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Date: 8/4/2004 9:29:16 AM
Subject: BE/BA and Wildlife reports SUFCO 6 hole drilling

Per Pete's request, I am providing the BE/BA and Wildlife report for the SUFCO helicopter drilling. If you need the signed cover page, let me know I'll fax it to you.

FYI

I'm working with Gregg Hudson to finalize BLM's EA. The FS Decision is under review, and it should be ready to sign in the next day or two.

This should come together in the next week or so.

Tom Lloyd

(See attached file: SUFCO_babe_2004a.doc)(See attached file: SUFCO_wildlifereport_AutoRe_2003.doc)

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BIOLOGICAL EVALUATION and BIOLOGICAL ASSESSMENT

For the

sufco 2004 Helicopter-assisted Coal Exploration Drilling PROJECT

**Ferron/Price Ranger District
Manti-La Sal National Forest
San Pete and Sevier Counties, Utah**

Prepared by: /s/ Terry Nelson **Date** 7/26/2004
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I. INTRODUCTION

The purpose of this Biological Evaluation /Biological Assessment (BE/BA) is to review the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project to determine the proposed action's potential effects on threatened, endangered, proposed or sensitive (TEPS) plant and animal species. TEPS species that may occur in the management unit where the proposed project is located are identified in Tables 1 through 4; those TEPS species that will not be affected by the project will not be carried through analyses in this report. Section 7 of the Endangered Species Act of 1973 (PL 93-205, as amended) requires federal agencies to ensure that any activity they authorize, fund, or carry out, does not jeopardize the continued existence of any wildlife species federally listed as threatened, endangered or proposed. Consultation with

the U.S. Fish and Wildlife Service (Service) is required if threatened or endangered (T&E) species, or their critical habitat may be affected by proposed actions. One purpose of this BE/BA is to determine whether consultation with the service is necessary. This BE/BA is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)), and follows standards established in the Forest Service Manual (FSM 2671.2 and 2672.4).

A. PROPOSED ACTION

1. Summary of the Proposed Action

Ark Land Company has submitted a plan to conduct coal exploration and reclamation activities. Six drill holes are proposed for coal exploration during summer 2004. Five of the holes are proposed on unleased federal portions of the proposed Muddy Coal Area (Forest Service Surface/Federal Coal). One hole is proposed on Utah School and Institutional Trust Lands Administration (SITLA) portions of the Muddy Coal tract (Forest Service Surface/SITLA Coal). The project would be completed during the summer and early fall season, 2004. Access to three of the proposed drill sites would be along existing FS roads. Helicopters would be used to fly drill equipment to the other 3 remote sites where there are no existing roads. Since, helicopter-drilling techniques are proposed, there would be minimum disturbance (<100 ft² per site).

The proponent's proposed action as defined in its 2003 coal exploration license proposal is to access National Forest system lands, construct temporary drilling pads, drill holes to acquire needed geologic data from six coal exploration holes and reclaim disturbed areas on Forest Service managed land, using helicopter-assisted drilling methods. The proposed helicopter-assisted drilling project is outlined below:

- The planned drilling method is wireline core drilling from the surface down through to the lowest coal horizon. Equipment will include two heli-portable skid-mounted core drilling rigs together with all necessary equipment such as drill rod trays, fuel tanks, water tanks, etc. The necessary equipment and vehicles include an 18,000 gallon frac tank, helicopter, jet fuel tank (trailer mounted), 4000 gallon water truck, two or three fifth-wheel flatbed trucks trailers used to haul drill equipment, four pick-up trucks, a covered tool supply trailer, and a geophysical logging truck.
- Hauling exploration equipment and transporting personnel to the staging area (see map) would be via frFDR 50007, 50044, and 50132 which traverses both the Fishlake and Manti-La Sal National Forests. Road-use permits would be obtained from the Forest Service before operation start.
- Site preparation would include removal of some vegetation with hand tools as needed for placement of the drill rig and needed equipment. Surface disturbance would be minimal; less than 100 square feet per site.

- The finished size of the hole will be nominally 2 3/16 inch diameter. Three-inch surface casing will be inserted through the surface alluvium and certain other intervals depending on hole conditions. Upon completion, holes would be geophysically logged.
- Soils would be protected from potential contamination by placement of brattice or similar impermeable material placed beneath mechanical equipment
- Water for drilling operations and road maintenance would be obtained from Muddy Creek and/or Quitchumpah Creek. Necessary arrangements would be made with shareholders and the Utah Division of Water Rights through a temporary water exchange permit. Completed drill holes would be plugged with a cement or cement/bentonite slurry to their full depth in accordance with BLM and Forest Service standards.
- Reclamation would include removal of equipment and trash immediately after hole completion. Topsoil would be scarified with hand tools. The disturbed areas would be reseeded (same as 2003 seed mix) with seed mix approved by the FS. The total plan, including reclamation, should be completed in 8 to 10 weeks.
- One hole may be completed as water monitoring well. Nominal 1.0 to 1.5 inch well screen and steel casing would be installed to below the deepest mineable coal seam. The screen zone would be sand packed and sealed from overlying strata and the overlying hole annulus would be cemented to the surface. Well casing with a locking lid would be left at the surface extending above the surface approximately two feet. The wellhead would be properly identified with either a brass marker or a welded-on identification. Once the monitor well is no longer in use, it would be completely plugged with a cement or cement/bentonite slurry to the top. The wellhead would be removed at the surface.

2. Description of the Project Location

The general locations are in San Pete and Sevier Counties about 10 miles northwest of the town of Emery, Utah. The proposed project area and drill hole locations are shown on Map 1. The proposed drill holes, lease tract administrator, location, depth and proposed access routes are summarized in the following table:

Drill Site	Tract	Location: T20S, R5E	Access Route
A	SITLA	SW, SE, Sec. 32	By Air FR 50044
B	BLM	NW, NW, Sec. 33	By Air FR 50132
C	BLM	SE, SW, Sec. 29	FR 50132
D	BLM	NW, NW, Sec. 32	FR 50132
E	BLM	NE, SE, Sec. 29	FR 50132

F	BLM	SE, NW, Sec. 29	By Air FR 50132
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B. SPECIES OF CONCERN

1. Threatened and Endangered Plant Species

Table 1 lists plant species designated as threatened or endangered by the U.S. Fish and Wildlife Service (Service) that could occur within San Pete and Sevier Counties, Utah. No proposed plants are identified in San Pete or Sevier County. The table also describes habitats occupied by the threatened and endangered plants, the general distribution of their habitats, and whether or not those habitats are found within the project area. Habitat descriptions and distributions were obtained from Welsh et al. (1987) and Atwood et al. (1991). Habitat presence in the project area was determined through field visits and existing data review of soils, elevations, microclimate, and plant community composition within the project area. Although no formal rare plant surveys were conducted for this project, field reviews (including informal rare plant surveys) of East Mountain have been conducted by Bob Thompson (MLNF Botanist) on numerous occasions over the past several years. No listed plants or their habitats were detected in the project area or surrounding areas during any of the field reviews, nor are they expected to occur in this area of the Forest.

Table 1. Federally listed plant species that could occur in Sevier County, Utah and site-specific occurrence of their habitat within the project area.

SPECIES	SPECIES STATUS	HABITAT DESCRIPTION and DISTRIBUTION in SAN PETE and SEVIER COUNTIES	HABITAT PRESENT in PROJECT AREA?
Heliotrope Milkvetch <i>Astragalus montii</i>	Threatened	<i>Astragalus montii</i> was first discovered by Monte Lewis and Robert Thompson in 1976, and was listed as threatened in 1987. Its habitat is high elevation (10,500 to 11,000 ft.) limestone barrens derived from the Flagstaff Geological Formation. All suitable habitat sites on the MLNF have been surveyed for populations of this species; it is known to occur in three populations on the MLNF. R. Thompson did not find <i>A. montii</i> in the proposed project area.	No
Last Chance Townsendia <i>Townsendia aprica</i>	Threatened	<i>Townsendia aprica</i> occurs in salt desert shrub and pinyon-juniper communities on clay or clay silt of the Arapien and Mancos Shale Formations, 5100' – 8000'; occurs in Southeastern Emery County (off MLNF managed land). <i>T. aprica</i> was not found in the proposed project area.	No
Wright Fishhook Cactus <i>Sclerocactus wrightiae</i>	Endangered	<i>Sclerocactus wrightiae</i> occurs in salt desert shrub and juniper communities on Mancos Shale, 4800' – 6200'; occurs in Southeastern Emery County (off MLNF managed land). <i>S. wrightiae</i> was not found in the proposed project area.	No
Winkler Cactus <i>Pediocactus winkleri</i>	Threatened	<i>Pediocactus winkleri</i> The Winkler cactus is a diminutive species that usually occurs solitary. The plant grows in salt desert shrub communities at 4800 to 5200 feet elevation, in fine textured and poor quality saline substrates (Welsh et al. 1987). <i>P. winkleri</i> was not found in the proposed project area.	No

2. Sensitive Plant Species

Table 2 lists sensitive plant species on the Intermountain Regional Forester's sensitive species list that could occur on the Manti division of the MLNF. The table also describes habitats occupied by these sensitive plants, the general distribution of their habitats, and whether or not those habitats are found within the project areas. Habitat descriptions were obtained from

Welsh, et al. (1987) and Spahr et al. (1991). Habitat presence in the project area was determined through field visits and existing data review of soils, elevations, microclimate, and plant community composition. Although no formal rare plant surveys have been conducted in the project area, field reviews (including informal rare plant surveys) the Pines Tract area have been conducted by Robert Thompson, MLNF Botanist. No sensitive plants or their habitats were identified in the project area or surrounding areas during any of the field reviews, nor are they expected to occur.

Table 2. Sensitive plants that could occur on the Manti Division of the Manti-La Sal National Forest (MLNF), and site-specific occurrence of their habitat within the project areas.

SPECIES	HABITAT DESCRIPTION, SPECIES OCCURRENCE IN THE PROJECT AREA AND CONSIDERATION IN THIS BE/BA
Link Trail Columbine <i>Aquilegia flavescens rubicunda</i>	Not considered. <i>Aquilegia flavescens rubicunda</i> occurs near spring seeps and perennial wetland sites on the east side of the Wasatch Plateau. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats. This species was not found in the project area.
Creutzfeldt-flower <i>Cryptantha creutzfeldtii</i>	Not Considered. <i>Cryptantha creutzfeldtii</i> occurs in shallow, rocky, heavy clay soils; open Mancos shale slopes. It is endemic to central Utah in Carbon and Emery Counties at 5,000 to 6,500 ft. elevation. The proposed project is above 8,000 ft. elevation, and this species was not found in the project area.
Carrington Daisy <i>Erigeron carringtoniae</i>	Not Considered. <i>Erigeron carringtoniae</i> occurs in limestone outcrops and escarpments in subalpine vegetation type on wind blown ridge tops and snowdrift sites at high elevations of the Wasatch Plateau (9,000 to 11,000 feet). The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats on a fairly flat plateau area between 8,500 and 9,000 ft. elevation. This species was not found in the project area.
Canyon Sweetvetch <i>Hedysarum occidentale var. canone</i>	Not Considered. <i>Hedysarum occidentale var. canone</i> is usually found on sites that have a high water table, near springs or stream beds; riparian sites within the Pinyon/Juniper vegetation type at 5,500 to 7,000 ft. elevation. River birch and squaw brush are the most commonly associated species. It is endemic to Duchesne, and Carbon Counties. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats. This species was not found in the project area.
Arizona Willow <i>Salix arizonica</i>	Not Considered. <i>Salix arizonica</i> occurs in wet meadows along perennial streams; occurs only in the Muddy Creek drainage on the MLNF. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats, and will not impact the Muddy Creek drainage.
Musinea groundsel <i>Senecio musiniensis</i>	Not Considered. <i>Senecio musiniensis</i> occurs in limestone barrens and talus slopes of the southern Wasatch Plateau. This species was not found in the proposed project area, and is not expected to occur there.
Maguire Campion <i>Silene petersonii</i>	Not Considered. <i>Silene petersonii</i> occurs at high elevations (10,000 to 11,800 ft.) on open calcareous and igneous soils derived from Flagstaff Limestone. The proposed project is located at approximately 8,700 ft. elevation in sedimentary soils. This species was not found in the project area.

3. Threatened and Endangered (T&E) Wildlife and Fish Species

Endangered species are species that have been identified, and listed in the Federal Register, by the U.S. Fish and Wildlife Service (Service) as being in danger of extinction throughout all or a significant portion of its range. Threatened species are species that have been identified, and listed in the Federal Register, by the Service as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Table 3 lists wildlife and fish species designated as threatened or endangered by the U.S. Fish and Wildlife Service that could occur in San Pete or Sevier County, Utah. T&E species that may occur in San Pete or Sevier County but are not likely to occur in, and do not have suitable habitat in or near the proposed project area are also identified in Table 3, but they will not be considered further in this BE/BA. There are no proposed wildlife or fish species identified for Emery County.

Table 3. Listed and candidate wildlife and fish species that could occur in Emery County, Utah, and their potential for occurrence in the proposed project area and consideration in this BE/BA.

SPECIES	SPECIES STATUS	SPECIES OCCURRENCE IN THE PROJECT AREAS AND CONSIDERATION IN THIS BE/BA
Bald Eagle <i>Haliaeetus leucocephalus</i>	Threatened San Pete and Sevier Counties	Considered. A bald eagle pair has been known to nest in Emery County approximately 20 miles from the proposed project area. Bald eagles may occur incidentally in the proposed project area.
Yellow-billed Cuckoo <i>Coccyzus americanus occidentalis</i>	Candidate San Pete and Sevier Counties	Not Considered. The western yellow-billed cuckoo breeds in western U.S. states including Utah, and migrates to South America during winter. Cuckoos are riparian obligates. Nesting habitat is classified as dense lowland cottonwood/willow riparian forest characterized by a dense sub-canopy or shrub layer. In Utah, nesting habitats are found at elevations between 2,500 to 6,000 feet. They appear to require large tracts (100 to 200 acres) of contiguous riparian nesting habitat (Parrish et al. 1999). The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats at between 8,500 and 9,000 ft. elevation; there is no suitable habitat for this species in or near the project area.
Canada Lynx <i>Lynx canadensis</i>	Threatened San Pete County	Not Considered. The proposed project is located in open fairly dry pinyon/juniper, sagebrush, mohogany habitats, which does not provide suitable habitat for the Canada lynx.
Utah Prairie Dog <i>Cynomys parvidens</i>	Threatened San Pete and Sevier Counties	Not Considered. Utah prairie dogs are found in areas where there are deep, well-drained soils; burrows extend straight down for about 10-15 ft. and then branch into horizontal tunnels. They feed on insects (particularly cicadas), where available. Their preferred vegetative food type is alfalfa, but they generally prefer grasses over forbs and shrubs. Moist palatable forage must be available throughout the summer. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats with mostly shallow soils over Castle Gate sandstone. No evidence of Utah prairie dogs was found in or near the project area.

4. Sensitive Wildlife and Fish Species

Sensitive species are species that are recognized by the Regional Forester as needing special management attention in order to prevent them from becoming threatened or endangered. Table 4 lists the Intermountain Regional Forester's list of sensitive wildlife species that could occur on the Manti Division of the Manti-La Sal National Forest (MLNF). Sensitive wildlife species that do not occur or have suitable habitat in or near the proposed project area, or species that would not be impacted by proposed activities within the project area, are identified in Table 4 and will not be considered further in this Biological Evaluation/Biological Assessment (BE/BA).

Table 4. Sensitive wildlife and fish species that could occur on the Manti Division of the MLNF, and their potential occurrence in the proposed project area and consideration in this BE/BA.

SPECIES	SPECIES OCCURRENCE IN THE PROJECT AREAS AND CONSIDERATION IN THIS BE/BA
Spotted Bat <i>Euderma maculatum</i>	Considered. In Utah, the spotted bat likely occurs throughout the state. It is known to use a variety of vegetation types from approximately 2,500 to 9,500 feet, including riparian, desert shrub, ponderosa pine, montane forests, open pastures and meadows. Spotted bats roost alone in rock crevices high up on steep cliff faces. There are potentially suitable roosting cliffs near the proposed project area. Spotted bats may occasionally forage in the sagebrush/shrub habitat in the vicinity of the proposed project, and in the nearby ponderosa pine habitat.

Townsend's Big-eared Bat
Plecotus townsendii pallescens
Greater Sage Grouse
Centrocercus urophasianus
Northern Goshawk
Accipiter gentilis

Considered. In Utah, Townsend's big-eared bats roost and hibernate in caves and mines; they also roost (but not hibernate) in buildings (Oliver 2000). These bats use juniper/pine forests, shrub/steppe grasslands, deciduous and mixed conifer forests. There is potentially suitable roost sites and forage habitat in or near the proposed project area.

Considered. Sage grouse are generally found where there are large tracts of sage brush habitat with a diverse and substantial understory of native grasses and forbs or in areas where there is a mosaic of sagebrush, grasslands, aspen. Wet meadows, springs, seeps, or other green areas within sagebrush shrublands are generally needed for the early brood-rearing period. There is suitable breeding habitat near the proposed project area.

Not Considered. Goshawks forage in fairly dense (generally greater than 40 percent canopy cover) conifer forests, and they nest in even denser stands (generally greater than 60 percent canopy cover); many nest and forage sights contain an aspen component. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats. There is no suitable goshawk habitat in or near the project area.

Peregrine Falcon
Falco peregrinus

Considered. Peregrine falcons may travel more than 18 miles from the nest site to hunt for food, however average foraging distance from the eyrie extends out to 10 miles, with 80 percent of peregrine falcon foraging occurring within a mile of the nest. The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Nesting peregrine falcons may forage in the vicinity of the proposed project.

Flammulated Owl
Otis flammeollus

Not Considered. Flammulated owls prefer mature ponderosa pine/Douglas fir forests with open canopies, but they can be found in second growth ponderosa pine, aspen and mixed conifer forests that contain a ponderosa pine component. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats, and will not alter or disturb flammulated owl habitat.

Three-toed woodpecker
Picoides tridactylus

Not Considered. Three-toed woodpeckers are found in northern coniferous and mixed forest types up to 9,000 feet elevation. Forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine are used. Nests may be found in spruce, tamarack, pine, cedar, and aspen trees. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats, and will not alter or disturb three-toed woodpecker habitat.

Spotted Frog
Rana pretiosa

Not Considered. Spotted frogs are most commonly found in cold, still, permanent water in such habitats as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, and near flat water springs with emergent vegetation. This frog has a broad distribution throughout the previously glaciated regions of British Columbia. They also occur in the Rocky Mountains of Alberta, and have patchy distribution in the United States, from Washington to Montana and south to Nevada and Utah. In Utah, the spotted frog occurs in isolated populations, and is considered to be a relict from the last ice age. The spotted frog has not been found on the Manti - La Sal National Forest or in the proposed project area.

Colorado Cutthroat Trout
Oncorhynchus clarki pleuriticus

Not Considered. Colorado cutthroat trout require cool, clear water in streams with well vegetated banks, which provides cover and bank stability. Deep pools and structures such as boulders and logs provide instream cover. This species is believed to have formerly been widespread in lakes, rivers, and streams in Utah, however now it is limited to isolated headwater streams and other rigorous environments where other species such as rainbow trout and Yellowstone cutthroat trout have not been introduced. Colorado cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found.

Bonneville Cutthroat Trout
Oncorhynchus clarki utah

Not Considered. Bonneville cutthroat trout require cool, clear, well-oxygenated water and the presence of clean, well-sorted gravels with minimal fine sediments for successful spawning. They are found at high, moderate and low elevations in small head water streams in the Bonneville basin (USDI 2001b). Bonneville cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found.

II. TES SPECIES POTENTIALLY AFFECTED BY THE PROJECT

A. Threatened and Endangered Species

Bald Eagle

Bald eagle nests are typically located in multi-storied (uneven aged) coniferous forest stands that contain elements of old growth structure, and are located near bodies of water that support prey species. Nest trees are generally one of the largest trees in the stand, which provides good visibility and a clear flight path to and from the nest (Stalmaster 1987). Bald Eagles typically construct large, conspicuous stick nests in sizeable trees.

Prey species commonly include fish, waterfowl, jackrabbits, and carrion; results of food-habit

studies have indicated that bald eagle diets included: 56 percent fish, 28 percent birds, 14 percent mammals, and 2 percent miscellaneous sources (Stalmaster 1987).

Bald eagles spend over 90 percent of the daylight hours perching. Important perch sites generally have 3 fundamental elements: a direct view of potential food sources, located within 50 meters of water, and are located in areas isolated from human disturbance (Stalmaster 1987).

Unlike nesting and perch sites, roosting sites are not necessarily located close to water; during breeding season, nesting adults often roost in the nest or at the nest tree (Stalmaster 1987). Roost sites generally provide thermal cover, and are isolated from human disturbance. Bald eagles often roost communally during winter.

During the winter, Bald Eagles tend to concentrate wherever food is available; food availability is probably the single most important factor affecting winter eagle distribution and abundance, but availability of night roosts and diurnal perches are also fundamental elements of bald eagle winter range. Eagles are often attracted to wintering concentrations of waterfowl. In some regions, such as Utah, carrion can also be an important food source. At wintering areas, Bald Eagles often roost in large groups. These communal roosts are located in forested stands that provide protection from harsh weather.

There are only a few known nesting pairs of bald eagles in Utah. There is a bald eagle nest site located approximately 20 miles from the proposed project area, and located approximately 7 miles from Forest Service managed land. A nesting pair had been observed at this site during the nesting and fledgling period for several years prior to 1997. This nesting territory was not occupied in 2001 or 2002. The nest was blown out of the tree in the winter of 2003, and a pair built a new nest approximately ½ mile southeast of the old one, but did not nest successfully in 2003. The pair worked on the nest again in early 2004, but did not nest. A 1997 study by N. Boschen indicated that the pair did not forage on national forest system lands; nesting adults and fledglings were found to forage within a 5 mile radius of the nest tree (Boschen, 1997). No bald eagles are known to nest on Manti-La Sal NF managed lands. Most bald eagle sightings on the Forest have been at Joe's Valley Reservoir and Huntington Canyon during late fall and early winter prior to freeze over.

B. Sensitive Species

Spotted Bat

The spotted bat ranges from Mexico through the western states to the southern border of British Columbia; it is probably widely distributed in low numbers throughout western North America (Toone 1994). And it probably occurs throughout Utah, but its distribution appears to be patchy. Hasenyager (1980) thought that "the range of the spotted bat in Utah could incorporate the southern third of the state and central portions of the west desert where suitable roosts exist, excluding the higher portions of the central mountain range." Habitat occupied by this bat ranges from low desert to montane coniferous forests normally below 8,000 feet in elevation (Watkins 1977). They have been found in a variety of habitat types including open ponderosa

pine, desert shrub, pinyon/juniper, and open pasture and hay fields. In Utah, the spotted bat has been captured in several habitats: lowland riparian habitat (open meadows), desert shrub communities (sagebrush/rabbitbrush), ponderosa pine forest, montane grassland (grass/aspen), and montane forest and woodland (grass/spruce/aspen). This species has also been occasionally found in or on buildings in Utah towns and cities (Oliver 2000).

They typically roost singly in crevices in steep cliff faces. Cracks and crevices in limestone or sandstone cliffs provide important roosting sites (Spahr et al. 1991), especially where rocky cliffs occur in proximity to riparian areas. Day roosts and maternal roosts are typically within small (up to 6 cm) cracks and crevices in cliff faces (Toone 1994). The relative inaccessibility of cliff roosts may insulate spotted bats from human disturbance, but the species has been observed roosting (and foraging) near campgrounds (Toone 1994). Spotted bats are thought to feed mainly on moths high above the vegetation canopy. They forage alone after dark using echolocation, which is effective for fast flight feeding on tympanate moths (moths that can detect ultra-sonic sounds). As is common with many bats, spotted bats may forage a considerable distance (up to 6 miles) from roost sites (Toone 1994).

Roosting habitat in the Wasatch Plateau region is likely to occur in numerous cliffs along the edges of the plateau and on canyon walls that cut through the plateau. It is likely that spotted bats forage in a variety of habitats on the Plateau that are located within 6 miles of suitable roost cliffs and at elevations lower than 9,500 ft. Various surveys on the MLNF have detected spotted bats in several major canyons (and their tributaries) on the east side of the plateau, including Muddy, Ferron, Straight, Cottonwood, and Huntington Canyons (Perkins and Peterson 1997, and Sherwin et al. 1997). These surveys also detected spotted bats near Joes Valley Reservoir and Trail Mountain.

Observations made during the 1997 surveys on the MLNF indicated that spotted bats tolerate at least moderate human disturbance while foraging. Surveys were conducted at several sites near roads with light to moderate vehicular traffic (Crandall Canyon, Huntington Canyon, Straight Canyon), including tandem coal trucks. Spotted bats were observed foraging at low elevation sites, within 30 meters of the right-of-way. The fact that spotted bats were relatively common in active and previously mined areas may imply that subsidence caused cliff failures have not dramatically affected resident populations (Sherwin, et al. 1997).

Townsend's Big-eared Bat

Townsend's big-eared bats occur throughout North America, from British Columbia to southern Mexico; from California to South Dakota and western Texas and Oklahoma. They are widely distributed throughout the Intermountain Region, and they occur throughout Utah (Oliver 2000). They inhabit a wide variety of xeric and mesic habitats including: desert scrub, sagebrush, chaparral, deciduous and coniferous forests including, but not limited to pinyon/juniper, ponderosa pine, spruce/fir, redwood, mixed hardwood/conifer, and oak woodlands (Pierson et al. 1999), and their distribution is strongly correlated with the availability of caves or cave-like roosting habitat such as mines, buildings with cave-like attics, diversion tunnels or bridges (Pierson et al. 1999). They require relatively spacious, relatively cool cave-like roost sites; generally at least 30 meters in length, and at least 2 meters high with temperatures ranging from

-2.0 to 13.0° C (Pierson et al. 1999).

These bats are relatively sedentary, and do not migrate long distances; generally seasonal movements are less than 32 km (Pierson et al. 1999). Detections in Utah have ranged from 3,300 feet to 9,520 feet (Oliver 2000). In Utah, night roosts are found in mines and caves; day roosts and maternity roosts are found in mines, caves and buildings (Oliver 2000).

Townsend's big-eared bats are insectivorous; a lepidopteran specialist eating mostly moths (Pierson et al. 1999). They forage after dark using echolocation on the wing (Sphar et al. 1991); a late flyer, emerging from the roost primarily after dark; well after sunset (Pierson et al. 1999).

Breeding occurs at winter sites between October and February, and parturition occurs in late spring and early summer. Each female usually gives birth to a single offspring. Females and young roost in communal nurseries, which range in size from 12 to 200 individuals. The offspring fly at three weeks and are weaned in six to eight weeks. Nurseries break up by August.

During winter, these bats roost singly or in small clusters in hibernacula from October to February. They don't migrate, but will move to different roost locations within hibernacula and may even move to different hibernacula during a winter in response to temperature changes.

Most of the bat surveys conducted on the MLNF that employed the use of mist nets or bat detectors have not revealed Townsend's big-eared bats (Perkins and Peterson 1997, and Sherwin et al. 1997). This is not unusual, as these bats are most commonly located during direct surveys of roosts (Oliver 2000).

There is potentially suitable Townsend's big-eared bat foraging habitat in and around the proposed project area.

Greater Sage Grouse

Sage grouse are sagebrush ecosystem obligates; they occur in mosaics of sagebrush, grasslands, and aspen, and are associated with both tall and short species of sagebrush in foothills, sagebrush shrublands, and mountain slopes. They do not occur in pinyon-juniper woodlands or in shadscale shrublands (Paige and Ritter 1999). At one time sage grouse were found in virtually all areas where sage brush (especially *Artemisia tridentata*) occurred in Western North America. It is hypothesized that the sage grouse breeding population circa 1800 was 1.1 million birds. Today, the estimated breeding population is 0.2 million (Parrish et al. 2002).

In Utah, sage grouse inhabit sagebrush habitat of the Colorado Plateau and Great Basin geographic regions from 6,000 to 9,000 ft. elevation. During spring, they use sagebrush habitats for breeding, feeding, roosting, nesting and rearing young (Connelly et al. 2000). Large, relatively continuous sagebrush stands, often exceeding 50 sq. mi., are needed to provide all habitat characteristics used by sage grouse; summer home ranges may be as small as 1 to 2.5 square miles, and annual home ranges may be as large as 577 square miles (Page and Ritter 1999).

Sage grouse males appear to form breeding leks opportunistically at sites within or adjacent to potential nesting habitat. Leks are typically established in openings within large sagebrush stands; openings include old lakebeds, low sagebrush flats, ridge tops, burn areas, and other open areas within sagebrush stands (Connely et al. 2000). Most nests are placed under sagebrush in stands that provide higher than average canopies and lateral cover (Connely et al. 2000). Nest sites also generally contain taller and denser grass cover than average. As sage brush habitats dry out during summer sage grouse use a wider variety of habitats including meadow and riparian habitats. Hens with broods move to areas that support succulent vegetation including forbs (Parrish et al. 2002). Sites used by broods have been reported to have twice as much forb cover as independent sites (Connely et al. 2000).

There suitable sage grouse habitat near the proposed project area.

Peregrine Falcon

The peregrine falcon is cosmopolitan, ranging from coast to coast in North America. Pesticide accumulation in the mid 1900s drove the peregrine to the verge of extinction, and by 1965 fewer than 20 pairs were known west of the Great Plains. In 1990 there were 326 known pairs in the southwest region (Rodriguez 2002). The peregrine falcon was federally listed as an endangered species in 1970, and again in 1984. With the help of reintroductions and pesticide controls (primarily banning DDT, which caused eggshell thinning and drastically low reproduction), the peregrine falcon population increased sufficiently to be de-listed in 2000.

Peregrine falcon preferred nesting habitat is on cliff faces with recesses or protected shelves, although reintroduced birds regularly nest on man-made structures such as towers and high-rise buildings. A wide variety of habitats are used for foraging, including riparian woodlands, open country near rivers and marshes, coniferous and deciduous forest edges, shrublands, and prairies. They prey on a wide variety of birds including pigeons, shorebirds, waterfowl, grouse and other small to mediums sized terrestrial birds. Peregrine falcons may travel up to 18 miles from their nest site to forage for food, however a 10 mile radius around the nest is an average hunting area, and 80% of foraging occurs within a mile of the nest (Spahr et al. 1991). The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Nesting peregrine falcons may forage in the vicinity of the proposed project.

III. AFFECTED ENVIRONMENT

The proposed project is located on a relatively high elevation plateau on the Castle Gate sandstone formation. There are a variety of habitats on this plateau including: pinyon/juniper, mixed conifer dominated by ponderosa pine, mixed conifer and aspen, mountain brush, sage brush and perennial grassland habitats. There are 6 drill sites in the proposed project plan: 5 drill holes are located in sagebrush dominated habitat and one drill hole is located in mountain brush habitat that includes sagebrush/rabbit brush, service berry and mahogany.

IV. ANALYSIS OF EFFECTS

This analysis of effects is based on the existing conditions within the project planning area. The analysis reviews the potential “direct and indirect effects” of the proposed SUFCO Exploration Drilling project on threatened, endangered and sensitive (TES) species, and the expected “cumulative effects” that could potentially accrue to TES species if project activities add cumulatively to other past, present or reasonably foreseeable future actions to impact the species of concern.

The past, present or reasonably foreseeable future actions that may add incrementally to impacts of the proposed Ark Land Company SUFCO (Federal Coal Leases U-76195 and U-63214) Coal Exploration Drilling Project (2003) include:

- Other exploration drilling activity
- Disbursed recreational activity
- Road construction and maintenance

A. Threatened and Endangered Species

This analysis of effects is based on the existing conditions within the project planning area. The analysis reviews the potential “direct and indirect effects” of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project on threatened, endangered and sensitive (TES) species, management indicator species (MIS), and priority migratory bird species. This report also states the expected “cumulative effects” that would potentially accrue to TES, MIS and priority migratory bird species if proposed project actions add cumulatively to other past, present or reasonably foreseeable future actions to impact the species of concern.

The past, present or reasonably foreseeable future actions that may add incrementally to impacts of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project include:

- Other exploration drilling activity
- Disbursed recreational activity
- Road construction and maintenance

A. Threatened and Endangered Species

Bald Eagle

Direct and Indirect Effects: There are no landscape characteristics in the vicinity of the proposed project that would attract bald eagles to the area; there are no water bodies that would provide suitable bald eagle forage habitat in or near the project area. The project area is not known or expected to be used by nesting, wintering or foraging bald eagles. However, bald eagles may occur incidentally while in transition during migration or dispersal during late fall or

early winter months. These occurrences would only be incidental and of short duration, and the proposed project would not alter bald eagle habitat. Therefore, the proposed project is not likely to directly or indirectly affect the bald eagle.

Cumulative Effects: Since the proposed project is not likely to exert direct or indirect affects on the bald eagle, no cumulative affects will accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

B. Sensitive Species

Spotted Bat

Direct and Indirect Effects: There are numerous cliff faces that could provide suitable spotted bat roost habitat within 2 miles of the proposed project area. The nearest suitable roost habitat is located approximately ½ mile from the nearest drill site. Activity during project implementation would not likely disturb roosting bats, and the project would not directly or indirectly impact spotted bat roost habitat.

The project would be implemented over a short period of time (7 plus days at each drill site) over small segments of the landscape that potentially provides suitable spotted bat forage habitat. However, since project activity would occur during daylight hours, it would not impact the nighttime foraging spotted bat. The proposed project would not appreciably directly or indirectly impact spotted bat foraging habitat.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect impacts on the spotted bat, no appreciable cumulative affects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Townsend's big-eared Bat

Direct and Indirect Effects: There are a number of alcoves and cave like structures located within 2 miles of the proposed project area. Activity during project implementation would not likely disturb roosting bats; the project would not directly or indirectly impact Townsend's big-eared bat roost habitat.

The project will be implemented for a short period of time (7 plus days at each drill site) over small segments of the landscape that potentially provides suitable Townsend's big-eared bat forage habitat. However, since project activity would occur during daylight hours, it would not impact this nighttime foraging species. The proposed project would not appreciably directly or indirectly impact Townsend's big-eared bat foraging habitat.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect affects on the Townsend's big-eared bat, no appreciable cumulative affects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling

Project.

Greater Sage Grouse

Direct and Indirect Effects: The proposed project would occur outside the greater sage grouse lekking and breeding season, the project would not modify lekking or breeding habitat, and the project would not occur in brood rearing habitat. Therefore, the proposed project would not likely appreciably directly or indirectly impact the greater sage grouse.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect effects on the greater sage grouse, no appreciable cumulative effects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Peregrine Falcon

Direct and Indirect Effects: The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Falcons may travel more than 18 miles from the nest site to hunt for food, however a 10 mile radius around the nest is an average hunting area, with 80% of foraging occurring within a mile of the nest. Nesting peregrine falcons may forage in the vicinity of the proposed project. Project implementation would not occur during the peregrine nesting period, and would only temporarily impact localized areas within potential forage habitat; therefore the proposed project would not likely appreciably directly or indirectly impact the peregrine falcon.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect effects on the peregrine falcon, no appreciable cumulative effects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

V. DETERMINATION OF EFFECTS

A. Threatened and Endangered Species

Plant Species: The U.S. Fish and Wildlife Service lists three plant species that could occur in or have suitable habitat in San Pete or Sevier County, Utah including: Heliotrope Milkvetch, Last Chance Townsendia, and Wright Fishhook Cactus. These plant species or their habitats do not occur within the proposed project area. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not affect the Heliotrope Milkvetch, Last Chance Townsendia, or Wright Fishhook Cactus.

Fish Species: The U.S. Fish and Wildlife Service (Service) does not list any fish species as threatened, endangered, proposed or candidate species for San Pete or Sevier County, Utah.

Wildlife Species: The U.S. Fish and Wildlife Service lists four wildlife species that could occur in or have suitable habitat in San Pete or Sevier County, Utah including: bald eagle, Southwestern willow flycatcher, Western yellow-billed cuckoo and Utah prairie dog. Determinations for these species follow:

Bald Eagle

There are no landscape characteristics in the vicinity of the proposed project that would draw bald eagles to the area; the project area is not known or expected to be used by nesting, wintering or foraging bald eagles, and the proposed project will not impact bald eagle nest, forage or winter habitat. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not affect the bald eagle.

Yellow-billed Cuckoo

Cuckoos are riparian obligates; nesting habitat is classified as dense lowland cottonwood/willow riparian forest characterized by a dense sub-canopy or shrub layer. In Utah, nesting habitats are found at elevations between 2,500 to 6,000 feet. They require large tracts (100 to 200 acres) of contiguous riparian nesting habitat (Parrish et al. 1999). The proposed project is located in relative dry upland habitat at approximately 8,700 ft. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not affect the yellow-billed cuckoo.

Canada Lynx

The proposed project is located in open fairly dry pinyon/juniper, sagebrush, mohogany habitats, which does not provide suitable habitat for the Canada lynx. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not affect the Canada Lynx.

Utah Prairie Dog

Utah prairie dogs are found in areas where there are deep, well-drained soils. The proposed project is located in an area where there are shallow soils on Castle Gate sandstone. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not affect the Utah prairie dog.

B. Sensitive Species

Plant Species: The Intermountain Regional Forester lists seven sensitive plant species that could occur on the Manti Division of the Manti-La Sal National Forest including: Link Trail

Columbine, Creutzfeldt-flower, Carrington Daisy, Canyon Sweetvetch, Arizona Willow, Musinea groundsel and Maguire Campion. None of these sensitive plants or their habitat occurs within or near the proposed project area. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the Link Trail Columbine, Creutzfeldt-flower, Carrington Daisy, Canyon Sweetvetch, Arizona Willow, Musinea groundsel or Maguire Campion.

Fish and Amphibian Species: The Intermountain Regional Forester lists three sensitive fish and amphibian species that could occur on the Manti Division of the Manti-La Sal National Forest including: spotted frog, Colorado cutthroat trout and the Bonneville cutthroat trout. Determinations for each of these species follow:

Spotted Frog

No suitable spotted frog habitat exists in or near the proposed project area, and no spotted frogs are known or thought to occur on the Manti-La Sal National Forest. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the spotted frog.

Colorado Cutthroat Trout

Colorado cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found. Therefore, it is my determination that the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project would have no impact on the Colorado cutthroat trout.

Bonneville Cutthroat Trout

Bonneville cutthroat trout are not found in the proposed project area, and the project would not adversely impact drainages where it is found. Therefore, it is my determination that the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project would have no impact on the Bonneville cutthroat trout.

Wildlife Species: The Intermountain Regional Forester lists seven sensitive wildlife species that could occur on the Manti Division of the Manti-La Sal National Forest including: the spotted bat, townsend's big-eared bat, greater sage grouse, northern goshawk, peregrine falcon, flammulated owl and three-toed woodpecker. Determinations for each of these species follow:

Spotted Bat

The nearest suitable roost habitat is located approximately ½ mile from the project area. Activity during project implementation is not likely to disturb roosting or foraging bats; nor would it disturb roost or foraging habitat. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the

spotted bat.

Townsend's big-eared bat

There is suitable Townsend's big-eared bat forage habitat in the proposed project area, and there is suitable roost habitat not far away. Activity during project implementation is not likely to disturb roosting or foraging bats; nor would it disturb roost or foraging habitat. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the Townsend's big-eared bat.

Greater Sage Grouse

The proposed project would occur outside the greater sage grouse lekking and breeding season, the project would not modify lekking or breeding habitat, and the project would not occur in brood rearing habitat. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the Greater Sage Grouse.

Northern Goshawk

Goshawks forage in fairly dense (generally greater than 40 percent canopy cover) conifer forests, and they nest in even denser stands (generally greater than 60 percent canopy cover); however the proposed project is located in fairly dry sagebrush and mohogany habitat types. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the northern goshawk.

Peregrine Falcon

The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Falcons may travel more than 18 miles from the nest site to hunt for food, however a 10 mile radius around the nest is an average hunting area, with 80% of foraging occurring within a mile of the nest. Nesting peregrine falcons may forage in the vicinity of the proposed project. Project implementation would not occur during the peregrine nesting period, and would only temporarily impact localized areas within potential forage habitat. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the peregrine falcon.

Flammulated Owl

Flammulated owls prefer mature ponderosa pine/Douglas fir forests with open canopies, but they can be found in second growth ponderosa pine, aspen and mixed conifer forests that contain a ponderosa pine component. The proposed project is located in fairly dry sagebrush and mohogany habitats. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the flammulated Owl.

Three-toed Woodpecker

Three-toed woodpeckers are found in northern coniferous and mixed forest types up to 9,000 feet elevation. Forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine are used. Nests may be found in spruce, tamarack, pine, cedar, and aspen trees. The proposed project is located in fairly dry sagebrush and mohogany habitats. Therefore, it is my determination that the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will have no impact on the three-toed woodpecker.

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WILDLIFE Resources REPORT

for the

sufco 2004 Helicopter-assisted Coal Exploration Drilling PROJECT

**Ferron/Price Ranger District
Manti-La Sal National Forest
San Pete and Sevier Counties, Utah**

Prepared by: /s/ Terry Nelson _____ **Date:** 7/26/2004
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I. INTRODUCTION

The purpose of this Wildlife Resources Report is to assess the potential affects of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project on wildlife species listed as threatened, endangered, candidate or proposed by the U.S. Fish and Wildlife Service (Service); wildlife species listed on the Intermountain Regional Forester's list of sensitive species; species identified as Management Indicator Species (MIS) by the Manti-La Sal National Forest; and migratory bird species identified as priority species by the Utah Partners in Flight Avian Conservation Strategy (2002).

A. PROPOSED ACTION

1. Summary of the Proposed Action

Ark Land Company has submitted a plan to conduct coal exploration and reclamation activities. Six drill holes are proposed for coal exploration during summer 2004. Five of the holes are proposed on unleased federal portions of the proposed Muddy Coal Area (Forest Service Surface/Federal Coal). One hole is proposed on Utah School and Institutional Trust Lands Administration (SITLA) portions of the Muddy Coal tract (Forest Service Surface/SITLA Coal). The project would be completed during the summer and early fall season, 2004. Access to three of the proposed drill sites would be along existing FS roads. Helicopters would be used to fly drill equipment to the other 3 remote sites where there are no existing roads. Since, helicopter-drilling techniques are proposed, there would be minimum disturbance (<100 ft² per site).

The proponent's proposed action as defined in its 2003 coal exploration license proposal is to access National Forest system lands, construct temporary drilling pads, drill holes to acquire needed geologic data from six coal exploration holes and reclaim disturbed areas on Forest Service managed land, using helicopter-assisted drilling methods. The proposed helicopter-assisted drilling project is outlined below:

- The planned drilling method is wireline core drilling from the surface down through to the lowest coal horizon. Equipment will include two heli-portable skid-mounted core drilling rigs together with all necessary equipment such as drill rod trays, fuel tanks, water tanks, etc. The necessary equipment and vehicles include an 18,000 gallon frac tank, helicopter, jet fuel tank (trailer mounted), 4000 gallon water truck, two or three fifth-wheel flatbed trucks trailers used to haul drill equipment, four pick-up trucks, a covered tool supply trailer, and a geophysical logging truck.
- Hauling exploration equipment and transporting personnel to the staging area (see map) would be via frFDR 50007, 50044, and 50132 which traverses both the Fishlake and Manti-La Sal National Forests. Road-use permits would be obtained from the Forest Service before operation start.
- Site preparation would include removal of some vegetation with hand tools as needed for placement of the drill rig and needed equipment. Surface

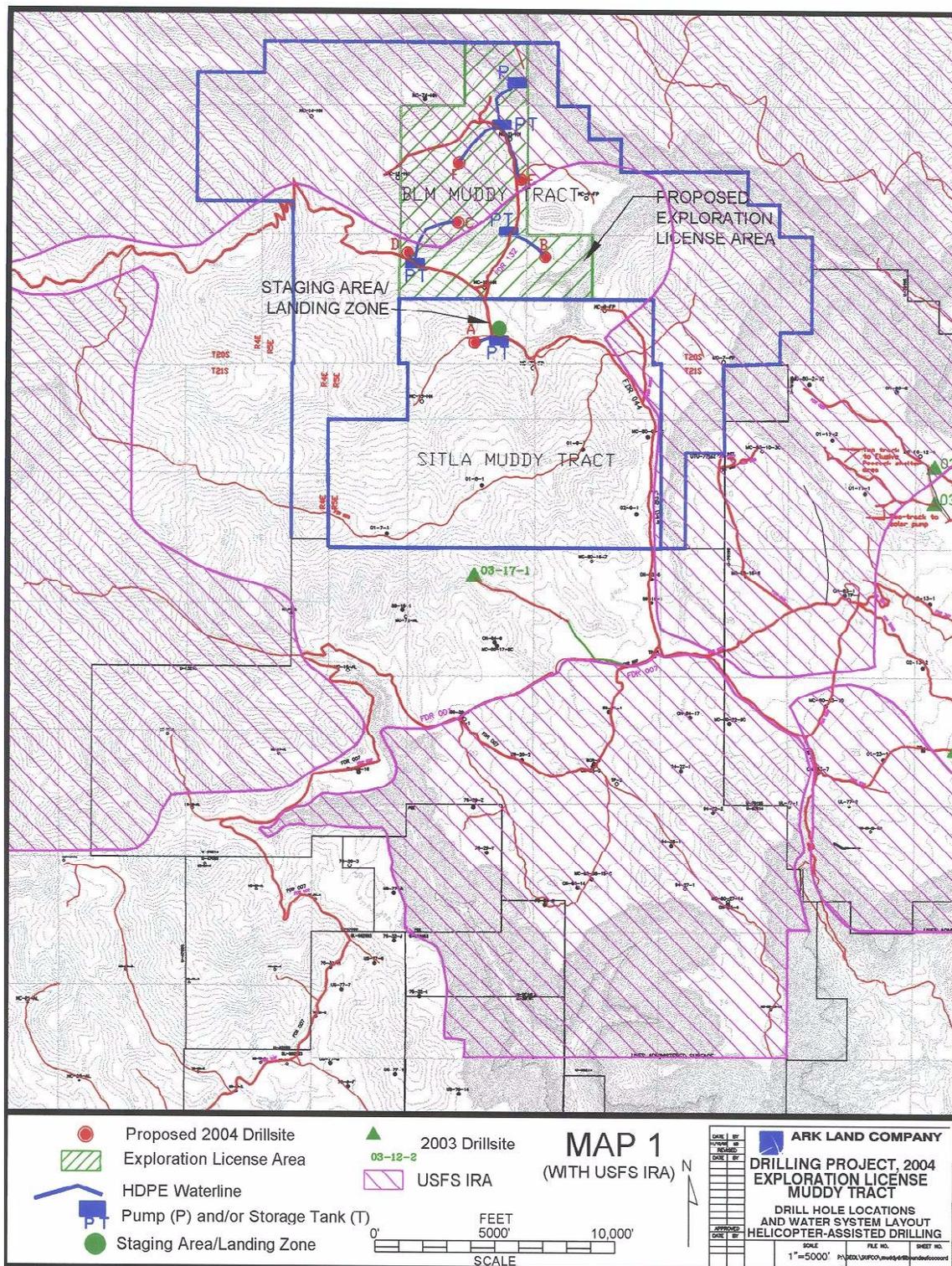
disturbance would be minimal; less than 100 square feet per site.

- The finished size of the hole will be nominally 2 3/16 inch diameter. Three-inch surface casing will be inserted through the surface alluvium and certain other intervals depending on hole conditions. Upon completion, holes would be geophysically logged.
- . Soils would be protected from potential contamination by placement of brattice or similar impermeable material placed beneath mechanical equipment
- Water for drilling operations and road maintenance would be obtained from Muddy Creek and/or Quitchumpah Creek. Necessary arrangements would be made with shareholders and the Utah Division of Water Rights through a temporary water exchange permit. Completed drill holes would be plugged with a cement or cement/bentonite slurry to their full depth in accordance with BLM and Forest Service standards.
- Reclamation would include removal of equipment and trash immediately after hole completion. Topsoil would be scarified with hand tools. The disturbed areas would be reseeded (same as 2003 seed mix) with seed mix approved by the FS. The total plan, including reclamation, should be completed in 8 to 10 weeks.
- One hole may be completed as water monitoring well. Nominal 1.0 to 1.5 inch well screen and steel casing would be installed to below the deepest mineable coal seam. The screen zone would be sand packed and sealed from overlying strata and the overlying hole annulus would be cemented to the surface. Well casing with a locking lid would be left at the surface extending above the surface approximately two feet. The wellhead would be properly identified with either a brass marker or a welded-on identification. Once the monitor well is no longer in use, it would be completely plugged with a cement or cement/bentonite slurry to the top. The wellhead would be removed at the surface.

2. Description of the Project Location

The general locations are in San Pete and Sevier Counties about 10 miles northwest of the town of Emery, Utah. The proposed project area and drill hole locations are shown on Map 1. The proposed drill holes, lease tract administrator, location, depth and proposed access routes are summarized in the following table:

Drill Site	Tract	Location: T20S, R5E	Access Route
A	SITLA	SW, SE, Sec. 32	By Air FR 50044
B	BLM	NW, NW, Sec. 33	By Air FR 50132
C	BLM	SE, SW, Sec. 29	FR 50132
D	BLM	NW, NW, Sec. 32	FR 50132
E	BLM	NE, SE, Sec. 29	FR 50132
F	BLM	SE, NW, Sec. 29	By Air FR 50132



B. SPECIES OF CONCERN

1. Threatened and Endangered (T&E) Wildlife Species

Endangered species are species that have been identified, and listed in the Federal Register, by the U.S. Fish and Wildlife Service (Service) as being in danger of extinction throughout all or a significant portion of its range. Threatened species are species that have been identified, and listed in the Federal Register, by the Service as likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Table 1 lists wildlife and fish species designated as threatened or endangered (T&E) by the Service that could occur in San Pete or Sevier County, Utah. T&E species that could occur in San Pete or Sevier County but do not have suitable habitat in and are not likely to occur in or near the proposed project area are also identified in Table 1, and will not be considered further in this wildlife Resources Report. There are no fish species identified as a threatened, endangered or candidate species for San Pete or Sevier County, and there are no proposed wildlife or fish species identified for San Pete or Sevier County.

Table 1. Listed and candidate wildlife and fish species that could occur in San Pete or Sevier County, Utah, and their potential for occurrence in the proposed project area and consideration in this Wildlife Resources Report.

SPECIES	SPECIES STATUS	SPECIES OCCURRENCE IN THE PROJECT AREAS AND CONSIDERATION IN THIS WILDLIFE REPORT
Bald Eagle <i>Haliaeetus leucocephalus</i>	Threatened San Pete and Sevier Counties	Considered. A bald eagle pair has been known to nest in Emery County approximately 20 miles northeast of the proposed project area. Bald eagles may occur incidentally in the proposed project area.
Western Yellow-billed Cuckoo <i>Coccyzus americanus occidentalis</i>	Candidate San Pete and Sevier Counties	Not Considered. The western yellow-billed cuckoo breeds in western U.S. states including Utah, and migrates to South America during winter. Cuckoos are riparian obligates. Nesting habitat is classified as dense lowland cottonwood/willow riparian forest characterized by a dense sub-canopy or shrub layer. In Utah, nesting habitats are found at elevations between 2,500 to 6,000 feet. They appear to require large tracts (100 to 200 acres) of contiguous riparian nesting habitat (Parrish et al. 1999). The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats at between 8,500 and 9,000 ft. elevation; there is no suitable habitat for this species in or near the project area.
Canada Lynx <i>Lynx canadensis</i>	Threatened San Pete County	Not Considered. The proposed project is located in open fairly dry pinyon/juniper, sagebrush, mohogany habitats, which does not provide suitable habitat for the Canada lynx.
Utah Prairie Dog <i>Cynomys parvidens</i>	Threatened San Pete and Sevier Counties	Not Considered. Utah prairie dogs are found in areas where there are deep, well-drained soils; burrows extend straight down for about 10-15 ft. and then branch into horizontal tunnels. They feed on insects (particularly cicadas), where available. Their preferred vegetative food type is alfalfa, but they generally prefer grasses over forbs and shrubs. Moist palatable forage must be available throughout the summer. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats with mostly shallow soils over Castle Gate sandstone. No evidence of Utah prairie dogs was found in or near the project area.

2. Sensitive Wildlife and Fish Species

Sensitive species are species that are recognized by the Regional Forester as needing special management attention in order to prevent them from becoming threatened or endangered.

Table 2 lists the Intermountain Regional Forester's list of sensitive wildlife species that could

occur on the Manti Division of the Manti-La Sal National Forest (MLNF). Sensitive wildlife species that do not occur or have suitable habitat in or near the proposed project area are identified in Table 2 and will not be considered further in this Wildlife Resources Report.

Table 2. Sensitive wildlife and fish species that could occur on the Manti Division of the MLNF, and their potential occurrence in the proposed project area and consideration in this Wildlife Report.

SPECIES	SPECIES OCCURRENCE IN THE PROJECT AREAS AND CONSIDERATION IN THIS WILDLIFE REPORT
Spotted Bat <i>Euderma maculatum</i>	Considered. In Utah, the spotted bat likely occurs throughout the state. It is known to use a variety of vegetation types from approximately 2,500 to 9,500 feet, including riparian, desert shrub, ponderosa pine, montane forests, open pastures and meadows. Spotted bats roost alone in rock crevices high up on steep cliff faces. There are potentially suitable roosting cliffs near the proposed project area. Spotted bats may occasionally forage in the sagebrush/shrub habitat in the vicinity of the proposed project, and in the nearby ponderosa pine habitat.
Townsend's Big-eared Bat <i>Plecotus townsendii pallescens</i>	Considered. In Utah, Townsend's big-eared bats roost and hibernate in caves and mines; they also roost (but not hibernate) in buildings (Oliver 2000). These bats use juniper/pine forests, shrub/steppe grasslands, deciduous and mixed conifer forests. There is potentially suitable roost sites and forage habitat in or near the proposed project area.
Greater Sage Grouse <i>Centrocercus urophasianus</i>	Considered. Sage grouse are generally found where there are large tracts of sage brush habitat with a diverse and substantial understory of native grasses and forbs or in areas where there is a mosaic of sagebrush, grasslands, aspen. Wet meadows, springs, seeps, or other green areas within sagebrush shrublands are generally needed for the early brood-rearing period. There is suitable breeding habitat near the proposed project area.
Northern Goshawk <i>Accipiter gentilis</i>	Not Considered. Goshawks forage in fairly dense (generally greater than 40 percent canopy cover) conifer forests, and they nest in even denser stands (generally greater than 60 percent canopy cover); many nest and forage sights contain an aspen component. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats. There is no suitable goshawk habitat in or near the project area.
Peregrine Falcon <i>Falco peregrinus</i>	Considered. Peregrine falcons may travel more than 18 miles from the nest site to hunt for food, however average foraging distance from the eyrie extends out to 10 miles, with 80 percent of peregrine falcon foraging occurring within a mile of the nest. The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Nesting peregrine falcons may forage in the vicinity of the proposed project.
Flammulated Owl <i>Otis flammeollus</i>	Not Considered. Flammulated owls prefer mature ponderosa pine/Douglas fir forests with open canopies, but they can be found in second growth ponderosa pine, aspen and mixed conifer forests that contain a ponderosa pine component. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats, and will not alter or disturb flammulated owl habitat.
Three-toed woodpecker <i>Picoides tridactylus</i>	Not Considered. Three-toed woodpeckers are found in northern coniferous and mixed forest types up to 9,000 feet elevation. Forests containing spruce, grand fir, ponderosa pine, tamarack, and lodgepole pine are used. Nests may be found in spruce, tamarack, pine, cedar, and aspen trees. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats, and will not alter or disturb three-toed woodpecker habitat.
Spotted Frog <i>Rana pretiosa</i>	Not Considered. Spotted frogs are most commonly found in cold, still, permanent water in such habitats as marshy edges of ponds or lakes, in algae-grown overflow pools of streams, and near flat water springs with emergent vegetation. The spotted frog may move considerable distances from water after breeding, often frequenting mixed conifer and subalpine forests, grasslands, and brushlands of sage and rabbitbrush. No spotted frogs have been found on the Manti – La Sal National Forest, and they are not known or thought to occur on the Forest.
Colorado Cutthroat Trout <i>Oncorhynchus clarki pleuriticus</i>	Not Considered. This species is generally limited to small headwater streams in remote areas where other trout species have not been introduced. They historically occurred in most waters of the upper Colorado River basin. No populations were discovered during 1992 Utah Department of Wildlife Resources surveys on the Ferron/Price district, however a non-pure population was recently found in Crandall Canyon. The proposed project would not impact streams known or suspected to contain Colorado cutthroats.
Bonneville Cutthroat Trout <i>Oncorhynchus clarki utah</i>	Not Considered. This trout requires cool, clear, well-oxygenated water and the presence of clean, well-sorted gravels with minimal fine sediments for successful spawning (Lentsch et al. 1997). There are no streams in the proposed project area that would provide suitable habitat for this species, and the project would not impact streams known or suspected to contain Bonneville cutthroats

3. Management Indicator Species (MIS)

Table 3 lists wildlife species identified as Management Indicator Species (MIS) by the Manti-La Sal National Forest (MLNF) that could occur on the Manti Division of the MLNF. MIS species that do not occur or have suitable habitat in or near the proposed project area are identified in Table 3 and will not be considered further in this Wildlife Resources Report.

Table 3. Management Indicator Species that could occur on the Manti Division of the Manti-La Sal National Forest.

Species Common name (<i>Scientific name</i>)	Species/Habitat Associations	Consideration of this species
Rocky Mountain Elk <i>Cervus canadensis</i>	Elk tend to occupy the higher elevation aspen and mixed conifer habitats from spring through early fall, and move to lower elevation mixed shrub, pinyon/juniper, and sagebrush habitats for winter.	Considered. Elk are known to use the area during snow free months.
Mule Deer <i>Odocoileus hemionus</i>	Mule deer use most of the habitat types surrounding the proposed project area. Lower elevation pinyon/juniper and sagebrush habitats provide suitable winter range. Most mule deer winter range is located at the edge of National Forest system lands on BLM managed land.	Considered. Mule deer are found in and around the proposed project area.
Northern Goshawk <i>Accipiter gentilis</i>	Goshawks forage in fairly dense (generally greater than 40 percent canopy cover) conifer forests, and they nest in even denser stands (generally greater than 60 percent canopy cover). In Utah, many nest stands contain an aspen component.	Not Considered. The proposed project is located in fairly dry pinyon/ juniper, sagebrush, mohogany habitats. There is no suitable goshawk habitat in or near the project area.
Golden Eagle <i>Aquila chrysaetos</i>	Golden eagles are generally found in mountainous or hilly terrain, but also inhabit valleys and plains, especially during migration and winter. They generally nest on cliffs; however tree nests are not uncommon. They hunt over open country for small mammals, snakes, birds and carrion.	Considered. There are a number of golden eagle nest sites located within 2 miles of the proposed project area.
Macroinvertebrates (aquatic Insects)	Macroinvertebrates (aquatic insects) are ecological indicator species in aquatic habitats. Habitat requirements for aquatic macroinvertebrates vary with species; habitat requirements for any one species are very specific so macroinvertebrate indices can provide an indication of general stream health.	Not Considered. The proposed project is located in fairly dry pinyon/juniper, sagebrush, mohogany habitats; the project will not alter or disturb aquatic macroinvertebrate habitat.

4. Migratory Birds

Migratory bird conventions impose obligations on federal agencies for the conservation of migratory birds and their habitats. The Migratory Bird Treaty Act has implemented these conventions with respect to the United States, and Executive Order 13186 ensures that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions on migratory birds, with emphasis on species of concern.

The Utah Partners in Flight Avian Conservation Strategy identifies 20 non-game migratory land birds as priority species. Eleven of these species could be expected to occur on the Ferron/Price Ranger District of the Manti-La Sal National Forest. Table 4 lists these species, their habitat associations, and their consideration in the document.

Table 4. Neotropical migratory birds (NTMBs) listed as priority species by the Utah Partners in Flight Avian Conservation Strategy that could occur on the Manti Division of the Manti-La Sal National Forest.

Common name (<i>Scientific name</i>)	Species/Habitat Associations	Consideration of this species
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Virginia's Warbler (<i>Vermivora virginiae</i>)	Preferred breeding habitat includes chaparral and open stands of pinyon/juniper, ponderosa pine and scrub oak, mountain mahogany thickets or other low brushy habitats on dry mountainsides. In Utah, the primary breeding habitat is oak, and secondary breeding habitat is pinyon/juniper at elevations ranging from 4,000 to 10,000 ft. (Parrish et al. 2002).	Considered. Virginia's warblers are known to occur on the Ferron/Price Ranger District of the Manti-La Sal NF, but they are not known to nest here.
Gray Vireo (<i>Vireo vicinior</i>)	Preferred breeding habitat is on arid slopes dominated by mature pinyon/juniper woodlands. This species commonly occurs in suitable habitats in Colorado, Nevada and Arizona at elevations ranging from 3200 ft. to 6800 ft., and they are known to nest in southwest Utah north to Sevier County. Gray vireos are not believed to nest on the Manti Division of the Manti-La Sal NF, but occur at lower elevations in Emery County, Utah (Walters and Sorenson 1983).	Not Considered. The proposed drill sites are located at 8,500 feet elevation and above, which is above the elevation range of the gray vireo.
Bell's Vireo (<i>Vireo bellii arizonae</i>)	Preferred nesting habitat in Utah is cottonwood-willow dominated riparian areas. This species breeds in southwestern Utah in the Virgin River drainage, Zion NP, and Beaver Dam Wash (Wauer 1997). Bell's vireos are not known to nest on the Manti Division of the Manti-La Sal NF.	Not Considered. The proposed project area does not contain suitable riparian nesting habitat for this species.
Black Rosy-Finch (<i>Leucosticte atrata</i>)	Breeds above timberline in Alpine tundra using barren, rocky or grassy areas and cliffs among glaciers or at bases of snow fields. In Utah, the largest breeding populations occur in alpine habitats in the Wasatch and Uinta Mountains.	Not Considered. The proposed project is located in sub-alpine habitats below the elevation breeding range of the black-rosy finch.
Brewer's Sparrow (<i>Spizella breweri breweri</i>)	Breeding habitat is primarily shrubsteppe, but may also breed in high desert scrub (greasewood) habitats. Breeding habitats are usually dominated by big sagebrush (Parrish et al. 2002).	Considered. The sage brush habitat surrounding the proposed project sites may provide suitable breeding habitat for the Brewer's sparrow.
Black Swift (<i>Cypseloides niger</i>)	Black swifts nest in small colonies near and often behind waterfalls at elevations ranging from 6,000 ft. to 11,500 ft (Parrish et al. 2002). There are only 2 confirmed breeding locations Utah: the Bridal Veil Falls area and Aspen Grove area (Knorr 1962)	Not Considered. Black swifts have been seen on the Manti Division of the Manti-La Sal NF. However, the proposed project area does not contain suitable nesting habitat for this species.
Broad-tailed Hummingbird (<i>Selasphorus platycercus</i>)	In Utah, the primary breeding habitat is lowland riparian; They have also been recorded as breeding in mountain riparian, aspen, ponderosa pine, Engelmann spruce, subalpine fir, and Douglas fir (Calder and Calder 1992). Nesting typically occurs at elevations ranging from 6,000 to 8,000 ft. near streamside habitat.	Not Considered. The proposed project area does not provide suitable breeding habitat for this species.
Ferruginous Hawk (<i>Buteo regalis</i>)	Usually breeds in areas of flat and rolling terrain in grassland or shrub steppe habitat. Avoids high elevations, forest and narrow canyons. Occurs in grasslands, agricultural lands, sagebrush/saltbrush/greasewood shrub lands and the periphery of pinyon/juniper habitats.	Not Considered. Ferruginous hawks are not likely to occur in the high elevation project area.
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	In Utah, the yellow-billed cuckoo is a rare breeder in large tracts (100-200 acres) of contiguous dense lowland riparian habitats. Over the last 10 years, there are only 3 breeding records in the state; none on the Manti Division of the Manti-La Sal NF (Parrish et al. 2002).	Not Considered. There are no large tracts of riparian habitat in or near the proposed project area.
Black-throated Gray Warbler (<i>Dendroica nigrescens</i>)	Preferred breeding habitat includes dry oak slopes, pinyon, juniper, pinyon/juniper woodlands, open mixed woods, and dry coniferous and mixed conifer habitats with brushy understories, and in chaparral. It occurs from sea level up to 5400 ft. elevation.	Not Considered. The proposed project is located above 8,000 feet elevation, which is above the elevation range of the black-throated gray warbler.
Sage Sparrow (<i>Amphispiza belli nevadensis</i>)	Uncommon permanent resident in Utah; occurs up to 8,000 ft. elevation. Nests have been found in rabbitbrush, hopsage, saltbush, and big sage.	Considered. The sage brush habitat surrounding the proposed project sites may provide suitable breeding habitat for the sage sparrow.

II. TES, MIS and PRIORITY MIGRATORY BIRD SPECIES POTENTIALLY AFFECTED by the PROPOSED PROJECT

A. Threatened and Endangered Species

Bald Eagle

Bald eagle nests are typically located in multi-storied (uneven aged) coniferous forest stands that contain elements of old growth structure, and are located near bodies of water that support prey species. Nest trees are generally one of the largest trees in the stand, which provides good visibility and a clear flight path to and from the nest (Stalmaster 1987). Bald Eagles typically construct large, conspicuous stick nests in sizeable trees.

Prey species commonly include fish, waterfowl, jackrabbits, and carrion; results of food-habit studies have indicated that bald eagle diets included: 56 percent fish, 28 percent birds, 14 percent mammals, and 2 percent miscellaneous sources (Stalmaster 1987).

Bald eagles spend over 90 percent of the daylight hours perching. Important perch sites generally have 3 fundamental elements: a direct view of potential food sources, located within 50 meters of water, and are located in areas isolated from human disturbance (Stalmaster 1987).

Unlike nesting and perch sites, roosting sites are not necessarily located close to water; during breeding season, nesting adults often roost in the nest or at the nest tree (Stalmaster 1987). Roost sites generally provide thermal cover, and are isolated from human disturbance. Bald eagles often roost communally during winter.

During the winter, Bald Eagles tend to concentrate wherever food is available; food availability is probably the single most important factor affecting winter eagle distribution and abundance, but availability of night roosts and diurnal perches are also fundamental elements of bald eagle winter range. Eagles are often attracted to wintering concentrations of waterfowl. In some regions, such as Utah, carrion can also be an important food source. At wintering areas, Bald Eagles often roost in large groups. These communal roosts are located in forested stands that provide protection from harsh weather.

There are only a few known nesting pairs of bald eagles in Utah. There is a bald eagle nest site located approximately 20 miles from the proposed project area, and located approximately 7 miles from Forest Service managed land. A nesting pair had been observed at this site during the nesting and fledgling period for several years prior to 1997. This nesting territory was not occupied in 2001 or 2002. The nest was blown out of the tree in the winter of 2003, and a pair built a new nest approximately ½ mile southeast of the old one, but did not nest successfully in 2003. The pair worked on the nest again in early 2004, but did not nest. A 1997 study by N. Boschen indicated that the pair did not forage on national forest system lands; nesting adults and fledglings were found to forage within a 5 mile radius of the nest tree (Boschen, 1997). No bald eagles are known to nest on Manti-La Sal NF managed lands. Most bald eagle sightings on the Forest have been at Joe's Valley Reservoir and Huntington Canyon during late fall and early winter prior to freeze over.

B. Sensitive Species

Spotted Bat

The spotted bat ranges from Mexico through the western states to the southern border of British Columbia; it is probably widely distributed in low numbers throughout western North America (Toone 1994). And it probably occurs throughout Utah, but its distribution appears to be patchy. Hasenyager (1980) thought that “the range of the spotted bat in Utah could incorporate the southern third of the state and central portions of the west desert where suitable roosts exist, excluding the higher portions of the central mountain range.” Habitat occupied by this bat ranges from low desert to montane coniferous forests normally below 8,000 feet in elevation (Watkins 1977). They have been found in a variety of habitat types including open ponderosa pine, desert shrub, pinyon/juniper, and open pasture and hay fields. In Utah, the spotted bat has been captured in several habitats: lowland riparian habitat (open meadows), desert shrub communities (sagebrush/rabbitbrush), ponderosa pine forest, montane grassland (grass/aspens), and montane forest and woodland (grass/spruce/aspens). This species has also been occasionally found in or on buildings in Utah towns and cities (Oliver 2000).

They typically roost singly in crevices in steep cliff faces. Cracks and crevices in limestone or sandstone cliffs provide important roosting sites (Spahr et al. 1991), especially where rocky cliffs occur in proximity to riparian areas. Day roosts and maternal roosts are typically within small (up to 6 cm) cracks and crevices in cliff faces (Toone 1994). The relative inaccessibility of cliff roosts may insulate spotted bats from human disturbance, but the species has been observed roosting (and foraging) near campgrounds (Toone 1994). Spotted bats are thought to feed mainly on moths high above the vegetation canopy. They forage alone after dark using echolocation, which is effective for fast flight feeding on tympanate moths (moths that can detect ultra-sonic sounds). As is common with many bats, spotted bats may forage a considerable distance (up to 6 miles) from roost sites (Toone 1994).

Roosting habitat in the Wasatch Plateau region is likely to occur in numerous cliffs along the edges of the plateau and on canyon walls that cut through the plateau. It is likely that spotted bats forage in a variety of habitats on the Plateau that are located within 6 miles of suitable roost cliffs and at elevations lower than 9,500 ft. Various surveys on the MLNF have detected spotted bats in several major canyons (and their tributaries) on the east side of the plateau, including Muddy, Ferron, Straight, Cottonwood, and Huntington Canyons (Perkins and Peterson 1997, and Sherwin et al. 1997). These surveys also detected spotted bats near Joes Valley Reservoir and Trail Mountain.

Observations made during the 1997 surveys on the MLNF indicated that spotted bats tolerate at least moderate human disturbance while foraging. Surveys were conducted at several sites near roads with light to moderate vehicular traffic (Crandall Canyon, Huntington Canyon, Straight Canyon), including tandem coal trucks. Spotted bats were observed foraging at low elevation sites, within 30 meters of the right-of-way. The fact that spotted bats were relatively common in active and previously mined areas may imply that subsidence caused cliff failures have not dramatically affected resident populations (Sherwin, et al. 1997).

Townsend's Big-eared Bat

Townsend's big-eared bats occur throughout North America, from British Columbia to southern Mexico; from California to South Dakota and western Texas and Oklahoma. They are widely distributed throughout the Intermountain Region, and they occur throughout Utah (Oliver 2000). They inhabit a wide variety of xeric and mesic habitats including: desert scrub, sagebrush, chaparral, deciduous and coniferous forests including, but not limited to pinyon/juniper, ponderosa pine, spruce/fir, redwood, mixed hardwood/conifer, and oak woodlands (Pierson et al. 1999), and their distribution is strongly correlated with the availability of caves or cave-like roosting habitat such as mines, buildings with cave-like attics, diversion tunnels or bridges (Pierson et al. 1999). They require relatively spacious, relatively cool cave-like roost sites; generally at least 30 meters in length, and at least 2 meters high with temperatures ranging from -2.0 to 13.0° C (Pierson et al. 1999).

These bats are relatively sedentary, and do not migrate long distances; generally seasonal movements are less than 32 km (Pierson et al. 1999). Detections in Utah have ranged from 3,300 feet to 9,520 feet (Oliver 2000). In Utah, night roosts are found in mines and caves; day roosts and maternity roosts are found in mines, caves and buildings (Oliver 2000).

Townsend's big-eared bats are insectivorous; a lepidopteran specialist eating mostly moths (Pierson et al. 1999). They forage after dark using echolocation on the wing (Sphar et al. 1991); a late flyer, emerging from the roost primarily after dark; well after sunset (Pierson et al. 1999).

Breeding occurs at winter sites between October and February, and parturition occurs in late spring and early summer. Each female usually gives birth to a single offspring. Females and young roost in communal nurseries, which range in size from 12 to 200 individuals. The offspring fly at three weeks and are weaned in six to eight weeks. Nurseries break up by August.

During winter, these bats roost singly or in small clusters in hibernacula from October to February. They don't migrate, but will move to different roost locations within hibernacula and may even move to different hibernacula during a winter in response to temperature changes.

Most of the bat surveys conducted on the MLNF that employed the use of mist nets or bat detectors have not revealed Townsend's big-eared bats (Perkins and Peterson 1997, and Sherwin et al. 1997). This is not unusual, as these bats are most commonly located during direct surveys of roosts (Oliver 2000).

There is potentially suitable Townsend's big-eared bat foraging habitat in and around the proposed project area.

Greater Sage Grouse

Sage grouse are sagebrush ecosystem obligates; they occur in mosaics of sagebrush, grasslands, and aspen, and are associated with both tall and short species of sagebrush in foothills, sagebrush

shrublands, and mountain slopes. They do not occur in pinyon-juniper woodlands or in shadscale shrublands (Paige and Ritter 1999). At one time sage grouse were found in virtually all areas where sage brush (especially *Artemisia tridentata*) occurred in Western North America. It is hypothesized that the sage grouse breeding population circa 1800 was 1.1 million birds. Today, the estimated breeding population is 0.2 million (Parrish et al. 2002).

In Utah, sage grouse inhabit sagebrush habitat of the Colorado Plateau and Great Basin geographic regions from 6,000 to 9,000 ft. elevation. During spring, they use sagebrush habitats for breeding, feeding, roosting, nesting and rearing young (Connelly et al. 2000). Large, relatively continuous sagebrush stands, often exceeding 50 sq. mi., are needed to provide all habitat characteristics used by sage grouse; summer home ranges may be as small as 1 to 2.5 square miles, and annual home ranges may be as large as 577 square miles (Page and Ritter 1999).

Sage grouse males appear to form breeding leks opportunistically at sites within or adjacent to potential nesting habitat. Leks are typically established in openings within large sagebrush stands; openings include old lakebeds, low sagebrush flats, ridge tops, burn areas, and other open areas within sagebrush stands (Connelly et al. 2000). Most nests are placed under sagebrush in stands that provide higher than average canopies and lateral cover (Connelly et al. 2000). Nest sites also generally contain taller and denser grass cover than average. As sage brush habitats dry out during summer sage grouse use a wider variety of habitats including meadow and riparian habitats. Hens with broods move to areas that support succulent vegetation including forbs (Parrish et al. 2002). Sites used by broods have been reported to have twice as much forb cover as independent sites (Connelly et al. 2000).

There suitable sage grouse habitat near the proposed project area.

Peregrine Falcon

The peregrine falcon is cosmopolitan, ranging from coast to coast in North America. Pesticide accumulation in the mid 1900s drove the peregrine to the verge of extinction, and by 1965 fewer than 20 pairs were known west of the Great Plains. In 1990 there were 326 known pairs in the southwest region (Rodriguez 2002). The peregrine falcon was federally listed as an endangered species in 1970, and again in 1984. With the help of reintroductions and pesticide controls (primarily banning DDT, which caused eggshell thinning and drastically low reproduction), the peregrine falcon population increased sufficiently to be de-listed in 2000.

Peregrine falcon preferred nesting habitat is on cliff faces with recesses or protected shelves, although reintroduced birds regularly nest on man-made structures such as towers and high-rise buildings. A wide variety of habitats are used for foraging, including riparian woodlands, open country near rivers and marshes, coniferous and deciduous forest edges, shrublands, and prairies. They prey on a wide variety of birds including pigeons, shorebirds, waterfowl, grouse and other small to mediums sized terrestrial birds. Peregrine falcons may travel up to 18 miles from their nest site to forage for food, however a 10 mile radius around the nest is an average hunting area, and 80% of foraging occurs within a mile of the nest (Spahr et al. 1991). The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Nesting

peregrine falcons may forage in the vicinity of the proposed project.

C. MANAGEMENT INDICATOR SPECIES

Rocky Mountain Elk

Elk occurred within the mountainous regions of Utah historically. However, due to unlimited hunting, elk populations in the state diminished until 1898 when elk hunting was prohibited. Elk transplants were initiated in 1912 and continued until 1925. Today elk again occur within the mountainous regions of the state, and elk populations have increased dramatically over the last 20 years. They are once again considered a big game species in Utah.

Elk habitat includes semi-open forest and mountain meadows in the summer. They move to foothills, plains and valleys in winter. Rocky Mountain elk use uneven-aged, mature forest stands that include old growth characteristics, herbaceous openings, and water. Dense brush understory is used for escape and thermal cover. They are herbivorous, and feed in riparian areas, meadows, and on herbaceous and brush stages of forest habitats. They graze and browse, eating grasses, forbs, tender twigs, and leaves of shrubs and trees, fungi, some mast, and aquatic vegetation.

A number of studies have shown that elk use has declined in areas adjacent to roads. The width of the area avoided has varied from 0.25 to 1.8 miles, depending on the amount and kind of traffic, quality of road, and density of cover adjacent to the road (Thomas and Toweill 1982). In general elk could be expected to move an average of approximately 0.5 miles from roadways that are being used.

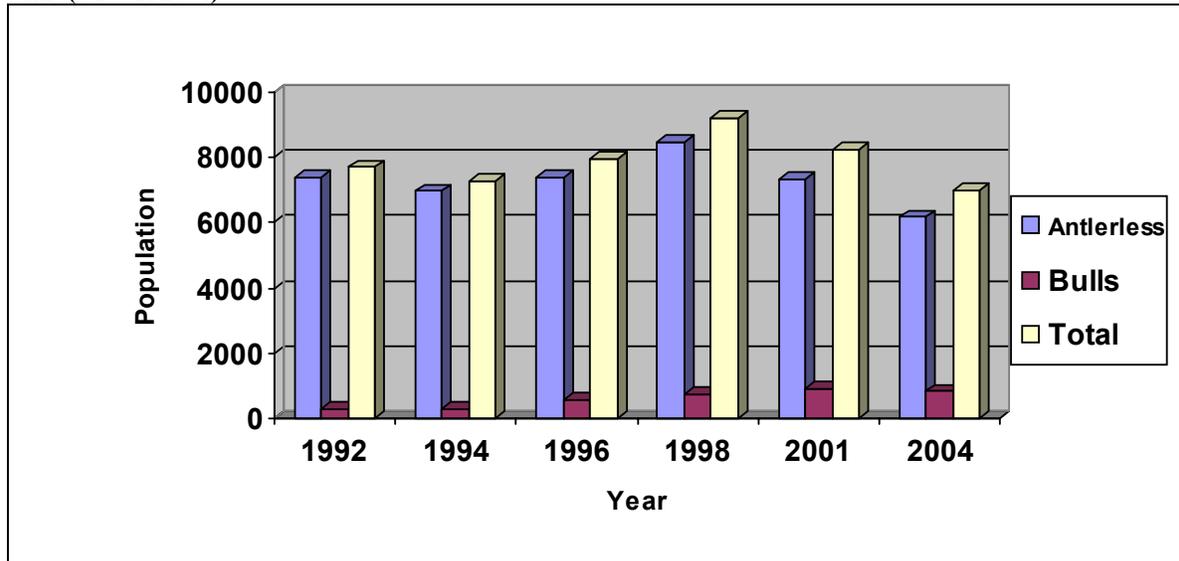
The rut occurs from late August to November. Gestation period is about 255 days, and calving takes place during late spring and early summer in areas that provide dense cover with brushy vegetation near openings, available water, and seclusion from human impacts.

On the Wasatch Plateau, elk tend to occupy the higher elevation aspen and mixed conifer habitats from spring through early fall, and then move to lower elevation mixed shrub, pinyon/juniper, and sagebrush habitats for winter range. Elk generally occupy winter range from about the beginning of December through mid-April, but this varies depending on the severity of the winter. On the Plateau, parturition (calving) takes place roughly from the first part of May through early July, generally in aspen dominated habitat. Protection of winter range and calving habitat is considered a key factor in the maintenance of elk populations. It is important that higher nutritional demands during calving be met to improve the chances of calving success, cow recovery, and early calf growth. Therefore, available forage within calving habitat is especially important. Available forage within winter range is also important to increase chances of survival during this harsh season.

The elk population (composition and size) on the Manti-La Sal NF, for the most part, depends on the number and type of tags (Bull, Cow or Spike) issued by the Utah Department of Wildlife Resources (UDWR) each year, and on weather cycles and patterns. Graph 2 illustrates the

results of UDWRs Manti Elk Census from 1992 through 2004.

Graph 2. The elk population (composition and size) from 1992 through 2004 within the Manti Elk Census unit (UDWR 2004).



The elk population for the Manti Elk Census in 2004 was slightly below the average population count for the 12 years of population information.

Mule Deer

Mule deer occur throughout the mountains and valleys of eastern Utah. Their populations throughout Utah have historically fluctuated, periodically affected by drought and severe winter weather. Populations in eastern Utah declined in the early to mid 1990s, but showed signs of recovery in the late 1990s. The decline was attributed to severe drought conditions from 1988 through 1992, which was followed by a severe winter in 1992-93. Other factors contributing to fluctuating mule deer populations include predators, habitat changes, and competition with elk.

Mule deer occupy several habitat types throughout the west including coniferous forests, desert shrubs, chaparral, and grassland with shrubs; they occur in early to intermediate successional stages of most forest, woodland, and brush habitats. Mule deer prefer a mosaic of various aged vegetation that provides woody cover, meadow and shrubby openings, and free water. Vegetation cover is critical for thermal regulation in winter and summer, and to provide escape cover. They browse and graze, and prefer tender new growth of various shrubs, many forbs, and a few grasses.

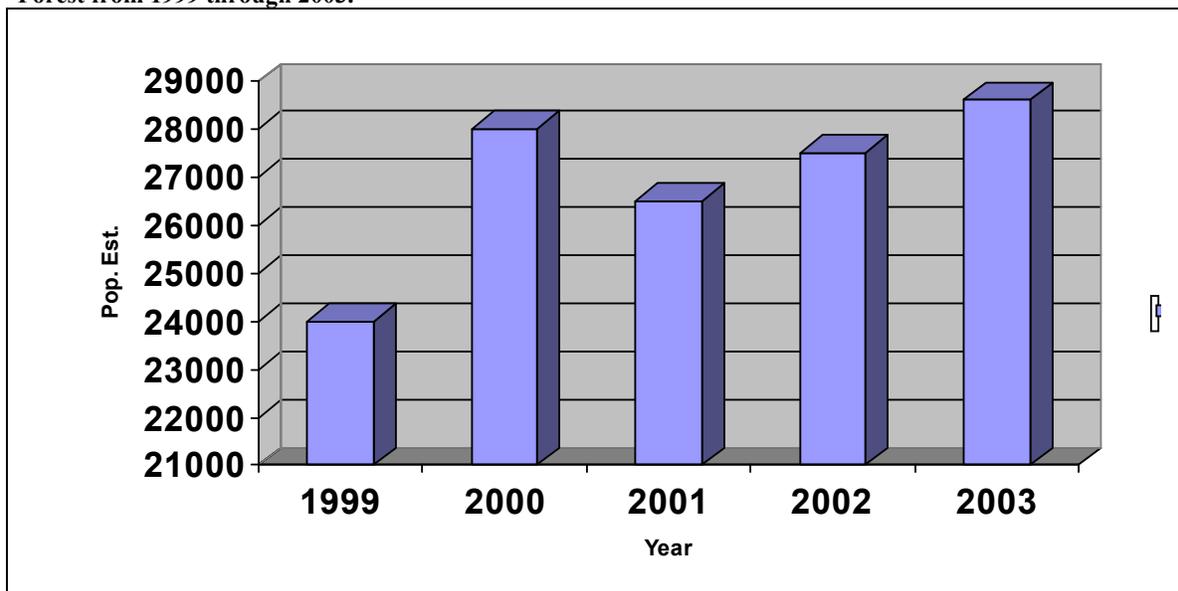
Human activity and traffic on roads are known to displace deer from the area of disturbance. The distance deer move away from disturbance areas depends on topographical features and the amount of vegetation cover in the area, but to average distance is approximately 660 feet from

disturbance areas.

Rutting season occurs in late fall through early winter. Gestation is between 195 and 212 days, and fawns are born from early April to midsummer, with some geographic variation. Fawning peaks generally occur from late April through mid June. Fawning occurs in moderately dense shrublands and forests, dense herbaceous stands, and high elevation riparian and mountain shrub habitats that have available water and abundant forage.

The deer population on the Manti-La Sal NF, for the most part, depends on weather cycles and patterns. Graph 3 illustrates the results of UDWRs Manti deer population estimates from 1999 through 2003.

Graph 3. Population estimate of the deer population on the Manti Division of the Manti-La Sal National Forest from 1999 through 2003.



There is an upward trend in the deer population on the Manti over the 5 years of population information.

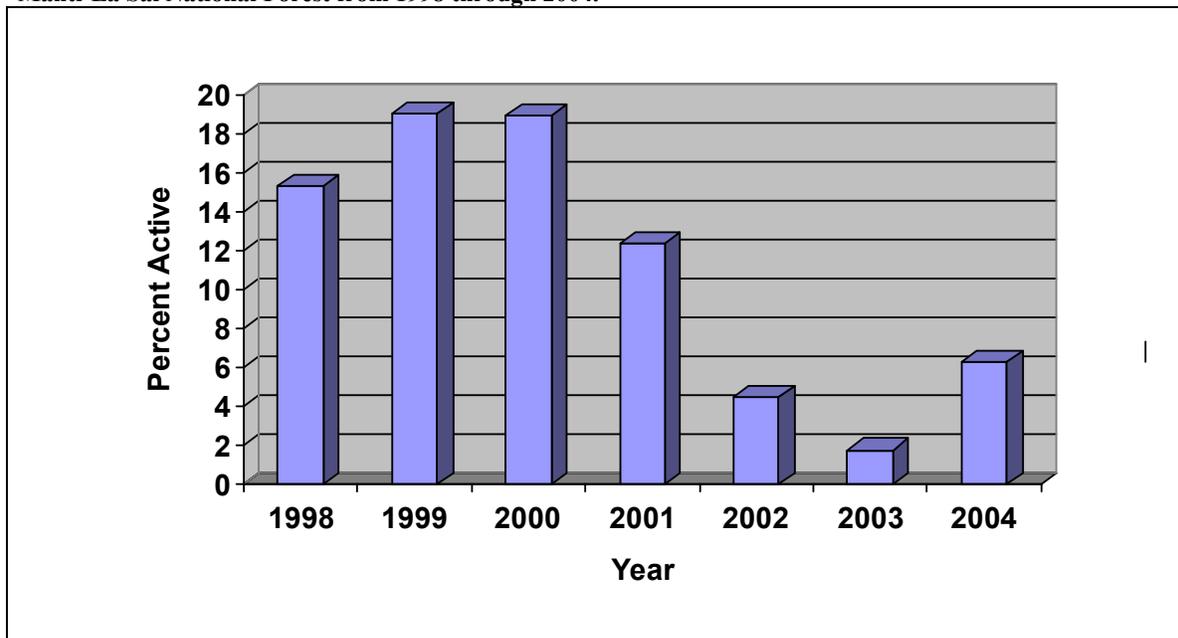
Golden Eagle

Golden eagles usually nest on cliffs overlooking large open expanses of grass-shrub or shrub steppe habitat, but tree nesting occurs in portions of their breeding range, including Utah. Nesting and brooding season generally extends from mid February to mid July. There is extensive cliff habitat along the eastern margin of the Wasatch Plateau and in canyons incising the Plateau. There are also extensive grassland and mountain brush habitats for foraging. Golden eagles primarily prey on small mammals including ground squirrels, prairie dogs, jack rabbits and cottontails.

Preferred golden eagle prey habitat includes edge along high mountain brush habitat, high/mid elevation perennial forb habitat, and high elevation perennial grassland habitat. Preferred golden eagle winter habitat includes large expanses of sagebrush.

There are a number of golden eagle nest sites located within the proposed project area; none of these nest sites were active in 2004. There are two golden eagle nest sites located less one mile from an area where project related activity could occur within the project area; neither of these nest sites have been active since surveys were began in 1998. The number of known golden eagle nests on the Forest has increased as new nests are found; therefore looking at the number of known active nests over the years would probably not give an accurate impression of the golden eagle population on the Forest since monitoring began in 1998. A better indication of how the golden eagle population is doing on the Forest would be the percent of monitored nest sites that were active each year, which is illustrated in Graph 5.

Graph 5. The percent of monitored golden eagle nest sites that were active on the Manti Division of the Manti-La Sal National Forest from 1998 through 2004.



The average percent of active nests over the 7 years of surveys is approximately 11.2%. Nesting activity was well below average in 2002, 2003 and 2004; there was somewhat of a rebound in 2004. There has not been a dramatic change in golden eagle nesting and foraging habitat attributed to management activity on the Forest over these 7 years of surveys. At least some of the change in golden eagle nesting activity during the last seven years is likely attributed to annual moisture.

D. Priority MIGRATORY BIRD SPECIES

Virginia's Warbler

Virginia's warblers prefer scrub hillsides with a well developed herbaceous or woody understory. In Utah, preferred nesting habitat is lower elevation dense Gambel's oak stands. They are also known to nest in habitats with shrubby understories including: mountain mahogany, riparian areas, ponderosa pine, Douglas fir, aspen, and pinyon/juniper woodlands. Nests are typically embedded or covered with dead or decaying leaves and grasses in areas of dense brush. Virginia's warblers begin arriving in Utah in early May, and begin their breeding cycle from mid-May to early June (Parrish et al. 2002). They are a single brood nester. Pairs begin nesting by early June, and young fledge approximately 3 weeks later.

Their breeding range is almost exclusively in the southwestern United States. Historical nesting records for Utah include: Salt Lake County, Summit County, San Juan County, Utah County, Kane County, Garfield County, Daggett County, Beaver County, Weber County, and the Uinta Basin; in Utah, nesting elevation ranges from 4,000 to 10,000 ft. There has been no confirmed nesting in Emery County or on the Manti Division of the Manti-La Sal National Forest (Parrish et al. 2002).

Brewer's Sparrow

The subspecies of Brewer's sparrow that occurs in Utah is primarily a Great Basin species, but also occurs in shrubsteppe and high desert shrub (greasewood) habitats. They generally nest in habitats dominated by big sagebrush (*artemisa tridentata*), but occasionally use other shrubs. Nests are usually located in sagebrush patches that are taller and denser than surrounding habitat; with less herbaceous cover and more bare ground. They are primarily insectivorous during breeding season, consume mostly grass and weed seed in winter.

They generally arrive in Utah in mid April and depart in mid October (Parrish et al. 2002). Pair form shortly after arrival and nesting begins when weather permits. Hatching begins in late May and peaks in mid June (Parrish et al. 2002)

Brewer's sparrow populations are declining range wide, however in Utah their population appears to be stable and possibly increasing (Parrish et al. 2002).

Sage Sparrow

The sage sparrow is considered a shrubsteppe-obligate species, and are closely associated with big sagebrush (*A. tridentate*) throughout most of their distribution, but also uses bitterbrush, rabbitbrush, greasewood, tumbleweed, or bunch grasses. They nest primarily in shrubs, but nests have also been found in bunch grass and on the ground under shrubs. They prefer taller shrubs with larger canopies that provide cover. They are categorized as ground-foraging omnivores during nesting season and ground-gleaning granivores during nonbreeding season (Parrish et al. 2002); nestlings are primarily fed spiders, butterflies, moths, true bugs and leafhoppers. They are known to occur up to 8,000 ft. in elevation.

III. AFFECTED ENVIRONMENT

The proposed project is located on a relatively high elevation plateau on the Castle Gate sandstone formation. There are a variety of habitats on this plateau including: pinyon/juniper, mixed conifer dominated by ponderosa pine, mixed conifer and aspen, mountain brush, sage brush and perennial grassland habitats. There are 6 drill sites in the proposed project plan: 5 drill holes are located in sagebrush dominated habitat and one drill hole is located in mountain brush habitat that includes sagebrush/rabbit brush, service berry and mahogany.

IV. ANALYSIS OF EFFECTS

This analysis of effects is based on the existing conditions within the project planning area. The analysis reviews the potential “direct and indirect effects” of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project on threatened, endangered and sensitive (TES) species, management indicator species (MIS), and priority migratory bird species. This report also states the expected “cumulative effects” that would potentially accrue to TES, MIS and priority migratory bird species if proposed project actions add cumulatively to other past, present or reasonably foreseeable future actions to impact the species of concern.

The past, present or reasonably foreseeable future actions that may add incrementally to impacts of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project include:

- Other exploration drilling activity
- Disbursed recreational activity
- Road construction and maintenance

A. Threatened and Endangered Species

Bald Eagle

Direct and Indirect Effects: There are no landscape characteristics in the vicinity of the proposed project that would attract bald eagles to the area; there are no water bodies that would provide suitable bald eagle forage habitat in or near the project area. The project area is not known or expected to be used by nesting, wintering or foraging bald eagles. However, bald eagles may occur incidentally while in transition during migration or dispersal during late fall or early winter months. These occurrences would only be incidental and of short duration, and the proposed project would not alter bald eagle habitat. Therefore, the proposed project is not likely to directly or indirectly affect the bald eagle.

Cumulative Effects: Since the proposed project is not likely to exert direct or indirect affects on the bald eagle, no cumulative affects will accrue to this species because of the SUFCO 2004

Helicopter-Assisted Coal Exploration Drilling Project.

B. Sensitive Species

Spotted Bat

Direct and Indirect Effects: There are numerous cliff faces that could provide suitable spotted bat roost habitat within 2 miles of the proposed project area. The nearest suitable roost habitat is located approximately ½ mile from the nearest drill site. Activity during project implementation would not likely disturb roosting bats, and the project would not directly or indirectly impact spotted bat roost habitat.

The project would be implemented over a short period of time (7 plus days at each drill site) over small segments of the landscape that potentially provides suitable spotted bat forage habitat. However, since project activity would occur during daylight hours, it would not impact the nighttime foraging spotted bat. The proposed project would not appreciably directly or indirectly impact spotted bat foraging habitat.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect impacts on the spotted bat, no appreciable cumulative affects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Townsend's big-eared Bat

Direct and Indirect Effects: There are a number of alcoves and cave like structures located within 2 miles of the proposed project area. Activity during project implementation would not likely disturb roosting bats; the project would not directly or indirectly impact Townsend's big-eared bat roost habitat.

The project will be implemented for a short period of time (7 plus days at each drill site) over small segments of the landscape that potentially provides suitable Townsend's big-eared bat forage habitat. However, since project activity would occur during daylight hours, it would not impact this nighttime foraging species. The proposed project would not appreciably directly or indirectly impact Townsend's big-eared bat foraging habitat.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect affects on the Townsend's big-eared bat, no appreciable cumulative affects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Greater Sage Grouse

Direct and Indirect Effects: The proposed project would occur outside the greater sage grouse lekking and breeding season, the project would not modify lekking or breeding habitat, and the

project would not occur in brood rearing habitat. Therefore, the proposed project would not likely appreciably directly or indirectly impact the greater sage grouse.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect effects on the greater sage grouse, no appreciable cumulative effects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Peregrine Falcon

Direct and Indirect Effects: The nearest known peregrine falcon eyrie is located approximately 3 ½ miles from the project area. Falcons may travel more than 18 miles from the nest site to hunt for food, however a 10 mile radius around the nest is an average hunting area, with 80% of foraging occurring within a mile of the nest. Nesting peregrine falcons may forage in the vicinity of the proposed project. Project implementation would not occur during the peregrine nesting period, and would only temporarily impact localized areas within potential forage habitat; therefore the proposed project would not likely appreciably directly or indirectly impact the peregrine falcon.

Cumulative effects: Since the proposed project would not likely exert appreciable direct or indirect effects on the peregrine falcon, no appreciable cumulative effects would accrue to this species because of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

C. Management Indicator Species

Rocky Mountain Elk and Mule Deer

Direct Effects: Exploration holes would not be drilled simultaneously, but would be drilled consecutively one after the other. Each hole would take approximately 7 days to drill and cause relatively little habitat disturbance at each drill site. Potential direct impacts would occur over relatively small segments of the landscape for short periods of time. Drilling will occur during the time frame when deer and elk would be present on the plateau, but would occur outside the prime calving and fawning season for these species; therefore potential direct impacts to these species would be minor (would not impact the deer and elk populations in the area). Potential direct impacts could include causing deer and elk to move away from areas where drilling is occurring; traffic along roadways associated with drilling activity may also cause disturbance.

Indirect Effects: Due to the short duration of the proposed project and the relatively small area of disturbance, there are not expected to be appreciable indirect impacts associated with the project.

Cumulative effects: Impacts on deer and elk from the proposed project may add cumulatively to impacts associated with dispersed recreational activity in the Pines and Big Ridge areas west of Emery, Utah. Potential impacts from dispersed recreational activity are variable; however the combined effects of these two activities is not expected to prevent deer or elk from using the

general landscape of this area of the Forest.

Potential impacts from the proposed project are not expected to overlap temporally with other exploration drilling activities or road maintenance projects; therefore the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project will not add cumulatively with those activities.

Golden Eagle

Direct and Indirect Effects: The nearest known golden eagle nest site is located approximately $\frac{3}{4}$ of a mile from one of the proposed drill sites, and there are a number of golden eagle nest sites located within 2 miles of the proposed project area; none of these nests were active in 2004. The proposed project will not directly affect these nest sites or any other golden eagle nest habitat. Golden eagles may forage in the vicinity of the proposed project; therefore the project could directly impact foraging eagles. These direct impacts may include diverting foraging eagle from the vicinity of project activity during drilling operations. The proposed project is not likely indirectly impact the golden eagle.

Cumulative Effects: The direct impacts from the proposed project may add cumulatively to impacts associated with disbursed recreational activity in the area. Potential impacts from disbursed recreational activity in the area are variable, however impacts are not expected to lead to mortality or reduced productivity. The cumulative affects of these activities is not expected to prevent golden eagles from using the general landscape of this area of the Forest.

D. Priority MIGRATORY BIRD SPECIES

Virginia's Warbler

Direct and Indirect Effects: Virginia's warblers are not known to nest in San Pete or Sevier Counties, Utah. However, some of the pinyon/juniper/brush habitat near the proposed drill sites may provide characteristics of suitable nesting habitat. The proposed project would not remove suitable nesting habitat, and the project will not be implemented during the nesting period for this species. Therefore there is not likely to be appreciable direct or indirect affects on this species.

Cumulative Effects: Since the proposed project is not likely to exert appreciable direct or indirect impacts on the Virginia's warbler, cumulative affects are not likely to accrue to this species as a result of the proposed SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Brewer's Sparrow

Direct and Indirect Effects: There is suitable Brewer's sparrow nesting habitat in the proposed project area. The proposed project is not expected to appreciably alter or remove suitable nesting habitat for this species. Project activity would not occur during this species breeding

period; therefore there would be no impacts on nesting Brewer's sparrows. There would not be appreciable direct impacts to the Brewer's sparrow, and the project is not expected to cause any indirect impacts to this species.

Cumulative Effects: Since the proposed project is not likely to cause appreciable direct or indirect impacts on the Brewer's sparrow, no appreciable cumulative effects would accrue to this species as a result of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

Sage Sparrow

Direct and Indirect Effects: There is suitable sage sparrow nesting habitat in the proposed project area; however the proposed project is not expected to appreciably alter or remove suitable nesting habitat for this species. Project activity would not occur during this species breeding period; therefore there would be no direct impacts on nesting sage sparrows. There would not be appreciable direct impacts to the sage sparrow, and the project is not expected to cause any indirect impacts to this species.

Cumulative Effects: Since the proposed project is not likely to cause appreciable direct or indirect impacts on the Brewer's sparrow, no appreciable cumulative effects would accrue to this species as a result of the SUFCO 2004 Helicopter-Assisted Coal Exploration Drilling Project.

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