodible soils to achieve adequate erosion control.

Actions associated with soil resources may include the identification and interpretation of existing soil resources and conditions; conducting soil inventories; identifying highly erosive soils; utilizing soil use limitation ratings for land use actions; evaluating current erosion condition of the soils in the planning area; preventing accelerated soil erosion from disturbed areas; utilizing effective BMPs; establishing successful reclamation or rehabilitation on disturbed areas within the planning area; restoring disturbed areas to pre-disturbance conditions; managing actions to maintain or improve soil chemical, physical, and biotic properties and maintain long-term soil stability; controlling the extent of surface disturbance in the planning area by establishing acreage limits for total surface disturbance; and periodically monitoring, evaluating, and adapting management actions.

7.21.1 Proposed Protections for Soil in the Kemmerer Proposed RMP and Final EIS

Listed below are proposed protections in the Kemmerer Proposed RMP and Final EIS:

- Completed soil surveys and site observations will be utilized to address soil protection and mitigations necessary to minimize damage to soils.
- Surface disturbance on slopes of 20 percent or greater will be avoided on sensitive soil types. Disturbance of slopes greater than 20 percent will require additional consideration of slope stabilization and erosion control techniques.
- The Green River and Bear River sub-basins will be protected from increased erosion and sedimentation.
- Disturbances on soils with fragile steep slopes, chemical and biological crusts, and soils with low reclamation potential and highly erodible characteristics would be avoided. Disturbance of soils of these types will require erosion, revegetation, and restoration plans.
- Topsoil piles will be seeded or erosion control devices installed on all surface disturbances within 6 months of the initial disturbance. Topsoil piles left exposed longer than 1 year will be no greater than 4-feet deep and seeded with cover crop seed mixes for soil stabilization and maintenance of soil health. Interim and (or) final reclamation will be required within 1 year of completion of drilling activities.

7.21.2 Conservation Measures Currently Committed to by the BLM

- Four areas of NSO have been designated: bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile radius of perennial streams in the Raymond Mountain ACEC, which also may benefit threatened or endangered species that use these areas..

7.21.3 Best Management Practices

The following BMP has been identified:

- Coordination between BLM soil scientists and BLM biologists will occur before any planned soils-related actions take place on the ground.

7.21.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the planning area. Soil resource program actions are not likely to affect black-footed ferrets due to the localized nature of soil testing, minimal impacts, and the short duration of time spent doing soil sampling. Some disturbance may result if a soil trench were dug in potential black-footed ferret habitats. Reclamation and rehabilitation will result in short-term disturbance and human activity, but reclamation requirements will result in improved habitat quality in the long term. Implementing soil-management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the current absence of the black-footed ferret in the planning area; the localized nature, duration and minimal impacts of soil testing and reclamation; and existing conservation measures.

Canada Lynx – Activities associated with soil mapping and sampling may include disturbances that are usually small and of short duration in nature so as not to disturb lynx. These soil resource related activities in the planning area are mainly in support of other programs. Implementing soil resource

management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx due to *discountable effects (NLAA-d)*. This determination is based on the conservation measures in place that will preclude adverse effects to the lynx or its habitat and will minimize or remove impacts to lynx habitat and LAUs.

Ute Ladies'-tresses – Actions to alleviate and (or) avoid soil erosion are not expected to adversely impact the Ute ladies'-tresses. Soil mapping or sampling actions, including soil testing, may result in minimal impacts to Ute ladies'-tresses due to the short duration of time spent sampling and the reclamation of the disturbance. Management actions that improve habitats through revegetation, reseeding, and other rehabilitation actions may benefit the Ute ladies'-tresses. Reductions in sedimentation and erosion within the drainages and waterways also will benefit the Ute ladies'-tresses. Soil-damaging actions are prohibited on moist soils, where the Ute ladies'-tresses typically is found. Implementing soil management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the localized, infrequent occurrence and relatively small scale of these actions, the fact that no Ute ladies'-tresses are known to exist in the resource area, and existing conservation measures in place to protect this species, if found.

Western Yellow-billed Cuckoo – BLM management actions that emphasize the reduction of soil erosion and sediment traveling to water systems ultimately protects potential cuckoo habitats. Projects proposed on BLM-administered lands are evaluated on a case-by-case basis for effects on soil resources using soil characteristics, such as steepness of slope, length of slope, and soil chemistry and composition, especially where soil surveys are not available in the planning area. Because there is a low likelihood of the western yellow-billed cuckoo occurrence, and with the protections of riparian areas in place, soil management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Actions that disturb or compact soil, disrupt soil stability, or reduce soil productivity could adversely impact threatened, endangered, or candidate species on nonfederal lands. Actions that stabilize soils or increase soil productivity may benefit these species. As these types of actions occur on nonfederal lands, the adverse or beneficial impacts may influence the habitats of threatened, endangered, or candidate species.

7.22 Special Designations – Areas of Critical Environmental Concern and Management Areas

Special designations include MAs, ACECs, Back Country Byways, and Wild and Scenic Rivers (WSR). Areas managed under special designations are regulatory or congressionally mandated and are designed to protect or preserve certain qualities or uses. Within the planning area, no MAs, one ACEC, and no Back Country Byways or WSRs are currently designated.

Pursuant to the FLPMA of 1976, Section 103(a), an ACEC is defined as an area “within public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.” These areas are managed pursuant to BLM Handbook Section 1613. MAs are generally areas with unique characteristics that warrant managing the area in a manner that is different than standard management actions. While an ACEC or MA may emphasize one or more unique resources, other existing multiple-use management can continue within an ACEC, as long as the uses do not impair the values for which the ACEC was designated or the MA was established.

Types of surface-disturbing activities that may occur under the special designations program include closing areas where accelerated erosion is occurring; implementing logging and heavy equipment use

restrictions; evaluating INNS control measures; applying restrictions on ground-disturbing activities; developing recreational trails; guiding supervised tours; protecting petroglyphs, artifacts, and cultural deposits from weathering and vandalism; and pursuing land exchanges.

The following discussion covers existing special designations and those included under the Proposed RMP and Final EIS within the planning area.

Bridger Butte ACEC (Proposed)

This ACEC was proposed under the Proposed RMP to preserve and enhance cultural, historical, and Native American values, as well as rare plant species that exist in the area located south of I-80 between Lyman and Evanston. Up to 1,127 acres of the Bridger Butte would be designated to protect sensitive cultural values, including NHTs and associated sites. Historical accounts and several Native American tribes have identified Bridger Butte as an area of significance. The area includes habitats for special status plant species populations, including tufted twinpod, prostrate bladderpod, Maybell locoweed, and Payson beardtongue. Rare animals inhabiting the area include the Uinta ground squirrel and Idaho pocket gopher. In addition, the area includes a portion of the Blacks Fork that supports populations of roundtail chub and flannelmouth suckers. The proposed ACEC exhibits low oil and gas development potential and low occurrence potential for coal, phosphate, and trona.

Cushion Plant Community ACEC (Proposed)

Up to 62 acres of the planning area (all BLM-administered surface and federal mineral estate) are proposed as an ACEC under the Proposed RMP that comprise known populations and seven endemic species. Cushion plant communities are sparsely vegetated areas with low-growing, mat-like tufts of vegetation with bare soil and gravel between the individual plants. Cold winters, little rainfall, and strong winds contribute to the development of these specialized communities. The communities are vulnerable to surface disturbance and have a slow recovery time. Usually 50 years or more are required to restore the communities to their original native state after disturbance. The cushion plant communities frequently contain uncommon and regional endemic plant species. Species composition varies from one community to another. Typical associates found in these areas include phlox species, twinpods, bladderpods, and legumes. The area northeast of Kemmerer proposed for inclusion in the ACEC includes active livestock grazing and oil and gas development. The proposed ACEC area exhibits moderate oil and gas development potential and low occurrence potential for coal, phosphate, and trona.

Raymond Mountain ACEC (Existing)

The Raymond Mountain ACEC was designated in 1982 and lies within the Raymond Mountain WSA and adjacent to other federal, state, and private lands. The Raymond Mountain ACEC includes 12,667 acres of BLM-administered surface and federal mineral estate along the northwestern edge of the planning area and lies wholly within the area managed by the Thomas Fork HMP. The Raymond Mountain ACEC designation is based on a recommendation within the Thomas Fork HMP to designate aquatic and riparian habitats of the Thomas Fork drainage as an ACEC to emphasize the declining trend of the fisheries habitats and management needs of the Bear River (Bonneville) cutthroat trout (*Oncorhynchus clarki utah*), a BLM-sensitive species. Intensive utilization of riparian vegetation by livestock and beaver historically resulted in reduced channel stability, accelerated stream bank erosion, channel downcutting, lower water tables, and disclimax in riparian vegetation communities. Cooperative management strategies developed with local livestock permittees/leasees have provided additional protections for sensitive resources in the area through livestock reductions and season of use restrictions, but continued use within the Raymond Mountain ACEC. The Raymond Mountain ACEC provides yearlong habitats for all life stages of the Bonneville cutthroat trout, which is in danger of being extirpated from the drainage, and other native nongame aquatic species. Management of the Raymond Mountain ACEC benefits this fish species, as well as riparian areas. Currently within the ACEC, no oil and gas leases or mining claims

exist. The Raymond Mountain ACEC exhibits no-to-low development potential for oil and gas. Coal occurrence potential within the Raymond Mountain ACEC is low-to-moderate with no development potential. Most of the Raymond Mountain ACEC exhibits moderate-to-high phosphate occurrence potential and low trona occurrence potential.

Special Status Plant Species ACEC (Proposed)

Up to 907 total acres in small, widely scattered patches on the planning area containing special status plant species habitats are included under the Proposed RMP for protection as an ACEC. The proposed areas include populations for any, or all, of eight special status plant species known to exist in the planning area and designated as sensitive by the BLM. Special status plant species habitats are vulnerable to OHV use, mineral development, and livestock grazing. Even though 793 of the proposed ACEC acres are on federal mineral estate, the majority of the areas exhibit low or moderate oil and gas development potential, with none exhibiting high oil and gas development potential. Occurrence potential for coal within the proposed ACEC areas is low and most of the areas are classified as having a low-to-moderate occurrence potential for phosphate. The occurrence potential for trona within the proposed ACEC areas is low.

Rock Creek/Tunp MA (Proposed)

Within the planning area, up to 63,278 acres of the Rock Creek/Tunp area are proposed as an MA. The proposed area is located northwest of Kemmerer and is intended to protect sensitive wildlife habitats, cultural values, NHTs and associated sites, and special status plant species. The area includes significant physical traces of the Oregon-California NHT that retain historic scenic qualities. This area also provides habitats for, and identified locations of, several special status plant species. The area contains crucial overlapping big game winter ranges; a north-south migration corridor for mule deer; migration corridors for elk, pronghorn, and moose; yearlong and seasonal habitats for the greater sage-grouse, other sensitive sagebrush obligate species, and all local big game species; designated elk parturition habitats; a raptor migration corridor; and potentially provides habitats for Bonneville cutthroat trout, bluehead suckers, leatherside chub, roundtail chub, and flannelmouth suckers. The entire proposed MA exhibits low oil and gas development potential. Most of the proposed MA exhibits low occurrence potential for coal; however, approximately 5,000 acres exhibit moderate occurrence potential. Phosphate occurrence potential within the proposed MA is mostly moderate with less than 10,000 acres classified as low, and less than 1,000 acres classified as high, occurrence potential. The entire proposed MA has low occurrence potential for trona.

Bear River Divide MA (Proposed)

The Bear River Divide proposed MA within the planning area comprises up to 146,322 acres. The two portions of the area are connected by underpasses that allow movement of big game under U.S. Highway 30. The Bear River Divide MA is intended to protect and enhance critical wildlife habitats, cultural values, and paleontology resources. The area includes traces of the Oregon-California NHT, Bear River Divide Trail Landmark, Fossil Butte National Monument viewshed, and internationally renowned fossil fish paleontological resources. Crucial big game winter range for mule deer, elk, antelope, and moose occur in the proposed MA. The area also contains a north-south migration corridor for mule deer, as well as migration corridors for elk and pronghorn. Currently, the area is closed during the winter season to motorized vehicles to protect wintering big game. The area supports yearlong and seasonal habitats for the greater sage-grouse, other sensitive sagebrush obligate species, and all local big game species; a raptor migration corridor; and potentially provides habitats for Bonneville cutthroat trout, bluehead suckers, leatherside chub, roundtail chub, and flannelmouth suckers. A number of gas plants occur in the area, including associated surface pipelines. The proposed MA exhibits low-to-high oil and gas development potential. Coal and phosphate occurrence potentials within the proposed MA primarily have low-to-moderate oil and gas development potential trona occurrence potential within the proposed MA is low.

7.22.1 Proposed Protections for Special Designations in the Kemmerer Proposed RMP and Final EIS

Bridger Butte ACEC

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- The BLM will manage the objective of preserving and enhancing rare plant species, as well as cultural values, that exist in the area.
- Establishment of ROW corridors and wind-energy projects will be prohibited, as will all surface-disturbing activities.
- BLM-administered lands within the ACEC boundary will be closed to OHV use.

Cushion Plant Community ACEC

No specific protections beyond those established for ACECs were specified in the Kemmerer Proposed RMP and Final EIS. The following assumptions were made:

- Surface-disturbing or other disruptive activities, including ROW, in cushion plant communities adversely impact cushion plant communities.
- The total amount of new surface disturbance allowed by an alternative is a good index of potential impacts to cushion plant communities. Success of reclamation measures prescribed as a condition of development is unknown and could underestimate the potential impact of surface disturbance on cushion plant communities.
- Reclamation of surface disturbance and reestablishment of vegetation minimizes adverse impacts to soils and, therefore, to cushion plant communities. The sooner the reestablishment of vegetation occurs, the greater the benefit to cushion plant communities.
- Management actions associated with protecting wildlife and cultural resource values generally benefit or have no adverse impact on cushion plant communities.

Raymond Mountain ACEC

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- No surface-disturbing activities will be allowed in riparian habitats within the ACEC.
- Two-track roads descending from the IGO Speedway into Raymond Canyon and the Raymond Canyon road will be closed to OHV use. Historically, OHV use in this area has caused soil erosion and disturbed aquatic habitats of Raymond Creek. A seasonal closure of these roads exists within big game winter range during severe climatic conditions from December 1 to May 15.
- One mile of the Huff Creek stream bank will be stabilized and two exclosures will be installed.

Special Statue Plant Species ACEC

No specific protection beyond those established for ACECs were specified in the Kemmerer Proposed RMP and Final EIS. The following assumptions were made:

- Surface-disturbing or other disruptive activities, including ROW, in special status plant habitats adversely impact special status plant species.

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- The total amount of new surface disturbance allowed by an alternative is a good index of potential impacts to special status plants. Success of reclamation measures prescribed as a condition of development is unknown, and could underestimate the potential impact of surface disturbance on special status plant populations.
 - Reclamation of surface disturbance and reestablishment of vegetation minimizes adverse impacts to soils and, therefore, to special status plant species habitats. The sooner the reestablishment of vegetation occurs, the greater the benefit to special status plant species.
 - Management actions associated with protecting wildlife and cultural resource values generally benefit or have no adverse impact on special status plant species.

Rock Creek/Tunp MA

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- The area will be administratively unavailable for all new fluid mineral leasing consideration; expired leases will not be reissued. The area will be administratively unavailable for solid leasable minerals for the life of the plan.
- The area will be available for mineral material sales and (or) free use permits.
- The area will be available for locatable mineral entry.
- All new ROW actions will be restricted to existing disturbance zones.
- No net loss of habitat function will be allowed from any construction activity within the boundaries of the MA. Successful reestablishment or improvement of habitats could offset any new disturbance areas.
- No wind-power facilities will be authorized.
- Opportunities to reclaim existing roads not necessary to attain management objectives will be pursued.
- OHV use will be restricted to existing roads and trails. No off-trail travel will be allowed without prior approval from the authorized officer.
- NHTs, sites settings, and all surface-disturbing activities will be managed to retain the existing character of the landscape in federal sections so developments do not dominate settings to detract from the feeling or sense of the historic period of use.
- Forage associated with newly acquired federal lands will be available for livestock use.
- No salt licks or mineral supplements will be allowed within ¼ mile of live water, sensitive wildlife areas (e.g., greater sage-grouse leks), special status plant locations, NHTs, and significant cultural sites.
- INNS species will be managed according to Partners Against Weeds.
- Plant community objectives will be developed and appropriate management to meet and maintain wildlife habitat needs will continue to be implemented.

Bear River Divide MA

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- The area will be administratively unavailable for new fluid mineral leasing on the currently unleased lands within the Bridger Creek/Twin Creek watersheds (31,802 acres); lands currently leased will have new leases issued. The area will be administratively unavailable for solid mineral leasing for the life of the plan.
- The area will be available for mineral material sales and (or) free use permits.
- The area will be available for locatable mineral entry.
- All new ROW actions to existing disturbance zones will be restricted.
- Construction activities within the boundaries of the management area will be allowed with the goal of no further loss of habitat function from these activities. Successful reestablishment or improvement of habitats could offset any new disturbance areas.
- No wind-power facilities will be authorized.
- Opportunities to reclaim existing roads not necessary to attain management objectives will be pursued.
- OHV use will be restricted to roads and trails. No off-trail travel is allowed without prior approval from the authorized officer.
- NHTs, sites settings, and all surface-disturbing activities will be managed to retain the existing character of the landscape in federal sections so developments do not dominate settings to detract from the feeling or sense of the historic period of use.
- Forage associated with newly acquired federal lands will be available for livestock use.
- No salt licks or mineral supplements will be allowed within ¼ mile of live water, sensitive wildlife areas (e.g., greater sage-grouse leks), special status plant locations, NHTs, and significant cultural sites.
- INNS species will be managed according to Partners Against Weeds.
- Plant community objectives will be developed and appropriate management to meet and maintain wildlife habitat needs will continue to be implemented.
- A paleontologic inventory will be made on a project-specific basis for mitigating paleontologic resources or as research permits are issued.
- Surface disturbance will be allowed with mitigation of paleontologic sites, if necessary.
- Comprehensive paleontologic management plans will not be completed at this time.

7.22.2 Conservation Measures Currently Committed to by the BLM

The following conservation measures are currently committed to by the BLM:

- Surveys for the Ute ladies'-tresses orchid will be conducted in potential habitats according to the current USFWS survey guidelines within MAs and ACECs. The surveys will be conducted for 3 consecutive years in potential orchid habitats. If the first survey shows that suitable habitats do not exist, even though streams occur in an area to be impacted, these areas may be dropped from further surveys. In suitable Ute ladies'-tresses habitat in these MAs, current actions will cease and the authorization of new actions will be held until surveys are completed.

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- Four areas of NSO have been designated: bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile radius of perennial streams in the Raymond Mountain ACEC, which also may benefit threatened or endangered species that use these areas..

7.22.3 Best Management Practices

The following BMP for special designations has been identified:

- Coordination between BLM recreational planners, BLM biologists, and other resource group managers will take place during the planning stage for actions occurring in these MAs and ACECs.

7.22.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – Management of special designations is not anticipated to adversely impact threatened, endangered, or candidate species or their habitats. Management of these areas would likely have beneficial effects on threatened, endangered, or candidate species due to access restrictions, limitations on surface disturbance, and management objectives specifically designed to benefit the resources contained within. Implementing special designation management actions *may affect, but is not likely to adversely affect*, the black-footed ferret, Canada lynx, and Ute ladies'-tresses due to *beneficial effects (NLAA-b)*. Because there is a low likelihood of western yellow-billed cuckoo occurrence, special designation management in the planning area *may impact, but is not likely to contribute to the need to list* this species. These determinations are based on the additional management restrictions placed on some of the special designation areas and the existing conservation measures in place to protect these species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. No actions associated with special designations on nonfederal lands are anticipated to affect threatened, endangered, or candidate species.

7.23 Special Designations – Wild and Scenic Rivers and Wilderness Study Areas

The Wild and Scenic Rivers Act of 1968 provides for protection of certain free-flowing rivers and their immediate environments that possess outstandingly remarkable values. A designated river is classified as wild, scenic, or recreational based on the presence of development and activity within a river's corridor. Classifications serve as a baseline land use description and guide management activities within the river corridors. Comprehensive management plans for wild and scenic rivers (WSRs) are developed within 3 years of designation.

WSAs were developed under the FLPMA of 1976 so that federal agencies would inventory and study roadless areas for potential wilderness characteristics to see if the areas qualify for wilderness designation. Pursuant to the Wilderness Act of 1964, areas qualify that (1) generally appear to have been affected primarily by the forces of nature, with the imprint of a human's work substantially unnoticeable; (2) have outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) have at least 5,000 acres of land or that are of sufficient size as to make practicable their preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

In the planning area, 13 eligible waterway segments are managed to protect the free-flowing, outstandingly remarkable values and tentative classification as WSRs. A WSR analysis of the planning

area was performed in December 2002. The results of this analysis found two waterway segments suitable for WSR designation—Huff Creek and Raymond Creek. These are included in the Proposed RMP and Final EIS. One WSA exists within the planning area (Raymond Mountain WSA); its designation would remain under the Proposed RMP and Final EIS.

Huff Creek and Raymond Creek WSR (Proposed)

The Kemmerer Field Office conducted a 2002 review of potential Wild and Scenic Rivers in the Kemmerer planning area that included approximately 7.31 miles of Huff Creek and that flow through three public land parcels and were determined to meet WSR eligibility criteria. Except for public lands associated with a roadway, most of Huff Creek is located in the Raymond Mountain WSA, where other management prescriptions already apply (including riparian management measures). Huff Creek was nominated as a WSR for its scenic, fisheries, and wildlife values, as well as its unique land and resource diversity. The public land parcels include a narrow river valley and a waterway that are important for Bonneville cutthroat trout habitats.

Approximately 6.3 miles of Raymond Creek that flow through one public land parcel were determined to meet WSR eligibility criteria. All segments of Raymond Creek reviewed are located in the Raymond Mountain WSA, where other management prescriptions already apply (including riparian management measures). Raymond Creek was nominated for its scenic, recreational, fisheries and wildlife values, as well as its unique land and resource diversity. Public lands include a pristine canyon and a waterway that is important for Bonneville cutthroat trout habitats.

Raymond Mountain WSA

The Raymond Mountain WSA currently exists within the planning area, entirely within the Raymond Mountain ACEC, and is approximately 32,880 acres. The WSA has diverse vegetation and steep topography. A major portion of the area is forested, with remaining areas containing stands of big sagebrush and rock outcrops.

Current management emphasizes preservation of wilderness values until wilderness determination is made by the Congress. The Raymond Mountain WSA exhibits very low oil and gas development potential and moderate-to-high phosphate occurrence potential; and most of the WSA is classified as having low occurrence potential for coal and trona.

7.23.1 Proposed Protections for WSRs and WSAs in the Kemmerer Proposed RMP and Final EIS

- Proposed WSR segments are currently located within the Raymond Mountain WSA, so those protections would remain.
- Management will continue in the WSA in a manner that does not impair its suitability for preservation as wilderness unless or until the Congress determines otherwise. Until the Congress makes the final determination of the status of the WSA, the preservation of wilderness values is paramount and the primary consideration when evaluating resource use proposals that may conflict with or be adverse to those wilderness values.
- If Congress acts on the designation, and the Raymond Mountain WSA is not selected as wilderness, the land area within the current boundary of the Raymond Mountain WSA will be managed under the interim management plan until a new management plan for the area is prepared and the RMP is amended.

7.23.2 Conservation Measures Currently Committed to by the BLM

No specific conservation measures apply to management of WSRs and WSAs.

7.23.3 Best Management Practices

No BMPS have been identified specific to WSRs and WSAs that affect threatened, endangered, or candidate species.

7.23.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – Management of special designations—WSRs and WSAs—is not anticipated to adversely impact threatened, endangered, or candidate species or their habitats. Management of these areas would likely have beneficial effects on threatened, endangered, or candidate species due to access restrictions, limitations on surface disturbance, and management objectives specifically designed to benefit the resources contained within. Implementing special designation management actions *may affect, but is not likely to adversely affect*, the black-footed ferret, Canada lynx, and Ute ladies’-tresses due to *beneficial effects (NLAA-b)*. Because there is a low likelihood of western yellow-billed cuckoo occurrence, WSR and WSA management in the planning area *may impact, but is not likely to contribute to the need to list* this species. These determinations are based on the additional management restrictions placed on WSRs and WSAs and the existing conservation measures in place to protect these species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. No actions associated with special designations—WSRs and WSAs—on nonfederal lands are anticipated to affect threatened, endangered, or candidate species.

7.24 Special Status Species – Plants

Special status plants are those listed as threatened or endangered, those proposed for listing, are candidates for listing under the provisions of the ESA, or are designated by the BLM state director as sensitive. Currently, four species of plants within Wyoming are listed as either endangered or threatened by the ESA, none of which is known to occur in the planning area, although potential habitat for one of these species (Ute ladies’-tresses) does occur within the planning area. No plants are proposed or candidates for listing within Wyoming. No designated critical habitat exists in the planning area. Eight sensitive plant species, as designated by the BLM State Director, occur in the planning area (refer to the Proposed RMP and Final EIS for details).

Species in Wyoming are considered to be of special concern if (1) the species is vulnerable to extinction at the global or state level due to inherent rarity, (2) the species has experienced a significant loss of habitat, or (3) the species is sensitive to human-caused mortality or habitat disturbances. The WYNDD tracks, studies, and documents these special status species and other species considered to be rare within the state. By continuing to identify and avoid actions that could result in adverse impacts to these species and their habitats, their populations can be maintained so they will not need to be listed by the BLM as sensitive in the future. Seventeen plant species tracked as rare by WYNDD are documented as occurring within the planning area.

The Kemmerer Field Office determines the presence of special status plant species and applicable restrictions in areas with known populations on a case-by-case basis and has the specific goals of contributing to the recovery of species currently listed under the ESA and of promoting the recovery and conservation of all special status plant species within the planning area.

The BLM manages public lands to conserve and (or) improve the habitats for special status plants. During special status species management actions, the BLM identifies habitat; protects known populations; enforces timing stipulations; conducts surveys; closes known locations to surface-disturbing activities; holds mineral material sales; monitors off-road vehicle use; and monitors and restricts the use of explosives and blasting.

7.24.1 Proposed Protections for Special Status Plant Species in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- The use of fire suppression chemicals, including foaming agents and surfactants, will not be allowed within 200 feet of known special status plant species populations.
- All vehicles, including fire suppression vehicles, would be restricted to existing roads and trails in special status plant species populations. The BLM authorized officer will have the discretion to lift this requirement in an emergency situation.
- Known locations of special status plant species will be protected and closed to the following:
 - Surface-disturbing activities that could adversely impact the plants or their habitats
 - Select mining claim locations (formally withdrawn)
 - Mineral material sales
 - All off-road vehicle use, including vehicles used for geophysical exploration activities, surveying, etc.
 - Explosives and blasting.
- Areas where special status plants are known to exist are ROW avoidance areas. The authorized officer could grant exceptions if analysis shows that there is no adverse impact to the plant populations.
- Potential habitats of special status plant species on federal lands or on split-estate lands require searches for the plant species prior to approving any project or activity. Should special status plant species be found, all disruptive activities will be halted until species-specific protective measures are developed and implemented. For federally listed species, protective measures will be developed and implemented in coordination with the USFWS.
- Potential habitat areas of special status plant species will be areas of CSU for surface-disturbing activities.
- Vegetation treatments in special status plant species habitats will be conducted on a case-by-case basis when they would benefit these species.
- No salt or mineral supplements will be allowed within ¼ mile of special status plant species populations. Buffers will be based on resource concerns on a case-by-case basis.
- Range improvement projects, such as troughs, reservoirs, and fences, will not be allowed on special status plant species populations. Buffers will be based on resource concerns on a case-by-case basis.

7.24.2 Conservation Measures Currently Committed to by the BLM

- Four areas of NSO have been designated: bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile

radius of perennial streams in the Raymond Mountain ACEC, which also may benefit threatened or endangered species that use the areas.

Conservation measures currently committed to by the BLM for special status plant species are listed under the individual plants in Section 10.0 of this document.

7.24.3 Best Management Practices

Best management practices currently committed to by the BLM for special status plant species are listed under the individual plants in Section 10.0 of this document.

7.24.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Management actions for special status plants will not affect the black-footed ferret. Prairie dogs are not noted for foraging on rare or sensitive plant foods, but rather they forage on typical plants of shortgrass prairie and semi-desert shrublands. If a population of rare plants were discovered within a prairie dog colony, protection of the plants, such as fencing and other protective measures, will not have an adverse impact on black-footed ferrets or prairie dogs. Implementing special status plants management actions will have *no effect (NE)* on black-footed ferrets. This determination is based on the fact that prairie dogs occur over large areas that are unlikely to harbor rare plants, and protective measures for sensitive plants will have no impact on prairie dogs or black-footed ferrets.

Canada Lynx – Management actions for special status plants will not impact the Canada lynx. General management actions will include restrictions of actions and surface disturbance that may be detrimental to special status plants. Implementing special status plant management actions will result in *no effect (NE)* to the lynx. This determination is based on the localized nature of these actions and the restrictions of surface disturbance in these areas, as well as potential improvements to these habitats.

Ute Ladies'-tresses – Protection and conservation of special status plants could have positive effects on the Ute ladies'-tresses and its habitats. Restrictions on actions within special status plants habitats may help to improve habitat for Ute ladies'-tresses. Implementing special status plant management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *beneficial effects (NLAA-b)*. This determination is based on the potential that these actions will limit adverse actions on Ute ladies'-tresses habitats.

Western Yellow-billed Cuckoo – Protection and conservation of special status plants also could have positive effects on the yellow-billed cuckoo and its habitats. Restrictions on actions within special status plants habitat may help to improve riparian habitats. Because there is a low likelihood of western yellow-billed cuckoo occurrence, and special status plant species management occurs in limited, localized areas of the planning area, these actions are expected to have *no impact* on the species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Protection and enhancement of special status plant species on nonfederal lands will conserve habitat for threatened, endangered, and candidate species and potentially limit habitat fragmentation.

7.25 Special Status Species – Fish and Wildlife

Special status fish and wildlife species are those listed as threatened or endangered, are proposed or candidates for listing under the provisions of the ESA, or designated by the BLM State Director as sensitive. The BLM manages public lands to conserve and (or) improve the habitats for special status fish and wildlife. Of these, the greater sage-grouse (*Centrocercus urophasianus*) and its habitats are a priority

for management in the planning area. The BLM will manage BLM-administered lands to provide for populations as determined by the local Sage-Grouse Working Group.

Special status species management actions may include identifying habitat; protecting known populations; enforcing timing stipulations; conducting surveys; closing known locations to surface-disturbing activities, holding mineral material sales; monitoring off-road vehicle use; and monitoring and restricting the use of explosives and blasting.

7.25.1 Proposed Protections for Special Status Fish and Wildlife Species in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Similar management actions as found in the Conservation Agreement and Strategies and Thomas Fork Aquatic Habitat Management Plan will be applied to support habitat and fisheries objectives for the Snake River cutthroat trout (*Oncorhynchus clarki* spp.)
- Habitat fragmentation will be avoided through attenuation, siting, and consolidation of roads, energy facilities, and other developments in identified special status species habitats, unless appropriate mitigation is initiated.
- The following distances and timeframes will be utilized to manage activities that may impact greater sage-grouse or their habitats. These distances and timeframes are based on current information, but may be subject to change in the future based on new information.
 - Greater sage-grouse leks: prohibit or restrict surface disturbance or occupancy on or within 0.6 mile radius of the perimeter of occupied or undetermined greater sage-grouse leks. No human activity between one hour before sunset to one hour after sunrise from March 1 through May 15 within 0.6 mile of the perimeter of occupied or undetermined greater sage-grouse leks.
 - Greater sage-grouse nesting and early brood-rearing habitats: prohibit or restrict surface-disturbing and disruptive activities in suitable greater sage-grouse nesting and early brood-rearing habitats within 3 miles of an occupied lek, or in identified greater sage-grouse nesting and early brood-rearing habitats regardless of distance from a lek from March 15 through July 15.
 - Greater sage-grouse winter habitat: prohibit or restrict surface disturbance and disruptive activities in delineated greater sage-grouse winter concentration areas from November 15 through March 14.
 - Exceptions to CSU and timing restrictions will continue to be considered on a case-by-case basis.
- Noise levels will be reduced to 49 dB or less or facilities located 900 feet from the noise source to minimize the impacts of continuous noise on species relying on aural cues for successful breeding.
- New high-profile structures (higher than 12 feet) will not be permitted within 1 mile of occupied sagebrush obligate habitats unless raptor perch deterrent devices are installed. New high-profile structures will not rely on guy wires for support in these habitats. Exceptions can be made if NEPA analysis shows little or no impact to sagebrush obligate species.
- Surface-disturbing and disruptive activities to nesting raptors will be prohibited within the following distances from an active nest from February 1 through July 15 for most raptors, with the exception of burrowing owl (April 15 through September 15) and northern goshawk (April 1

through August 31). In all cases, the end date will be extended to the date when the fledglings become independent of the parents and the nest area.

- 1-mile buffer: ferruginous hawk
- ¾-mile buffer: golden eagle, barn owl, red-tailed hawk, great-horned owl, osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk, short-eared owl, long-eared owl, peregrine falcon, screech owl, burrowing owl, northern goshawk, and other raptor.

Time periods can be adjusted based on specific needs of identified species, and will be extended to the date when the fledglings become independent of the parents and the nest area. The following time periods will be applied as appropriate:

- February 1 through July 15: golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors
- March 1 through July 31: short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl
- April 1 through July 31: osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk.
- Surface-disturbing activities will be avoided in occupied pygmy rabbit habitats.
- Activities identified that could result in collapse of burrows in occupied white-tailed prairie dog colonies or complexes 200 acres or greater will be avoided, unless appropriate mitigation occurs.
- Management for traditional migration and travel corridors for special status species will be identified and developed.

7.25.2 Conservation Measures Currently Committed to by the BLM

The following conservation measures currently committed to by the BLM:

- Four areas of NSO have been designated: bald eagle winter roosts (Woodruff Narrows and Morgan Canyon), the Bridger Antelope Trap, sensitive plant locations, and within a ¼-mile radius of perennial streams in the Raymond Mountain ACEC, which also may benefit threatened or endangered species that use the areas.
- The objectives of the proposed Woodruff Narrows mitigation plan are to improve riparian habitat used as a bald eagle winter roost and to mitigate possible habitat loss from the construction of a low-head hydro power plant. This also may benefit suitable habitat for the yellow-billed cuckoo.

Additional conservation measures currently committed to by the BLM for special status wildlife species are listed under the individual species in Section 10.0 of this document.

7.25.3 Best Management Practices

Conservation measures currently committed to by the BLM for special status wildlife species are listed under the individual species in Section 10.0 of this document.

7.25.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Management and protection of habitats for other special status wildlife may influence potential habitats for black-footed ferrets. Protection of greater sage-grouse and mountain plover breeding areas could also protect prairie dogs, black-footed ferrets, and their habitats. Limiting

access to specific areas by OHVs, equestrians, and pedestrians; prohibiting surface development; and imposing road closures could benefit black-footed ferret prey by protecting prairie dog habitats and reducing human access, which will reduce shooting. Implementing special status species management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *beneficial effects (NLAA-b)*. This determination is based on protection of black-footed ferret habitats, existing protective measures in the Kemmerer Proposed RMP and Final EIS, and the protection afforded by the ESA as administered by the BLM.

Canada Lynx – Management and protection of habitats for other special status wildlife species may influence potential habitats for Canada lynx. The objective of special status species management is to protect their habitats and allow for reintroduction or maintenance. These management actions will result in positive effects to lynx by limiting harassment and disturbance to denning and hunting areas. Implementing special status wildlife management actions *may affect, but is not likely to adversely affect*, the lynx due to *beneficial effects (NLAA-b)*. This determination is based on the potential for these actions to limit harassment and displacement of lynx and minimize adverse effects to lynx activity areas.

Ute Ladies'-tresses – Management actions associated with special status wildlife species will not impact Ute ladies'-tresses or its habitat. Implementing special status wildlife species management actions will have *no effect (NE)* on the Ute ladies'-tresses.

Western Yellow-billed Cuckoo – Special status species management activities often include protecting habitat and known populations, enforcing development of timing stipulations, conducting surveys, and closing known locations to surface-disturbing activities. Activities such as these tend to be beneficial to non-target species, including the yellow-billed cuckoo. In addition, protections imposed for riparian, stream, and wetland habitats under the Proposed RMP also may be beneficial. Therefore, special status species management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Protection of special status fish and wildlife species and maintenance and enhancement of their habitats on nonfederal lands will provide additional benefits for threatened, endangered, and candidate species. In addition, limitations to development and disturbance will reduce further habitat fragmentation and species displacement.

7.26 Transportation

The BLM transportation program provides legal access to public lands and maintenance and development of various transportation facilities. The primary goals of the BLM transportation and access program are (1) acquire access, and (2) manage the transportation system to meet resource management objectives.

The Kemmerer Field Office transportation program manages legal access to and across public lands utilized for recreation, renewable and nonrenewable energy development, range management, public access, and communication site management. OHV and related issues are discussed in the Off-highway Vehicles section (7.17) of this document. Access is acquired using several different tools, including purchase, exchange, reciprocal ROW, donation, and condemnation. The primary components of the transportation network and facilities in the planning area include roads, railroads, and airports. A large number of the BLM system roads that currently provide access to public lands were first built and maintained by the oil and gas industry. The transportation infrastructure within the planning area is closely related to historic trails, as many automobile routes and railroads eventually paralleled some of the trail routes. At the beginning of the twentieth century, there was a dramatic increase in Wyoming roadways as a result of increased automobile use and the burgeoning oil and gas industry.

The BLM rehabilitates access roads no longer needed, proposes easement negotiations, pursues access across private lands, acquires ROW or easements, and exchanges lands under the transportation program.

7.26.1 Proposed Protections for Transportation in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Travel management planning will be conducted in compliance with the management decisions identified in the Proposed RMP and Final EIS.
- Designated roads will not be upgraded. Any improvements to the roadways will require further analysis.
- Travel management planning in big game winter ranges will minimize open road density to meet an objective of less than an average of 2 miles of open road per square mile.
- New unpaved roads could be allowed within 250 feet of special status plant species populations only if, under NEPA analysis, the road will not adversely impact the species.
- The following areas will be designated limited to existing roads and trails pending resource surveys and travel management planning to support an open designation: Oakley Draw and Leavitt Bench/Crooked Canyon.
- Motor vehicle travel in the planning area, outside of the WSA, is limited to existing roads and trails. Limited off-trail motor vehicle travel is allowed for dispersed uses and to perform necessary tasks, as long as it does not cause resource damage or create new trails.
- Motor vehicle travel will be seasonally limited in the following crucial big game winter range areas: Slate Creek, Rock Creek, and Bridger Creek. Public access to the areas will be closed from January 1 to April 30 (exemptions apply).
- Designated motor vehicle routes in the planning area are as follows:
 - Interstate highways, state highways, signed and numbered county roads, and the following BLM roads: #4209 (Slate Creek), #4211 (Dempsey), #4213 (Smiths Fork), #4219 (South Fork Fontenelle), #4315 (Burnt Fork).
- The following will be closed to motorized vehicles and OHV use:
 - Raymond Mountain WSA
 - Green Hill (near town of Kemmerer)
 - The trail to Commissary Ridge from the Commissary Ranch development (T24N, R116W, Sections 15, 20)
 - The following NHT segment to motorized vehicle and OHV use: a ¼-mile segment of the Oregon/California trail on the west slope of the Bear River Divide.
 - Riparian and wetland areas, except for designated road crossings
 - Special status plant species populations.
- Mechanized vehicle use will be allowed on existing roads and trails throughout the planning area including the existing Raymond Canyon trail in the WSA.
- Snowmobile use in Pine Creek Canyon will be limited to the groomed trail.

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- Snowmobile use will be limited to available dates prior to January 1 in the following crucial big game winter range areas: Slate Creek, Rock Creek, Bridger Creek, and Raymond Mountain. Snowmobile use will be prohibited in the WSA, including the cross-country ski trail.

7.26.2 Conservation Measures Currently Committed to by the BLM

No conservation measures apply to the transportation program.

7.26.3 Best Management Practices

No BMPs for transportation management have been identified.

7.26.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the planning area. Closing roads would benefit black-footed ferrets by reducing access and associated disturbance, such as recreational shooting. Any new access roads, easements, or land exchanges through prairie dog colonies could provide additional human access. However, given the BLM-committed conservation measures, prairie dog colonies would be avoided, thereby avoiding impacts to the black-footed ferret or potential recovery sites. Implementing transportation management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on no black-footed ferrets existing within the planning area and the avoidance of prairie dog colonies as specified in the conservation measures.

Canada Lynx – Additional roads can be a source of fragmentation of lynx habitat resulting in reduced opportunity for dispersement and mobility and in increased mortality to lynx from collisions with vehicles. Any improved access may open new areas to human activity that may cause lynx to avoid or abandon otherwise occupied habitats. The degree of these impacts is correlated with traffic volume and speed, as well as road width. The construction of roads within established ROW decreases adverse effects. Implementing transportation management actions *may affect, but is not likely to adversely affect*, the lynx due to *insignificant effects (NLAA-i)*. This determination is based on the unlikely event that actions associated with transportation would result in impacts to lynx occupied habitat and the localized nature of the actions.

Ute Ladies'-tresses – New roads or expansion of access through potential Ute ladies'-tresses habitat are not expected to occur. Based on the conservation measures, riparian and wetland habitats would be avoided, thereby further minimizing impacts to Ute ladies'-tresses. Implementing transportation management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the fact that no Ute ladies'-tresses have been recorded in the planning area, conservation measures are in place, and the avoidance of wetland and riparian areas for new construction.

Western Yellow-billed Cuckoo – Similar to the Ute ladies'-tresses habitat effects, new roads or expansion of access through potential yellow-billed cuckoo habitat are not expected to occur. Based on the conservation measures, riparian and wetland habitats would be avoided, thereby further minimizing impacts to yellow-billed cuckoo and their potential habitats. Because there is a low likelihood of the western yellow-billed cuckoo occurrence, travel management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Increased road building on private and state lands may cause additional mortality of threatened, endangered, or candidate species due to collisions with vehicles.

Increases of prairie dog mortalities due to vehicle collisions, loss of prairie dog habitat, and increases of recreational shooting due to better access may lead to increases in illegal take of black-footed ferrets if present. Railroad construction on state and private lands may also remove and fragment habitat that is suitable for black-footed ferret reintroduction (i.e., large prairie dog towns).

7.27 Vegetative Resources

The convergence of two physiographic regions (plains and Rocky Mountains) and a wide range of topography result in a diversity of vegetative community types in the planning area. Grasslands and sagebrush communities, followed by desert shrubs and saltbush-greasewood flats and woodlands, dominate vegetation in the planning area. Lodgepole pine and ponderosa pine forests are limited to higher elevations of the planning area. The Kemmerer Proposed RMP and Final EIS summarizes the extent of vegetative types within the planning area.

Vegetative resources objectives for the BLM include active management of vegetation communities for a complete range of seral stages; restoring fire to its appropriate place in the ecological process; using mechanical, chemical, biological methods, as well as livestock grazing to achieve objectives; managing all lotic and lentic wetland and riparian systems toward proper functioning condition; conducting rangeland health evaluations; regenerating aspen communities and managing aspen toward desired plant community; actively managing vegetation communities for sustainable levels of forage for livestock and habitat for wildlife; implementing guidelines on allotments that do not meet rangeland health standards; and conducting vegetation treatment in areas to achieve desired future condition.

As part of the vegetation management program, the BLM designs vegetation treatments; conducts prescribed fires; implements INNS control programs that may include the use of species-specific biological control insects, livestock grazing, mechanical methods, or chemical methods; implements planting and seeding; allows precommercial tree thinning; provides buffer zones; improves existing, and pursues the acquisition of additional, riparian habitat; and conducts plant species surveys.

7.27.1 Proposed Protections for Vegetative Resources in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Reestablishment of healthy native plant communities will be based on preexisting composition or other species as identified in an approved management plan on disturbed soils within 3 years of initial seeding. If establishment is unsuccessful, follow-up seeding and soil nutrient testing will be done to determine if additional reclamation is necessary.
- Large contiguous blocks of federal land will be managed by maintaining or enhancing sagebrush, aspen, and mountain shrub communities. Connections between these community types will be maintained by managing projects to minimize construction disturbance to the smallest acreage possible with considerations for engineering feasibility and safety.
- Treatments such as prescribed fire, wildland fire, and appropriate chemical, mechanical, and biological methods could be used to meet vegetation management objectives.
- Representative cushion plant communities will be NSO areas.
- Riparian areas will be maintained, improved, or restored to enhance habitat forage conditions for wildlife and livestock and to improve stream water quality. All riparian areas with sensitive wildlife and plant species concerns will be managed to a successional stage appropriate for the benefit of those species, including vertical and horizontal vegetative structure and composition.

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- Livestock salt or mineral supplements will be located a minimum of ¼ mile away from water sources, riparian areas, and aspen stands. Buffers will be based on resource concerns on a case-by-case basis.

7.27.2 Conservation Measures Currently Committed to by the BLM

- The objectives of the proposed Woodruff Narrows mitigation plan are to improve riparian habitats used as a bald eagle winter roost and to mitigate possible habitat loss from the construction of a low-head hydro power plant. Riparian habitat improvements also may benefit threatened or endangered species that use these areas

7.27.3 Best Management Practices

The following BMPs have been identified:

- For all actions occurring in riparian and wetland areas, the BMPs presented in the following documents will be considered in an effort to generate the most ecologically sound management program: “Birds in Green Ribbons – Best Management Practices for Riparian Areas to Benefit Birds in Wyoming” (Wyoming PIF); “Grazing Management for Riparian-Wetland Areas” (TR 1737-14); and “Effective Cattle Management in Riparian Zones – A Field Survey and Literature Review” (BLM [MT], RTB No. 3).
- Riparian areas will receive special attention.
- In any proposed new access, wetland and riparian areas will be avoided, where possible (18 CFR 725.2 – Floodplain Management and Protection of Wetlands).

7.27.4 Impact Analysis and Effect Determinations

Black-footed Ferret – No black-footed ferrets are known to exist within the planning area. No vegetative treatment programs are currently planned within active prairie dog colonies. The use of biological controls (insects and livestock grazing), chemical controls, mechanical control (including cutting and thinning with hand tools and machinery), and prescribed fire is not expected to adversely impact potential black-footed ferret habitats. Where used, the long-term goal of these programs would be to improve habitat quality. Implementing vegetative management actions *may affect, but is not likely to adversely affect*, the black-footed ferret due to *beneficial effects (NLAA-b)*. This determination is based on the potential for improvements to prairie dog and potential ferret habitats if vegetative treatments are used and existing conservation measures.

Canada Lynx – Vegetation treatments that may occur in occupied Canada lynx habitat would be expected to disturb resident lynx in the short term, but improve habitat in the long term. Areas where vegetation management actions are implemented will be widespread throughout the planning area and impacts localized, therefore, affecting only a portion of the large territory occupied by lynx. Implementing vegetation management actions *may affect, but is not likely to adversely affect*, the lynx due to *discountable effects (NLAA-d)*. This determination is based on the unlikely event vegetation management actions will take place in potential lynx habitats and the existing conservation measures in place to protect the species. In the long term, vegetation management actions will benefit the lynx by improving habitats for prey species.

Ute Ladies'-tresses – Vegetation management actions are not expected to adversely impact the Ute ladies'-tresses and may actually benefit suitable habitat health. Implementing vegetation management actions *may affect, but is not likely to adversely affect*, the Ute ladies'-tresses due to *discountable effects (NLAA-d)*. This determination is based on the limited amount of suitable Ute ladies'-tresses habitat on

BLM-administered surface lands, no identified populations in the planning area, and the existing conservation measures in place.

Western Yellow-billed Cuckoo – Vegetation treatments are most often used to improve habitats for native species. When treatments are applied, there may be short-term effects to potential yellow-billed cuckoo habitats after disturbance. Because there is a low likelihood of western yellow-billed cuckoo occurrence and due to potential beneficial effects, vegetation management in the planning area *may impact, but is not likely to contribute to the need to list* this species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Vegetation management on nonfederal lands may add to disturbance of threatened, endangered, or candidate species in the short term depending on the time of year actions are conducted, increased human presence, and use of machinery. However, the long-term goal of vegetation management programs are to improve habitat quality, which would benefit threatened, endangered, and candidate species.

7.28 Visual Resource Management

Visual Resource Management (VRM) involves applying methodologies for evaluating landscapes and determining appropriate techniques and strategies for maintaining visual quality and reducing adverse impacts. The inventory process evaluates landscapes based on scenic quality, public perception (sensitivity), and location from key observation points (distance). VRM class recommendations were made based on the inventory process, with final class determinations being set by the RMP.

The majority of the Kemmerer planning area is classified as VRM Class IV (648,736 acres), with Class III as next prevalent at 314,829 acres. This allows for moderate-to-high visual intrusions, while striving to preserve the characteristic landscapes. Areas warranting more protections were delineated as Class I and include Raymond Mountain Wilderness Study Area. Key resources that include high value viewsheds are Rock Creek Ridge, and Slate Creek Ridge, Fossil Butte National Monument, and the Green River. These locations ranked higher in the scenic quality and are much higher in visual sensitivity. Special recommendations also were made concerning the NHTs and other historic trail corridors.

7.28.1 Proposed Protections for VRM in the Kemmerer Proposed RMP and Final EIS

No proposed protections for VRM that would benefit threatened, endangered, or candidate species were identified.

7.28.2 Conservation Measures Currently Committed to by the BLM

The following is a conservation measure currently committed to by the BLM:

- Stipulations will be applied to ensure that the resulting action does not distract from the visual character of the area to the extent that the character of the viewshed will be compromised.

7.28.3 Best Management Practices

The following BMPs have been identified:

- The BLM will consider the effects of actions it authorizes on the visual quality and character of the area in which they takes place and will not permit or authorize actions that detract from the character of the landscape.

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- Consideration for the effect a project has on the visible landscape, or viewshed, should be taken into account for all actions permitted or authorized by the BLM.

7.28.4 Impact Analysis and Effect Determinations

Threatened and Endangered Species – Actions associated with VRM will not directly impact threatened, endangered, or candidate species or any potential habitats. VRM will exclude some actions and structures from designated viewsheds and may have a beneficial impact of limiting disturbance in habitats suitable for threatened, endangered, or candidate species. Implementing VRM actions *may affect, but is not likely to adversely affect*, the threatened or endangered species due to *beneficial effects (NLAA-b)* and *may impact, but is not likely to contribute to the need to list* the yellow-billed cuckoo. This determination is based on the potential of these management actions to preserve or minimize disturbance to habitats suitable for threatened and endangered species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. No actions associated with VRM on nonfederal lands that may affect threatened, endangered, or candidate species are anticipated.

7.29 Water Resources

The BLM's Watershed and Water Resources Program conducts data collection, resource monitoring, and analysis in support of other management actions, such as range management, forest management, and mineral extraction. Watershed management actions include evaluating proposed projects, applying soil management practices, applying seasonal closures, monitoring public drinking water, and completing groundwater studies. Some of these field actions involve the use of heavy machinery and hand tools. Field actions can involve developing riparian exclosures and constructing stream crossings. Other actions can involve imposing restrictions on actions and structures, such as mineral exploration and development, pipelines, powerlines, roads, recreational sites, fences, and wells.

Through water resource management, the BLM seeks to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and federal water quality standards, provide for the availability of water to facilitate authorized uses, and minimize harmful consequences of erosion and surface runoff. Water resources also are to be protected or enhanced through site-specific mitigation guidelines.

During watershed management actions, the BLM develops pollution prevention plans, ensures that rights to water-related projects are filed, delineates no chemical-use buffer zones, designs actions to promote reduction of channel erosion, and restores damaged wetlands or riparian areas. The BLM also provides technical expertise on other actions, such as for constructing livestock ponds, monitoring water quality actions, and providing impact analyses of oil and gas development or any surface disturbance projects.

Surface-disturbing and other activities associated with the Watershed and Water Resources Program include, but are not limited to (1) evaluating and permitting surface discharges of produced water; (2) restricting surface disturbance near water resources and sensitive soils; (3) closing areas, including roads, where accelerated erosion is occurring; (4) installing stream crossings for appropriate sediment and flow passage (e.g., culverts and bridges); (5) developing riparian and wetland exclosures; (6) restoring channels using heavy equipment; and (7) cutting, planting, and seeding to restore function in riparian or wetland areas.

7.29.1 Proposed Protections for Water Resources in the Kemmerer Proposed RMP and Final EIS

The following protections are proposed in the Kemmerer Proposed RMP and Final EIS:

- Use of fire suppression chemicals, including foaming agents and surfactants, will not be allowed within 200 feet of surface water.
- Land use and surface-disturbing activities will be designed to reduce channel erosion, specifically bank erosion and channel incision, which result in loss of riparian habitats and accelerate surface erosion. Damaged wetlands will be restored.
- Activity and (or) project plans to reduce phosphate, sediment, and salt loading to downstream waterbodies, including Bear Lake and the Flaming Gorge Reservoir, will be designed.
- The area within 500 feet of or within wetlands, riparian areas, aquatic habitats, and 100-year floodplains will become avoidance areas for surface-disturbing activities.
- No new permanent facilities will be allowed in riparian areas or wetlands unless they (1) meet the requirements and intent of Executive Orders 11988 and 11990, (2) there are no practicable alternatives, and (3) appropriate mitigation measures are implemented.
- Linear watercourse crossings will be considered on a case-by-case basis.
- All reserve pits will be lined unless other, more effective, methods (i.e., barrier walls, closed mud systems) are needed to prevent infiltration and adverse impacts to groundwater and other resources.
- Identified aquifer recharge areas will be maintained to protect groundwater and surface water quality through maintenance of the vegetative cover and soil structure that contributes to recharge.
- Proposed discharge of produced water to streams or other flow-connected surface features on public lands will require a BLM-approved discharge plan. Discharge of produced water to public land uplands will be considered on a case-by-case basis, require a BLM-approved discharge plan, and be permitted as long as the applicant can demonstrate that a beneficial use of the water will result.

7.29.2 Conservation Measures Currently Committed to by the BLM

The following is a list of conservation measures currently committed to by the BLM:

- Any actions occurring in riparian or wetland areas will be surveyed and water quality will be monitored as a safeguard to protect potential Ute ladies'-tresses habitats.
- Coordination between BLM hydrologists and BLM biologists will take place before any planned water resource management-related actions take place on the ground. Coordination will occur between BLM biologists and other BLM activity planners to ensure exchange of information regarding threatened, endangered, proposed, and candidate specie and their locations, restrictions, and conservation measures.

7.29.3 Best Management Practices

- No specific BMPs have been identified.

7.29.4 Impact Analysis and Effect Determinations

Black-footed Ferret – Water resource management does not generally occur in potential black-footed ferret habitats, nor are black-footed ferrets known to exist within the planning area. Prairie dogs, the black-footed ferret’s primary prey, inhabit shortgrass prairie and semi-desert shrublands without much slope, and are not typically found in riparian areas. The avoidance area buffer for perennial streams could benefit prairie dogs that use grasslands adjacent to riparian areas. Implementing watershed and water resources management *may affect, but is not likely to adversely affect*, the black-footed ferret due to *discountable effects (NLAA-d)*. This determination is based on the species not being present, management not occurring in potential habitats, and protection of and potential improvements to a small component of prairie dog habitats.

Canada Lynx – Water management actions would occur in a very small portion of occupied Canada lynx habitat, if at all, and be short term in nature. Access for these activities would be primarily by vehicle (pickup truck, etc.) and personnel walking into and along streams and rivers would do monitoring. Some disturbance to streams or rivers during construction and occasional maintenance of monitoring equipment may occur. Riparian habitat restoration to reduce erosion and sediment movement along watercourses would be disruptive to resident lynx but beneficial to the species and its prey in the long term. The activities associated with this management action are infrequent, small in scale, and not likely to occur in lynx habitat. Implementing water-resource management actions, as presented in the Kemmerer Proposed RMP and Final EIS, *may affect, but is not likely to adversely affect*, the lynx, due to *discountable effects (NLAA-d)*. This determination is based on the conservation measures in place that will preclude adverse effects to the lynx or its habitat or LAUs, the low potential for occurrence in occupied habitat, and the likelihood of habitat improvement.

Ute Ladies’-tresses – Management actions associated with water resources are infrequent and typically small in scale. Overall, these types of management actions may benefit the species and its habitat by maintaining or improving riparian or wetland habitat conditions, on which the species depends. Implementing water resource management actions *may affect, but is not likely to adversely affect*, the Ute ladies’-tresses due to *discountable effects (NLAA-d)*. This determination is based on no occupied Ute ladies’-tresses habitats being recorded in the planning area, the potential for improvement of potential habitats, and the incorporation of conservation measures for the Ute ladies’-tresses.

Western Yellow-billed Cuckoo – Degradation of riparian areas has resulted from past and continuing human management of flow regimes in the major waterways of the West. Much of the remaining yellow-billed cuckoo habitat in Wyoming now occurs in the form of narrow disconnected linear patches unsuitable for western yellow-billed cuckoo nesting (BLM 2003c). This is due to the loss of continuous migration corridors, lack of patches of adequate size for nesting, and the species’ apparent inability to utilize highly isolated patches of habitat. Water management has included such activities as building of dams, diversions, flow alterations, groundwater pumping, and channel modification for flood prevention, production of electrical energy, recreation, water storage (particularly for agricultural production), and stream stabilization. Effects to cuckoo habitats have included hydrological changes, vegetative changes, and inundated habitats. Diversion and channelization result in diminished surface flows, increased salinity of residual flows, and altered stream banks and fluvial dynamics, all affecting riparian vegetation. Any continuation of these actions would be detrimental to the species, but reversal of these practices may improve potential habitats. Because there is a low likelihood of western yellow-billed cuckoo occurrence, water management actions in the planning area *are not likely to contribute to the need to list* and have the potential to provide additional habitats for the species.

Cumulative Effects – Cumulative effects include future state, tribal, local, or private actions reasonably certain to occur in the planning area. Water depletions on nonfederal lands could adversely affect

threatened, endangered, or candidate species within and downstream of the planning area. Water depletions are expected from the development of oil and gas wells and livestock water sources on nonfederal lands. Protection and enhancement of water resources in the planning area on nonfederal lands will improve habitat for threatened, endangered, and candidate species. Surface disturbance and other actions could increase sedimentation of waterways and may potentially impact threatened, endangered, and candidate species.

8.0 SUMMARY OF CUMULATIVE EFFECTS

Cumulative effects are the collective incremental impacts of the Proposed RMP regardless of the entity undertaking the action. Cumulative effects include future state, tribal, local, or private actions that are reasonably certain to occur in the planning area. Future federal actions that are unrelated to the Proposed RMP are not considered because they require separate consultation pursuant to section 7 of the ESA. Nonfederal actions that may affect threatened or endangered species or their habitats in the planning area include the following:

- Livestock grazing on private and state lands
- Spread of INNS on state and private lands throughout the planning area
- Oil and gas development on private and state lands
- Coal mine operations occurring on both state and private lands; these large mines may remove habitat for prairie dogs and black-footed ferrets
- Proposed wind farms, which may remove habitat for prairie dogs, fragment existing larger habitat blocks, and provide additional human access into areas
- Increase in road building on private and state lands, which may impact threatened, endangered, or candidate species habitat and potential habitat through the fragmentation of large blocks and direct loss of habitats
- Railroad construction, which occurs primarily on state and private lands, may remove or fragment habitat for threatened, endangered, or candidate species.

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9.0 SUMMARY OF EFFECTS DETERMINATIONS

Table 4 summarizes the effects determinations for threatened, endangered, and candidate species that may occur in the planning area.

Table 4. Summary of Effects Determinations for Threatened, Endangered, and Candidate Species

Resource	Species			
	Black-footed Ferret	Canada Lynx	Ute Ladies'-tresses	Western Yellow-billed Cuckoo
Air Quality	NE	NE	NE	NI
Cultural Resources	NLAA-d	NLAA-d	NLAA-d	MI
Fire Management and Ecology – Unplanned/Wildland Fire	NLAA-i	NLAA-i	NLAA-d	MI
Fire Management and Ecology – Planned/Prescribed Fire	NLAA-i	NLAA-i	NLAA-d	MI
Fish and Wildlife Resources	NLAA-b	NLAA-i	NLAA-d	MI
Forests, Woodlands, and Forest Products	NE	NLAA-i	NLAA-i	MI
Health and Safety	NE	NE	NE	NI
Invasive Nonnative Species and Pest Control	NLAA-d	NLAA-d	NLAA-d	MI
Lands and Realty	NLAA-d	NLAA-i	NLAA-d	MI
Livestock Grazing	NLAA-i	NLAA-i	NLAA-d	MI
Locatable Minerals	NE	NE	NE	NI
Leasable – Coal	NLAA-d	NLAA-i	NLAA-d	MI
Leasable – Sodium (Trona)	NE	NE	NE	NI
Leasable – Oil and Gas	NLAA-d	NLAA-i	NLAA-d	MI
Leasable – Other Solid Leasables	NE	NE	NE	NI
Salable	NLAA-d	NLAA-i	NLAA-d	MI
Off-highway Vehicles	NLAA-d	NLAA-i	NLAA-d	MI
Paleontological Resources	NLAA-d	NLAA-d	NLAA-d	MI
Recreation	NLAA-d	NLAA-i	NLAA-d	MI
Socioeconomic Resources	NE	NE	NE	NI
Soil	NLAA-d	NLAA-d	NLAA-d	MI
Special Designations	NLAA-b	NLAA-b	NLAA-b	MI
Wild and Scenic Rivers and Wilderness Study Areas	NLAA-b	NLAA-b	NLAA-b	MI
Special Status Species – Plants	NE	NLAA-b	NLAA-b	MI
Special Status Species – Fish and Wildlife	NLAA-b	NLAA-b	NE	MI
Transportation	NLAA-d	NLAA-i	NLAA-d	MI
Vegetative Resources	NLAA-b	NLAA-d	NLAA-d	MI
Visual Resource Management	NLAA-b	NLAA-b	NLAA-b	MI
Water Resources	NLAA-d	NLAA-d	NLAA-d	MI

Effects Determinations:

- LAA likely to adversely affect
- NE no effect
- NLAA-b may affect, but is not likely to adversely affect, due to beneficial effects
- NLAA-d may affect, but is not likely to adversely affect, due to discountable effects
- NLAA-i may affect, but is not likely to adversely affect, due to insignificant effects
- NI no impact to candidate species
- MI may impact candidate species, but not likely to contribute to the need for federal listing

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10.0 SUMMARY OF SPECIES-SPECIFIC COORDINATION AND CONSERVATION MEASURES

The following species-specific conservation strategies are intended to minimize adverse impacts likely to result from implementing the management actions provided in the RMPs. Specific to each species, this section discusses (1) existing protections, (2) conservation measures committed to by the BLM, and (3) BMPs the BLM routinely uses. Protections are those measures outlined as management actions in the Kemmerer Proposed RMP and Final EIS. In addition, the BLM has already committed to implementing many conservation measures; many of these are from the statewide BAs, Biological Evaluations, and BOs for the individual species. The BLM will also consider implementing any appropriate BMPs to further protect the species and its habitat. In the event new populations of the species are discovered, these measures will apply until such time that further investigation and subsequent consultation with the USFWS result in more appropriate management prescriptions.

10.1 Black-footed Ferret Conservation Measures

10.1.1 Proposed Protections in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed for black-footed ferrets:

Habitats managed for reintroductions of black-footed ferrets will be addressed on a case-by-case basis.

10.1.2 Conservation Measures Committed to by BLM

1. When project proposals are received for areas that still require black-footed ferret surveys [i.e., non-block-cleared (see Map 3 of the black-footed ferret biological assessment (BLM 2005)) or the USFWS block clearance letter of February 2, 2004) (USFWS 2004)] and meet potential habitat criteria as defined by the USFWS's guidelines (USFWS 1989), the BLM shall initiate coordination with the USFWS at the earliest possible date so that the USFWS can provide input. This should minimize the need to redesign projects at a later date to include black-footed ferret conservation measures, determined as appropriate by the USFWS.
2. In areas identified in conservation measure number one above (non-block-cleared areas), if suitable prairie dog town/complex avoidance is not possible, surveys of towns/complexes for black-footed ferrets shall be conducted in accordance with current USFWS guidelines and recommendations. This information shall be provided to the BLM and the USFWS in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (50 CFR §402.10 and 13), and the Interagency Cooperation Regulations.
3. Observations of black-footed ferrets, their sign, or carcasses on a project area and the location of the suspected observation, however obtained, shall be reported within 24 hours to the appropriate local BLM wildlife biologist and Field Supervisor of the USFWS's office in Cheyenne, Wyoming, (307) 772-2374. Observations will include a description including what was seen, time, date, exact location, suspected cause of death, and observer's name and telephone number. Carcasses or other "suspected" ferret remains shall be collected by the USFWS or BLM employees, and deposited with the USFWS's Wyoming Field Office or the USFWS's law enforcement office. This type of specimen collection is authorized as described in 50 CFR 17.21(c)(3-4). It is imperative that any fresh black-footed ferret carcass be salvaged and immediately transported to the USFWS so pertinent information concerning the cause of death

can be gathered, including photographs in order to document an accurate depiction of the fatality.

4. Discovery of a live black-footed ferret outside of the Experiment Non-essential population areas in Wyoming would have profound importance to the species' recovery. Reporting of such a discovery by staff, contractors, permittees, etc. will be fully encouraged by BLM Staff and Management.
5. If black-footed ferrets or their sign are found on public lands outside of the Non-essential Experimental population areas in Wyoming, all previously authorized surface disturbing activities (or actions on any future application that may directly, indirectly, or cumulatively affect the colony/complex ongoing) in the complex in which black-footed ferrets are found shall temporarily cease until further direction is developed by a task force consisting of the BLM Field Office Manager, the USFWS Field Office Supervisor, the Wyoming Game and Fish Department (WGFD) Non-game Coordinator, and other potentially affected parties. This task force will be formed within 48 hours of the find to determine appropriate conservation/protection actions. The BLM shall coordinate with these affected parties to ensure that ferret surveys or appropriate actions are conducted as deemed necessary. The BLM will also re-initiate section 7 consultation with the USFWS. An emergency road closure limiting access to the site will be enacted by the BLM within 48 hours of the find to protect the newly discovered black-footed ferrets. This emergency road closure will be for all non-paved roads within at least one mile of the find. On a case-by-case basis and with approval of the USFWS, certain surface disturbing activities within the town or complex may be allowed to continue.
6. Information on ferret identification shall be provided and posted in common areas and circulated in a memorandum among all employees and service providers. This information shall illustrate the black-footed ferret and its sign; describe morphology, tracks, scat, skull, habitat characteristics, behavior, and current status; and the relationship between project development and possible impacts to black-footed ferrets, especially regarding canine distemper and recreational shooting.

Habitat and Mapping Measures

1. New prairie dog towns shall be allowed to become established on public lands in all circumstances where they would not interfere with other previously established activities.

Recovery/Reintroduction Measures

The BLM shall work with the USFWS and the WGFD to identify and select Special Management Areas for potential reintroduction sites for black-footed ferrets. These areas will be selected based upon a number of factors including the BLM's ability to protect and manage them, their size (5,000 to 10,000 acre sites, optimally), and potential utility to black-footed ferrets. Because of the need to manage reintroduction sites (of prairie dog complexes) on a landscape scale, and because plague is a significant but unpredictable event, Special Management Areas may be selected that are currently "plagued out", but may recover in time. Complexes can be selected from, but not necessarily restricted to, those shown in block cleared areas (see Map 3 of BLM 2005). Protective measures will be drawn up for these Special Management Areas, and may include being withdrawn from leasing and protected from commercial development (i.e., land disposal through R&PP actions, etc.). Examples of protective measures that will be included in these Special Management Areas are:

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- a. The BLM shall work with respective State Game and Fish agencies and USFWS offices to ensure that enough reintroduction sites are maintained to successfully recover the black-footed ferret. If areas available for reintroduction are removed through the BLM's authorized actions below a threshold level, so that the black-footed ferret can no longer be recovered, then those actions reducing availability of reintroduction sites will be modified or discontinued until the black-footed ferret has been recovered.
 - b. The BLM shall monitor and post restrictions, if necessary, on recreational opportunities and other uses on BLM-administered lands within 1 mile of formally proposed and active reintroduction sites for black-footed ferrets.
 - c. The BLM and operators shall conduct educational outreach to employees regarding the nature, hosts, and symptoms of canine distemper and its effects on black-footed ferrets, focusing attention on why employees should not have pets on work sites during or after hours. The BLM shall encourage operators to develop policies to prohibit dogs from operation sites or require current distemper vaccinations within black-footed ferret reintroduction areas. It is recommended that vaccinated puppies shall not be allowed until one month after their final distemper vaccination due to potential effects of the modified live virus vaccine.

10.1.3 Best Management Practices

1. Develop prairie dog management plans with ongoing monitoring and protection of prairie dog towns and complexes on towns with high priority for black-footed ferret reintroductions.
2. Follow the guidelines outlined in the Wyoming Black-tailed Prairie Dog Management Plan and the White-tailed Prairie Dog Conservation Assessment (Seglund et al. 2004).
3. Establish land stewardship agreements with other agencies and/or private landowners where large (1,000 acres) prairie dog towns or complexes exist. These agreements should manage potential uses that may be detrimental to prairie dogs and their habitats, while preserving the landowner's intent for use.
4. Avoid sale or exchange of lands with potential for black-footed ferret reintroductions and attempt to acquire parcels with suitable prairie dog complexes on them, especially those parcels that could potentially be part of a black-footed ferret reintroduction effort.
5. Initiate, to the extent feasible, land exchanges in the Thunder Basin and Shirley Basin in areas with potential for black-footed ferrets, in order to increase the land area in Federal ownership.
6. Avoid vegetation stand conversions that have been shown to be detrimental to prairie dogs, and reduce or eliminate any other suspected ecosystem-degrading practices.

10.2 Canada Lynx Conservation Measures

10.2.1 Existing Protections in the Kemmerer Proposed RMP and Final EIS

The following protection is proposed for the Canada lynx in the Kemmerer Proposed RMP and Final EIS.

On February 28, 2008, the USFWS proposed to revise designated critical habitat for the contiguous United States distinct population segment of the Canada lynx under the ESA (73 FR 10860). Approximately 27.3 million acres fall within the boundaries of the proposed revised critical habitat

designation. Only a small portion (596 acres), fall within the Kemmerer BLM RMP planning area. With so few acres proposed for designation in the Kemmerer planning area, the BLM has determined that any action undertaken in the Kemmerer planning area on these acres will have negligible effect to the proposed critical habitat as a whole, and will not lead to adverse modification of the designated critical habitat. In the event that the USFWS includes portions of Kemmerer BLM-administered lands in the final critical habitat designation, the BLM will evaluate potential effects to that habitat and conduct Section 7 consultation with the USFWS as appropriate.

10.2.2 Conservation Measures Committed to by BLM

1. Within an LAU, the BLM shall ensure that mapping occurs of Canada lynx habitat and nonhabitat, and that denning habitat, foraging habitat, and topographic features important for lynx movement are mapped. The BLM or project proponent shall identify whether all lynx habitat within an LAU is in suitable or unsuitable condition. This will involve interagency coordination where LAUs cross administrative boundaries.
2. The BLM shall limit disturbance within each LAU to 30 percent of the suitable habitat within the LAU. If 30 percent of the habitat within an LAU is currently in unsuitable condition, no further reduction of suitable conditions shall occur as a result of management activities. The BLM shall map oil and gas production and transmission facilities, mining activities and facilities, dams, forest management, and agricultural lands on public lands and evaluate projects on adjacent private lands to assess cumulative effects. This will involve interagency coordination where LAUs cross administrative boundaries, primarily with the USFS.
3. The BLM management actions shall not change more than 15 percent of Canada lynx habitat within an LAU to an unsuitable condition within a 10-year period. This will involve interagency coordination where LAUs cross administrative boundaries.
4. BLM shall maintain denning habitat in patches generally larger than 5 acres, comprising at least 10 percent of lynx habitat. Where less than 10 percent is currently present within an LAU, defer any management actions that would delay development of denning habitat structure. This will involve interagency coordination where LAUs cross administrative boundaries.
5. The BLM shall ensure that key linkage areas that may be important in providing landscape connectivity within and between geographic areas across all ownerships are identified using best available science.
6. The BLM shall ensure that habitat connectivity within and between LAUs is maintained.
7. The BLM shall document Canada lynx observations (tracks, sightings, along with date, location, and habitat) and provide these to the WYNDD, as well as request an annual update from the WYNDD on all sightings for review in each field office.
8. Following a disturbance (blowdown, fire, insects) that could contribute to lynx denning habitat, the BLM shall allow no salvage harvest when the affected area is smaller than 5 acres. Some exceptions apply, as specified in the LCAS timber management project planning standards.
9. BLM shall only allow pre-commercial thinning when stands no longer provide snowshoe hare habitat.
10. In aspen stands, the BLM shall ensure that harvest prescriptions apply that favor regeneration of aspen.
11. The BLM shall ensure that improvement harvests (commercial thinning, selection, etc.) are designed to retain and improve recruitment of an understory of small diameter conifers and shrubs preferred by hares.

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12. In the event of a large wildfire, the BLM shall ensure that a post-disturbance assessment prior to salvage harvest is conducted, particularly in stands that were formerly in late successional stages, to evaluate potential for lynx denning and foraging habitat.
 13. The BLM shall ensure that construction of temporary roads and fire lines are minimized to the extent possible during fire suppression activities and shall ensure revegetation of those that are necessary. Construction on ridges and saddles should be avoided, if possible.
 14. The BLM shall allow no net increase in groomed or designated over-the-snow routes and snowmobile play areas in LAUs unless the designation serves to consolidate unregulated use and improves Canada lynx habitat through a net reduction of compacted snow areas. This is intended to apply to dispersed recreation rather than existing ski areas. Winter logging activity is not subject to this restriction.
 15. In Canada lynx habitats within an LAU, the BLM shall ensure that federal actions do not degrade or compromise landscape connectivity or linkage areas when planning and operating new or expanded recreation developments.
 16. The BLM shall ensure that trails, roads, and lift termini are designed to direct winter use away from diurnal security habitats.
 17. To protect the integrity of lynx habitats, the BLM shall ensure that (as new information becomes available) winter recreational special use permits (outside of permitted ski areas) that promote snow-compacting activities in lynx habitats are evaluated and amended as needed.
 18. The BLM shall ensure that livestock use in openings created by fire or forest management that would delay successful regeneration of the shrub and tree components is not allowed. This regeneration may take 3 years or longer, and will depend on site-specific conditions.
 19. The BLM shall ensure that grazing in aspen stands is managed to ensure sprouting and sprout survival sufficient to perpetuate the long-term viability of the clones.
 20. Within Canada lynx habitat, the BLM shall ensure that livestock grazing in riparian areas and willow patches is managed to maintain or achieve mid-seral or higher condition to provide cover and forage for prey species.
 21. On projects where over-snow access is required, the BLM shall ensure use is restricted to designated routes.
 22. Predator control activities, including trapping or poisoning on domestic livestock allotments on federal lands within lynx habitat, shall be conducted in accordance with USFWS recommendations established through a formal section 7 consultation process.
 23. The BLM shall ensure that the potential importance of shrub-steppe habitats in the Canada lynx habitat matrix and in providing landscape connectivity between blocks of lynx habitat is evaluated and considered as integral to overall lynx habitat where appropriate. Livestock grazing within shrub-steppe habitats in such areas should be managed to maintain or achieve mid-seral or higher condition, to maximize cover and prey availability. Such areas that are currently in late seral condition not be degraded.
 24. In high-elevation riparian areas, especially those subject to grazing, the BLM shall ensure that weed assessments and weed control are conducted to optimize habitat for snowshoe hares.
 25. Within lynx habitats, the BLM shall ensure that key linkage areas and potential highway crossing areas are identified using best available science.
 26. The BLM shall work cooperatively and proactively with the Federal Highway Administration and state Departments of Transportation to identify land corridors necessary to maintain connectivity

of Canada lynx habitat and map the location of "key linkage areas" where highway crossings may be needed to provide habitat connectivity and reduce mortality of lynx (and other wildlife).

27. Dirt and gravel roads traversing lynx habitat (particularly those that could become highways) should not be paved or otherwise upgraded (e.g., straightening of curves, widening of roadway, etc.) in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of the cleared ROW, or would foreseeably contribute to development or increases in human activity in Canada lynx habitat. Whenever rural dirt and gravel roads traversing lynx habitat are proposed for such upgrades, a thorough analysis should be conducted on the potential direct and indirect effects to lynx and lynx habitats.
28. The BLM shall ensure that proposed land exchanges, land sales, and special use permits are evaluated for effects on key linkage areas.
29. If activities are proposed in Canada lynx habitat, the BLM shall ensure that stipulations and conditions of approval for limitations on the timing of activities and surface use and occupancy are developed at the leasing and APD stages. For example, requiring that activities not be conducted at night, when lynx are active, and avoiding activity near denning habitat during the breeding season (April or May to July) to protect vulnerable kittens.
30. The BLM shall ensure that snow compaction is minimized when authorizing and monitoring developments. The BLM shall encourage remote monitoring of sites that are located in Canada lynx habitat so that sites do not have to be visited daily.

10.2.3 Best Management Practices

1. Design regeneration prescriptions to mimic historical fire (or other natural disturbance) events, including retention of fire-killed dead trees and coarse woody debris.
2. Design harvest units to mimic the pattern and scale of natural disturbances and retain natural connectivity across the landscape. Evaluate the potential of riparian zones, ridges, and saddles to provide connectivity.
3. Provide for continuing availability of foraging habitat in proximity to denning habitats.
4. In areas where recruitment of additional denning habitat is desired, or to extend the production of snowshoe hare foraging habitat where forage quality and quantity is declining due to plant succession, consider improvement harvests (commercial thinning, selection, etc). Improvement harvests should be designed to retain and recruit the understory of small diameter conifers and shrubs preferred by hares; retain and recruit coarse woody debris, consistent with the likely availability of such material under natural disturbance regimes; and maintain or improve the juxtaposition of denning and foraging habitat.
5. Provide habitat conditions through time that support dense horizontal understory cover and high densities of snowshoe hares. This includes, for example, mature multistoried conifer vegetation. Focus vegetation management, including timber harvest and use of prescribed fire, in areas that have the potential to improve snowshoe hare habitat (dense horizontal cover), but that presently have poorly developed understories with little value to snowshoe hares.
6. Design burn prescriptions to promote response by shrub and tree species that are favored by snowshoe hare and, thus, regenerate or create snowshoe hare habitats (e.g., regeneration of aspen and lodgepole pine).
7. Design burn prescriptions to retain or encourage tree species composition and structure that will provide habitat for red squirrels or other alternate prey species.
8. Consider the need for pretreatment of fuels before conducting management ignitions.

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9. Design burn prescriptions and, where feasible, conduct fire-suppression actions in a manner that maximizes Canada lynx denning habitat.
 10. Map and monitor the location and intensity of snow-compacting activities (for example, snowmobiling, snowshoeing, cross-country skiing, dog sledding, etc.) that coincide with lynx habitat to facilitate future evaluation of effects on lynx as information becomes available. Discourage recreational use in areas where it is shown to compromise Canada lynx habitats. Such actions should be undertaken on a priority basis considering habitat function and importance.
 11. Provide a landscape with interconnected blocks of foraging habitat where snowmobile, cross-country skiing, snowshoeing, or other snow-compacting activities are minimized or discouraged.
 12. Identify and protect potential security habitats in and around proposed developments or expansions.
 13. Determine where high total road densities (>2 miles per square mile) coincide with lynx habitat, and prioritize roads for seasonal restrictions or reclamation in those areas.
 14. Minimize roadside brushing to provide snowshoe hare habitats.
 15. Limit public use on temporary roads constructed for timber sales. Design new roads, especially entrances, for effective closure upon completion of sale activities.
 16. Limit public use on temporary and permanent roads constructed for access to timber sales, mines, and leases. Design new roads, especially entrances, for effective closure. Upon project completion, reclaim or obliterate these roads.
 17. Minimize building of roads directly on ridgetops or areas identified as important for Canada lynx habitat connectivity.
 18. To reduce accidental shooting of lynx, initiate and (or) augment interagency information and education efforts throughout the range of Canada lynx in the contiguous states. Utilize trailhead posters, magazine articles, news releases, state hunting and trapping regulation booklets and so on, to inform the public of the possible presence of lynx, their field identification, and their status.
 19. Where needed, develop measures such as wildlife fencing and associated underpasses or overpasses to reduce mortality risk.
 20. Where feasible within identified key linkage areas, maintain or enhance native plant communities, patterns, and habitat for potential lynx prey. Pursue opportunities for cooperative management with other landowners. Evaluate whether land ownership and management practices are compatible with maintaining lynx highway crossings in key linkage areas. On public lands, management practices will be compatible with providing habitat connectivity. On private lands, agencies will strive to work with landowners to develop conservation easements, exchanges, or other solutions.
 21. Dirt and gravel roads traversing lynx habitats (particularly those that could become highways) should not be paved or otherwise upgraded (e.g., straightening of curves, widening of roadways, etc.) in a manner that is likely to lead to significant increases in traffic volumes, traffic speeds, increased width of cleared ROW, or would foreseeably contribute to development or increases in human activity in Canada lynx habitat. Whenever rural dirt and gravel roads traversing lynx habitat are proposed for such upgrades, a thorough analysis should be conducted on the potential direct and indirect effects to lynx and lynx habitat.

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22. In land adjustment programs, identify key linkage areas. Work toward unified management direction via habitat conservation plans, conservation easements or agreements, and land acquisition.
 23. Plan recreational development and manage recreational and operational uses to provide for lynx movement and to maintain effectiveness of lynx habitat.
 24. Identify, map, and prioritize site-specific locations using topographic and vegetation features to determine where highway crossings are needed to reduce highway impacts on lynx.
 25. Using best available science, develop a plan to protect key linkage areas on federal lands from activities that would create barriers to movement. Barriers could result from an accumulation of incremental projects, as opposed to any one project.
 26. When opportunities for vegetation treatments arise, develop treatments that provide or develop characteristics suitable for snowshoe hare.
 27. Protect existing snowshoe hare and red squirrel habitats.

10.3 Ute Ladies'-tresses Conservation Measures

10.3.1 Existing Protections in the Kemmerer Proposed RMP and Final EIS

No specific management actions to protect the Ute ladies'-tresses or its habitats are identified in the Kemmerer Proposed RMP and Final EIS.

10.3.2 Conservation Measures Committed to by the BLM

1. Surface disturbance will be prohibited within 500 feet of surface water and (or) riparian areas.
2. No Surface Occupancy will be allowed within special management areas (e.g., known threatened or endangered species habitat).
3. Portions of the authorized use area are known or suspected to be essential habitat for threatened or endangered species. Prior to conducting any onsite activities, the lessee/permittee will be required to conduct inventories or studies in accordance with BLM and US FWS guidelines to verify the presence or absence of this species. In the event that an occurrence is identified, the lessee/permittee will be required to modify operational plans to include the protection requirements of this species and its habitat (e.g., seasonal use restrictions, occupancy limitations, facility design modifications).
4. Within the potential of the ecological site (soil type, landform, climate, and geology), the BLM will ensure that the soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.
5. The BLM will ensure that grazing management practices will restore, maintain, or improve plant communities. Grazing management strategies consider hydrology, physical attributes, and potential for the watershed and the ecological site.
6. The BLM will ensure that upland vegetation on each ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.
7. The BLM will ensure that rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.

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8. The BLM will ensure that grazing management practices will incorporate the kinds and amounts of use that will restore, maintain, or enhance habitats to assist in the recovery of federally threatened and endangered species or the conservation of federally-listed species of concern and other State-designated special status species. Grazing management practices will maintain existing habitat or facilitate vegetation change toward desired habitats. Grazing management will consider threatened and endangered species and their habitats.
 9. The BLM will maintain biological diversity of plant and animal species; support the Wyoming Game and Fish Department strategic plan population objective levels to the extent practical and to the extent consistent with BLM multiple use management requirements; maintain, and where possible, improve forage production and quality of rangelands, fisheries, and wildlife habitat; and to the extent possible, provide habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the Endangered Species Act and approved recovery plans.
 10. In any proposed new access, wetland and riparian areas will be avoided where possible.
 11. Grazing will be intensively managed within known habitat containing populations from July through September, to allow plants to bloom and go to seed.
 12. Recreational site development will not be authorized in known Ute ladies'-tresses habitat.
 13. The BLM will manage stream habitats to retain, re-create, or mimic natural hydrology, water quality, and related vegetation dynamics. Projects that may alter natural hydrology or water quality, change the vegetation of the riparian ecosystem and cause direct ground disturbance will be evaluated and redesigned to ensure that adverse effects to populations of the orchid do not occur.
 14. The BLM will add the following two conservation measures to grazing permit renewals in allotments with known Ute ladies'-tresses populations.
 - a. The BLM will ensure the placement of mineral supplements, or new water sources (permanent or temporary), for livestock, wild horses, or wildlife at least 1.0 mile from known Ute ladies'-tresses populations. Supplemental feed for livestock, wildlife, or wild horses will not be authorized within 1.0 mile of known Ute ladies'-tresses populations. Straw or other feed must be certified weed-free. These restrictions are intended to keep free-ranging livestock away from Ute ladies'-tresses populations and potential overgrazing of the areas occupied by these orchids. Surveys for Ute ladies'-tresses will be conducted in potential Ute ladies'-tresses prior to livestock operations-related construction projects.
 - b. The BLM will not increase permitted livestock stocking levels in any allotment with pastures containing known Ute ladies'-tresses populations without consulting with the USFWS.
 15. Biological control of noxious plant species will be prohibited within 1.0 mile from known orchid habitat until the impact of the control agent has been fully evaluated and determined not to adversely affect the plant population. The BLM will monitor biological control vectors.

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16. Except in cases of extreme ecological health (insect or weed outbreaks/infestations), herbicide treatment of noxious plants/weeds will be well-regulated within 0.25 miles of known populations of the orchid and insecticide/pesticide treatments will be well-regulated within 1.0 mile of known populations of the orchid to protect pollinators. Where insect or weed outbreaks have the potential to degrade area ecological health inside the buffers listed above the following will apply: where needed and only on a case-by-case basis, a pesticide use proposal or other site specific plan will address concerns of proper timing, methods of use, and chemicals. Pesticides specific to dicots will be preferred where these are adequate to control the noxious weeds present. Aerial application of herbicides will be carefully planned to prevent drift in areas near known populations of the orchid (outside of the 0.25 mile buffer). The BLM will work with the Animal and Plant Health Inspection Service (APHIS), the USFWS, and County Weed and Pest Agencies to select pesticides and methods of application that will most effectively manage the infestation and least affect the orchid.
 17. If revegetation projects are conducted within 0.25 miles of known habitat for the orchid, only native species will be selected. This conservation measure will reduce the possibility that non-native species will be introduced and will compete with Ute ladies'-tresses orchids.
 18. The BLM will limit the use of off road vehicles (OHVs) to designated roads and trails within 0.5 mile of known Ute ladies'-tresses populations, with no exceptions for the "performance of necessary tasks" other than fire fighting and hazardous material cleanup allowed using vehicles off of highways. No OHV competitive events will be allowed within 1.0 mile of known Ute ladies'-tresses populations. Roads that have the potential to impact Ute ladies'-tresses orchids and are not required for routine operations or maintenance of developed projects, or lead to abandoned projects will be reclaimed as directed by the BLM.
 19. The BLM will apply a condition of approval (COA) on all applications for permit to drill (APDs) oil and gas wells for sites within 0.25 miles of any known populations of the orchid. This condition will prohibit all authorized surface disturbance and OHV travel from sites containing populations of the orchid. Operations outside of the 0.25 mile buffer of orchid populations, such as "directional drilling" to reach oil or gas resources underneath the orchid's habitat, would be acceptable.
 20. For known Ute ladies'-tresses populations, the BLM will place a Controlled Surface Use (CSU) stipulation prohibiting all surface disturbances on new oil and gas leases, buffering the area within 0.25 miles of known Ute ladies'-tresses populations. For existing oil and gas leases with known Ute ladies'-tresses populations (these would be for newly discovered populations not currently documented), the BLM will require the COA in conservation measure 19 above including the same 0.25 mile buffer area around those known Ute ladies'-tresses populations.
 21. The disposal (sale and removal) of salable minerals is a discretionary BLM action and is prohibited within a 0.25 mile buffer area of known populations of Ute ladies'-tresses orchids.
 22. To prevent loss of habitat for the orchid, the BLM "shall retain in Federal ownership all habitats essential for the survival and recovery of any listed species, including habitat that was used historically, that has retained its potential to sustain listed species, and is deemed

to be essential to their survival" (BLM 2001). Prior to any land tenure adjustments in known habitat for the orchid, the BLM will survey to assess the habitat boundary and retain that area in Federal ownership. BLM-administered public lands that contain identified habitat for the orchid will not be exchanged or sold, unless it benefits the species.

23. All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 miles from any known orchid habitat to minimize disturbances. If avoidance of adverse effects is not possible, the BLM will re-initiate consultation with the USFWS.
24. All proposed projects will be designed and locations selected to minimize disturbances to known Ute ladies'-tresses populations, and if the avoidance of adverse effects is not possible, the BLM will re-initiate consultation with the USFWS. Projects will not be authorized closer than 0.25 miles from any known Ute ladies'-tresses populations without concurrence of the USFWS and the BLM authorized officer. No ground disturbing construction activities will be authorized within 0.25 miles of any known Ute ladies'-tresses populations during the essential growing season time period (from July to September, the growing, flowering and fruiting stages) to reduce impacts to the species.
25. In order to conserve and protect natural areas, planned recreational foot trails are created to control human traffic. The BLM will create programs that will strive to protect the orchid's habitat and prevent new trails from being constructed within 0.25 miles from known occurrences of the orchid.

10.3.3 Best Management Practices

1. When project proposals are received, the BLM will initiate coordination with the USFWS at the earliest possible date so that both agencies can advise on project design. This should minimize the need to redesign projects at a later date to include orchid conservation measures, determined as appropriate by the USFWS.
2. The BLM will participate in the development of both a conservation agreement/assessment strategy and a species-specific Recovery Plan for the orchid in coordination with the USFWS and other agencies, as appropriate. Orchid habitats on BLM-administered lands will be monitored to determine if recovery and conservation objectives are being met.
3. The BLM will coordinate with the USFWS, the National Resource Conservation Service, and private landowners to ensure adequate protection for the orchid and its habitat when new activities are proposed and to work proactively to enhance the survival of the plant.
4. In the event that a new population of the orchid is found, the USFWS Wyoming Field Office (307-772-2374) will be notified within 1 week of discovery.
5. Livestock grazing, mowing and haying, and some burning are specific management tools that the BLM may use to maintain favorable habitat conditions for the orchid where feasible. Mowing and grazing, with proper timing and intensity, reduce the native and exotic plant competition for light and possibly for water, space, and nutrients.
6. Recreational foot trails that may be located adjacent to Ute ladies'-tresses plant habitat should be constructed to reduce impacts to this species.
7. To prevent loss of habitat for the orchid, the BLM "shall retain in federal ownership all habitats essential for the survival and recovery of any listed species, including habitat that was used

historically, that has retained its potential to sustain listed species, and is deemed to be essential to their survival” (BLM 2001). Prior to any land tenure adjustments in *potential* orchid habitats, the BLM will survey to assess the potential for the existence of the orchid. While it is difficult to assess whether the orchid was historically present on such sites, the BLM should try and retain in Federal ownership all habitats essential for the survival and recovery of the orchid, including habitat that was used historically, that has retained its potential to sustain this listed species, and is deemed to be essential to their survival (BLM 2001). Potential orchid habitat may be used for reintroduction efforts and is important for the recovery and enhancement of the species.

8. Prescribed fire and grazing activities shall be coordinated between biologists, rangeland management specialists, and fire personnel to ensure that no damage occurs to the plant habitat when being used to maintain the habitat for the species.
9. Maintain and restore the dynamics of stream systems, including the movement of streams within their floodplains, which are vital for the life-cycle of the orchid. Flow timing, flow quantity, and water table characteristics should be evaluated to ensure that the riparian system is maintained where these plants occur. The BLM should continue water use in a manner that maintains suitable habitat for the Ute ladies'-tresses orchid to benefit the species.
10. Maintain and restore the natural species composition and structural diversity of plant communities in riparian zones and wetlands.
11. For the protection of Ute ladies'-tresses and its potential habitat, surface-disturbing activities should be avoided in the following areas when they occur outside the protective ¼-mile buffer from known populations: (1) identified 100-year floodplains; (2) areas within 500 feet from perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet from the inner gorge of ephemeral channels.
12. Form a steering committee to develop and prioritize management practices and assist BLM and USFWS with research projects.
13. Conduct inventories for the orchid in areas with potential habitat.
14. Maintain a database of all searched, inventoried, or monitored orchid sites.
15. Analyze vegetation treatments (mowing, prescribed fire, mechanical treatments, etc.) in potential habitats for the orchid to determine impacts to the species.
16. Establish monitoring, biological, ecological, population demographics, and life-history studies as funding and staffing allow, such as monitoring current populations each year for trends, studies regarding identification of pollinators, genetics, life history, effects of pesticides and herbicides, seed viability and germination, and studies regarding monitoring the success of reintroduction efforts. Monitor orchid population sites for invasion by noxious and invasive plant species.
17. Perform monitoring and analysis pertaining to flow timing, flow quantity, and water table characteristics with the goal of ensuring that riparian vegetation in areas of potential habitat for the orchid is maintained.

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18. If possible, collect and bank orchid seeds at local, regional, national, and international arboreta, seed banks, and botanical gardens as insurance against catastrophic events, for use in biological studies, and for possible introduction or reintroduction into potential habitat.
 19. Train law enforcement personnel on protections for the orchid and its habitat, its status, and current threats to its existence.
 20. Educate resource specialists, rangers, and fire crews about the orchid and its habitat to help with project design for the general area and for fire-suppression actions occurring in potential habitat for the orchid and on the habitat characteristics and plant identification for the plant, so that if they encounter the orchid occurring in riparian habitat, they can report it to their office's threatened and endangered species specialist.
 21. The BLM should work toward developing reintroduction sites in coordination with the USFWS and to maintain the integrity of these sites for the survival of the orchid. The objective would be to reintroduce populations of the orchid into areas of historic occurrence and introduce new populations in suitable habitat within the plant's historic range.
 22. Develop propagation techniques and use them to reintroduce or introduce the orchid and to repopulate known populations in the event population recovery becomes necessary.

10.4 Western Yellow-billed Cuckoo Conservation Measures

10.4.1 Existing Protections in the Kemmerer Proposed RMP and Final EIS

No specific management actions to protect the western yellow-billed cuckoo or its habitat are identified in the Kemmerer Proposed RMP and Final EIS.

10.4.2 Conservation Measures Committed to by the BLM

1. Consider carefully the effects to the western yellow-billed cuckoo from any activities within or adjacent to cuckoo habitats.
2. Apply a 500-foot buffer through seasonal restrictions to include the breeding season from May 15 through August 15 and rehabilitation standards in or adjacent to yellow-billed cuckoo habitat, when necessary.
3. Manage for a stable or increasing population of cottonwood and willow vegetation in yellow-billed cuckoo habitat. Ensure that all age classes of vegetation are present (seedling, young, mature, and decadent), with more seedlings present than decadent plants, and more young plants than mature ones.
4. When planting trees, select only native species and avoid Russian-olive and tamarisk (salt cedar).
5. Use livestock management practices that minimize impacts to important cuckoo habitats. Examples of practices include planned grazing systems, riparian pasture fences, exclosures, herding, changes in class of livestock, timing and season of use, seasonal changes, managing use levels, off-site water and salting, resting for 1 or more years, and reduction in livestock numbers.

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6. Improve livestock distribution and forage use by using salt and mineral blocks, but avoid placing them within riparian areas (keep them at least ¼ mile from streams) or in immediately adjacent uplands.
 7. Locate livestock-handling facilities and collection points outside of riparian areas. Branding, loading, and other handling efforts should be limited to areas and times that do not harm soils and plants in riparian zones.
 8. Where roads, pipelines, and powerlines must be routed through riparian habitat, the construction work should not be accomplished during the period from mid-May to mid-August while the cuckoos are nesting.
 9. Topography should be returned to its original condition to the greatest extent possible to ensure the hydrology remains intact.
 10. Combine multiple roads and ROWs to one stream-crossing site.
 11. Maintain at least 100-foot buffer zones between riparian areas and mining, oil, gas, sand and gravel, and geothermal activities, including structures, roads, and support facilities. Boat and raft landing areas should not be developed in western yellow-billed cuckoo habitats. Outfitting camps should not be permitted in yellow-billed cuckoo habitat. Restrict the use of foggers for insect control in yellow-billed cuckoo habitats, especially during the nesting season, so a food source remains available for birds. Chemical insecticides should not be utilized within 500 feet of occupied yellow-billed cuckoo habitat and chemical herbicides, which do not break down upon contact with soil or water, should be prohibited within 500 feet of riparian areas. Supposedly, the use of Demolin to control grasshopper outbreaks does not move through ecological systems. The chemical is an agent that affects only the ability of young grasshoppers to develop an exoskeleton. It is applied only when a potential outbreak is identified and application would not reduce grasshopper numbers to lower than which would exist during a non-outbreak year. It does not affect insects that do not have exoskeletons. BLM state weed coordinator, Ken Henke, recommends as a conservation measure: “Chemical insecticides should not be utilized in occupied cuckoo habitat. In case of a grasshopper outbreak, insecticides other than Demolin should not be utilized within yellow-billed cuckoo habitat. A ¼-mile buffer zone around active nests could be applied.”
 12. Chemical insecticides or herbicides, if used, should be applied by hand in cuckoo habitat and only in cases where insect invasion or noxious weed outbreak has the potential to degrade area ecological health.
 13. In areas adjacent to western yellow-billed cuckoo habitat, carefully plan aerial application of herbicides to prevent drift of chemicals into riparian areas.
 14. Prescribed fire activities will be used only to maintain or enhance cuckoo habitat. Restrictions, such as for smoke dispersal, heat intensity, buffer zones, or timing, will be incorporated into the fire plan and approved by a BLM biologist prior to conducting the burn.
 15. Maintain beaver populations where they occur in cuckoo habitats and encourage reintroduction into areas that were historically occupied by beavers in cuckoo habitats.

10.4.3 Best Management Practices

1. All riparian areas of 20 hectares or more should be managed to preserve, protect and, if necessary, restore natural functions in compliance with Executive Orders 11988 (requires agencies to preserve natural values served by floodplains) and 11990 (requires avoidance of

adverse impacts associated with destruction or modification of wetlands), with the objective of minimizing degradation of stream banks and the loss of riparian habitats.

2. Where possible, acquisition of additional riparian area acreage should be pursued to enhance riparian area management per Executive Orders 11988 and 11990.
3. Stabilize and protect eroding stream banks in cuckoo habitats. Activities that could erode the stream bank should be restricted. When possible, fence in occupied cuckoo habitat to exclude livestock where livestock grazing is determined to impede regeneration of the habitat. Improve adjacent upland forage to lure livestock out of riparian areas.
4. Develop shade and water (wells, windmills, guzzlers, or water piped from the stream) in upland areas to help spread grazing pressure. Provide escape ramps in water tanks to prevent drowning.
5. ROW should be placed near current habitat edge areas to reduce fragmentation of larger blocks of pristine habitat.
6. Avoid building roads or new trails parallel to streams in riparian zones or through wet meadows. Stream crossings should be at right angles to minimize impacts on riparian vegetation, stream banks, soils, and water quality.
7. Avoid straightening or diverting sections of stream channel. These activities increase stream velocity and erosion, reduce stream bank stability, and adversely affect upstream and downstream habitats.
8. Promote “tread lightly” recreational ethics. Educate recreationists about problems humans can cause in riparian habitats and how they can avoid damaging these areas.
9. Plant dense native vegetation, such as willows, to screen and reduce human use of fragile or vulnerable riparian areas.
10. The BLM should work with the APHIS and the USFWS to select a pesticide and method of application that would most effectively manage the insect infestation and least affect the western yellow-billed cuckoo. Where possible, biological, rather than chemical, control should be used.
11. Avoid depleting groundwater and diverting streams outside their natural stream channels.
12. Lands containing occupied cuckoo habitats should not be sold or exchanged. If lands containing western yellow-billed cuckoo habitats are exchanged, sold, or acquired, a strategy to protect the species should be developed.

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