APPENDIX 3—BIOLOGICAL ASSESSMENT

Under provisions of the federal Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 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 are also 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 habitat. The ESA requires action agencies, such as the Bureau of Land Management (BLM), to consult or confer with the U.S. Fish and Wildlife Service (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 that the proposed action may affect listed species or critical habitat 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, U.S. Forest Service, USFWS, and 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 biological assessment provides documentation for the Proposed Jack Morrow Hills Coordinated Activity Plan (JMH CAP) to meet federal requirements and agreements set forth among the federal agencies listed above. It addresses federally listed threatened and endangered, candidate, and proposed species and experimental populations and has been prepared under the 1973 ESA Section 7 regulations, in accordance with the 1998 procedures set forth by USFWS and NMFS, the 1994 MOU, and the 2000 MOA. In addition to the above, site-specific evaluations will be conducted for activities authorized under the JMH CAP. Consultation or conferencing will occur with the USFWS for all future activities that might affect threatened, endangered, candidate, and proposed species or experimental populations.

PROJECT DESCRIPTION

The primary objective of this project is to prepare a Jack Morrow Hills Coordinated Activity Plan that provides specific management direction to prevent or address potential conflicts among mineral resources development, recreational activities, livestock grazing, important wildlife habitat, and other important land and resource uses in the planning area, and determines the appropriate levels and timing of leasing and development of energy resources. Decisions made as a result of the Record of Decision (ROD) for the JMH CAP will result in amendment of the Green River Resource Management Plan (RMP).

The general planning area for the JMH CAP covers approximately 622,000 acres located in southwestern Wyoming. The area includes the BLM-administered lands located north and east of Rock Springs, Wyoming, and extends across parts of the counties of Sweetwater, Sublette, and Fremont (Map 1). The area is bounded on the west by U.S. Highway 191, on the north by State Highway 28, on the south by County Road 17, and on the east by County Roads 74 and 15.

Further information on the JMH CAP alternatives, affected environment, and environmental consequences is available in Chapters 2, 3, and 4, respectively, of the final environmental impact statement (EIS). The Proposed JMH CAP is discussed in Section 2.7 of the final EIS. Analysis of the Proposed JMH CAP is discussed in the last section of each resource category section of Chapter 4. Appendices 5 and 6 of the final EIS outline Wyoming BLM mitigation guidelines and standard practices, best management practices, and guidelines for surface disturbing activities, respectively. Appendix 20 of

the final EIS summarizes the significance criteria and assumptions used for analysis of the JMH CAP alternatives and cumulative impacts analysis contained in Chapter 4.

FEDERAL THREATENED AND ENDANGERED SPECIES

Bald Eagle (*Haliaeetus leucocephalus*)

Federal Status: Threatened State Status: NSS2[1]

Critical Habitat: No Recovery Plan: Yes

Species Biology and Habitat Requirements

The bald eagle has a conspicuous white head and tail, a blackish-brown back and breast, and yellow feet and bill. The distinctive white plumage on the head and tail, for which the species is named, is not attained until a bird is 5 or more years of age. The female bald eagle is approximately 35 to 37 inches long with a wingspan from 79 to 90 inches. The male bald eagle is slightly smaller than the female, with a body length of 30 to 34 inches and a wingspan of 72 to 85 inches. Wild bald eagles may live as long as 30 years, but the average lifespan is probably about 15 to 20 years (Rutledge 1996–2000).

Bald eagles are found primarily along surface water sources (e.g., rivers, lakes, coasts) where their nests are usually located in large trees. They often use and rebuild the same nest each year, which is typically about 5 feet in diameter. Nest trees are usually close to water, afford a clear view of the surrounding area, and often provide sparse cover above the nest. Breeding typically begins in February or March, and the female lays a clutch ranging from one to three eggs in March or April. Both the male and female incubate the eggs for about 35 to 40 days, resulting in usually one or two eaglets produced by the pair (Stalmaster 1987). Young eagles remain in the nest for approximately 75 days. After the breeding season, bald eagles congregate where food is plentiful, and they may continue to roost near the nest tree.

During winter, bald eagles congregate near rivers and reservoirs with open water and often near large concentrations of waterfowl. Wintering eagles usually occupy river habitats between November 15 and April 30 and use large cottonwoods, poplars, and other riparian trees as daytime perches and night roosts. They usually perch within a riparian corridor or along lakeshores and prefer areas with limited human activity. Feeding areas, diurnal perches, and night roosts are fundamental elements of bald eagle winter range. Wintering bald eagles primarily occur where all three of these elements are in close proximity (Swisher 1964).

Food availability is probably the single most important factor affecting winter bald eagle distribution and abundance (Steenhof 1976). Fish and waterfowl are the primary sources of food for bald eagles, but they will also feed on rabbits, carrion, and small rodents. The hunting area or home range patrolled by a bald eagle varies from 1,700 to 10,000 acres. Home ranges are smaller where food is present in great quantity.

Population Distribution

Bald eagles occur over most of North America at some time during the year and breed across at least half of the continent. The largest populations occur in the Pacific Northwest, western Canada, and southern Alaska.

[1] Species in which habitat is restricted or vulnerable (but no recent or significant loss has occurred) and whose populations are greatly restricted or declining or (2) species with ongoing significant loss of habitat and populations that are declining or restricted in numbers and distribution (but extirpation is not imminent).

The planning area and surrounding areas were surveyed for raptor nests and potential nesting sites in 1980. In addition, numerous routine surveys in the planning area have been conducted for mineral development and range projects. Within the planning area, bald eagles are classed as casual migrants and have been observed feeding on carrion near Pacific Butte and Jack Morrow Creek. No known roost or nest sites are within the planning area; however, bald eagles regularly winter in the Farson/Eden communities near the planning area. They roost in cottonwood and poplar trees around ranches and home sites. Currently, the only known active bald eagle nesting site near the planning area is on the Green River on Seedskadee National Wildlife Refuge, which is a minimum of 30 miles from the planning area.

Conflicts

The accelerated decline in numbers of the species since World War II has been attributed to several factors. Some of these factors are unauthorized poison baits on public lands, shooting, and electrocution.

Effects of the Proposed JMH CAP

Because the bald eagle is a casual migrant within the planning area, no potential exists for roosting or nesting, and foraging occurs only during the big game hunting season (gut piles), no effects are expected to occur.

Determination: No effect

***Minimization Measures*:** None required

Black-Footed Ferret (*Mustela nigripes*)

Federal Status: Endangered State Status: NSS1[2]

Critical Habitat: No Recovery Plan: Yes

Species Biology and Habitat Requirements

The black-footed ferret is a member of the weasel family (*Mustelidae*), which includes the skunk, badger, fisher, marten, otter, mink, wolverine, and weasel. Black-footed ferrets have a long thin body, short legs, and a very flexible spine, allowing them to run through small tunnels and turn in tight spaces. These adaptations allow them to live underground in prairie dog colonies where the temperature is more uniform than on the surface, conserving water is easier, and protection is provided from surface predators. Potential predators include badgers, coyotes, bobcats, golden eagles, great-horned owls, ferruginous hawks, and domestic dogs. Black-footed ferrets are strong and limber, allowing them to catch and kill prey larger than themselves. Adults are 18 to 22 inches long and weigh between 1 and 2½ pounds. Ferrets live alone except during the breeding season. The kits are born in May or June, usually in litters of three or four.

The black-footed ferret is closely associated with prairie dogs, depending almost entirely on the prairie dog for its survival. The black-footed ferret's diet may also contain some other small mammals and birds. Potential areas of ferret habitat can be delineated because of the ferret's association with prairie dogs. The planning area is within the range of white-tailed prairie dogs, and ferrets may occur within colonies of this species. The USFWS has determined that, at a minimum, potential habitat for the black-footed ferret must include a single white-tailed prairie dog town or complex of greater than 200 acres or a

[2] Includes species with ongoing significant loss of habitat and with populations that are greatly restricted or declining (extirpation appears possible).

complex of two or more neighboring prairie dog towns, each less than 4.3 miles from the other and totaling 200 acres and whose density meets or exceeds 8 burrows per acre (USFWS 1989).

Primarily nocturnal, ferrets spend much of their time below ground and are rarely seen during daylight hours. This behavior is probably one of the reasons why so few sightings have been recorded in this planning area and elsewhere.

Population Distribution

Black-footed ferrets are the only ferrets native to North America. They have lived in North America for at least 30,000 years and have lived everywhere that prairie dogs have lived. At one time, black-footed ferrets and prairie dogs ranged throughout the Great Plains and intermountain basins of the Rockies, from Canada to Mexico.

Populations of black-footed ferrets are undetermined in the planning area. Historical documentation exists of the presence of ferrets near the planning area as recently as 1963 when a ferret and kits were commonly seen by several persons in the southwest part of Eden Valley. There have been other sightings near the planning area as recently as 1983. Other areas where ferrets are presumed to have occurred are Sublette Flats, Seedskadee National Wildlife Refuge (outside the planning area), and the Red Desert. The USFWS has conducted some surveys and prairie dog colony inventories in the field office area since 1981. The Wyoming Game and Fish Department (WGFD) mapped and surveyed a large white-tailed prairie dog colony (the Sweetwater complex) bordering the planning area in 2003. Although the colony is of sufficient acreage, it is unknown whether it contains sufficient densities of white-tailed prairie dogs to support a ferret.

Conflicts

Past prairie dog control programs, conversion of habitat for agriculture, and the introduction of plague have caused the greatest impacts on black-footed ferret populations.

From the 1920s until the mid-1970s, predator control through trapping and poisoning also resulted in significant black-footed ferret mortality (67 percent of positive ferret reports). Secondary poisoning of ferrets is also known to have occurred from highly toxic rodenticides (or predicides) used in prairie dog eradication programs.

Recreational shooters often seek out prairie dog colonies for shooting. Because distinguishing between a ferret, a burrowing owl, or a prairie dog peering over a prairie dog mound is difficult, it is assumed that some black-footed ferrets have been killed accidentally by shooters.

Land use activities such as rights-of-way, energy developments, use permits, mineral extraction, and grazing can reduce, degrade, or fragment ferret habitat. Any projects with a federal nexus that may affect potential black-footed ferrets will require inventories and clearances prior to the activity beginning. Habitat losses have been minimized through coordination and management prescriptions requiring surveys and avoidance of potential black-footed ferret habitat.

Effects of the Proposed JMH CAP

Effects to the black-footed ferret include possible direct take by sport shooters and collisions with vehicles. Indirect take of the black-footed ferrets can occur from reduction or elimination of habitat from surface disturbing activities (e.g., oil and gas development, exploration activities, mining, rights-of-way, range improvement projects) on or near prairie dog towns or colonies as a result of these activities. Use

of off-highway vehicles (OHV) and other recreational activities in the planning area may also affect the species through disruption and disturbance of habitat.

Determination: May affect, but not likely to adversely affect

Minimization Measures*:* Black-footed ferret surveys would be completed according to current USFWS protocol within 1 year prior to conducting any surface disturbing or disruptive activities in potential ferret habitat areas (prairie dog towns or complexes of 200 or greater with sufficient density). In addition, should a ferret or sign of a ferret be found after the surveys are completed, all disruptive activities would be halted until protective measures developed with the USFWS could be implemented. BLM would cooperate with USFWS and WGFD on any black-footed ferret reintroduction within the JMH CAP planning area.

Measures would also be taken to reduce potential raptor perches in and around prairie dog towns and colonies (e.g., rerouting, burying power lines where feasible, or incorporating ant-perch devices where burying is not possible).

Black-footed ferret habitat would be protected from habitat degradation, and BLM would take proactive measures to improve vegetative character on an as-needed basis, per BLM 6840 policy and Section 7 of the Endangered Species Act.

Ute Ladies'-Tresses *(Spiranthes diluvialis)*

Federal Status: Threatened	State Status: None
Critical Habitat: No	Recovery Plan: Yes

Species Biology and Habitat Requirements

Ute ladies'-tresses orchid is a perennial herb with erect, glandular-pubescent stems 12 to 50 cm tall arising from tuberous-thickened roots. This species flowers from late July to September. Plants probably do not flower every year and may remain dormant below ground during drought years. Flowers are white to ivory in color, faintly fragrant with a spicy scent of coumarin, and 7.5 to 15 mm long. Flower clusters are spirally arranged around the central flowering stalk, with green bracts below each flower. Reproduction is strictly sexual.

Ute ladies'-tresses orchid grows on moist, sub-irrigated or seasonally flooded soils in valley bottoms, gravel bars, old oxbows, or floodplains bordering springs, lakes, rivers, or perennial streams between 1,780 and 6,800 feet elevation (Fertig and Beauvais 1999). Populations have been documented from alkaline sedge meadows, riverine floodplains, flooded alkaline meadows adjacent to woodlands of ponderosa pine and Douglas fir, sagebrush steppe, and streamside floodplains.

Known sites of this species often have low vegetative cover and may be subjected to periodic disturbances (e.g., flooding or grazing). Populations are often dynamic and shift within a watershed as disturbances create new habitat or succession eliminates old habitat (Fertig and Beauvais 1999). The Ute ladies'-tresses orchid is well adapted to disturbances from stream movement and is tolerant of other disturbances, such as light grazing, that are common to grassland riparian habitats and reduce competition between the orchid and other plants (USFWS 1995). It is known to establish in heavily disturbed sites, such as revegetated gravel pits, heavily grazed riparian edges, and along well-traveled foot trails (USFWS 1995). The species is commonly associated with horsetail, wild licorice, yellow sweet clover, blue-eyed grass, goldenrod, and arrowgrass.

Population Distribution

The Ute ladies'-tresses orchid is known to occur from western Nebraska, southeastern Wyoming, north-central Colorado, northeastern and southern Utah, east-central Idaho, southwestern Montana, and north-central Washington (Moseley 1998). The total population is approximately 20,500 individuals.

The Ute ladies'-tresses has not yet been found in southwest Wyoming, although BLM-authorized searches for the species have been performed at several locations along the Green River. The closest known location of the Ute ladies'-tresses to the planning area is on the Green River at Brown's Park, Utah. Potential suitable habitat (all riparian areas below 7,000 feet in elevation) in the planning area was surveyed from 1999 to 2001 with no findings.

Conflicts

The riparian and wetland habitats required by this species have been heavily impacted by urban development, heavy grazing, stream channelization, water diversions, and other watershed and stream alterations that reduce the natural dynamics of the stream system, recreation, and invasion of habitat by exotic plant species (USFWS 1995).

Effects of the Proposed JMH CAP

Although surveys of planning area potential habitat concluded there were no populations of the Ute ladies'-tresses, effects from development activities could occur if the plants were to come out of dormancy when and if current drought conditions cease.

Determination: May affect, but not likely to adversely affect

Minimization Measures: To gather as much information about this species as possible and comply with the provisions of the ESA and BLM national policy, the Rock Springs BLM requires surveys of all suitable areas that could provide habitat for this species prior to engaging in surface disturbing activities (e.g., oil and gas development, exploration activities, mining, rights-of-way, range improvement projects). In addition, should a Ute ladies'-tresses be found after the surveys are completed, all disruptive activities would be halted until protective measures developed with the USFWS can be implemented. Mandatory surveys and avoidance would help to prevent adverse effects to this species within the planning area.

Ute ladies'-tresses habitat would be protected from habitat degradation, and BLM would take proactive measures to improve vegetative character on an as-needed basis, per BLM 6840 policy and Section 7 of the Endangered Species Act.

Blowout Penstemon *(Penstemon haydenii)*

Federal Status: Endangered	State Status: None
Critical Habitat: No	Recovery Plan: Yes

Species Biology and Habitat Requirements

The blowout penstemon is a milky-blue, aromatic, perennial herb. This species flowers from May to early July and produces fruits from late June to mid-July. Each fruit contains an average of 25–35 seeds. Seeds are released in late August to September and are often buried in shifting sand and can remain viable for 20 years. Prolonged wet conditions and abrasion are required for breaking dormancy and seed

germination. The plant is primarily an out-crosser (transfers genes from one plant of the same species to another plant of the same or closely related species), although studies show that it is potentially self-fertile (Fertig 2000).

The blowout penstemon occurs in "blowouts," sparsely vegetated depressions in active sand dunes created by wind erosion. In Wyoming, the blowout penstemon occurs on steep, north-facing slopes of active blowout-like sand dunes with sparse cover of blowout grass, thickspike wheatgrass, lemon scurfpea, and occasional rubber rabbitbrush. Plants are not evenly distributed throughout their habitat but are found in sparse, nonrandom clusters (Fertig 2000).

Population Distribution

There are two known endemic populations of the blowout penstemon exist in the United States, one in the sand hills of west-central Nebraska and two in the northeastern Great Divide Basin in Carbon County, Wyoming. The Wyoming population was first discovered in 1996; however, site visits were conducted annually until July 1999 to confirm the identity of the species. Currently, only 3,500–5,000 plants are found at approximately 13 sites in Nebraska. The Wyoming populations are divided into at least eight main subpopulations that occupy approximately 80 acres within a 5-square-mile area. Based on surveys in 2000, the total Wyoming population is estimated at 4,150–5,840 individuals. The largest population in the state (and apparently the world) occurs on the south slopes of Bear Mountain and adjacent Junk Hill, numbering 3,950–5,540 plants in July 2000. The Bradley Peak population, estimated at 300–500 plants in 1999 (Fertig 2000), apparently declined to 200–300 individuals in 2000. A species survey of potential habitat within the Killpecker Dunes of the planning area was conducted in 2000 with no identification of additional populations.

Conflicts

No long-term trend data are available on the Wyoming population. The cause of the sharp decline in the Nebraska population is also unknown, although wildfire control, severe drought, improvements in range management, leveling of sand dunes, and outbreaks of pyralid moths have all been identified as possible causes (Fertig, 2000).

Effects of the Proposed JMH CAP

Although surveys of known potential habitat within the planning area concluded there were no populations of the blowout penstemon, effects from development activities (e.g., oil and gas), livestock grazing, or recreation could occur because of the future possibility of finding additional habitat within the planning area.

Determination: May affect, but not likely to adversely affect

Minimization Measures: To gather as much information about this species as possible and comply with the provisions of the ESA and BLM national policy, the Rock Springs BLM requires surveys of all suitable areas that could provide habitat for this species prior to engaging in surface disturbing activities. In addition, should a blowout penstemon be found after completion of the surveys, all disruptive activities would be halted until protective measures developed in coordination with the USFWS can be implemented. Mandatory surveys and avoidance would help to prevent adverse effects to this species within the planning area.

Blowout penstemon habitat would be protected from habitat degradation, and BLM would take proactive measures to improve vegetative character on an as-needed basis, per BLM 6840 policy and Section 7 of the Endangered Species Act.

Grizzly Bear (*Ursus arctos horribilis*)

Federal Status: Threatened State Status: Trophy Game Animal

Critical Habitat: No Recovery Plan: Yes

Species Biology and Habitat Requirements

The grizzly bear (grizzly) is one of the largest North American land mammals and is the largest North American omnivore. Male grizzlies stand approximately 8 feet tall, are 3.5 to 4.5 feet at the hump when on all fours, and weigh from 400 to 600 pounds. Females are smaller, usually weighing between 250 and 350 pounds.

Adult grizzlies are generally solitary except when caring for young or during breeding periods. Strict territoriality is unknown, with intra-specific defense limited to specific food concentrations, defense of young, and surprise encounters. Mating season is the only time that adult males and females tolerate one another, and then only during the estrous period. Other social affiliations are generally restricted to family groups of mother and offspring, siblings that may stay together for several years after being weaned, and an occasional alliance of subadults or several females and their offspring (Jonkel and Cowan 1971; Craighead 1976; Herrero 1978).

Home ranges of adult males are generally two to four times larger than those of females (Craighead 1976; Herrero 1978). These home ranges vary in relation to food availability, weather conditions, and interactions with other bears. Thus, the home range may vary seasonally or from year-to-year (Jonkel and Cowan 1971; Craighead 1976).

Key habitat characteristics include (1) availability of preferred foods, such as whitebark pine (*Pinus albicaulis*) seeds, army cutworm moths (*Euxoa auxiliaries*), large ungulates (newly born young and winter kills), and spawning cutthroat trout (*Oncorhynchus clarki*) (Mattson et al. 1991); (2) sufficient cover for bedding and security (Moody et al. 2002; USFWS 1993); and (3) denning locations (USFWS 1993). There is a high preference for forested habitat that provides protection from threats and disturbances. Most suitable grizzly habitat, both biologically and socially, is in areas with large tracts of undisturbed habitat and minimal human disturbance (Moody et al. 2002).

Winter hibernation, which lasts approximately 5 months, is brought on by the decreasing length of daylight and inclement weather. In preparation for this period, grizzlies excavate dens that are usually found at high elevation, on steep slopes where wind and topography cause an accumulation of deep snow, and are well away from areas of human activity (USFWS 1993).

Population Distribution

Historically, the distribution of grizzly bears included the western half of North America. Today, they have disappeared from more than half their former range. Within the United States, grizzly bears persist as identifiable populations in five areas: the Northern Continental Divide, Greater Yellowstone, and Cabinet-Yaak, Selkirk, and North Cascade ecosystems. All these populations, except Yellowstone's, have some connection with grizzlies in southern Canada. Grizzlies potentially occur in two other areas:

the San Juan Mountains of southern Colorado and the Bitterroot ecosystem of Idaho and Montana (Mattson et al. 2003).

Grizzlies were reported in the JMH CAP planning area in July 1841 (Dorn 1986). The JMH CAP planning area is well away (approximately 100 aerial miles) from the Yellowstone Primary Conservation Area (ICST 2003). However, the northern border of the planning area (Wyoming State Highway 28) is the southern most boundary of the Wyoming State Bear Management Area.

Conflicts

A major cause of grizzly population decline is habitat loss. This loss is a result of conversion of native vegetation, depletion of preferred food resources, disturbance, displacement from human developments and activities, and fragmentation of habitat into increasingly small blocks that are inadequate to maintain viable populations. Roads are a major factor in displacing grizzlies, especially the level of traffic associated with a road. Grizzlies living near roads have a higher probability of human-caused mortality as a consequence of illegal shooting, control actions influenced by attraction to unnatural food sources, and vehicle collisions (Moody et al. 2002).

Although no legal sport harvest occurred from 1975 to 2000, 194 known and probable human-caused grizzly bear mortalities were documented in the Yellowstone ecosystem (WGFD 2001). Since the listing of the grizzly, federal law has allowed legal take of any grizzly that was an immediate threat to human safety. Authorized state or federal agency personnel have also taken grizzly bears (classified as management removals) for chronic livestock depredations, property damage, or threat to public safety.

Effects of the Proposed JMH CAP

Currently the WGFD manages the bears in Wyoming outside of Yellowstone and Grand Teton National Parks. Although grizzly bears were historically observed in the planning area, the current habitat available in the planning area lacks cutthroat trout, large moth hatches, and whitebark pine and is characterized by high-desert habitat lacking sufficient forbs and tender grasses (all important grizzly foods). The area is also expected to present many problems associated with bear/livestock conflicts and is highly fragmented by roads. The large herds of bison (*Bison bison*) and bighorn sheep (*Ovis canadensis*) that once supported the grizzly here no longer exist in the planning area. It is our determination that the planning area is no longer capable of supporting a grizzly bear. Under the WGFD Grizzly Bear Management Plan (2002) any bears wondering into the planning area would most likely be relocated due to conflicts with humans and livestock.

Determination: No effect

Minimization Measures: None required

Gray Wolf (*Canis lupus*)

Federal Status:	Nonessential Experimental Population in the Greater Yellowstone ecosystem (GYE)
State Dual Status:	Trophy Game Animal (wolf management areas); Predator (remainder of Wyoming)
Critical Habitat:	No
Recovery Plan:	Yes

Species Biology and Habitat Requirements

Gray wolves are the largest wild members of the canine (*Canidae*), or dog family, with adults ranging from 80 to 110 pounds depending on gender. Height averages 26–32 inches at the shoulder, and length typically measures 4.5–6.5 feet from nose to tail tip. Approximate track size is 4 inches wide by 5 inches long. Pelt color can be highly variable ranging from white to black, with grizzled gray or black being most common in the northern Rocky Mountains (USFWS 1994).

Wolves form family groups referred to as packs. A pack consists of at least two individuals that breed and produce pups. The dominant male and female in the pack produce most of the young though packs may contain two or more adult females that produce (Mech 1991). Breeding occurs during February or March, and pups are born after a 63-day gestation in April or May. Litter sizes in Wyoming have averaged approximately five pups from 1997–2001 (USFWS et al. 2002). Pups remain at the den site for approximately 6 weeks until they are weaned. The pack then moves to rendezvous sites (home sites) until the pups are old enough to hunt with the pack. When pups begin hunting, these rendezvous sites are no longer used and the pack ranges throughout its territory.

Yearlings tend to leave the pack during fall to find a mate and develop a new territory and pack (Fritts and Mech 1981); however, some individuals stay with the pack longer. Pack territories are defended against other wolves. Territory location is advertised to other wolves through scent marking and howling. Territory size appears related to prey density (Ballard et al. 1987; Fuller 1989). Pack sizes typically range from 2–16 wolves but may vary in relation to the size of prey species. The average size of the eight wolf packs currently in Wyoming outside of Yellowstone National Park in 2001 was 8.7 (range 2–12) (USFWS et al. 2002).

Population Distribution

The gray wolf (*Canis lupus*) originally occupied all habitats in North America north of approximately 20° north latitude (in Mexico), except for the Southeastern United States, where the red wolf (*Canis rufanis*) lived. By 1960 the wolf was exterminated by federal and state governments from all of the United States except Alaska and northern Minnesota. Wolves were virtually absent in the western United States (other than an occasional animal that disperses from Canada) from the mid-1930s through 1980 (Ream and Mattson 1982). The nearest breeding population through this period was probably in Banff National Park, Alberta. This led to recolonization of the area and adjacent northwestern Montana, and in 1986 a den was documented in Glacier National Park, Montana (Ream et al. 1989).

The wolf was extirpated from Wyoming by the 1930s and from that time through the early 1990s, occasional wolf sightings occurred though no reproduction was documented. With the goal of reestablishing a sustainable gray wolf population in the northern Rocky Mountains (Wyoming, Idaho, and Montana), the USFWS reintroduced 31 wolves to Yellowstone National Park and 35 wolves to central Idaho in 1995 and 1996 (Bangs et al. 1998). The northern Rock Mountain wolf population is now comprised of three recovery areas: northwest Montana, central Idaho, and the Greater Yellowstone area. The Greater Yellowstone recovery area (GYA) includes all of Wyoming, including Yellowstone National Park, Grand Teton National Park, the National Elk Refuge, and adjacent parts of Idaho and Montana (WGFD 2003). These wolf populations have rapidly expanded in both numbers and distribution calling for possible delisting and the drafting of state management plans in Idaho, Montana, and Wyoming.

Within the JMH CAP planning area, a wolf sighting was recorded in June of 1834 by William Anderson just west of South Pass (Dorn 1986). One known location of a lone wolf within the JMH CAP planning area was reported by WGFD personnel in 2002. This wolf has not been seen since and is believed to have been a young animal, most likely dispersing and looking for a new home range. Wolf sightings have also

occurred outside the planning area to the east (Red Desert) and the west (near Granger) of the planning area.

Conflicts

Direct take by people tends to be the highest form of mortality. Since 1995, 53 percent of documented wolf mortalities in the GYA have been caused by humans (Smith and Guernsey 2002). In areas where human exploitation is low, disease, starvation, and killing by other wolves are the primary causes of wolf mortality.

Effects of the Proposed JMH CAP

Under the current federal management as a Nonessential Experimental Population, any wolves occurring in the planning area will be captured and relocated or destroyed if conflicts occur. When the wolf is removed from the Endangered Species List, the State of Wyoming will be responsible for management of the wolf. Under the current state plan, the wolf is classified as a "Predator" in the planning area and can be shot at will (WGFD 2003).

Determination: Not likely to jeopardize the continued existence of the species

Minimization Measures: Not required

CANDIDATE SPECIES

Western Population of Yellow-Billed Cuckoo (*Coccyzus americanus*)

Federal Status: Candidate	State Status: NSS2[3]
Critical Habitat: No	Recovery Plan: No

Species Biology and Habitat Requirements

The western population of the yellow-billed cuckoo (cuckoo) is a slender, long-tailed, robin-sized bird with a moderately long, down-curved bill. It is brownish gray in color with white underparts and a striking yellow base of the lower mandible, for which the species is named. The outer tail feathers have distinctive broad white tips, giving the appearance of six large white spots on the underside. Although more than 75 percent of the cuckoo's diet comprises grasshoppers and caterpillars, they have been known to eat beetles, cicadas, wasps, flies, lacewings, mosquito hawks, and other insects.

Cuckoos arrive on their western breeding grounds in mid-June and leave for South America by late August. Breeding often coincides with the appearance of large numbers of spring insects. Cuckoos have the shortest combined incubation/nesting period of any bird species. Clutch size usually ranges between three and five, and egg incubation is shared by both males and females. Though unable to fly, the newly fledged young are adept crawlers, traveling up to 150 feet on their first day out of the nest. After 3 to 4 weeks, they are able to begin their migration to South America (Center for Biological Diversity 2002).

Cuckoos are primarily found in open, streamside deciduous woodland with low scrub vegetation. They generally prefer cottonwood stands for foraging and willow thickets for nesting. They also require

[3] Species in which (1) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are greatly restricted or declining or (2) species with ongoing significant loss of habitat and populations that are declining or restricted in numbers and distribution (but extirpation is not imminent).

relatively large riparian tracks below 7,000 feet for breeding, which are severely limited in Wyoming (WYNDD 2002).

Population Distribution

The cuckoo formerly ranged across southern Canada, the United States, and northern Mexico. It has been nearly extirpated in the West and is restricted to small isolated populations. It is considered extremely rare in the Northern Rockies and Great Plains. An estimated 90 percent of the bird's riparian habitat in the West has been destroyed or degraded as a result of human activity. The species is no longer found in British Columbia, Washington, Oregon, or Nevada.

Little is known about the historic distribution of cuckoos in Wyoming; reported observations have been relatively few. Breeding pairs may be found in the Green River and Powder River Basins, along the North Platte River to Casper, and along the Henry's and Black's Fork Rivers. One observation of the cuckoo in 1994 was made at Seedskadee National Wildlife Refuge, which is a minimum of 30 miles from the planning area. Within the planning area, the type of habitat the cuckoo prefers is severely limited. There are no cottonwoods but only small thickets of coyote willow near the Sweetwater River. All riparian areas are also located above 7,400 feet in elevation. No formal surveys within the planning area have been conducted.

Conflicts

Loss of habitat is probably the greatest threat facing the cuckoo. Dams and river flow management, overgrazing, land conversions associated with agriculture, and infestations of exotic plants have severely impacted riparian habitat throughout the West, including Wyoming (Laymon 1987; Hughes 1999; UDSI FWS 2000, 2001).

Effects of the Proposed JMH CAP

No potential habitat exists within JMH CAP planning area because of lack of trees for foraging and the high altitude of all riparian areas in the planning area (exceeds 7,400 feet). As stated in information from the Wyoming Natural Diversity Database, yellow-billed cuckoo require relatively large riparian tracks below 7,000 feet for breeding (WYNDD 2002).

Determination: No effect

Minimization Measures: None required

Water Depletions

There are three watersheds draining the planning area (Map 61): Green River Basin (60 percent), Platte River Basin (9 percent), and Great Divide Basin (31 percent). The Pacific, Jack Morrow, and Killpecker Creeks are part of the Green River Basin, which drains into the Colorado River Basin, and the Sweetwater River is part of the Platte River Basin. The Great Divide Basin is a closed watershed and therefore does not drain into either the Colorado or Platte River Basins.

Water developments from these two systems (the Colorado and Platte River Basins) have caused reduced peak discharges and pulse flows, which are having a negative effect on downstream species. Water depletions reduce the ability of the river system to create and maintain important habitats for these species by limiting nutrient supply and productivity, and therefore food supply, brought about by high spring flows. They are also contributing to incremental reductions in groundwater levels, which adversely affect

wetland habitats because of their requirement of periodic saturation near or above the soil surface to maintain their characteristics.

The depletions caused by activities within the Colorado River drainage in the JMH CAP area were described in the Green River RMP and addressed in its Biological Opinion. However, Platte River depletions were not identified in that document and the oil and gas reasonably foreseeable development (RFD) for this area has been updated. Because of this, a description of new depletions specific to this project area is provided. For purposes of comparison or tracking, water depletions are anticipated to occur by using water for the drilling of oil and gas wells (typical deep wells and coalbed gas wells) and potentially from livestock watering pits or ponds. Water that would be withdrawn from an aquifer during the coalbed gas process and the extent to which it connects to surface flows would be analyzed in site-specific environmental documents. Historic depletions were addressed in the Green River RMP (for the Colorado River Basin) and the *Programmatic Biological Assessment for Minor Water Depletions Associated with Reissuing of BLM Grazing Leases in the Platte River Basin,* July 1, 1999 (for the Platte River Basin) and are repeated in this document for tracking purposes.

Colorado River Species

Four species of fish in the upper Colorado River system are federally listed as endangered. They are the Colorado pikeminnow (*Ptychocheilus lucius*), the humpback chub (*Gila cypha*), the bonytail chub (*Gila elegans*) and the razorback sucker (*Xyrauchen texanus*). Although these fish currently exist only downstream from the planning area, water from the Upper Green River basin affects their downstream habitat. Historically, under the Recovery and Implementation Program (RIP) for Endangered Fish Species in the Upper Colorado River Basin, any water depletions from tributary waters within the Colorado River drainage were considered as jeopardizing the continued existence of these fish. Tributary water is defined as water that contributes to instream flow habitat. Depletion is defined as water that would contribute to the river flow if not intercepted and removed from the system.

The RIP was developed as part of a cooperative effort between Colorado, Utah, and Wyoming; the Bureau of Reclamation (BOR); USFWS; private water development interests; and various environmental groups. In addition, a cooperative agreement was signed by the governors of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the Administrator of the Western Area Power Administration, Department of Energy, to further implement the RIP.

The Green River RMP (ROD signed October 1997) covered the discussion on depletions to the Colorado River system for the entire Rock Springs Field Office. The biological opinion received from USFWS dated July 12, 1994, waived the depletion fee for the Green River RMP because the average annual depletions were expected to be less than 100 acre-feet. This expectation was based on a previous biological opinion by the USFWS, which stated that the RIP was making sufficient progress (July 5, 1994). For this basin, all existing livestock watering facilities are identified and covered by the Green River RMP Biological Assessment/Biological Opinion because most, if not all, of the livestock watering impoundments addressed in this document would be a reconstruction of existing facilities.

The BLM retains discretionary authority over individual projects within the area for the purpose of endangered species consultation. If the recovery program is unable to implement the RIP in a timely manner or make sufficient progress in recovery of these endangered species, reinitiating of Section 7 consultation may be required so that new reasonable and prudent alternatives can be developed.

It is assumed that approximately 95 percent of the water used for gas drilling would be from the Colorado River drainage (i.e., 95 percent of the wells would be within this watershed). Depletions from oil and gas and coalbed gas well drilling processes would total approximately 368 acre-feet over the planning period

for the Colorado River drainage. The average annual depletion is expected to be 18 acre-feet. The depletion analysis for coalbed gas development only considers withdrawals for well drilling and completion. Dewatering for coalbed gas production will be evaluated during the site-specific analyses required for the Application for Permit to Drill process. Water withdrawn to dewater coal seams for coalbed gas production may or may not impact surface water flows, and any potential impacts to surface water will be addressed on a site-specific basis.

It is estimated that 23 livestock pits, ponds, and water wells may be created or rebuilt in the JMH CAP planning area. Average annual depletions that are anticipated by 19 livestock water developments in this basin would not exceed 4.75 acre-feet after all are installed. The total average annual depletion expected under these assumptions is approximately 23 acre-feet.

Table A3-1. Water Use in the Colorado River Drainage

Action	Number	Water Use per Action (acre-feet)	Total Water Use (acre-feet)	Project Lifespan (years)	Average Annual Depletion (acre-feet)
Oil and Gas Drilling [a]	245	1.5	367.5	20	18.4
Livestock Water Impoundments [b]	19	5	95	20	4.75
Total	264	6.5	463	20	23.15

[a] Oil and gas wells would be drilled during the non-winter months (approximately May–November), but exceptions could be granted. Industry estimates for this area for water needed for drilling and completion of wells. See Appendix 13 for reasonably foreseeable development assumptions.

[b] Water depletion from livestock impoundments is based on the following assumptions: (1) all are installed in year one of the 20 year planning period, (2) ponds average one-quarter acre in surface area, (3) evaporation rate from surface water equals the summertime peak rate of one-quarter inch per day, and (4) water would remain in the pond for 48 days. Resultant calculations yield a depletion of 0.25 acre-feet per pond per year or 5 acre-feet per pond for the 20-year planning period.

No other water depletions for the planning area are anticipated at this time. It is assumed that water used for hydrostatic testing of gas pipelines results in a "no net loss" to the associated basin because the water used is released back into the same basin. This assumes that if water were taken directly from surface flows it would be released back into surface waters at or below the point of diversion. Any variations from these assumptions would be analyzed on a site-specific basis.

Determinations: May affect, likely to adversely affect the four endangered Colorado River fishes and their critical habitat

Minimization Measures*:* Water depletion would occur within the Colorado River Basin. Formal consultation will occur with the USFWS. Minimization measures will be determined through consultation with USFWS.

Platte River Species

Seven species in the Platte River system are federally listed as threatened or endangered. They are the endangered whooping crane (*Grus americana*), endangered interior population of least tern (*Sterna antillarum*), threatened piping plover (*Charadrius melodus*), endangered pallid sturgeon (*Scaphirhynchus albus*), threatened bald eagle (*Haliaeetus leucocephalus*), endangered Eskimo curlew (*Numenius borealis*), and the threatened western prairie fringed orchid (*Platanthera praeclara*). Though they currently exist only downstream from the planning area, water from the Sweetwater River affects the

downstream habitat for these species. Any water depletions from this tributary water of the Platte River are considered to negatively affect these species or their habitat.

Under the *Revised Intra-Service Section 7 Consultation for Federal Agency Actions Resulting in Minor Water Depletions to the Platte River System,* March 2002, individual federal actions that result in annual water depletions of 25 acre-feet or less to the Platte River system are considered as "may adversely affect, but are not likely to jeopardize the continued existence of the whooping crane, interior population of least tern, piping plover, and pallid sturgeon, Eskimo curlew, western prairie fringed orchid, or the bald eagle" (USDI 2002).

It is assumed that less than five percent of the water to be used for oil and gas drilling processes is part of the Platte River system. This is because of the small amount of area within the planning area that drains into the Platte River. Depletions resulting from drilling operations for oil and gas wells would total approximately 15 acre-feet over the planning period for the Platte River system. The average annual depletion from drilling activities is anticipated to be 0.75 acre-feet.

For this basin, all existing livestock water developments are identified and covered by the *Programmatic Biological Assessment for Minor Water Depletions Associated with Reissuing of BLM Grazing Leases in the Platte River Basin,* July 1, 1999. Most, if not all, water developments addressed in this document would be a reconstruction of existing facilities. Livestock water development average annual depletions would not exceed 1 acre-foot after all are installed.

Table A3-2. Water Use in the Platte River Drainage

Action	Number	Water Use Per Action (acre-feet)	Total Water Use (acre-feet)	Project Lifespan (years)	Average Annual Depletion (acre-feet)
Oil and Gas Drilling [a]	10	1.5	15	20	0.75
Livestock Water Impoundments [b]	4	5	20	20	1
Total	14	6.5	35	20	1.75

[a] Oil and gas wells would be drilled during the non-winter months (approximately May–November,) but exceptions could be granted. Industry estimates for this area for water needed for drilling and completion of wells. See Appendix 13 for reasonably foreseeable development assumptions.

[b] Water depletion from livestock impoundments is based on the following assumptions: (1) all are installed in year one of the 20 year planning period, (2) ponds average one-quarter acre in surface area, (3) evaporation rate from surface water equals the summertime peak rate of one-quarter inch per day, (4) water would remain in the pond for 48 days. Resultant calculations yield a depletion of 0.25 acre-feet per pond per year or 5 acre-feet per pond for the 20-year planning period.

No other water depletions for the planning area are anticipated at this time. It is assumed that water used for hydrostatic testing of gas pipelines results in a "no net loss" to the associated basin because the water used is released back into the same basin. This assumes that if water were taken directly from surface flows it would be released back into surface waters at or below the point of diversion. Any variations from these assumptions would be analyzed on a site-specific basis.

***Determinations**:* May affect, likely to adversely affect the continued existence of the species (interior population of least tern, piping plover, pallid sturgeon, whooping crane, piping plover, Eskimo curlew, western prairie fringed orchid, and bald eagle); may affect, likely to adversely affect critical habitat for whooping crane and piping plover

***Minimization Measures**:* Water depletion would occur within the Platte River Basin. Formal consultation will occur with the USFWS to determine what measures would be required to minimize impacts to the above species and their habitats.

INTERRELATED AND INTERDEPENDENT ACTIONS

BLM has the discretionary authority to authorize actions on public lands (50 CFR §402.02) for development activities. As defined by the Federal Land Policy and Management Act of 1976 (FLPMA), "public lands" are those federally owned lands, and any interest in lands (e.g., federally owned mineral estate), that are administered by BLM. Within the planning area, there are varied and intermingled land surface ownerships and overlapping mineral ownerships. Therefore, the administrative jurisdictions for land use planning and for managing the land surface and minerals are also varied, intermingled, and overlapping. Because of this situation, the completed JMH CAP will not include planning and management decisions for lands or minerals that are privately owned or owned by the State of Wyoming or local governments. Providing direction for the surface or minerals management of these lands is not within BLM's jurisdiction. However, because Section 7 of the ESA and the requirements of 50 CFR §402 apply to all actions in which there is discretionary federal involvement or control, actions that the BLM authorizes, such as easements, leases, or permits, may interdependently affect ESA species on nonfederal lands. If a species protected under the Endangered Species Act is suspected of occurring on nonfederal lands and may be affected by an action on the nonfederal lands and that action would not occur but for the granting of an action on the federal lands (i.e., right-of-way), then consultation under Section 7 of the Endangered Species Act must be conducted for both the federal and nonfederal lands.

Potential impacts to ESA species could occur from BLM granting access to state and/or private lands through designation of easements and/or rights-of-way across public land. However, BLM has the jurisdiction to disallow a right-of-way and/or easement if the action is likely to facilitate jeopardizing a listed species on private lands.

Less than 10 percent (47,540 acres) of the planning area is state, private, or federal land outside of BLM's jurisdiction. Under the Proposed JMH CAP, a portion of the planning area will be closed to mineral leasing and development (Map 54). The remaining portion of the planning area will be open to mineral leasing and development with mitigation applied as appropriate. Impacts to threatened and endangered species could occur on state and private lands as a result of closing a portion of the planning area to the new leasing because those lands may be open to development. However, impacts are expected to be minimal because the amount of state and private land in the planning area is small and the land is dispersed throughout.

SPECIES NO LONGER ADDRESSED

Mountain Plover (*Charadrius montanus*)

Federal Status: None

State Classification: Imperiled (Not of significant concern)

Critical Habitat: No Recovery Plan: No

The USFWS determined that the mountain plover does not warrant listing under the ESA and therefore will not be addressed further in this document. In accordance with BLM guidance, the mountain plover will initially be addresses as a "Wyoming BLM Sensitive Species."

Whooping Crane *(Grus americana)*

Federal Status: Extirpated (Western Wyoming) State Status: None

Critical Habitat: Yes Recovery Plan: Yes

In 2001, the last bird in the Gray's Lake flock died, and the whooping crane population in western Wyoming is now considered extirpated; therefore, the whooping crane will not be considered further in this document.

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