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 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 action is likely to adversely affect listed species or critical habitat, or the aforementioned federal agencies do not concur with the action agency's finding (USFWS, Consultation Handbook, 1998).

Under the 1994 Memorandum of Understanding (MOU) and the 2000 Memorandum of Agreement (MOA) among the BLM, U.S. Forest Service (USFS), 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 biological assessment provides documentation for the proposed action 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 has been prepared under the 1973 ESA Section 7 regulations, in accordance with the 1998 procedures set forth by USFWS and NMFS, and in accordance with the 1994 and 2000 MOU and MOA, respectively.

As part of this biological assessment, BLM requests formal consultation for the four federally listed species of fish in the upper Colorado River system: the Colorado pikeminnow (*Ptychocheilus lucius*), the humpback chub (*Gila cypha*), the bonytail chub (*Gila elegans*) and the razorback sucker (*Xyrauchen texanus*); and seven federally listed species in the Platte River system: the endangered whooping crane (*Grus americana*), endangered interior 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*). Informal consultation is requested for the federally listed black-footed ferret (*Mustela nigripes*), Ute Ladies'-Tresses (*Spiranthes diluvialis*), and the blowout penstemon (*Penstemon haydenii*). Although the mountain plover is a proposed species and not formally listed, the BLM treats it as a listed species and manages accordingly. Therefore, BLM requests USFWS concurrence with the determination made in this biological assessment. BLM also requests recommendations from the USFWS on the management of habitat for the candidate western subspecies of yellow-billed cuckoo.

PROJECT DESCRIPTION

The Green River Resource Management Plan (RMP) deferred mineral decisions in a "core" area (approximately 85,000 acres), involving the eastern portion of the Greater Sand Dunes Area of Critical Environmental Concern (ACEC) (not including any parts of Buffalo Hump or Sand Dunes Wilderness Study Areas [WSA]), the entire Steamboat Mountain ACEC, and the area of overlapping crucial big game habitats surrounding and adjacent to the Greater

Sand Dunes and Steamboat Mountain ACECs (Map 51 and Map 14). The primary objective of this project is to prepare a Jack Morrow Hills Coordinated Activity Plan (JMH CAP), which provides more specific management direction to prevent or address potential conflicts among energy resources development, recreational activities, livestock grazing, important wildlife habitat, and other important land and resource uses in the planning area, and determine the appropriate levels and timing of leasing and development of energy resources. Decisions made in the supplemental draft environmental impact statement (EIS) for the JMH CAP will result in amending the Green River 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). It also encompasses the Steamboat Mountain, Greater Sand Dunes, White Mountain Petroglyphs, and Oregon Buttes ACECs, a portion of the South Pass Historic Landscape, and the Oregon Buttes, Honeycomb Buttes, Sand Dunes, Buffalo Hump, Whitehorse Creek, South Pinnacles, and Alkali Draw WSAs.

FEDERAL THREATENED AND ENDANGERED SPECIES

Bald Eagle (*Haliaeetus leucocephalus*)

Federal Status: Threatened State Status: Threatened

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 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 about 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, although they will fly up to 15 miles where these elements are sparsely distributed across the landscape (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.

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. Over the past two decades, poison baits set out to attract coyotes have caused the deaths of numerous bald eagles in Wyoming. Unauthorized poison baits placed on public lands is also a direct threat to bald eagles inhabiting the planning area. Shooting is another significant factor, causing an estimated mortality of 75% of the fledglings in some areas. Electrocution, while still a problem, has been reduced through alteration and redesign of many power transmission systems.

Black-footed Ferret (*Mustela nigripes*)

Federal Status: Endangered	State Status: Endangered
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, it is easier to conserve water, and they are protected 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 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).

Based on archeological and historical evidence, researchers have concluded that the black-footed ferret has never been very abundant. 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 for so few sightings 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.

From 1851, when the first ferret was described by Audubon, to 1976, 145 sightings of at least 167 animals were evaluated as valid or likely valid sightings across the species range. Of the 145 reports, 93 were classified as positive, 37 probable, and 15 possible; 35 or 36 were of dead animals (10 or 11 killed in coyote traps, 2 in badger traps, 1 was shot, 1 a road kill, and 1 drowned in a stock tank). Additional mortality may be attributed to poisoning by baits set out for coyotes. Young ferrets were reported in three instances. The diversity and competence of respondents lends credence to their sightings; such evidence indicates that ferrets still exist in Wyoming and possibly within the planning area.

Populations of black-footed ferrets are undetermined in the planning area. Historical documentation exists of the presence of ferrets in 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.

Conflicts

Past animal damage control programs probably have had the greatest impact on ferret mortality.

From the 1920s until the mid-1970s, predator control through trapping and poisoning 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.

Varmint hunters seek out prairie dog colonies for target shooting. Because few people can distinguish between a ferret, a burrowing owl, or a prairie dog peering over a prairie dog mound, it is assumed that some black-footed ferrets have been killed accidentally by target shooters.

Land use activities such as rights-of-ways, energy developments, use permits, urban expansion, mineral extraction, and grazing projects can reduce or fragment ferret habitat and therefore require inventory and clearances. Habitat losses have been minimized through coordination and management prescriptions requiring surveys and avoidance of potential black-footed ferret habitat.

Whooping Crane *(Grus americana)*

Federal Status: Endangered (Western WY—Extinct) State Status: Endangered

Critical Habitat: Yes Recovery Plan: Yes

An effort to create a wild flock with an alternate migratory route was initiated in 1975, using sandhill cranes as "foster parents." Whooping crane eggs were placed in the nests of sandhill cranes on their nesting grounds at the Grays Lake National Wildlife Refuge in Idaho. This experimental population was then called the Gray's Lake flock. As of March 21, 1990, only 13 whooping cranes were known to be alive and free-roaming in the Gray's Lake flock. Several of these found their way into the Rock Springs Field Office area over the past decade. During 1987 and 1988, a pair spent part of the summers in Farson crop fields and wetlands. Two observations of whooping crane were made along Pacific Creek wetlands in 1991 and 1992. In 2001, the last bird in the Gray's Lake flock died, and the whooping crane population in western Wyoming became extinct.

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, subirrigated 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 ponderosa pine-Douglas fir woodlands, 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).

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 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 in Nebraska at approximately 13 sites. The Wyoming populations are subdivided into at least 8 main subpopulations that occupy about 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 is 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 causes (Fertig, 2000).

PROPOSED SPECIES

Mountain Plover *(Charadrius montanus)*

Federal Status: Proposed State Status: None

Critical Habitat: No Recovery Plan: No

Species Biology and Habitat Requirements

The mountain plover is pale sandy-brown in color, with a white neck and underparts. The crown and bill are black, and a black stripe extends from the base of the beak to the eye. During winter months, the plumage is pale and the dark headbands are absent. Males and females are similar in size and color. Their diet consists of various arthropods, with grasshoppers, crickets, and ants being the most important food items (Baldwin 1971).

Mountain plovers arrive on their breeding grounds in mid-April. Clutches are usually hatched in June and chicks fledge by late July. The fall migration begins in late August, and most birds are gone from the breeding grounds by late September.

Mountain plover nests consist of a small scrape on flat ground in open areas. Parrish, et al. (1993) noted that mountain plover nests in northeastern Wyoming were found in areas of short (< 4 inches) vegetation on slopes of less than 3 percent. Any short grass, short shrub, or cushion plant community could be considered as nesting habitat.

Population Distribution

The mountain plover inhabits high, dry short-grass plains/prairies east of the Rocky Mountains, as well as the sagebrush grasslands throughout Wyoming, northern Utah, and northwestern Colorado. In Wyoming, it is most often found in areas used historically or currently by prairie dogs and pronghorn antelope. Breeding activity within Wyoming occurs from central-north Albany County west to Lincoln and Sublette Counties (USDI 2001). Mountain plovers have been documented nesting in the cushion plant communities and windswept ridges of the planning area (Beauvais and Smith 1999).

Surveys conducted between 1966 and 1987 show an overall decline in the continental population of mountain plovers (U.S. Department of Agriculture, Forest Service 1994a). Surveys completed in 1991 indicate that only 4,360 to 5,610 mountain plovers remain on the North American continent (with fewer than 1,500 in Wyoming).

Conflicts

Conversion of grassland habitat, agricultural practices, management of domestic livestock, and declines in native herbivore populations are factors that have likely contributed to the mountain plover's decline. Specifically, loss of breeding habitat resulting from cultivation activities and prey base declines resulting from pesticide use are significant threats to mountain plover survival. Livestock grazing may benefit the species by maintaining the open blue grama/buffalo grass preferred by mountain plovers but can also adversely affect prey species by reducing the forage base.

CANDIDATE SPECIES

Western Yellow-billed Cuckoo (*Coccyzus americanus*)

Federal Status: Candidate State Status: None

Critical Habitat: No Recovery Plan: No

Species Biology and Habitat Requirements

The western subspecies 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 relatively large riparian tracks below 7,000 feet for breeding, which is 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; there have been relatively few reported observations. 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. 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 ACTION

Following is an analysis of effects, determination, and minimization measures for candidate, proposed, threatened, and endangered species contained in this document. Potential habitat of special status wildlife species would require searches for the species prior to approving any project or activity. Should species be found, all disruptive activities would be halted until protective measures developed in coordination with the USFWS are implemented. Mitigation measures would be species-specific and determined on a case-by-case basis in coordination with the USFWS. Special Status Species' habitat would be protected from habitat degradation, and BLM would take proactive measures to improve vegetative character on an as-needed basis, as per BLM 6840 Regulations and Section 7 of the Endangered Species Act.

Bald Eagle

Because the bald eagle is a casual migrant within the planning area, no effects are expected to occur.

Determination: No Effect

Black-Footed Ferret

Effects to the black-footed ferret include possible take of the species through reduction or elimination of habitat from surface disturbing activities on or near prairie dog towns or colonies as a result of mineral development activities. Use of off-highway vehicles (OHV) in the planning area may also affect the species through disruption and disturbance of habitat. Recreational shooting may have an effect on the black-footed ferret because shooters often cannot distinguish a prairie dog from a ferret and may end up killing an animal resulting in a taking.

It is important to note that black-footed ferret populations are expected to remain low, despite BLM efforts to minimize activities that could impact prairie dog colonies, because researchers have concluded the black-footed ferret has never been very abundant.

Determination: May affect, but not likely to adversely affect.

Minimization Measures: Black-footed ferret searches would be required within 1 year prior to authorizing any surface disturbing or disruptive activities in all or portions of potential ferret habitat areas (prairie dog towns or complexes of 200 or greater with sufficient density). Should a ferret or ferret sign be found, all disruptive activities would be halted until protective measures developed in coordination with the USFWS can be implemented. BLM would cooperate with USFWS and Wyoming Game and Fish Department on any black-footed ferret reintroduction within the JMH area.

Measures would also be taken to reduce potential raptor perches in and around prairie dog towns and colonies.

Ute Ladies'-Tresses

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. Should a Ute Ladies'-Tresses be found, 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 affects to this species within the planning area.

Blowout Penstemon

Although surveys of known potential habitat within the planning area concluded there were no populations of the blowout penstemon, effects from development activities 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. Should a blowout penstemon be found, 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 affects to this species within the planning area.

Mountain Plover

Effects to the mountain plover that may result in a taking or displacement of adults from a nest would occur from development activities that cause surface disturbance and disruption. Because of the mountain plover's affinity to nest in open areas with short vegetation and return to the same general areas to nest, adverse impacts would include direct mortality from traffic, including OHVs, on access roads; displacement of adults from nesting activities causing direct mortality to chicks from higher predation and heat exhaustion on chicks resulting from construction and well maintenance activities that cause noise and surface disruption and habitat loss, conversion, and fragmentation; and predation by raptors, ravens, foxes, and coyotes from creation of rights-of-way for power or telephone lines, fence installation, and building installation. The construction of roads for energy development also increases disturbance to the plover from other users such as recreationists and ranchers. Wildfire management activities may also have an effect on the mountain plover from potential crushing of nest, eggs, or chicks by fire suppression activities. Mountain plover habitat in the planning area does not contain sufficient fuels to carry prescribed fire; therefore, habitat would not be considered for prescribed burns and no effect would occur. Range developments may also affect the mountain plover through habitat loss or conversion.

Determination: May affect, but not likely to adversely affect if the plover is listed during the life of the plan.

Minimization Measures: Surveys would be conducted to identify nesting habitat/locations of the mountain plover consistent with the USFWS Mountain Plover Survey Guidelines. Should a mountain plover or nest be found, all disruptive activities would be halted until protective measures developed in coordination with the USFWS can be implemented. Active mountain plover nesting concentration areas would be avoidance areas for surface disturbing and disruptive activities within a quarter of a mile of the area from April 10 to July 10. Traffic speeds on BLM roads during the brood rearing period (June and July) would be limited within a quarter of a mile of nesting concentration areas. Measures would be taken to limit hunting perches or nest sites for avian predators within a quarter of a mile of nesting concentration areas. Exceptions or other mitigation measures could be applied on a case-by-case basis, as determined by BLM in coordination with the USFWS and commodity users.

Western Yellow-Billed Cuckoo

Possible adverse effects to the western subspecies of the yellow-billed cuckoo (cuckoo) could occur from activities such as grazing, water depletions and/or diversions associated with oil and gas or livestock water development, and noxious weed invasion from grazing and surface disturbing activity. Grazing and surface disturbing activities could result in soil compaction and loss of vegetative cover and therefore reduced infiltration and increased runoff and sedimentation of surface waters. Promotion of invasive plant species would also occur with grazing and surface disturbing activities. Other potential, adverse impacts from livestock grazing activities could include channel destabilization and nutrient loading of surface waters. Water depletions and diversions would also occur in potential habitat, however because potential habitat for the cuckoo in the planning area is within the Platte River drainage, depletions and diversions would be minimal and therefore would not significantly adversely affect the cuckoo (see the following section for an in-depth discussion on depletions).

Determination: May affect, but not likely to adversely affect.

Minimization Measures: Surveys would be conducted to identify nesting habitat/locations prior to any surface disturbing activities. Should a cuckoo or nest be found, all disruptive activities would be halted until protective measures developed in coordination with the USFWS can be implemented.

The area within 500 feet of wetlands, riparian areas, and 100-year floodplains, and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, would be avoided and 100-year floodplains, wetlands, and riparian areas would be closed to new permanent facilities (e.g., storage tanks, structure pits).

Implementation of healthy rangeland standards, guidelines for livestock grazing, and desired plant community (DPC) objectives would ensure proper management of livestock resources and serve to minimize adverse impacts to watershed resources and water quality.

Executive Order 13112 regarding invasive species would be followed and the introduction of invasive species would be prevented and monitored, and populations would be controlled in a cost-effective and environmentally sound manner. All surface disturbing activities would be subject to best management practices (See Appendix 6) that eliminate or severely reduce the potential for introducing invasive species.

Water Depletions

There are three watersheds draining the planning area (Map 61): Green River Basin (60%), Platte River Basin (9%), and Great Divide Basin (31%). 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.

Basin-wide impoundments and diversions 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 native fish populations and wetland dependent 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 ground water 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 methane wells) and potentially from livestock watering pits or ponds. Water that would be withdrawn from an aquifer during the coalbed methane process 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" of July 1, 1999, (for the Platte River Basin) and are repeated in this document for tracking purposes.

Colorado River Species

There are four species of fish in the upper Colorado River system that 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*). Though they currently exist only downstream from the planning area, water from the Upper Green River basin affects the downstream habitat for these fish. Under the Recovery and Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (RIP), any water depletions from tributary waters within the Colorado River drainage are 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 (record of decision [ROD] signed October 1997) covered the discussion on depletions to the Colorado River system for the entire 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 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, reinitiation 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 methane 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 methane development only considers withdrawals for well drilling and completion. Dewatering for coalbed methane 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 methane production may or may not impact surface water flows, and any potential impacts to surface water and mitigation requirements will be developed 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*	245	1.5	367.5	20	18.4
Livestock Water Impoundments*	19	5	95	20	4.75
Total	264	6.5	463	20	23.15

*Footnotes: Oil and gas wells would be drilled during the "nonwinter" months (approximately May–November) but exceptions could be granted.

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 summer-time 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/pond/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. Water used for hydrostatic testing of gas pipelines results in a "no net loss" to the associated basin as the water used is released back into the same basin.

Determinations: Likely to jeopardize the continued existence of the species.

Minimization Measures: Water depletion would occur within the Colorado River basin. Formal consultation will occur with the USFWS to determine the necessary mitigation requirements.

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 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.

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 which 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, least tern, piping plover, and pallid sturgeon" and "likely to adversely affect, but are not likely to jeopardize the continued existence of the Eskimo curlew, Western prairie fringed orchid, or the bald eagle" (USDOI 2002).

It is assumed that less than five percent of the water to be use 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, which 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* of 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*	10	1.5	15	20	0.75
Livestock Water Impoundments*	4	5	20	20	1
Total	14	6.5	35	20	1.75

*Footnotes: Oil and gas wells would be drilled during the "nonwinter" months (approximately May–November) but exceptions could be granted.

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 summer-time 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/pond/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. Water used for hydrostatic testing of gas pipelines results in a "no net loss" to the associated basin as the water used is released back into the same basin.

Determinations: May adversely affect, not likely to jeopardize, the continued existence of the species (least tern, piping plover, and pallid sturgeon). Likely to adversely affect, but not likely to jeopardize the continued existence of the species (Eskimo curlew, Western prairie fringed orchid, and the bald eagle [those species nesting within the lower Platte River system]).

Minimization Measures: Water depletion would occur within the Platte River basin. Formal consultation will occur with the USFWS to determine the necessary mitigation requirements.

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.

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 action adaptive management approach, approximately one-third of the planning area will be open to mineral leasing and development (Map A17-1). The remaining portion of the planning area will be held in suspension, and no new leases will be offered pending the results of indicator monitoring. Impacts to threatened and endangered species could occur on state and private lands as a result of holding leases in suspension 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. It is also assumed that state and private landowners are responsible for initiation of consultation with the USFWS should there be a possible threatened and endangered species on their land.

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