APPENDIX G

BIOLOGICAL ASSESSMENT FOR THE WEST HAY CREEK LBA TRACT AND BLM SENSITIVE SPECIES EVALUATION

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ABBREVIATIONS AND ACRONYMS

BLM	Bureau of Land Management
CBM	coal bed methane
CFR	Code of Federal Regulations
COE	US Army Corps of Engineers
EIS	environmental impact statement
ESA	Endangered Species Act of 1973
FS	Forest Service
FLPMA	Federal Land Policy Management Act of 1976
FWS	Fish and Wildlife Service
LBA	lease by application
MLA	Mineral Leasing Act of 1920
OSM	Office of Surface Mining Reclamation & Enforcement
PRB	Powder River Basin
PRES	Powder River Eagle Studies
SMCRA	Surface Mining Control and Reclamation Act of 1977
T&E	threatened and endangered
TWC	Thunderbird Wildlife Consulting, Inc.
WDEQ	Wyoming Department of Environmental Quality
WDEQ/LQD	Wyoming Department of Environmental Quality/Land Quality Division
WGFD	Wyoming Game and Fish Department

INTRODUCTION

On August 31, 2000, Triton Coal Company, LLC (Triton) filed an application with the Bureau of Land Management (BLM) for federal coal reserves in a tract located north of and adjacent to the Buckskin Mine in Campbell County, Wyoming. The environmental impacts of leasing this lease by application (LBA) tract are evaluated in the environmental impact statement (EIS) for the West Hay Creek Lease Application.

The purpose of this biological assessment is to provide information about the potential environmental effects that leasing the West Hay Creek LBA tract would have on federally endangered, threatened, proposed, and candidate species.

Threatened and endangered (T&E) species are managed under the authority of the Endangered Species Act (ESA) of 1973 (PL 93-205, as amended). The ESA requires federal agencies to ensure that all actions which they authorize, fund, or carry out are not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of their critical habitat.

This biological assessment was prepared to display the possible effects to endangered, threatened, experimental, proposed, or candidate wildlife or vegetative species (terrestrial and aquatic) known to occur or that may occur within the area influenced by the Preferred Alternative of the BLM. It was prepared in accordance with section 7 of the ESA.

The objectives of this biological assessment are to comply with the requirements of the ESA which states that actions of federal agencies should not jeopardize or adversely modify critical habitat of federally listed species, and to provide a process and standard by which to ensure that threatened, endangered, and proposed species receive full consideration in the decision-making process.

The Wyoming BLM has also prepared a list of sensitive species to focus species management efforts towards maintaining habitats under a multiple use mandate. The authority for this policy and guidance comes from the ESA of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and Department Manual 235.1.1A.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action, which is to lease the federal coal in West Hay Creek LBA tract as applied for, and three alternatives to that proposed action are analyzed in the final EIS. Under Alternative 1, which is the No Action alternative, BLM would reject the application to lease the West Hay Creek LBA tract. Alternatives 2 and 3 evaluate leasing a tract that has been modified by BLM. BLM's Preferred Alternative is Alternative 2, which is to lease a tract that includes the applied-for tract and some federal coal adjacent to that tract.

Under the Proposed Action and Alternatives 2 and 3 (action alternatives) for the West Hay Creek LBA tract, if a decision is made to hold a competitive lease sale and there is a successful bidder at that sale, a lease would be issued to the successful bidder for the federal coal included in the tract. The Proposed Action and action alternatives considered in this EIS assume that Triton would be the successful bidder if a competitive sale is held, and that the West Hay Creek LBA tract would be mined as a maintenance lease to extend the life of the adjacent existing Buckskin Mine. As a result, under the Proposed Action and the action alternatives, existing facilities and roads would be used to mine the coal included in the tract. Employment would increase from 199 to 225 with or without selection of the Preferred Alternative.

BLM does not authorize mining by issuing a lease for federal coal, but the impacts of mining the coal are considered at the leasing stage because it is a logical consequence of issuing a maintenance lease to an existing coal mine.

Under the Proposed Action and action alternatives, it is assumed that an area larger than the tract would have to be disturbed in order to recover all of the coal in the tract. The disturbances outside the coal removal area would be due to activities like overstripping, matching undisturbed topography, and constructing flood control and sediment control structures. Under the Proposed Action and action alternatives, the LBA tract lies entirely within the currently approved mine permit area for the Buckskin Mine.

The coal mining unsuitability criteria listed in the federal coal management regulations (43 CFR 3461) have been applied to high to moderate coal development potential lands in the Wyoming Powder River Basin (PRB). None of the lands included in the West Hay Creek LBA tract under any of the alternatives considered in this EIS have been determined to be unsuitable for mining. Additional discussion follows in the Consultation to Date section.

The Proposed Action

Under the Proposed Action, BLM would hold a competitive coal lease sale and issue a maintenance lease to the successful bidder for the West Hay Creek LBA tract as applied for by Triton. The tract as applied for is shown in figure G-1. The legal description of the West Hay Creek LBA tract as applied for is as follows;

T. 52 N., R. 72 W., 6th P.M., Campbell County, Wyoming

Section 17:	Lot	5 (S2S2)	10.265
		6 (S2S2)	10.265
		7 (S2S2)	10.3475
		8 (S2S2)	10.3475
		9-14, inclusive;	247.24
Section 18:	Lot	13 (E2)	21.035
		20 (E2)	20.75

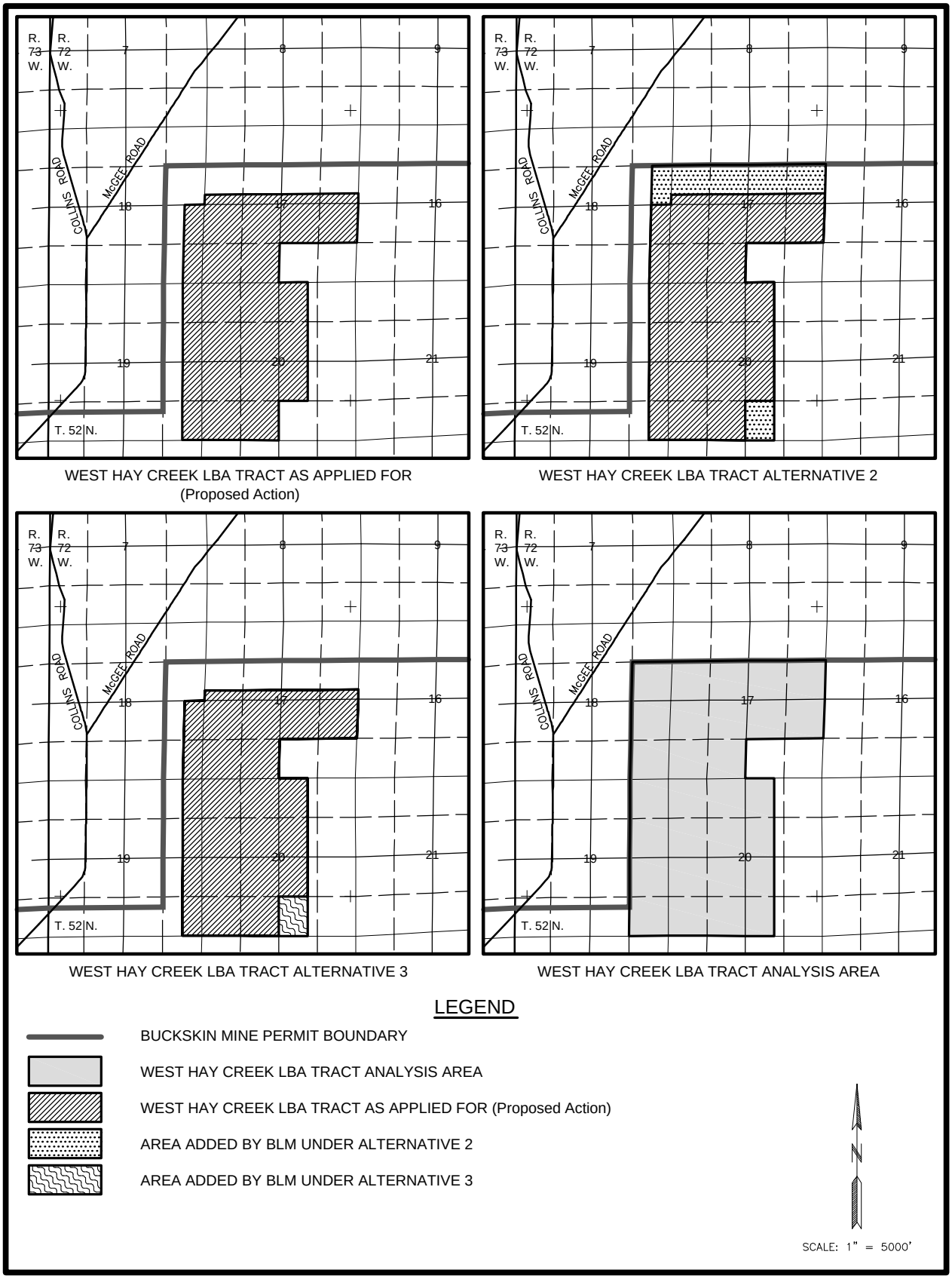

Figure G-1. West Hay Creek LBA Tract Configurations.

Section 19:	Lot	5 (E2)	20.71
		12 (E2)	20.84
		13 (E2)	20.935
		20 (E2)	21.065
Section 20:	Lot	2 (W2, W2E2)	31.1175
		3-6, inclusive;	165.38
		7 (W2, W2 E2)	31.1325
		10 (W2, W2E2)	31.1475
		11-14, inclusive	165.52
Total:			838.0975 acres

The coal estate underlying this tract is owned by the federal government and administered by the BLM. The surface estate on this tract is owned by Triton.

Triton estimates that the tract as applied for includes approximately 145 million tons of in-place coal, and that about 130 million tons of that coal would be recoverable. If Triton acquires a lease for the tract, they anticipate mining the coal at a rate of 25 million tons per year, which would extend the life of the existing Buckskin Mine by approximately 5 years; employment would be about 225 persons.

Alternative 1: No Action Alternative

Alternative 1 is the No Action Alternative. Under the No Action Alternative, the LBA tract would not be leased, but the existing leases at the adjacent Buckskin Mine would be developed according to the existing approved mine plans. Under this alternative, the Buckskin Mine would mine its remaining reserves in approximately 12 years at an average production of 25 million tons per year and average employment would remain at 225 persons. Portions of the surface of the LBA tract will be disturbed due to overstripping to allow coal removal from existing, contiguous Buckskin Mine leases. Selection of this alternative would not preclude leasing and mining of this tract in the future, either as a maintenance tract for an existing operation or as part of a new start mine.

Alternative 2: Preferred Alternative

In evaluating the West Hay Creek coal lease application, BLM identified a study area, shown in figure G-1 as “West Hay Creek LBA Tract Alternative 2,” which includes unleased federal coal to the north and adjacent to the southeast corner of the tract as applied for. The study area includes approximately 176.2 additional acres and 25 million additional tons of in-place coal.

The BLM’s Preferred Alternative would add approximately 83.06 acres to the tract as applied for, including approximately 31.16 acres adjacent to the southeast corner and approximately 51.90 acres to the north (figure G-2). Triton did not include the area to the southeast in their application because their current geologic model does not indicate that any mineable coal is present. BLM is considering adding this area to the lease because, as the model becomes further defined by additional drilling information, there

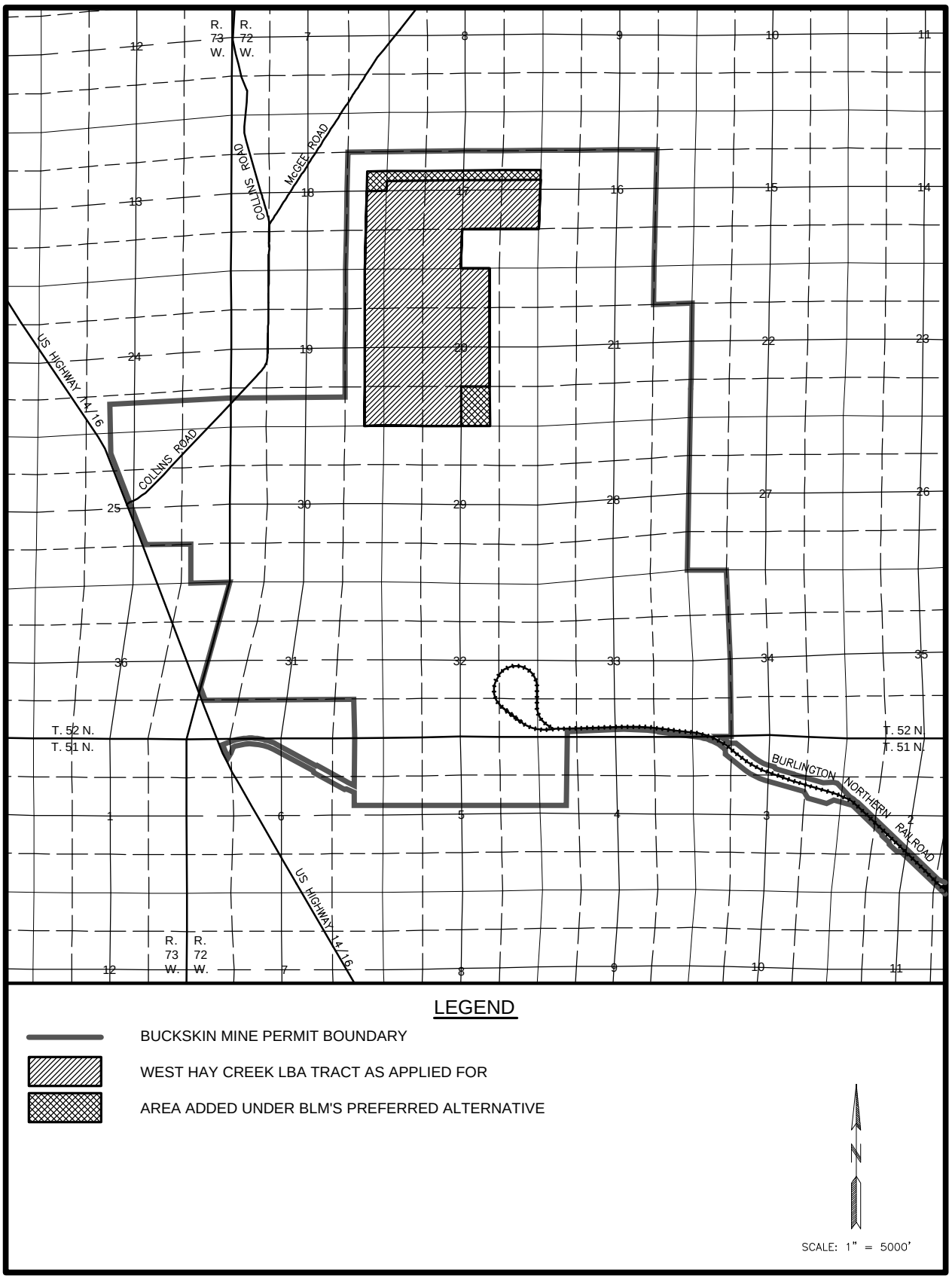

Figure G-2. West Hay Creek LBA Preferred Alternative Tract Configuration.

may be portions of the area that include mineable coal which would be bypassed if it is not leased with the surrounding coal. BLM's Preferred Alternative would also add the approximately 51.90 acres north of the tract as applied for in order to allow for more efficient coal recovery and to avoid bypassing potentially mineable federal coal.

The legal description of the West Hay Creek LBA tract under the BLM's Preferred Alternative is:

T. 52 N., R. 72 W., 6th P.M., Campbell County, Wyoming

Section 17	Lot	5 (S2)	20.53
		6 (S2)	20.53
		7 (S2)	20.695
		8 (S2)	20.695
		9-14, inclusive;	247.24
Section 18:	Lot	12 (SE4)	10.6725
		13 (E2)	21.035
		20 (E2)	20.75
Section 19:	Lot	5 (E2)	20.71
		12 (E2)	20.84
		13 (E2)	20.935
		20 (E2)	21.065
Section 20:	Lot	2 (W2, W2E2)	31.1175
		3-6, inclusive	165.38
		7 (W/2, W2E2)	31.1325
		10 (W2, W2E2)	31.1475
		11-14, inclusive	165.52
		15 (W2, W2E2)	31.1625
Total:			921.1575 acres

The coal estate underlying this tract is owned by the federal government and administered by the BLM. The surface estate on this tract is owned by Triton.

Triton estimates that the modified tract includes approximately 160 million tons of in-place coal, and that about 140 million tons of that coal would be recoverable. If Triton acquires a lease for the tract, they anticipate mining the coal at a rate of 25 million tons per year which would extend the life of the existing Buckskin Mine by approximately 6 years; employment would be about 225 persons.

Alternative 3

Alternative 3 also considers holding a competitive coal lease sale and issuing a maintenance lease to the successful bidder for a reconfigured tract which would add 31.16 acres to the southeast corner of the tract as applied for (figure G-1). Triton did not include this area in their application because their current geologic model does not indicate that any mineable coal is present. BLM is considering adding this area to the

lease because, as the model becomes further defined by additional drilling information, there may be portions of the area that include mineable coal which would be bypassed if it is not leased with the surrounding coal.

CONSULTATION TO DATE

The locations of the existing Buckskin Mine coal leases, the existing approved mine permit area, and the West Hay Creek LBA tracts are shown in figure G-3.

The Buckskin Mine and West Hay Creek LBA tract are included in the area evaluated for acceptability for further lease consideration as part of the coal screening process. The coal screening process is a four-part process that includes application of the coal unsuitability criteria, which are defined in 43 CFR 3461.5 and listed in appendix B of this EIS. The coal unsuitability criteria were applied to federal coal lands in Campbell and Converse counties in the early 1980s by the BLM and Forest Service (FS). Consultation with the US Fish and Wildlife Service (FWS) occurred in conjunction with the unsuitability findings under criterion 9 (Critical Habitat for Threatened or Endangered Plant and Animal Species), criterion 11 (Bald or Golden Eagle Nests), criterion 12 (Bald and Golden Eagle Roost and Concentration Areas), criterion 13 (Falcon Nesting Site(s) and Buffer Zone(s), and criterion 14 (Habitat for Migratory Bird Species). In 1993, BLM, FS, and FWS began the process of reapplying these criteria to federal coal lands in Campbell, Converse, and Sheridan Counties. The results of this analysis are included as appendix D in the 2001 *Approved Resource Management Plan for Public Lands Administered by the Bureau of Land Management Buffalo Field Office.* Appendix B of this EIS summarizes the unsuitability criteria, describes the general findings for the previous screening analyses discussed above, and presents the findings for the West Hay Creek LBA tract based on the current information.

Consultation with FWS was previously conducted for the area within the Buckskin Mine's existing approved mining permit area (figure G-3), including the entire West Hay Creek LBA tract under the Proposed Action and all of the Alternatives as part of the mining and reclamation permit approval process. The Buckskin Mine was initially permitted in 1980. In 2000, Triton acquired a lease for the Belco Exchange tract, adjacent to the Buckskin Mine, and began the process of amending their existing mine permit to include that tract. In 2002, the Buckskin Mine Hay Creek permit amendment was approved. The West Hay Creek LBA tract and anticipated disturbance area lie completely within the Buckskin Mine permit area as amended by the Hay Creek permit amendment action. A letter dated January 23, 2001, from Mike Long, FWS, Cheyenne, Wyoming, to Don Crecelius, Wyoming Department of Environmental Quality/ Land Quality Division (WDEQ/LQD), Sheridan, Wyoming, is included in the March 2002 mining plan decision document for the Buckskin Mine Hay Creek permit amendment. This letter indicates that no impacts to threatened or endangered species, or species proposed for listing, are anticipated from the Hay Creek permit amendment action, as proposed. A second letter from Mike Long, FWS, to Don Crecelius, WDEQ/LQD, indicates that the raptor and migratory birds of high federal interest plans for the Buckskin Mine Hay Creek permit amendment had been approved.

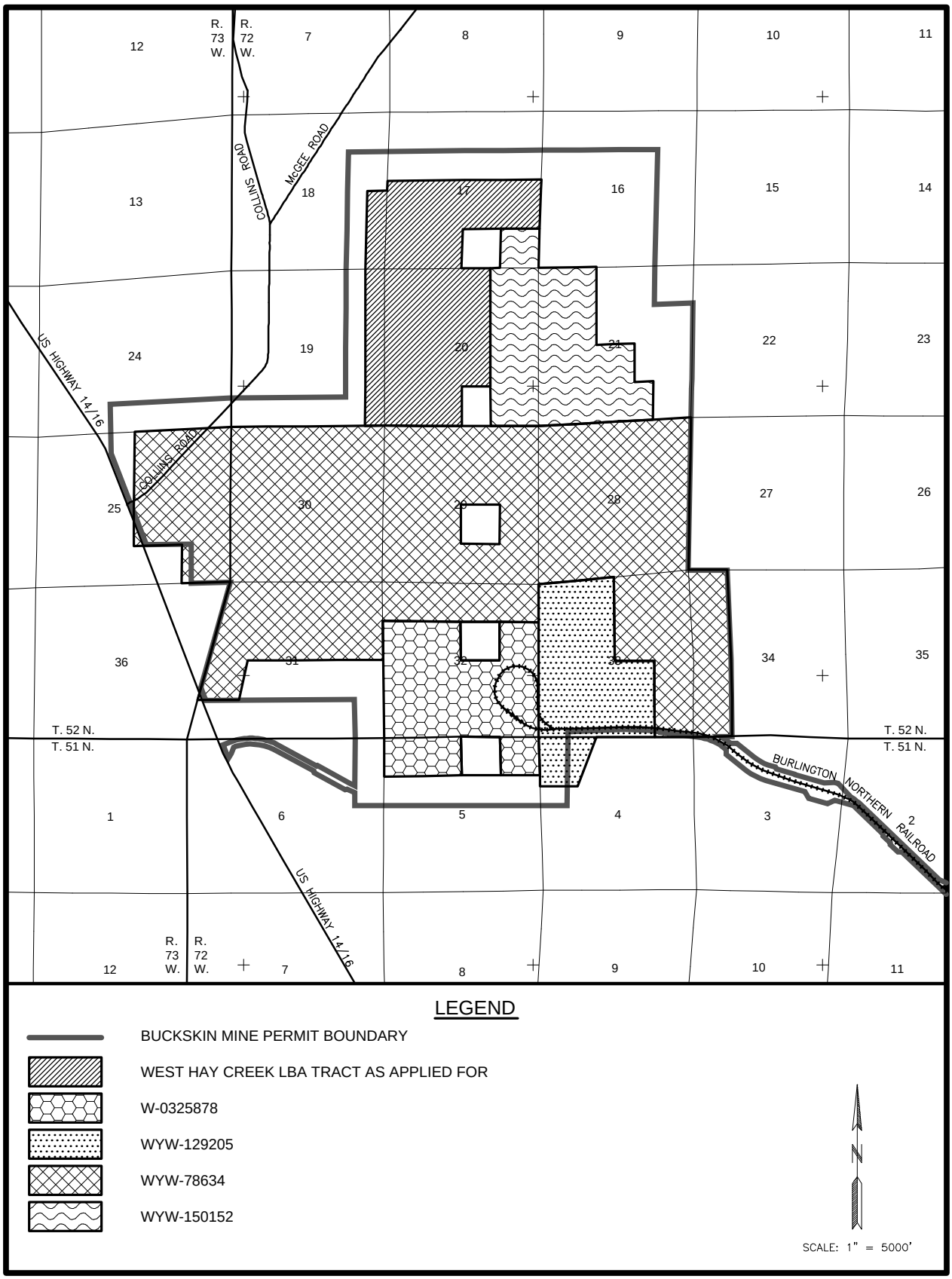

Figure G-3. Buckskin Mine Federal Coal Leases and the West Hay Creek LBA Tract as Applied For.

FWS provided BLM the following list of federally-listed threatened and endangered species, species proposed for listing, and candidate species that may be present in the project area in a memorandum dated August 2, 2002 (FWS 2002).

Birds

Bald eagle (*Haliaetus leucocephalus*): threatened (proposed for delisting)
Mountain plover (*Charadrius montanus*)*:* proposed threatened

Mammals

Black-footed ferret (*Mustela nigripes*): endangered
Black-tailed prairie dog (*Cynomys ludovicianus*): candidate

Plants

Ute ladies'-tresses (*Spiranthes diluvialis*): threatened

On September 9, 2003, FWS published a withdrawal of the proposed rule to list the mountain plover as threatened (FWS 2003). The FWS has advised BLM that they will no longer be reviewing project impacts to the mountain plover under the ESA; however, they encourage provisions that would provide protection for this species, as it continues to be protected under the Migratory Bird Treaty Act.

FWS submitted comments on the draft EIS for the West Hay Creek coal lease application on June 3, 2003 (FWS 2003a). This appendix has been revised in response to those review comments.

SPECIES HABITAT, OCCURRENCE, AND EFFECTS OF THE PROPOSED PROJECT

The Buckskin Mine, currently operated by Triton, began producing coal in 1983. Wildlife surveys conducted for the Buckskin Mine began in 1977. Thunderbird Wildlife Consulting, Inc. (TWC), formerly Powder River Eagle Studies (PRES) have conducted annual wildlife monitoring surveys at Buckskin Mine from 1984 through 2003. The study area has included most of the LBA analysis area throughout TWC's monitoring timeframe (Figure G-4). The wildlife monitoring is designed to meet the WDEQ/LQD and federal requirements for annual monitoring and reporting of wildlife activity on coal mining areas. Detailed procedures and site-specific requirements have been carried out as approved by Wyoming Game and Fish Department (WGFD) and FWS. The monitoring program is conducted in accordance with appendix B of WDEQ/LQD Coal Rules and Regulations.

Background information on T&E species in the vicinity of the Buckskin LBA tract was drawn from several sources, including WGFD and FWS records and personal contacts with WGFD and FWS biologists.

Site-specific data for the proposed lease area was obtained from sources including WDEQ/LQD permit applications and annual reports for the Buckskin Mine. Baseline

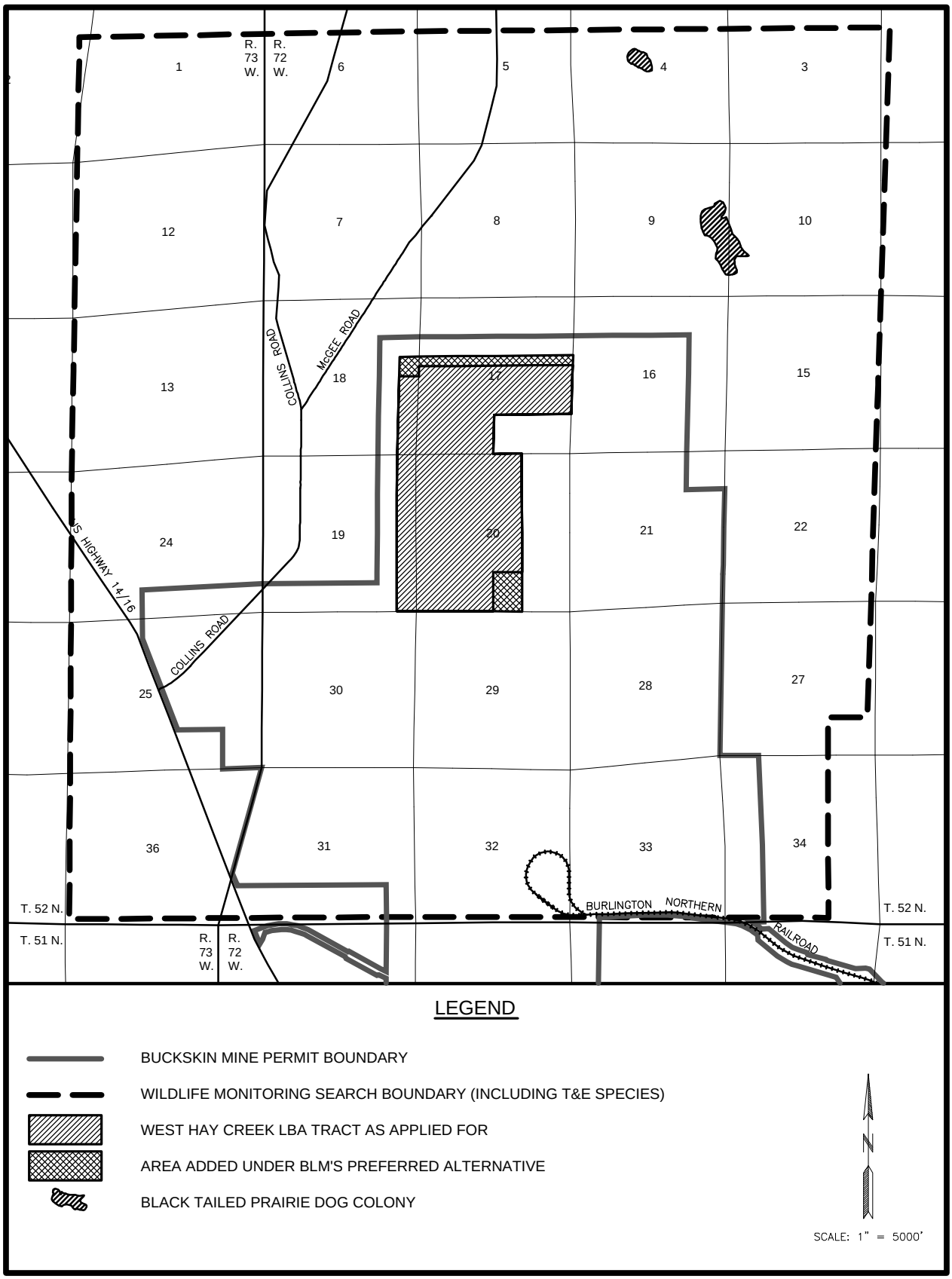

Figure G-4. T&E Animal Species Survey Areas for the West Hay Creek LBA Tract.

wildlife monitoring was conducted on the analysis area concurrent with the analysis conducted for the Hay Creek permit amendment (February 1999 through February 2000). The objectives of this baseline survey were to collect both qualitative and quantitative data on vertebrate occurrence, abundance and habitat affinity on the study area.

The LBA tract and adjacent area consists primarily of uplands. The topography is level to rolling, with some areas sloping to steeply sloping. Sagebrush-grassland and grassland are the principal native habitat types in the south and eastern portions of the analysis area. Agricultural pasturelands and croplands dominate the northwest quarter of the analysis area. Hay Creek, an ephemeral headwater stream in the regional drainage network of the Little Powder River, flows from west to east through the northern portion of the tract. Its confluence with the Little Powder River is about 3 miles east of the LBA tract. There is bottomland habitat along Hay Creek. No designated critical, crucial, or unique habitats are present. Several stockponds and natural pools exist on the analysis area. Within the analysis area, there are 37 cottonwoods in a shelterbelt located near the center of section 20, T. 52 N., R. 72 W.

Threatened Species

Bald Eagle (*Haliaetus leucocephalus*)

Biology and Habitat Requirements. On February 14, 1978, the bald eagle was listed as endangered in all of the conterminous United States except Minnesota, Wisconsin, Michigan, Oregon, and Washington, where it was classified as threatened (43 F.R. 6233). The FWS reclassified the bald eagle from endangered to threatened throughout its range in the lower 48 states on July 12, 1995 (60 F.R. 36000). The bald eagle was proposed for delisting on July 6, 1999 (64 F.R. 36454). Currently, the proposal has not been finalized or withdrawn.

Bald eagles nest primarily in remote areas that are free of disturbance and contain large trees that are within one mile of water bodies containing reliable fisheries. In Wyoming, this species builds large nests in the crowns of large mature trees such as cottonwoods or pines. Typically, there are alternate nests within or in close proximity to the nest stand. Snags and open-canopied trees near the nest site and foraging areas provide favorable perch sites. Old-growth stands with their structural diversity and open canopies are an important habitat for bald eagles. This species is a common breeding resident in some areas of Wyoming. Bald eagles use mixed coniferous and mature cottonwood-riparian areas near large lakes or rivers as nesting habitat (Luce et al. 1999).

Food availability is probably the single most important determining factor for bald eagle distribution and abundance (Steenhof 1976). Fish and waterfowl are the primary sources of food. Big game and livestock carrion, as well as larger rodents (prairie dogs) also can be important dietary components where these resources are available (Ehrlich et al. 1988). Bald eagles are opportunistic foragers. They prefer to forage in areas with

the least human disturbance (FWS 1978, McGarigal et al. 1991).

Bald eagles that have open water or alternate food sources near their nesting territories may stay for the winter; other eagles migrate southward to areas with available prey. During migration and in winter, eagles often concentrate on locally abundant food resources and tend to roost communally. Communal roosts usually are located in stands of mature old growth conifers or cottonwoods. Large, live trees in sheltered areas provide a favorable thermal environment and help minimize the energy stress encountered by wintering eagles. Communal roosting also may facilitate food finding (Steenhof 1976) and pair bonding. Freedom from human disturbance is also important in communal roost site selection (Steenhof et al. 1980, U.S. Bureau of Reclamation 1981, FWS 1986, Buehler et al. 1991). Continued human disturbance of a night roost may cause eagles to abandon an area (Hansen et al. 1981, Keister 1981). The proximity of night roosts to the other habitats required by wintering eagles, such as hunting perches and feeding sites, is important (Steenhof et al. 1980). Roosts may be several miles from feeding sites. The absence of a suitable roost may limit the use of otherwise suitable habitat.

Existing Environment. Bald eagles are relatively common winter residents and migrants in northeastern Wyoming's PRB. No suitable roosting habitat, known nest sites, or concentrated prey or carrion sources for bald eagles have been identified during baseline or annual wildlife surveys in the West Hay Creek analysis area. Historically, this species has infrequently been seen foraging in the general vicinity of Buckskin Mine. The 1999-2000 baseline wildlife surveys conducted by PRES in the analysis area and the accessible 2-mile perimeter, which included surveys for bald eagle nests and potential roost sites, identified no nests or roosts. Two bald eagles were recorded during those baseline studies, both in March 1999. PRES has conducted annual wildlife studies at the Buckskin Mine since 1984 and has prepared their raptor mitigation plans for the WDEQ/LQD permit.

Effects of the Proposed Project. ***Mining the federal coal included in the West Hay Creek LBA tract, if the tract is leased under the Proposed Action or one of the action alternatives, including the BLM's Preferred Alternative, may affect, but is not likely to adversely affect, bald eagles or their habitat.*** If the federal coal in the West Hay Creek LBA tract is leased, there would be an expansion in the area of human disturbance on the tract that could impact wintering bald eagles in the area. Freedom from disturbance is important in forage, nest, and roost site selection. Disturbance to nesting eagles can cause nest failure, nest abandonment, and unsuccessful fledging of young. There have been and currently are no known nest sites on the West Hay Creek LBA tract or within the anticipated mine permit area under the Proposed Action or action alternatives. No suitable roosting habitat or concentrated prey or carrion sources for bald eagles are present on the West Hay Creek LBA tract analysis area under the Proposed Action or action alternatives, including the Preferred Alternative. Bald eagle foraging habitat would be lost during mining and before reclamation. The loss of any potential prey habitat would be short-term. Foraging habitat lost during mining would be replaced during reclamation. Eagles may alter foraging patterns as they avoid active

mining areas. The potential for bald eagles to collide with or be electrocuted by electric power lines on the mine site would be minimal due to use of properly designed power lines to avoid electrocution of raptors, which is required by the Wyoming Coal Mining Rules and Regulations. Use of the roads accessing the Buckskin Mine by mine-related traffic would continue when the West Hay Creek tract is mined, which may result in vehicular collisions and roadside carcasses for up to six additional years. The presence of roadside carcasses can result in bald eagle foraging along roads, which creates the potential for road kills of foraging bald eagles to occur. The applicant has not projected an increase in employees if the West Hay Creek tract is leased and therefore an increase in the volume or frequency of traffic on roads accessing Buckskin Mine is not anticipated.

Cumulative Effects. Mineral development, including coal bed methane (CBM) development, conventional oil and gas development, and surface coal mining, is a leading cause of habitat loss within the PRB. CBM development has occurred and is proposed in the analysis area. Surface coal mining has been ongoing in the area for more than 25 years. In the *Final Biological and Conference Opinion for the Powder River Basin Oil and Gas Project*, the FWS states that they believe that "as a direct result of the construction of approximately 7,136 miles of new improved roads and 5,311 miles of overhead distribution lines, there will be direct loss of bald eagles" in the PRB (FWS 2002a).

Ute ladies'-tresses (*Spiranthes dilavialis*)

Biology and Habitat Requirements. Ute ladies'-tresses was listed as threatened on January 17, 1992 due to a variety of factors, including habitat loss and modification, and hydrological modifications of existing and potential habitat areas. At the time of listing, Ute ladies'-tresses was only known from Colorado, Utah, and extreme eastern Nevada. It was next discovered in Idaho in September 1996. It is currently known from western Nebraska, southeastern Wyoming, north-central Colorado, northeastern and southern Utah, east-central Idaho, southwestern Montana, and central Washington.

Ute ladies'-tresses is a perennial herb with erect, glandular-pubescent stems 12 to 50 centimeters 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. The total known population of this species is approximately 25,000 to 30,000 individuals. Occurrences range in size from one plant to a few hundred individuals.

Ute ladies'-tresses occurs primarily on moist, subirrigated or seasonally flooded soils in valley bottoms, gravel bars, old oxbows, or floodplains bordering springs, lakes, rivers, or perennial streams at elevations between 1,780 and 6,800 feet (ft) in elevation (Fertig and Beauvais 1999). Suitable soils vary from sandy or coarse cobbley alluvium to calcareous, histic or fine-textured clays and loams. 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. Some occurrences are also found on agricultural lands managed for winter or early season grazing or hay production. Known sites often have low vegetative cover and may be subjected to periodic disturbances such as flooding or grazing. Populations are often dynamic and "move" within a watershed as disturbances create new habitat or succession eliminates old habitat (Fertig and Beauvais 1999).

The orchid is well adapted to disturbances from stream movement and is tolerant of other disturbances (grazing) that are common to grassland riparian habitats (FWS 1995). Ute ladies'-tresses colonize early successional riparian habitats such as point bars, sand bars, and low-lying gravelly, sandy, or cobbley edges, persisting in those areas where the hydrology provides continual dampness in the root zone through the growing season. The orchid establishes in heavily disturbed sites, such as revegetated gravel pits, heavily grazed riparian edges, and along well-traveled foot trails on old berms (FWS 1995). The species occurs primarily in areas where the vegetation is relatively open and not overly dense, overgrown, or overgrazed. Ute ladies'-tresses orchid is commonly associated with horsetail, milkweed, verbena, blue-eyed grass, reedgrass, goldenrod, and arrowgrass.

This species is known from four occurrences in Wyoming, within Converse, Goshen, Laramie, and Niobrara counties, all discovered between 1993 and1997 (Fertig and Beauvais 1999). One of these occurrences is recorded from northwestern Converse County, within the Antelope Creek watershed.

Existing Environment. Potential habitat for Ute ladies-tresses orchid was surveyed within the Hay Creek amendment baseline study area, which includes the West Hay Creek LBA tract, by Habitat Management, Inc. in 1999. The surveys were managed and conducted by Habitat Management, Inc. personnel who are recognized as being qualified to conduct Ute ladies'-tresses surveys by the FWS Colorado Field Services Office. Habitat Management, Inc. met with FWS personnel in Cheyenne, Wyoming on August 30, 1999, to discuss acceptable survey methods and practices. A total of 17.52 acres of jurisdictional wetlands were identified in the West Hay Creek LBA tract. All wetland areas and nonjurisdictional waters of the US were included in the survey area. All wet meadow wetland and lowland prairie vegetation community types were surveyed. Pedestrian surveys were completed from July 25 through August 4, 1999 and August 31 through September 3, 1999. No Ute ladies'-tresses were observed during this survey, and none have been identified during surveys for other mines in this area.

Effects of the Proposed Project. ***Mining the federal coal included in the West Hay Creek LBA tract, if the tract is leased under the Proposed Action or the action alternatives, may affect, but is not likely to adversely affect, Ute ladies'-tresses.*** Typical suitable habitat for this species is rare in the LBA tract analysis area. No individuals were located during surveys of potentially suitable habitat on the tract during blooming season in 1999. Ute ladies'-tresses individuals have not been found during surveys conducted for other surface coal mines in this area or other surveys in this area of Wyoming. Because of this plant's ability to persist below ground or above ground without flowering, single season surveys that meet the current FWS survey guidelines

may not detect populations. If undetected populations are present, they could be lost to surface-disturbing activities.

Cumulative Effects. Alterations of stream morphology and hydrology are believed to have destroyed Ute ladies'-tresses from most of its historical range (FWS 2002b). Disturbance and reclamation of streams by surface coal mining may alter stream morphology and hydrology. Water produced by CBM development and discharged on the surface may also alter stream morphology and hydrology. Jurisdictional wetlands located within the West Hay Creek LBA tract that are destroyed by mining operations would be replaced in accordance with the requirements of section 404 of the Clean Water Act, as determined by the Corps of Engineers (COE). The replaced wetlands may not duplicate the exact function and landscape features of the pre-mine wetlands. COE considers the type and function of each jurisdictional wetland that will be impacted and determines the ratio of restored wetlands to disturbed wetlands. If the COE determines that the restored wetlands will not completely replace the type and function of the original wetlands, they may require restoration of additional acres. WDEQ/LQD allows and sometimes requires mitigation of nonjurisdictional wetlands affected by mining, depending on the values associated with the wetland features.

Endangered Species

Black-footed Ferret (*Mustela nigripes*)

Biology and Habitat Requirements. The black-footed ferret is a federally-listed endangered species. The black-footed ferret historically occurred throughout Texas, Oklahoma, New Mexico, Arizona, Utah, Kansas, North and South Dakota, Montana, Wyoming, Nebraska, and Colorado. The black-footed ferret, a nocturnally active mammal, is closely associated with prairie dogs, depending almost entirely on the prairie dog for its survival. The decline in ferret populations has been attributed to the reduction in the extensive prairie dog colonies that historically existed in the western US. Ferrets may occur within colonies of white-tailed or black-tailed prairie dogs. The FWS has determined that, at a minimum, potential habitat for the black-footed ferret must include a single white-tailed prairie dog colony greater than 200 acres, or a complex of smaller colonies within a 4.3 mile (7 km) radius circle totaling 200 acres (FWS 1989). Minimum colony size for black-tailed prairie dog is 80 acres (FWS 1989). The last known wild population of black-footed ferrets was discovered in Meeteetse, Wyoming. Individuals from this population were captured and raised in protective captive breeding facilities in an effort to prevent the species' extinction (Clark and Stromberg 1987).

Recent survey efforts in the Shirley Basin have identified a population at this former re-introduction site. This is the only known population in Wyoming. There are no prairie dog towns located within the LBA tract.

Existing Environment. The West Hay Creek LBA tract is within the historical range of the black-footed ferret, although no black-footed ferrets are presently known to occur

within northeastern Wyoming. Surveys to identify any populations of this species within the area administered by the BLM Buffalo Field Office (Campbell, Johnson, and Sheridan counties, Wyoming), including multiple years of wildlife surveys covering the Buckskin Mine and surrounding area, have been unsuccessful. This endangered species is found almost exclusively living in prairie dog colonies. The Bureau of Sport Fisheries and Wildlife estimated that there were approximately 49,000 remaining acres of black-tailed prairie dog colonies in Wyoming in 1961. Strychnine and 1080 poisoning was banned in 1972, but colonies had declined to less than the estimated 1961 levels in Wyoming in the intervening time. Increases in occupied black-tailed prairie dog habitat did occur following the ban of strychnine and 1080, but the black-tailed prairie dog population has been declining recently due to the impacts of sylvatic plague combined with loss of suitable habitat and inadequate regulatory mechanisms (FWS 2000). During the 1980s, the WGFD, in cooperation with other agencies, conducted searches for black-footed ferrets in Wyoming in the places they were most likely to be found, but these searches were not successful, according to Martin Grenier with the WGFD (Martin Grenier, personal communication, 10/14/2003). The FWS has been coordinating with the WGFD about the current and historic status of prairie dog towns throughout Wyoming and reviewing the history of black-footed ferret surveys to determine whether black-footed ferret survey guidelines should continue to be applied across the entire state. Through this process, the FWS has developed a list of blocks of habitat that are not likely to be inhabited by black-footed ferrets and for which surveys for ferrets are no longer recommended. All black-tailed prairie dog towns in Wyoming were cleared from recommendation for ferret surveys through this process (FWS 2004).

No prairie dog colonies are currently located on or within ½-half mile of the West Hay Creek LBA tract (figure G-4). No evidence of ferrets has ever been recorded by qualified biologists during general or specific surveys in the Buckskin Mine area.

Effects of the Proposed Project. ***Mining the federal coal included in the West Hay Creek LBA tract, if the tract is leased under the Proposed Action or the action alternatives, will have no effect on black-footed ferrets.*** Black-tailed prairie dog occupied habitat has declined significantly from historic estimates and the species seems to be scattered throughout its historic range in eastern Wyoming. Prior to 1972, use of strychnine and 1080 to poison black-tailed prairie dogs contributed to declines in their populations in Wyoming. Recent declines are largely attributed to sylvatic plague and are likely to continue (FWS 2000). The reductions in black-tailed prairie dog populations reduced the potential for black-footed ferret survival in northeastern Wyoming. Searches of the best remaining black-footed ferret habitat in Wyoming during the 1980s were unsuccessful in finding any ferrets. Baseline wildlife surveys and annual wildlife surveys conducted for over 25 years by mines in the area have also been unsuccessful in finding any black-footed ferrets or signs of black-footed ferrets.

Cumulative Effects. Mineral development within black-tailed prairie dog colonies is a leading cause of ferret habitat loss in the PRB. Surface coal mining tends to have more intense impacts on fairly localized areas, while oil and gas development tends to be less intensive but spread over larger areas. Oil and gas development and mining activities

have requirements for reclamation of disturbed areas as the resources are depleted. The vegetation cover in reclaimed areas may differ from undisturbed areas. Surface coal mines re-establish species in the reclamation seed mixtures in their approved WDEQ/LQD permit. The majority of the approved species are native to the area; however reclaimed areas may serve different ecosystem functions than those served by the undisturbed vegetation communities and habitats. Natural shifts in habitat composition or distribution over the long term could also increase or decrease potential habitat for prairie dogs in reclaimed areas.

Potential black-footed ferret habitat is also affected by other impacts to prairie dog populations. Plague can infect and eliminate entire prairie dog colonies (see black-tailed prairie dog discussion presented below). Poisoning and recreational shooting may locally reduce prairie dog populations, but seldom completely eliminate colonies.

Candidate Species

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Biology and Habitat Requirements. The black-tailed prairie dog was added to the list of candidate species for federal listing on February 4, 2000 (FWS 2000). At that time, the FWS concluded that listing the black-tailed prairie dog was warranted but precluded by other higher priority actions to amend the lists of T&E species. No specific date for proposal for listing was given, but the FWS committed to reviewing the status of the species one year after publication of the above-mentioned notice (FWS 2000). In June 2002, FWS found that the listing proposal for the black-tailed prairie dog was still warranted but precluded (FWS 2002c). As of May 2004, FWS had not updated the finding with respect to the black-tailed prairie dog (FWS 2004a)

The black-tailed prairie dog is a highly social, diurnally active, burrowing mammal. Aggregations of individual burrows, known as colonies, form the basic unit of prairie dog populations. Found throughout the Great Plains in shortgrass and mixed-grass prairie areas (Fitzgerald et al. 1994), the black-tailed prairie dog has declined in population numbers and extent of colonies in recent years. The three major impacts that have influenced black-tailed prairie dog populations are the initial conversion of prairie grasslands to croplands in the eastern portion of its range from approximately the 1880s to the 1920s; large-scale control efforts conducted from approximately 1918 through 1972, when an executive order was issued banning the use of compound 1080; and the introduction of sylvatic plague into North American ecosystems in 1908 (FWS 2000). In Wyoming, this species is primarily found in isolated populations in the eastern half of the state (Clark and Stromberg 1987). In 2000, the FWS estimated that about 125,000 acres of black-tailed prairie dog occupied habitat exists in Wyoming (FWS 2000). Many other wildlife species, such as the black-footed ferret, swift fox, mountain plover, ferruginous hawk, and burrowing owl are dependent on the black-tailed prairie dog for some portion of their life cycle (FWS 2000).

The species is considered a common resident, using shortgrass and mid-grass habitats

in eastern Wyoming (Luce et al. 1999).

Existing Environment. Recent wildlife surveys indicate that no prairie dog colonies are present within the West Hay Creek LBA tract analysis area (Triton 2000). There is one prairie dog colony located approximately 1 mile northeast of the tract (figure G-4).

Effects of the Proposed Project. ***Mining the federal coal included in the West Hay Creek LBA tract, if the tract is leased under the Proposed Action or one of the action alternatives, will not affect the continued existence of prairie dogs.*** No prairie dog towns are currently located on the tract. Habitat where prairie dogs could establish towns would be lost during mining but would be replaced as reclamation occurs on already mined areas.

SUMMARY OF DETERMINATIONS

Table G-1 summarizes the determinations for federally listed threatened, endangered, proposed, and candidate species in the area of the West Hay Creek LBA tract that may result from implementing the Proposed Action or action alternatives.

TABLE G-1
EVALUATION OF EFFECTS ON FEDERAL THREATENED, ENDANGERED, PROPOSED, AND CANDIDATE SPECIES IN THE AREA OF THE WEST HAY CREEK LBA TRACT

Status	Name	Potential Effect
Threatened	Bald eagle *(Haliaetus leucocephalus)*	May affect[1]
	Ute ladies' - tresses *(Spiranthes diluvialis)*	May effect[1]
Endangered	Black-footed ferret *(Mustela nigripes)*	No effect
Candidate	Black-tailed prairie dog (*Cynomys ludovicianus*)	No effect

[1] Not likely to adversely affect individuals or populations.

REGULATORY REQUIREMENTS AND MITIGATION

The issuance of a federal coal lease grants the lessee the exclusive right to mine the coal, subject to the terms and conditions of the lease. Lease ownership is necessary for mining federal coal, but lease ownership does not authorize mining operations. Surface coal mining operations are regulated in accordance with the requirements of Wyoming

State regulations. The SMCRA gives the Office of Surface Mining Reclamation and Enforcement (OSM) primary responsibility to administer programs that regulate surface coal mining operations and the surface effects of underground coal mining operations. Pursuant to section 503 of SMCRA, the WDEQ developed, and in November 1980 the Secretary of the Interior approved, a permanent program authorizing WDEQ to regulate surface coal mining operations and surface effects of underground mining on nonfederal lands within Wyoming. In January 1987, pursuant to section 523(c) of SMCRA, WDEQ entered into a cooperative agreement with the Secretary of the Interior authorizing WDEQ to regulate surface coal mining operations and surface effects of underground mining on federal lands within the state. In order to get approval of this cooperative agreement, the state had to demonstrate that the state laws and regulations are no less effective than, meet the minimum requirements of, and include all applicable provisions of SMCRA.

If the West Hay Creek LBA tract is leased under the Proposed Action or action alternatives, it would be a maintenance lease for the existing Buckskin Mine, which currently has both an approved Mineral Leasing Act of 1920 (MLA) mining plan and an approved state mining and reclamation permit. In the case of maintenance leases, the existing MLA mining plan and state mining and reclamation plan must be amended to include the newly leased areas before they can be mined. The LBA tract is located within the permit area for the existing approved Buckskin Mine MLA mining plan and state mining and reclamation plan, but those plans would have to be amended to include mining the coal in the newly leased area before coal removal could occur. In order to amend the existing MLA mining plan and state mining and reclamation permit, the company would be required to submit a detailed permit application package to WDEQ and OSM before starting surface coal mining operations on the newly acquired leases. WDEQ/LQD would review the permit application package to insure that the permit application complies with the permitting requirements, and that the coal mining operation will meet the performance standards of the approved Wyoming program. If the permit application package does comply, WDEQ would issue the applicant an amended permit that would allow the permittee to extend coal mining operations onto the newly acquired leases. OSM, BLM, and other federal agencies review the permit application package to ensure it complies with the terms of the coal lease, the MLA, NEPA, and other federal laws and regulations. OSM would recommend approval, approval with conditions, or disapproval of the MLA mining plan to the Assistant Secretary of the Interior, Land and Minerals Management.

Protection of fish, wildlife, and related environmental values is required under the Wyoming Coal Mining Rules and Regulations, Chapter 4, Section (2)(r)(iii) which state:

> “No surface mining activity shall be conducted which is likely to jeopardize the continued existence of endangered or threatened species listed by the State or the Secretary of the Interior or which will result in the destruction or adverse modification of designated critical habitats of such species in violation of the Endangered Species Act (16 U.S.C. 1531 et seq.). No surface mining activity shall be conducted in a manner which would result in the unlawful taking of a

bald or golden eagle, its nest, or any of its eggs. The Administrator shall consult with the State and Federal Fish and Wildlife Agencies to identify whether and under what conditions the operation may continue under this provision."

In addition to requiring the operator to minimize disturbances and adverse impacts on fish, wildlife, and related environmental values and prohibiting any surface mining activity which is likely to jeopardize the continued existence of endangered or threatened species, the regulations require that the operator use the best technology currently available to minimize electrocution hazards to raptors; locate and operate haul and access roads to avoid or minimize impacts on important fish and wildlife species; and design fences, conveyors, and other potential barriers to permit passage of large mammals. Both the state and federal regulations require Section 7 consultation prior to approval of a mining and reclamation plan and a MLA mining plan. Additional mitigation measures to ensure compliance with the ESA can be developed when the detailed mining plan, which identifies the actual location of the disturbance areas, how and when they would be disturbed, and how they would be reclaimed, is developed and reviewed for approval. At the leasing stage, a detailed mining and reclamation plan is not available for evaluation or development of appropriate mitigation measures.

The following is a partial list of measures that the state of Wyoming has required as part of existing mining and reclamation permits in accordance with the state regulatory requirements and which are:

- avoiding bald eagle disturbance;
- restoring bald eagle foraging areas disturbed by mining;
- using raptor safe power lines;
- surveying for Ute ladies'-tresses if habitat is present;
- surveying for black-footed ferrets in prairie dogs towns potentially affected by mining.

CUMULATIVE IMPACTS

If the West Hay Creek LBA tract is leased as proposed and Triton acquires and mines the coal in the West Hay Creek tract, the mining operations could contribute to cumulative effects to T&E plant and wildlife species in the PRB. Existing habitat-disturbing activities in the PRB in Wyoming and Montana include surface coal mining; conventional oil and gas and CBM development; uranium mining; sand, gravel, and scoria mining; ranching; agriculture; road, railroad, and power plant construction and operation; recreational activities; and rural and urban housing development. Mining and construction activities, agriculture, and urban development tend to have more intense impacts on fairly localized areas, while ranching, recreational activities, and oil and gas development tend to be less intensive but spread over larger areas. Oil and gas development and mining activities have requirements for reclamation of disturbed areas as resources are depleted. The net area of energy disturbance in the Wyoming PRB has been increasing. In the short term, this means a reduction in the available habitat for threatened, endangered, proposed, and candidate plant and wildlife species. In the long term, habitat is being and will continue to be restored as reclamation proceeds.

Oil and gas exploration and production have been ongoing in the PRB for more than 100 years. Conventional (non CBM) oil and gas fields are, for the most part, concentrated in the central and southern parts of the structural basin. Development of the CBM resources from the coal beds is a more recent occurrence, with CBM production in the Wyoming PRB starting in the late 1980s. According to the Wyoming Oil and Gas Conservation Commission, there were approximately 15,040 oil and gas wells producing in the Wyoming PRB as of October 2003. Most (approximately 12,530) of those wells are CBM wells, the remainder (approximately 2,510) are conventional oil or gas wells (Wyoming Oil and Gas Conservation Commission 2003). Additional wells have been drilled in the basin but have been abandoned or are not yet producing. BLM recently completed an environmental impact statement analyzing projected CBM and conventional oil and gas development in the Wyoming PRB over the next 10 years. The *Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project* (BLM 2003) analyzed the potential impacts of constructing and operating about 39,400 new CBM wells and 3,200 new conventional wells and associated facilities, starting in 2002 and continuing for 10 years. The project area for this analysis encompasses approximately eight million acres, and includes all or portions of Campbell, Converse, Sheridan, and Johnson counties in northeastern Wyoming. Total projected short-term and long-term disturbance associated with the development under the Preferred Alternative was estimated at 211,643 acres and 102,658 acres respectively. As stated previously, in the *Final Biological and Conference Opinion for the Powder River Basin Oil and Gas Project*, the FWS states that they believe that "as a direct result of the construction of approximately 7,136 miles of new improved roads and 5,311 miles of overhead distribution lines, there will be direct loss of bald eagles" in the PRB (FWS 2002a).

BLM estimates that the existing federal coal leases in the Wyoming PRB include approximately 103,615 acres. The currently pending federal coal LBA tracts (including the West Hay Creek LBA tract) include approximately 18,650 acres. The majority of the coal in the areas permitted for surface coal mining is federal, but some state and private leases are included within some of the existing mine permit areas. All of the existing federal coal leases are concentrated near the outcrop of the Wyodak coal bed, which is located along the eastern edge of the CBM project area discussed above. These active coal operations along the Wyodak outcrop had disturbed approximately 62,200 acres as of 2001. Approximately 16,100 of those acres of disturbance are occupied by "permanent" mine facilities such as roads, buildings, and coal handling facilities, which are not available for reclamation. Of the remaining 46,100 acres which represent areas of disturbance available for reclamation, approximately 24,300 acres had been reclaimed. This information is compiled from BLM lease and WDEQ/LQD mining and reclamation permit databases.

There are an estimated 9,500 additional acres of disturbance occupied by facilities indirectly associated with surface coal mining (railroad main line and electrical transmission line).

In addition to the ongoing coal leasing and mining and oil and gas development, there are other projects that are in progress or have been proposed. These projects include the Wygen II coal-fired power plant proposed near the Wyodak Mine, the Two Elk coal-fired power plant proposed near the Black Thunder Mine, and the proposed DM&E railroad line. Other power plants have been proposed in this area but have not progressed beyond very preliminary stages. Most of these proposed projects would be constructed within or adjacent to areas of current disturbance. The proposed DM&E railroad line would represent a new corridor of disturbance across the eastern PRB if it is approved and constructed.

The total acreage directly affected by surface coal mining and oil and gas development would not be disturbed simultaneously. Some of the disturbed acreage would be reclaimed or be in the process of being reclaimed as new disturbances are initiated in other areas.

There would also be cumulative effects to T&E plant and wildlife resources as a result of indirect impacts. One factor is the potential import and spread of noxious weeds around roads and facilities. Noxious weeds have the ability to displace native vegetation and hinder reclamation efforts. Control of noxious weeds is addressed in surface coal mining and reclamation plans. If weed mitigation and preventative procedures are applied to all construction and reclamation practices, the impact of noxious weeds on T&E plants and wildlife would be minimized.

In reclaimed areas, vegetation cover often differs from undisturbed areas. In the case of surface coal mines, re-established vegetation would be dominated by species mandated in the reclamation seed mixtures (approved by WDEQ). The majority of the species in the approved reclamation seed mixtures are native to the area; however, reclaimed areas may not serve ecosystem functions presently served by undisturbed vegetation communities and habitats. In the short-term in particular, species composition, shrub cover, and other environmental factors are likely to differ from pre-disturbance vegetation communities and habitats. Establishment of noxious weeds and alteration of vegetation in reclaimed areas has the potential to alter T&E plant and wildlife habitat composition and distribution.

Potential adverse effects to listed and proposed species that have occurred and would continue to occur as a result of existing and potential future activities in the PRB would include direct loss of habitat, indirect loss of habitat due to human and equipment disturbance, habitat fragmentation, displacement of bald eagle prey species and the resultant change in bald eagle foraging, and mortality caused by equipment activities, motor vehicle collisions, power line collisions, and power line electrocution. The existing mines have developed mitigation procedures, as required by SMCRA (30 CFR 816.97) and Wyoming state regulations, to protect T&E species. These procedural requirements would be extended to include mining operations on the LBA tracts, if they are leased as proposed and after required detailed plans to mine the coal and reclaim the mined-out areas are developed and approved.

BLM SENSITIVE SPECIES EVALUATION

Introduction

Wyoming BLM has prepared a list of sensitive species to focus species management efforts towards maintaining habitats under a multiple use mandate. The authority for this policy and guidance comes from the ESA of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and the Department Manual 235.1.1A., General Program Delegation, Director, BLM.

The goals of the sensitive species policy are to:

- Maintain vulnerable species and habitat components in functional BLM ecosystems.
- Ensure sensitive species are considered in land management decisions.
- Prevent a need for species listing under the ESA.
- Prioritize needed conservation work with an emphasis on habitat.

Species Occurrence and Habitat Description

Sensitive species were listed for the BLM Buffalo Field Office within its range. Sensitive species do or could occur on or in the area of the West Hay Creek LBA tract. Specialized habitat requirements (caves, cliffs, calcareous rock outcrops) make occupation for other sensitive species unlikely. Table G-2 lists BLM sensitive species and summarizes their habitat requirements. Please refer to the wildlife sections of Chapters 3 and 4 for additional discussion about the occurrence of and potential impacts to upland game birds, including sage grouse, raptors and Migratory Birds of Management Concern in the area of the West Hay Creek LBA Tract. Potential impacts to mountain plover are discussed below.

Mountain Plover (*Charadrius montanus*)

The FWS published a proposed rule to list the mountain plover as threatened in 1999 (FWS l999). As discussed previously. on September 9, 2003, FWS published a withdrawal of the proposed rule to list the mountain plover as threatened (FWS 2003). When the listing petition was withdrawn, the status of the mountain plover changed from a proposed threatened species under the ESA to a BLM sensitive species. Although the FWS will no longer be reviewing project impacts to the mountain plover under the ESA they have advised BLM that they encourage provisions that would provide protection for this species, as it continues to be protected under the Migratory Bird Treaty Act. The following information about mountain plover habitat and occurrence in the West Hay Creek LBA tract analysis area is based on the baseline and annual wildlife surveys that have been conducted for the Buckskin Mine.

Biology and Habitat Requirements. The mountain plover is a migratory species of the shortgrass prairie and shrub-steppe eco-regions of the arid West. This species uses

TABLE G-2
SENSITIVE SPECIES LIST - BUFFALO FIELD OFFICE

Common Name (scientific name)	Habitat and Occurrence in West Hay Creek Analysis Area	Presence[1]	Project Effects[2]	Rationale
Amphibians				
Northern leopard frog (Rana pipiens)	Beaver ponds, permanent water in plains and foothills	S	MIIH	Stock reservoirs & natural pools will be impacted.
Spotted frog (Ranus pretiosa)	Ponds, sloughs, small streams.	NP	NI	Prairie habitat not mountain.
Birds				
Baird's sparrow (Ammodramus bairdii)	Grasslands, weedy fields. Occurrence not recorded	S	MIIH	Sagebrush cover will be affected.
Brewer's sparrow (Spizella breweri)	Basin-prairie shrub. Regular breeder.	K	MIIH	Sagebrush cover will be affected.
Burrowing owl (Athene cunicularia)	Grasslands, basin-prairie shrub. Infrequent breeder.	K	MIIH	Grassland and shrubland habitats will be affected.
Ferruginous hawk (Buteo regalis)	Basin-prairie shrub, grasslands, rock outcrops. Historical breeder.	K	MIIH	Grassland and shrubland habitats will be affected.
Greater sage-grouse (Centrocercus urophasianus)	Basin-prairie shrub, mountain-foothill shrub. Occasional breeder.	K	MIIH	Sagebrush cover will be affected.
Loggerhead shrike (Lanius ludovicianus)	Basin-prairie shrub, mountain-foothill shrub. Infrequently observed.	K	MIIH	Sagebrush cover will be affected.
Long-billed curlew (Numenius americanus)	Grasslands, plains, foothills, wet meadows. Infrequent spring migrant.	K	MIIH	Grassland & wet meadow habitats will be affected.
Northern goshawk (Accipiter gentilis)	Conifer and deciduous forests.	NP	NI	Forest habitat limited to cottonwood shelterbelt.
Peregrine falcon (Falco peregrinus)	Cliffs. Never recorded	NP	NI	No nesting habitat.
Sage sparrow (Amphispiza billneata)	Basin-prairie shrub, mountain-foothill shrub. Never recorded	S	MIIH	Sagebrush cover will be affected.
Sage thrasher (Oreoscoptes montanus)	Basin-prairie shrub, mountain-foothill shrub. Rarely observed.	K	MIIH	Sagebrush cover will be affected.
Trumpeter swan (Cygnus buccinator)	Lakes, ponds, rivers	NP	NI	Suitable habitat not present.
White-faced ibis (Plegadis chihi)	Marshes, wet meadows	NP	NI	Permanently wet meadows not present.
Yellow-billed cuckoo (Coccyzus americanus)	Open woodlands, streamside willow and alder groves. Never recorded	NP	NI	Shrub or forest riparian habitats not present.
Fish				
Yellowstone cutthroat trout (Oncoryhynchus clarki bouvieri)	Mountain streams and rivers in Yellowstone River drainage	NP	NI	Outside species range.

Common Name (scientific name)	Habitat and Occurrence in West Hay Creek Analysis Area	Presence[1]	Project Effects[2]	Rationale
Mammals				
Dwarf Shrew (Sorex nanus)	Mountain foothill shrub, grasslands	S	MIIH	Sagebrush cover will be affected.
Fringed myotis (Myotis thysanodes)	Conifer forests, woodland chaparral, caves and mines	NP	NI	Habitat not present.
Long-eared myotis (Myotis evotis)	Conifer and deciduous forest, caves and mines	NS	NI	Limited cottonwood habitat.
Spotted bat (Euderma maculatum)	Cliffs over perennial water, basin-prairie shrub	NP	NI	Habitat not present
Swift fox (Vulpes velox)	Grasslands	S	MIIH	Grassland habitat will be affected.
Townsend's big-eared bat (Corynorhinus townsendii)	Forests, basin-prairie shrub, caves and mines	NS	NI	Limited cottonwood habitat.
Plants				
Cary beardtongue (Penstemon caryi)	Calcareous rock outcrops and rocky soil in sage, juniper, Douglas fir and limber pine communities, 5200-8500 ft.	NP	NI	Habitat not present.
Porter's sagebrush (Artemisia porteri)	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft.	NP	NI	Habitat not present.
William's wafer parship (Cymopterus williamsii)	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	NI	Habitat not present.

Notes

[1]Presence

K Known, documented observation within project area.
S Habitat suitable and species suspected, to occur within the project area.
NS Habitat suitable but species is not suspected to occur within the project area.
NP Habitat not present and species unlikely to occur within the project area.

[2]Project Effects

NI No impact.
MIIH May impact individuals or habitat but will not likely contribute to a trend towards federal listing or a loss of viability to the population or species.
WIFV* Will impact individuals or habitat with a consequence that the action may contribute to a trend towards federal listing or cause a loss of viability to the population or species (trigger for a significant action as defined in NEPA).
BI Beneficial impact.

high, dry, shortgrass prairie with vegetation typically shorter than four inches tall. Within this habitat, areas of blue grama (*Bouteloua gracilis*) and buffalograss (*Buchloe dactyloides*) are most often used, as well as areas of mixed-grass associations dominated by needle-and-thread *(Stipa comata)* and blue grama (Dinsmore 1983).

Mountain plovers often use black-tailed prairie dog towns for breeding, nesting, and feeding. Not all prairie dog towns offer suitable habitat for mountain plover, mostly due to topographic incompatibility. There are habitats other than prairie dog towns that provide nesting, feeding, and breeding habitat for mountain plover.

The nest of the mountain plover consists of a small scrape on flat ground in open areas. Most nests are placed on slopes of less than five degrees in areas where vegetation is less than three inches tall in April. More than half of identified nests occurred within 12 inches of old cow manure piles and almost 20% were found against old manure piles in similar habitats in Colorado. Nests in similar habitats in Montana (Dinsmore 1983) and other areas (Ehrlich et al. 1988) were nearly always associated with the heavily grazed shortgrass vegetation of prairie dog colonies.

Mountain plovers arrive on their breeding grounds in late March with egg-laying beginning in late April. Breeding plovers show close site fidelity, often returning to the same territory in subsequent years. Clutches are hatched by late June, and chicks fledge by late July. The fall migration begins in late August. Most birds are gone from the breeding grounds by late September.

Existing Environment. The BLM Buffalo Field Office contracted two mountain plover nesting surveys in 2001 (Good et al. 2002, Keinath and Ehle 2001). Both contracted surveys conclude mountain plover habitat within the PRB may be sparse and fragmented (Good et al. 2002, Keinath and Ehle 2001). Much of the PRB is dominated by rolling sagebrush. Good et al. (2002) believe that bare ground and vegetation height are the limiting habitat components in the basin's prairie communities; the areas they detected mountain plovers within the PRB appeared to receive less precipitation and have greater amounts of short grass prairie than the rest of the basin. However, both surveys caution more suitable mountain plover habitat exists than they were able to survey, as they were limited to public roads (Good et al. 2002, Keinath and Ehle 2001). Mountain plover preferred habitat consists of level, open, and exceedingly grazed sites (Knopf 1996) that are generally lacking in the West Hay Creek LBA analysis area. Vegetation on and within ½-mile of the LBA area is too tall and dense to be considered suitable habitat (Triton 2002). Prairie dog towns can provide habitat for the mountain plover; however, no colonies exist within the West Hay Creek LBA area. No mountain plovers have ever been observed during annual wildlife surveys for all migratory birds of high federal interest/migratory bird species of management concern. Qualified biologists watch for all listed species and habitats that could support them while conducting all wildlife species surveys.

Effects of the Proposed Project. Mountain plover have not been observed in the vicinity if the LBA tract during wildlife surveys conducted for the Buckskin Mine that began in 1977. Typical suitable habitat for this species is not currently located on the tract. Therefore, mining the federal coal included in the West Hay Creek LBA tract will not impact mountain plover individuals or the species

Cumulative Effects. Mineral development is likely to have both beneficial and detrimental effects on mountain plover. Mining activities tend to have more intense impacts on fairly localized areas. Oil and gas development tends to be less intensive but spread over larger areas. Surface disturbance within suitable habitat will likely result in short-term habitat loss in areas to be reclaimed, and permanent or long-term loss where roads and permanent or long-term facilities are located. Power poles, conveyors, and other structures are likely to provide perch sites and hiding cover for mountain plover predators. Vehicle traffic may occasionally run over mountain plovers or their nests. Mineral development may benefit plovers where surface disturbance provides bare ground and reduces shrub cover (Dechant et al. 2001).

Oil and gas development and mining activities have requirements for reclamation of disturbed areas as resources are depleted. In reclaimed areas, vegetation cover often differs from disturbed areas. For surface coal mines, re-established vegetation would be dominated by species mandated in the reclamation seed mixtures approved by WDEQ/LQD. The majority of the approved plant species are native to the area; however, reclaimed areas may not serve ecosystem functions presently served by undisturbed vegetation communities and habitats, particularly in the short term, when species composition, shrub cover and other environmental factors are likely to be different. Shifts in habitat composition or distribution following reclamation could increase or decrease potential habitat for prairie dogs in this area, which could lead to an increase or decrease in potential habitat for mountain plovers.

CREDENTIALS OF SURVEY PERSONNEL

Thunderbird Wildlife Consulting, Inc. of Gillette, Wyoming

Gwyn McKee

Ms. McKee obtained a Master of Science degree in Wildlife Ecology form the University of Missouri-Columbia. She has accumulated more than 16 years of professional experience, with the last nine in Wyoming. Ms. McKee has skills that include planning and conducting surveys for a variety of terrestrial and aquatic species, summarizing data, and preparing technical reports for private, state, and federal agencies. Ms. McKee is considered qualified by all state and federal agencies to conduct T&E and other wildlife surveys within the region. Those qualifications include surveys for mountain plovers and their habitat, and certification by the FWS to conduct black-footed ferret surveys.

Kort M. Clayton

Mr. Clayton earned a Masters of Science degree in Biology from the University of Saskatchewan. He has been professionally involved with wildlife issues in the Northern Great Plains for over 10 years. Since 1998, Mr. Clayton has focused on wildlife inventories, clearances, impact analysis, mitigation, and applied research related to energy developments in the PRB of Wyoming and Montana. Those experiences include surveys for most vertebrate taxa in the region, sage grouse research, raptor mitigation projects, and clearance surveys for several federally listed species.

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