BIOLOGICAL EVALUATION
and
BIOLOGICAL ASSESSMENT

for the

North Paradox Range Allotment

Categorical Exclusion

Manti-La Sal National Forest
Moab/Monticello District

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I. INTRODUCTION

The purpose of this Biological Assessment/Biological Evaluation (BA/BE) is to review the North Paradox C&H Range Allotment Categorical Exclusion to determine the proposed action's potential effects on threatened, endangered, candidate and sensitive wildlife and plant species. The proposed action is to reauthorize and continue current grazing allotment management in compliance with Sect. 339, Public Law 108-447 of the 2005 Consolidated Appropriations Act.

The Endangered Species Act of 1973 (PL 93-205, as amended) requires federal agencies to ensure that any activities they authorize, fund, or carry out, do not jeopardize the continued existence of any wildlife species federally listed, or a candidate for listing, as threatened or endangered. Consultation with the U.S. Fish and Wildlife Service is required if threatened or endangered (T&E) species, or their critical habitat may be affected by proposed actions. The Biological Assessment document 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 2671.4 and 2672.4). In consultation, the USFWS (Western Colorado Field Office, Grand Junction, CO) concurred with the May Affect, Not Likely to Adversely Affect determinations for Mexican spotted owl and southwestern willow flycatcher in a letter dated September 26, 2007 (in project record). The USFWS cited insignificant or discountable effects to these listed species.

The USDA Forest Service has developed policy regarding the designation of sensitive plant and animal species (FSM 2670.32). A sensitive species is defined (FSM 2670.5) as those plant and animal species identified by the Regional Forester for which population viability is a concern as evidenced by: 1) significant current or predicted downward trends in population numbers or density or 2) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. The Biological Evaluation is an analysis of which sensitive species may occur in the project area and whether any impacts on these species or their habitat are anticipated which will adversely affect their viability.

The North Paradox Range Allotment Biological Evaluation/Biological Assessment documents consistency with Forest Plan direction and compliance with applicable laws and regulations [Endangered Species Act, Migratory Bird Treaty Act, E.O. 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), and Forest Service Manual 2670] as related to the project. The project is also consistent with the Bald and Golden Eagle Protection Act (16 USC 668) and 16 USC 2912, Federal conservation of migratory nongame birds. The project analysis follows direction in the Forest Service Handbook and Forest Service Manual pertaining to fish, wildlife and sensitive plants, including Management Indicator Species (FSH 2600 and FSM 2600). The Wildlife Report (Smith 2007) contains an analysis of impacts to Management Indicator Species and migratory birds in relation to the proposed action.

Allotment Description:

The North Paradox Allotment includes 12,300 acres of National Forest System lands on the east side of the La Sal Mountains. Within the allotment boundaries, 8,400 acres are considered capable range. Located around Carpenter Ridge and Buckeye Reservoir, the allotment is largely in Montrose County, Colorado, with a small portion in San Juan County, Utah. The area is within the Willow Basin Creek and Roc Creek subwatersheds, which are part of the Lower Dolores watershed. Elevations range from 5,800 ft. in West Paradox Creek at the Forest boundary to the highest point on Carpenter Ridge at 8,400 feet.

The allotment contains a variety of vegetative communities, but is dominated by ponderosa pine (5160 acres or 42% of the allotment), mountain brush/oakbrush (28%) and pinyon/juniper (22%). There are also small areas of aspen, sagebrush and grassland/meadow communities. Past range treatments included seeding much of the ponderosa pine habitat with the introduced forage grass smooth brome (*Bromus inermis*). Past and ongoing timber management has also had a significant influence on the structure of the forest community. Part of the Dry Point pasture was chained and seeded in the 1960's. This area burned in the 2006 Lion Creek wildfire, and will be rested from livestock grazing until it is seeded and recovered.

Management unit direction for the majority of the area (68%) is Timber emphasis, and 5% is a Range Management Unit (see map in Appendix 1). There are 1332 acres, 11% of the allotment, managed with an emphasis on general big game winter range (GWR). The slopes on the northeastern boundary of the allotment in the Roc Creek canyon are designated as Semi-Primitive Recreation (SPR, 13% of the allotment). The SPR unit contains most of the unsuitable range.

Long-term range studies, consisting of site analysis, nested frequency and repeat photography, show stable to improving trends in the characteristics of rangeland vegetation and condition on the allotment. Data from range trend studies on the allotment are documented in the Specialist Report for Vegetation and Range Resources for North Paradox.

The allotment is currently permitted for 878 Head Months (cattle).

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

Table 1 lists wildlife and fish species designated as threatened, endangered or candidate species by the USDI Fish and Wildlife Service (USFWS) that could occur in Montrose County, Colorado or San Juan County, Utah. T&E species that do not occur or have suitable habitat in or near the proposed project area are identified in Table 1 and will not be considered further in this Biological Assessment. The bald eagle (*Haliaeetus leucocephalus*) was removed from the Federal List of Endangered and Threatened Wildlife in August 2007, and the species is now included in the analysis as a Forest Service sensitive species (Table 3). The project area is outside of the designated experimental population area (USFWS 1996) of the endangered California condor (*Gymnogyps californianus).*

Table 1. Listed wildlife and fish species that could occur in Montrose County, CO or San Juan County, UT (USFWS 2006), their potential occurrence in the North Paradox allotment and consideration in this Biological Assessment.

SPECIES	SPECIES STATUS	SPECIES OCCURRENCE IN THE PROJECT AREA AND CONSIDERATION IN THIS BA
Mexican spotted owl (MSO) *Strix occidentalis lucida*	Threatened	**Considered.** While there is canyon habitat that meets the definition of breeding/roosting habitat, MSO are not known to breed on the La Sal Mountains. An individual was detected in the North Paradox allotment in a 1990 comprehensive survey.
Southwestern willow flycatcher *Empidonax traillii extimus*	Endangered	**Considered.** While the northern extent of the range of the southwestern willow flycatcher does not include the La Sal Mountains in Utah (USFWS 2005), potential downstream effects must be analyzed.
Canada lynx *Lynx canadensis*	Threatened	**Considered.** Although the project area does not contain suitable habitat or a prey base of snowshoe hares for the lynx, the area is within 100 miles of the release sites and is within the dispersal range.
Black-footed ferret *Mustela nigripes*	Endangered (historical range)	**Not Considered.** The black-footed ferret depends exclusively on prairie dog colonies for food and shelter. The limited prairie dog habitat in the allotment is not adequate in size to be occupied by ferrets.
Bonytail *Gila elegans*	Endangered	**Not Considered[1].** Historically, bonytails existed throughout the larger channels of the Colorado River drainage. Bonytails do not occur on the Manti-La Sal National Forest (MLNF), but are present in drainages that receive water originating on the MLNF. The allotment is located approximately 8 miles from the Dolores River. Maintaining current livestock management will not adversely affect the quantity or quality of water in these drainages.
Humpback chub *Gila cypha*	Endangered	**Not Considered[1].** The humpback chub once ranged throughout the whitewater canyons of the Colorado River basin. Presently, the species can be located in and above the Grand Canyon (Arizona) and in major tributaries to the Colorado River. The humpback chub does not occur on the MLNF, but it is present in drainages that receive water originating on the MLNF. Maintaining current livestock management will not adversely affect any of these drainages.

Colorado pikeminnow *Ptychocheilus lucius*	Endangered	**Not Considered[1].** The Colorado pikeminnow had a historic range from the Green River in Wyoming to the Gulf of California, but the species is now confined to the upper Colorado River Basin mainstem and larger tributaries. Colorado pikeminnow do not occur on the MLNF, but they are present in drainages that receive water originating on the MLNF. Maintaining current livestock management will not adversely affect these drainages.
Razorback sucker *Xyrauchen texanus*	Endangered	**Not Considered[1].** Historic distribution of the razorback sucker was throughout the large river portions of the Colorado River and its major tributaries. It presently occurs in only a portion of the former range in these rivers. Razorback suckers have never been reported from headwater streams, and do not occur on the MLNF. They are present in drainages that receive water originating on the MLNF. Maintaining current livestock management will not adversely affect these drainages.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Candidate	**Not Considered.** This neotropical migrant requires dense, deciduous riparian woodlands for breeding, generally in tall, old-growth cottonwoods and willows in at least 25-acre patches. There are scattered cottonwood trees along the drainages in the allotment, but no large areas suitable for cuckoos.

2. Threatened and Endangered Plant Species

There are two plants on the USFWS list for Montrose County, Colorado and one for San Juan County, Utah (table 2). Neither of these plants is known to occur on the Manti-La Sal National Forest. Habitat descriptions and distributions were obtained from Welsh et al. (1993), Atwood et al. (1991) and NatureServe (2004). Habitat presence in the project area was determined through field visits and review of soils, elevations and plant community composition within the project area. Listed plants or their habitats were not detected in the project area during field reviews, nor are they expected to occur.

Table 2. Federally listed plants that could occur in Montrose County, CO or San Juan County, UT (USFWS 2006) and site-specific occurrence of their habitat within the North Paradox allotment.

SPECIES	STATUS	HABITAT DESCRIPTION & DISTRIBUTION IN GRAND COUNTY OR SAN JUAN COUNTY	HABITAT PRESENT IN PROJECT AREA?
Unita Basin hookless cactus *Sclerocactus glaucus*	Threatened	This cactus is found on coarse, gravelly river alluvium above the present flood plains of the upper Colorado and Green Rivers and their major tributaries. It is currently known from numerous population centers in Utah and Colorado; none are on the Manti-La Sal National Forest.	No
Clay-loving wild buckwheat *Eriogonum pelinophilum*	Endangered	This buckwheat is restricted to a very specific microhabitat of clay soils derived from the Mancos shale formation. It is found in association with shadscale (Atriplex spp.) at elevations of 5180-6350', generally below the Forest boundary. No populations of this species are known from the Manti-La Sal National Forest.	No
Navajo sedge *Carex specuicola*	Threatened	This sedge grows in seeps and springs on vertical cliffs of Navajo sandstone at elevations between 5,000 and 5,900 feet. Critical habitat is on the Navajo reservation. No known populations exist on the Moab-Monticello Ranger District.	No

3. Sensitive Wildlife and Fish Species

Table 3 lists wildlife and fish species on the Intermountain Regional Forester's sensitive species list (12/03 update) that could occur on the Manti – La Sal National Forest, excluding species known only from the Manti Division (the Wasatch Plateau). Basic habitat information is taken from the report on Threatened, Endangered and Sensitive Species of the Intermountain Region (USDA Forest Service 1991). Sensitive wildlife and fish 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 Biological Evaluation.

Table 3. Sensitive wildlife and fish species that could occur on the Manti-La Sal National Forest (12/2003 R4 sensitive species list), their potential occurrence in the North Paradox allotment and consideration in this Biological Evaluation.

SPECIES	SPECIES OCCURRENCE IN THE PROJECT AREA AND CONSIDERATION IN THIS BE
Spotted bat *Euderma maculatum*	**Considered.** The spotted bat uses a variety of vegetation types from approximately 2500 to 9500 feet in elevation, including riparian, desert shrub, ponderosa pine, montane forests and meadows. Spotted bats roost in rock crevices high up on steep cliff faces. Spotted bats may roost and forage in the allotment.
Western big-eared bat *Corynorhinus townsendii pallescens*	**Considered.** Western big-eared bats roost and hibernate in complex caves and mines. There may be suitable roosting habitat in abandoned mines in the Roc and La Sal Creek drainages. Western big-eared bats may forage over the area.
Bald eagle *Haliaeetus leucocephalus*	**Considered.** While there are no nesting bald eagles in the area (the closest nesting pair is over 40 miles away on the Colorado River), Buckeye Reservoir may provide migratory habitat.
Northern goshawk *Accipiter gentilis*	**Considered.** Goshawks occur in mixed conifer, spruce/fir, aspen and ponderosa pine vegetative communities on the La Sal Mountains. One northern goshawk territory has been identified in the allotment.
Peregrine falcon *Falco peregrinus anatum*	**Considered.** Suitable nesting/roosting cliffs and associated canyon riparian foraging habitat occur in Roc Creek canyon. The closest known territory is in Paradox Valley, several miles below the allotment.
Flammulated owl *Otus flammeolus*	**Considered.** This small owl inhabits mature mixed pine, aspen and second growth ponderosa pine forests. It occurs in forested portions of the allotment.
Three-toed woodpecker *Picoides tridactylus*	**Considered.** Three-toed woodpeckers occur in the project area, predominately in pockets of mature ponderosa pine forests with mountain pine beetles.
Greater sage-grouse *Centrocercus urophasianus*	**Not Considered.** The range of the greater sage-grouse is north and west of the Colorado River in Utah, so this species did not occur historically on the Colorado Plateau or the Moab district. A population was introduced in the Canyonlands area 25 miles west of the allotment area. Livestock grazing on the North Paradox Allotment has no effect on this population.
Columbia spotted frog *Rana luteiventris*	**Not Considered.** In Utah, the spotted frog occurs in isolated populations in the Bonneville Basin in the western portion of the state, in association with aquatic habitat with perennial sources of water. No spotted frogs are known to occur on the south zone of the Manti-La Sal National Forest.
Colorado River cutthroat trout *Oncorhynchus clarki pleuriticus*	**Considered.** A native population of cutthroat trout occurs in Roc Creek on the northeast boundary of the allotment. Colorado River cutthroat trout have also been stocked in the Buckeye/West Paradox Creek drainage below Buckeye Reservoir.

4. Sensitive Plant Species

Table 4 displays the plants on the Intermountain Regional Forester's sensitive species list that occur on the Moab District of the Manti-La Sal National Forest. Habitat descriptions were obtained from Welsh et al. (1993) and Atwood et al. (1991). The availability of habitat in the allotment area was determined through review of known population locations, field visits and review of soils, elevations and plant community composition.

Table 4. Sensitive plants that occur on the Moab District and site-specific occurrence of their habitat within the North Paradox Grazing Allotment area.

SPECIES	HABITAT DESCRIPTION AND DISTRIBUTION	HABITAT PRESENT IN ALLOTMENT?
Sweet-flowered rock-jasmine *Androsace chamaejasme carinata*	This mat-forming perennial species is found in alpine tundra and talus communities on the top of the La Sal Mountains at elevations of 10,000-12,600 feet.	No
La Sal daisy *Erigeron mancus*	This alpine daisy is endemic to the La Sal Mountains. It occurs on the peaks above timberline in grass-sedge and forb communities at elevations of 9150-10,500 feet.	No
Canyonlands lomatium *Lomatium latilobum*	Canyonlands lomatium occurs in association with Entrada sandstone, and may be found in pinyon/juniper and desert shrub communities in the Burkholder Draw/Meloy Park area on the northwest side of the La Sal Mountains.	No

II. TES SPECIES DESCRIPTIONS AND ANALYSIS OF EFFECTS

A brief description of the life history and habitat needs for each species considered is followed by specific information about the species on the Manti-La Sal National Forest.

The effects analysis is based on existing conditions within the allotment. The analysis discloses the potential direct and indirect effects of the continuation of current livestock grazing management on the North Paradox allotment on threatened, endangered and sensitive (TES) species and their habitat, and the expected cumulative effects that could potentially accrue to TES species if livestock grazing activities add cumulatively to other past, present or reasonably foreseeable future actions.

Unless otherwise specified, the cumulative effects area considered in the analysis includes appropriate habitats for each species on the east and south sides of the La Sal Mountains. This area includes the Roc Creek, Willow Basin/West Paradox Creek and La Sal Creek drainages of the upper Dolores River. Past, present or reasonably foreseeable future actions that were reviewed in this analysis for their potential to add incrementally to impacts of the proposed action:

- Timber (ponderosa pine) harvest around Buckeye and Carpenter Ridge in the 1960's, the 190 acre Sawmill Pond sale in 1991 and timber management on adjacent private land
- Buckeye Vegetation Management Project – ponderosa pine thinning, prescribed fire and pile burning (2002-2006) on 1000 acres
- Spraying for pine beetles in the developed recreation site at Buckeye Reservoir (1998, 2000, 2002, 2004), future insecticide (carbaryl 4L) spraying may occur if conditions dictate
- Buckeye Pine Beetle tree salvage project – removal of beetle-infested ponderosa pine in the developed recreation site 1997-2001
- Hang Dog wildfire (2002), BAER (2002-2003) and 204 acre timber salvage (2005), Hang Dog Black Money Project – streambank stabilization, reseeding, pond dredging (2005)
- Fuelwood harvest
- Ungulate (livestock and big game) grazing
- Improvements to access roads (Montrose County)
- Summer home development on private land
- Lion Creek wildfire (2006)
- Pine Ridge oil and gas 3D exploration project 2006
- Proposed Buckeye Reservoir Recreation Area campground reconstruction (2008), motorized trail designation/development
- Impacts from unmanaged recreation, mostly from ATVs and dispersed camping without adequate facilities
- Buckeye Reservoir Hazard Fuels Project/timber sale (2007-2009)
- outdoor recreation activities including hunting, hiking and mountain biking
- resumption of uranium mining

A. Threatened and Endangered Species

Mexican Spotted Owl

The Mexican spotted owl (MSO) currently occupies a broad geographic area, but does not occur uniformly throughout its range. Across most of the southwest, it is found in mature, mixed conifer forests with dense, uneven-aged stands. However, breeding owls in southern Utah and southwestern Colorado utilize deep, steep-walled canyons with mature coniferous or deciduous trees. Spotted owls are relatively intolerant of high temperatures and roost and nest in shady forests or in the cracks of narrow, complex canyons. These large owls forage primarily on canyon floors and benches, and occasionally on the surrounding mesa tops. The owls eat a variety of rodents, bats and birds, but their primary prey is woodrats (Neotoma sp). Individual owls may winter in their territories or migrate up to 50 km, generally to lower elevation, open habitats, often pinyon-juniper woodland or mountain shrub habitat types (Willey 1993).

The MSO was federally listed in 1993. A Recovery Plan for the Mexican Spotted Owl was completed in December 1995 (USFWS 1995a). Critical habitat for the MSO was designated in July 1995, again in February 2001 and modified in August 2004 (USFWS 2004). This designation includes the western half of the Monticello portion of the district, but nothing on the Moab portion or in southwestern Colorado. To date, all nests located in the region have been within steep-walled canyon habitats. PACs (Protected Activity Centers) have been designated in the canyon country west of the La Sal Mountains. Most habitat deemed suitable for Mexican Spotted Owl has been surveyed on the Moab/Monticello Ranger District (1990-1993), and the best canyon habitat was surveyed again in 2002-2005. Only one response has been recorded; in May 1990 in the North Paradox allotment below Buckeye Reservoir. Owls were not detected in subsequent surveys so breeding was not suspected and no PAC designated. This area in Buckeye/West Paradox Creek was assessed for potential owl habitat by the District Wildlife Biologist in June 2005. The shallow, xeric canyon has low cliffs, little riparian development and limited potential as breeding/roosting habitat (Figure 1).

The canyon habitat in Roc Creek is the only portion of the allotment to contain suitable breeding/roosting or Restricted habitat as defined in the Recovery Plan (USFWS 1995a). Owls were not detected in the original surveys in Roc Creek in the early 1990's. The canyon is a very difficult area to access and survey effectively, so more recent surveys have not been completed in the area. Due to the rugged, inaccessible nature of the canyon, this portion of Roc Creek is not suitable range and is not grazed by livestock, so there is no effect from livestock grazing in the canyon or riparian area.

Figure 1. Typical habitat in Buckeye Creek below the reservoir.

The suitable grazing land on the allotment is not known or expected to be used by nesting Mexican spotted owls. The forested habitat in the allotment is a Ponderosa Pine forest type as defined in the Recovery Plan (USFWS 1995a). There are no specific guidelines in the Recovery Plan for the forest types outside of Protected and Restricted areas.

Available evidence suggests that where owls use different habitats in winter, these habitats are generally more open in structure (Ganey and Block 2005). There is pinyon-juniper habitat in the lower portions of the allotment, but due to a lack of water, the area is seldom grazed. The 2006 Lion Creek wildfire fire burned 1400 acres of pinyon-juniper habitat.

The North Paradox allotment is monitored using range trend studies and other assessments to ensure that grazing use allows for the attainment of desired resource conditions established in the Forest Plan. This is consistent with the Recovery Plan for the Mexican Spotted Owl (USFWS 1995a) that recommends: 1)monitoring grazing use by livestock and wildlife within “key grazing areas”, which include riparian areas, meadows and oak types; 2)implementation and enforcement of grazing utilization standards that would attain good to excellent range conditions within the key grazing areas; 3)implementation of management strategies that restore good conditions to degraded riparian areas. Monitoring has not indicated adverse impacts to riparian communities in the allotment.

Activities associated with livestock management, such as fencing, water developments, and herding practices are implemented to control forage utilization and livestock distribution in order to meet standards and guidelines set in the Manti-La Sal National Forest Land and Resource Management Plan and the Allotment Management Plan to maintain desired range conditions, which includes forage and cover for wildlife – including prey species of the Mexican spotted owl.

Direct and Indirect Effects: Effects to owls from livestock grazing are related to potential effects to habitat composition and structure and prey availability and diversity. Livestock grazing has at least short-term impacts to vegetative communities and the associated wildlife populations. Habitat composition and structure in the forested portion of the allotment is influenced by timber management and the presence of the dense understory of introduced grasses. Grazing effects to owl prey species vary between species, but adequate shrub and herbaceous cover for rodents is maintained by the current grazing system.

Cumulative Effects: Other actions that may affect prey availability and diversity in the allotment are timber/vegetation management, which includes thinning, commercial timber harvest and prescribed burning. There is no defined threshold for impacts to prey species, but as long as adequate cover is retained, impacts are not sufficient to cause significant effects. The overall effects to habitat quality from the vegetation treatments around Buckeye Reservoir may be beneficial in the long-term due to reduced risk of stand-replacing fire and return to a properly functioning condition. The Lion Creek wildfire (planned for seeding in the fall of 2007) had an impact to prey populations on at 1400 acres, but this impact was mitigated by resting the allotment from livestock grazing until area has recovered. Unmanaged recreation may impact rodents through vegetation trampling and habitat fragmentation. Actions are proposed to manage off-road vehicle use in the area. Current livestock grazing does not add measurable or long-term cumulative effects.

The USFWS concurred that the proposed action may affect, but is not likely to adversely affect, Mexican spotted owls due to insignificant or discountable effects.

Southwestern Willow Flycatcher

One of four subspecies of willow flycatcher, the migratory southwestern willow flycatcher (SWWF) occurs in New Mexico, Arizona, southern California, and the southern parts of Utah and Colorado. The SWWF is a riparian obligate species, nesting in dense clumps of willow or shrubs with similar structure (alder, some tamarisk) along low-gradient streams, wetlands, beaver ponds, wet meadows and rivers. The US Fish and Wildlife Service announced the listing of the southwestern willow flycatcher as an endangered species on February 27, 1995. This migratory bird is endangered by extensive loss and alteration of riparian habitat, and by brood parasitism in some areas (USFWS 1995b).

The 2002 Recovery Plan (USFWS 2002) did not include the Moab district in the Upper Colorado Recovery Unit. Current range maps do not include the Moab District NFS lands in Utah or Colorado. Critical habitat designated in 2005 included only the Virgin River in Utah and no areas in Colorado (USFWS 2005). Research on distribution by song differentiation seems to indicate that pure strains of *Empidonax traillii extimus* do not occur in Colorado (Sedgwick 2001).

The lower elevation portions of the allotment support little to no riparian habitat in the narrow steep channel of West Paradox Creek. The only willow/shrub habitat patch of any size is found along the inlet ditch that feeds Buckeye Reservoir. The strip of willows from the Forest boundary southeast to the reservoir averages approximately 12 meters in width for 1,400 meters, comprising 2.3 ha of habitat. It meets the minimum patch size, as flycatchers have been found nesting in narrow, linear habitats greater than 10 m wide and larger than 0.6 ha (Finch and Stoleson 2000). This area is at an elevation of 7600 feet, which is within the limits of breeding habitat identified in the Recovery Plan (USFWS 2002).

Livestock grazing can affect willow flycatchers directly through nest disturbance and facilitation of brood parasitism in the breeding season (May to mid-July), or indirectly through impacts to riparian vegetation structure and composition. While impacts to woody vegetation can certainly occur, livestock use of palatable, herbaceous riparian vegetation can occur without browsing of riparian shrubs, and light to moderate grazing can allow maintenance of range conditions (USFWS 2002). To protect and/or enhance areas of suitable/potential habitat, grazing management in the area would continue to follow guidelines for forage utilization, browse use and soil disturbance as outlined in the Forest Plan (USDA Forest Service1986). The limited willow habitat in the allotment has been assessed, and it was found to be in excellent condition with current reproduction and little evidence of grazing. The most likely impacts to riparian habitat structure come from recent beaver activity around the reservoir.

Potential downstream effects to suitable or potential southwestern willow flycatcher habitat are also considered. There are no water depletions associated with the proposed action and no impacts to the hydrologic regime or riparian vegetation outside the Forest boundary.

Direct and Indirect Effects: Southwestern willow flycatchers are not known to occur on the North Paradox allotment. However, livestock grazing use may affect unoccupied suitable habitat.

Cumulative Effects: No other actions are expected to impact the willow/shrub habitat at Buckeye Reservoir.

The USFWS concurred with the May Affect, Not Likely to Adversely Affect determination due to insignificant or discountable effects to the southwestern willow flycatcher.

Canada Lynx

The Canada lynx is a medium-sized wild cat with a large home range based principally on the availability of their primary prey, snowshoe hare (*Lepus americanus*). The cyclic nature of lynx population numbers can be directly tied to cycles in hare populations. Lynx will feed on other small mammals and birds such

as squirrel, beaver and grouse in the summer or when hare numbers are low. Canada lynx primarily occupy alpine, conifer and mixed conifer forests in boreal and montane regions, with a key element of cold winters with deep snow. The Northern Rocky Mountain population includes northern Utah, and the Southern Rocky Mountain population includes southeast Wyoming and portions of Colorado.

The primary concern for Canada lynx is habitat loss or modification and susceptibility to overharvest (trapping). Other factors impacting their existence include road construction, urbanization of mountain valleys, recreational development (ski areas), and fire suppression effects to forest structure.

Lynx have recently been transplanted into southwest Colorado. Several individuals have dispersed into Utah, but no known breeding populations are established in the state. While the USFWS Salt Lake City Office does not recognize the Moab and Monticello District of the Manti-La Sal National Forest as potential lynx habitat, lynx are on the list for Montrose County in Colorado (due to potential habitat on the Uncompahgre Plateau). There is no snowshoe hare population on the La Sal Mountains in Utah or Colorado. In addition, the portion of the Moab District that falls within Colorado around Buckeye Reservoir is predominantly ponderosa pine, pinyon/juniper and mountain brush habitat. These habitats do not contain the fundamental elements considered necessary for lynx range (USFWS 2003).

Although the project area is well outside lynx primary habitat as designated by the USFWS and over 75 miles from the reintroduction sites in Colorado, lynx are well-known long-distance dispersers. Any individuals in the project area would be dispersing lynx, which may be found in completely unsuitable habitats. Lynx are not expected to remain in the area due to the unsuitability of the habitat.

Direct and Indirect Effects: The allotment does not contain suitable Canada lynx habitat, and continued livestock grazing would not contribute to the loss, modification or fragmentation of primary habitat for this species. There would be no effects to Canada lynx.

Cumulative Effects: No cumulative effects are expected.

B. USFS R4 Sensitive Species

Spotted Bat

Spotted bats occur in a variety of habitat types including open ponderosa pine, desert scrub, pinyon/juniper and agricultural land. Meadows and forest openings are important foraging areas for this species. As a low frequency echolocator, this species focuses on moth prey (Fenton et al 1998). Cracks and crevices ranging in width from 0.8-2.2 inches in limestone or sandstone cliffs are critical roosting sites.

Spotted bats were heard at Wilcox Flat in 1993 (Toone 1994) and captured at Warner Lake (9200 ft elevation) in 1995 (Foster et al. 1996), documenting the species on the La Sal Mountains. In surveys on Elk Ridge, Toone (1991) noted that spotted bat activity occurred in proportion to the availability of cliff habitat along the survey routes. There are cliffs that may provide suitable roosting habitat in areas adjacent to and within the allotment, and water is available in several drainages, ponds and Buckeye Reservoir.

Other than destruction of roosting sites, the primary threats to spotted bats may be the collection of specimens and pesticide accumulation. Population trends for the western crevice and cavity-roosting bats are unknown (O'Shea and Bogan 2003). Spotted bats are particularly difficult to capture and monitor. Largely due to the lack of data, trends are speculated to be downward.

Direct and Indirect Impacts: Direct impacts to bats from livestock grazing are unlikely since cattle are not expected to impact bat roosts. Loss or disturbance of the limited, specialized roosting habitat available to this species is a major factor in population declines. The proposed action would not impact suitable roosting, maturity or hibernating habitat.

Loss and degradation of foraging habitat may also contribute to population declines for this species. The effect of grazing on the insect prey base is variable, but likely short-term. Under proper management, impacts to the insect prey base from livestock grazing would be limited.

On the North Paradox allotment, the current livestock grazing management has not resulted in long-term changes to plant community composition or structure that would have a measurable adverse impact on insect prey, especially moths.

Cumulative Impacts: As the proposed project would have no direct or indirect impacts to spotted bat roosting/hibernating habitat, possible impacts from abandoned mine closures, future mine operations or recreation in the area are not cumulative to this project.

Impacts to bat foraging habitat may result from past and future vegetation treatments, especially if there are impacts to riparian zone vegetation. The proposed Buckeye Reservoir ponderosa pine treatments generally avoid riparian zones, or contain seasonal/soil condition restrictions to minimize impacts to riparian areas. Recreation, including ATVs and activity at the Buckeye Reservoir campground, has the potential to impact riparian and other foraging area vegetation, and may add cumulatively to impacts from grazing, but as foraging habitat is not a limiting factor for spotted bats in the project area, the potential impacts do not reach a threshold of impact to populations.

Western Big-eared Bat

The western or Townsend's big-eared bat occurs throughout Utah and the western states in a variety of habitat types including pinyon/juniper, shrub grasslands, deciduous forest and mixed conifer forest where there is suitable cave/mine roosting habitat. They have been found most often in rough foothill and desert country (Armstrong 1979). The elevation range of confirmed sightings in Utah is 3300 to 8851 ft. (Oliver 2000). The species forages primarily for moths in open woodlands, often high in the forest canopy, along forest edges and over water. This bat roosts in cool places such as caves, rock fissures, mines and buildings. The availability of suitable mine/cave habitat for maternity colonies and hibernacula is the limiting factor for western big-eared bats. These bats are sensitive to human disturbance, and have been repeatedly observed to abandon their roosts when activities occur within the roosting structure (Oliver 2000). The main threats to roosts are abandoned mine reclamation, recreational caving, renewed mining in historic districts and natural subsidence of caves and mines. Livestock grazing management and practices related to the large-scale conversion of mesic riparian habitats to more xeric uplands may have affected western big-eared bat populations in the west (Pierson et al 1999). Population trend of this obligate cave/mine hibernator is unknown due to the difficulty of surveying/monitoring the small, less-detectable summer colonies and winter hibernation in complex, dangerous mines (O'Shea and Bogan 2003). Largely due to the lack of data, trends are speculated to be downward.

The species is known to occur in Montrose County (Colorado DOW 2005). Suitable roosting habitat may be found in old mines in the vicinity of the Buckeye Reservoir and Roc Creek, and the reservoir may be an attraction to foraging bats. The Colorado Bat Conservation Plan (Ellison et al. 2003) addressed two issues in forest management; loss of tree roosts and degradation of foraging habitat. The plan recommends retention of all stages of snags, developing firewood guidelines to protect snags and wildlife trees and also restoring fire to the ecosystem, with adequate protections for snags in the burn plan. These recommendations are contained in the mitigation measures for other projects proposed in the area, but are not within the scope of this decision.

The abundance and diversity of insect prey is an important component of foraging habitat. The impacts to invertebrates from livestock grazing are not well quantified and vary greatly depending on a variety of factors. Moths, the preferred prey of many bats, especially western big-eared bats, reproduce on shrubs, trees, and flowering plants, but not on grasses (Ellison et al. 2003), so impacts are limited.

Vegetation in riparian zones is critical for most bat species. As documented in recent ID team reviews, the riparian areas in the North Paradox allotment currently meet *Forest Plan* Direction and Standards (Vanderbilt 2006). Riparian vegetation, where present, is adequate in both composition and density to provide for soil protection. Field reviews of upper Buckeye Creek (ditch) by the wildlife biologist have found the riparian vegetation to be in good condition, with the willows exhibiting

reproduction.

Direct and Indirect Impacts: Direct impacts to bats from livestock grazing are unlikely since cattle are not expected to impact bat roosts. Loss or disturbance of the limited, specialized roosting habitat available to this species is a major factor in population declines. The proposed action would not impact suitable roosting, maturity or hibernating habitat.

Loss and degradation of foraging habitat may also contribute to population declines for this species. The effect of grazing on the insect prey base is variable and short-term. Under proper management, impacts to the insect prey base from livestock grazing would be limited.

Cumulative Impacts: As the proposed project would have no direct or indirect impacts to western big-eared bat roosting/hibernating habitat, possible impacts from past abandoned mine closures or future mine operations in the area are not cumulative to this project.

Vegetation management projects in the area, including timber sales, prescribed burns, wildfires and beetle tree removal may impact bat foraging habitat across the valley, and may be cumulative to livestock grazing impacts to the insect prey base. All proposed treatments in the area avoid riparian zones, so would not add cumulatively to livestock grazing impacts in these important areas. Potential impacts to bat prey species from spraying to control pine beetles should not have direct effects to bats when done according to label directions, and is not cumulative to livestock grazing impacts as bark beetles are not affected by grazing. Recreation, including ATVs and activity at the Buckeye Reservoir campground, has the potential to impact riparian and other foraging area vegetation, and may add cumulatively to impacts from grazing, but as foraging habitat is not the limiting factor for big-eared bats in the project area, the potential impacts do not reach a threshold of impact to big-eared bat populations.

Bald Eagle

Bald eagles were recently delisted (August 8, 2007) as a federally listed threatened species, and are now considered as a Forest Service sensitive species. In addition to protection under the Eagle Protection Act [16 U.S.C. 668-668d] and the Migratory Bird Treaty Act, specific guidelines for the management and protection of bald eagles and their habitat have recently been approved. Livestock grazing is not addressed as a potential impact to nesting or roosting bald eagles in the 2007 National Bald Eagle Management Guidelines (USFWS 2007). Nationwide, the population trend for bald eagles has been steadily upward since 1980 (Sauer 2005).

Bald eagles occur in Colorado and Utah generally as a migratory or wintering population, although there are about 13 known nesting territories in the two states.

During the breeding season, bald eagles are closely associated with water, feeding mainly on fish along coasts, lakeshores or rivers. The thousands of bald eagles wintering in Colorado and Utah are found around ice-free waters or in upland habitats, where they eat whatever is available, including fish, waterfowl, small mammals and carrion. Winter roosts are located primarily in forested canyons or tall cottonwoods along streams and reservoirs.

There are no breeding pairs known or suspected on the Moab/Monticello District. The nearest nesting territories are along the Colorado River, 40 miles away. Bald eagles in the general area are considered wintering populations or northern birds that are migrating through in the fall and spring. Numbers and distribution vary with the severity of the winter. Winter sightings of bald eagles are common along the Colorado and Dolores Rivers, but there are no known winter roosts or concentration areas on the higher elevation forested areas around Buckeye Reservoir, which freezes over in the winter.

Direct and Indirect Impacts: The allotment is not known or expected to be used by nesting or wintering bald eagles. Grazing on the allotment takes place outside the winter months when bald eagles have the highest potential to be in the area (November to April). Current management in the project area does not impact bald eagles or their habitat.

Cumulative Impacts: No cumulative impacts are expected.

Northern Goshawk

Goshawks inhabit mixed deciduous and coniferous forests in temperate and boreal regions, from sea level to tree line. Nesting territories have been located in a variety of forest ecosystems including lodgepole pine (*Pinus contorta*), ponderosa pine, Douglas- fir (*Pseudotsuga menziesii*), mixed conifer and aspen. Aspen trees are an important habitat component for nesting on the Moab District. These large accipiters prey upon small mammals and birds (e.g., squirrels, rabbits, grouse, woodpeckers, jays, robins). In winter, radio-tracked goshawks remained on their breeding territories or similar habitat or migrated to pinyon/juniper habitats up to 190 miles away (Graham et al. 1999).

Goshawks utilize extensive stands of mature and old trees for nesting and foraging, although they can reproduce and hunt successfully in a variety of forest types and structures. They appear to prefer open understories to facilitate the detection and capture of prey. In addition to changes related to timber harvest and livestock grazing, large-scale fire suppression activities have resulted in modification to forest structure over large areas. These activities have often led to dense forest thickets and a declining aspen component in many western forests. Many of these forests are outside of properly functioning condition.

Surveys have been conducted on the district over the last 12 years. Several

goshawk territories have been located on the Moab/Monticello district. Nests have been found in mixed conifer/aspen and ponderosa pine habitats. There is one active territory known on the North Paradox Allotment. It was not active for 12 years following a timber sale and escaped prescribed burn in the area, but the territory was re-established in 2006 and was active again in 2007 with a successful nest. Monitoring of this territory will continue on an annual basis, and suitable habitat continues to be surveyed.

See the MIS section of the Wildlife Report for more information on local population trends and habitat suitability/capability (USDA Forest Service 2007).

Direct and Indirect Impacts: Livestock grazing has, over time, affected forest and understory structure and composition with potential effects to northern goshawks (Graham et al. 1999). Cattle and elk browsing on aspen sprouts may affect tree regeneration, altering the future availability of suitable nesting and foraging habitat in mixed conifer, ponderosa pine and aspen vegetation types. Grazing may also influence potential food supplies for goshawks by affecting the habitat suitability for prey species.

In the Utah Northern Goshawk project guidelines and associated Manti-La Sal Forest Plan amendments (added to the Forest Plan in 2000 and 2003), a process for identification and modification of ungulate grazing pressure that is contributing to a functioning-at-risk condition in forested habitats is included. On the La Sal Mountains, where the majority of the prey remains recorded at active nests is woodpeckers, Steller's jays and red squirrels, there has been no identification of a functioning-at-risk condition related to prey species of the northern goshawk. Recurring and ongoing activities such as vegetation utilization by both livestock and wildlife may result in minimal, localized impacts on goshawk prey species. However, as a result of maintaining management standards for forage utilization, stubble heights and soil disturbance as listed in the Manti-La Sal National Forest Land and Resource Management Plan (1986), no measurable direct or indirect impacts on the complexity and diversity of goshawk prey is expected.

Cumulative Impacts: Activities that affect forest structure and composition may result in cumulative impacts to northern goshawk habitat. The past and proposed Buckeye area vegetation treatments in the ponderosa pine communities occur in goshawk habitat. Over the long-term, these treatments would be beneficial to goshawk habitat conditions. Post-treatment grazing must be managed to allow recovery of the treated sites.

Recreation, including ATVs and activity at the Buckeye Reservoir campground, has the potential to impact riparian and other foraging area vegetation, and may add cumulatively to impacts from grazing. In the ponderosa pine vegetation type in the allotment, nesting habitat structure as influenced by timber management is more likely a limiting factor than foraging habitat, therefore the potential cumulative impacts from grazing do not reach a threshold of impact to goshawk populations.

American Peregrine Falcon

Peregrine falcons nest on tall cliffs (usually below 6000 feet elevation) near streams, rivers or reservoirs, though sites can be several miles from water. They prey on a variety of birds, including shorebirds, waterfowl and doves, associated with open water, riparian, wetland and meadow habitats. Some peregrines migrate, but with an adequate food supply, they may remain on breeding territories through the winter. Courtship and breeding activity begin in February.

After a dramatic decline in numbers in the 1940-1960's, attributed largely to the impacts of pesticide residues (particularly organochlorines such as DDT), these falcons have become more abundant throughout their range in recent years. In August 1999, the peregrine falcon had recovered to the point that it was removed from the Federal Endangered Species list. The primary threat to falcon populations today is the loss of foraging habitat and the disturbance of nest sites, associated largely with urban encroachment but also increased outdoor recreation. Botulism and exposure to pesticides on wintering grounds also remain a threat.

Suitable nesting areas in southeastern Utah and southwestern Colorado consist of sheer cliffs with associated canyon riparian areas for foraging. The largest concentrations of falcons occur along the Colorado and Dolores Rivers. Suitable nesting habitat on NFS lands on the Moab district in Colorado can be found in Roc Creek. There are active nests in Paradox Valley, approximately 5 miles from the project area. The reservoir may provide foraging habitat for migrants.

Suitable nesting habitat on NFS lands on the Moab district has been inventoried for peregrines, and will continue to be monitored for nesting activity. There is suitable habitat in the allotment in Roc Creek, but no nesting has been detected in the limited surveying conducted on the allotment.

Direct and Indirect Impacts: The habitat where this species nests (cliffs and rock ledges) is not found within suitable range for livestock. These birds do hunt for prey in riparian areas that may be impacted by livestock grazing, but on the North Paradox allotment, the suitable foraging areas are in the larger and more open canyons such as Roc Creek, which is not grazed by livestock. By adhering to standards for forage utilization, soil disturbance and stubble heights in riparian areas as listed in the Manti-La Sal National Forest Land and Resource Management Plan (1986), any potential impacts are minimized. There are no known peregrine falcon territories on the allotment, suitable nesting and foraging habitat is not grazed, so no impact is expected from livestock grazing.

***Cumulative Impacts*:** No cumulative impacts are expected.

Flammulated Owl

This insectivorous owl, a neotropical migrant, inhabits mature mixed pine, aspen and second growth ponderosa pine forests in the west. Nearly all nest sites in this region occur in mature or old growth stands of ponderosa pine and Douglas fir, which tend to have a moderate to high percent canopy cover. These small owls appear to prefer dense foliage for roosting cover. As secondary cavity nesters, flammulated owls depend on holes excavated by large woodpeckers, generally in large diameter (>20" dbh) snags. They also nest in aspen, which may be a function of the prevalence of woodpecker holes excavated in this tree species. The availability of cavity nest sites is likely the limiting factor for populations (McCallum 1994). Pinyon/juniper may be used as nesting and foraging habitat on the Colorado Plateau (Hayward and Verner 1994, Romin and Muck 2002). Vegetative structure, rather than plant species composition, may be the most important habitat factor to these owls (Hayward and Verner 1994). They hunt their insect prey (moths, beetles, caterpillars and crickets) by aerial pursuit or gleaning of foliage, in open habitat or along edges.

Several owl surveys have been conducted on the Moab/Monticello district, resulting in numerous records of flammulated owls. The Mexican spotted owl survey (1990-1995) documented flammulated owl responses at over 100 locations. A strong association between flammulated owl locations and mature ponderosa pine on Elk Ridge was noted (High Desert Research Collective 1990 and 1991). Owl surveys conducted on the Moab district in 2004-2006 (MLNF 2006a) continue to document the presence of flammulated owls in suitable habitat. They were found during the Carpenter Ridge/Buckeye area surveys in 2004 and 2006. They remain the most common species recorded during owl surveys on the district.

Direct and Indirect Impacts: Recurring and ongoing activities such as vegetation utilization by both livestock and wildlife may result in localized impacts on insect prey availability. However, as a result of maintaining goshawk management guidelines as well as management standards for forage utilization and soil disturbance as listed in the Manti-La Sal National Forest Land and Resource Management Plan (1986), no measurable direct or indirect impacts on the complexity and diversity of owls is expected. Current livestock grazing is not the primary factor influencing forest character, which is directed by timber and fire management. Habitat features for the flammulated owl would be maintained under current livestock grazing management.

***Cumulative Impacts*:** No cumulative impacts are expected.

Three-toed Woodpecker

The three-toed woodpecker (TTWO), a circumboreal species, inhabits mixed conifer and pine forests, generally above 8,000 feet in elevation. These primary excavators rely on mature forests and disturbance events, such as fire, foraging in areas with abundant dead and/or diseased trees infested with wood-boring insects. Seventy-

five percent of their diet is bark/wood-boring insect larvae, mainly beetles (Scolytidae). Severe burns represent potentially critical, but ephemeral, habitat for this species (Kotliar et al 2002, Saab and Dudley 1998). Other than logging, the principle threat to three-toed woodpecker populations is fire suppression (Wiggins 2004).

On the Moab/Monticello district, three-toed woodpeckers have been found in spruce/fir (*Picea engelmannii/Abies lasiocarpa*) and pine beetle-infested or burned ponderosa pine (*Pinus ponderosa*) habitat types. Three-toed woodpeckers are most commonly observed in mature spruce/fir forests with pockets of spruce beetle activity. Documented breeding territories have been found from 9,500 to 10,600 feet on the mountain. Monitoring on the La Sal Mountains (1994-2006) has shown a general trend of stable occupancy of the known three-toed woodpecker territories (Figure 1). The decline in occupancy rates recorded in 2005 may be related to the late surveying date in several territories. In 2006, breeding was documented in all but one territory, where birds were found in an adjacent stand (MLNF 2006b).

Three-toed woodpeckers occur at a low density in the ponderosa pine types in the allotment, utilizing pockets of pine beetle-infested trees for foraging. Breeding activity has been documented.

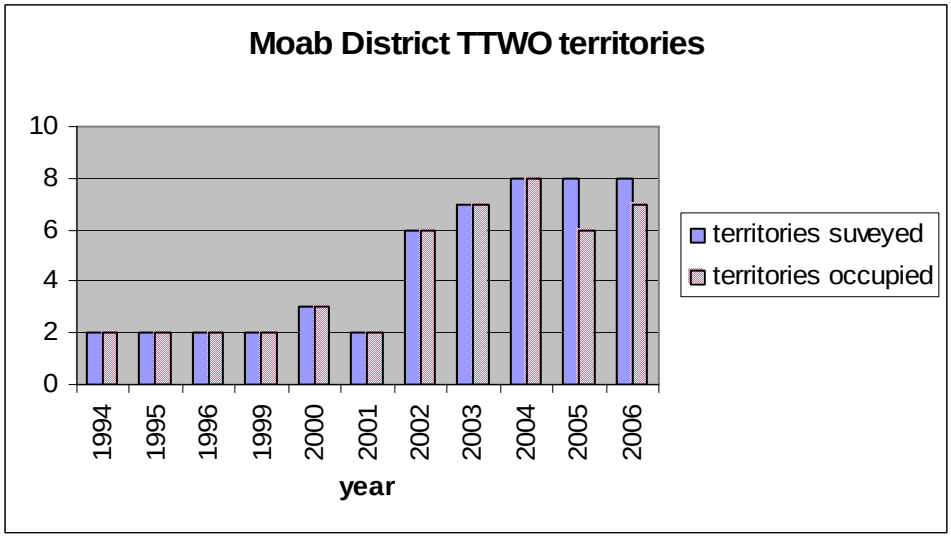

Figure 1. Moab District three-toed woodpecker territory occupancy trends (MLNF 2006b).

Direct and Indirect Impacts: Livestock grazing does not impact the standing dead and diseased trees that woodpeckers depend upon. Continuation of current cattle grazing management on the North Paradox allotment is not expected to have any direct or indirect impact on the three-toed woodpecker.

***Cumulative Impacts*:** No cumulative impacts are expected.

Colorado River Cutthroat Trout

Colorado River cutthroat trout (CRCT) require cool, clear water and well-vegetated stream banks for cover and bank stability. Instream cover, in the form of deep pools and structures such as boulders and logs, is also important. This subspecies is adapted to relatively cold water and prospers at high elevations. It is limited by habitat alteration from grazing, logging, mining, and water diversions for irrigation as well as loss of genetic purity from hybridization with introduced non-native trout (USDA Forest Service 1991).

A Conservation Agreement for preservation and enhancement of native Colorado River cutthroat trout was finalized in March 1997 and renewed in 2001. Based on surveys required by the Agreement, CRCT were found on the Moab portion of the Moab/Monticello Ranger District, specifically within three streams and locations (Berg and Slater 2000, 2001). Core conservation populations occur in La Sal Creek, the La Sal Creek main diversion ditch and in Geyser Creek/Roc Creek. The Colorado DOW conducted surveys in Roc Creek in 2005, and they would be concerned about potential impacts to that drainage (Kowalski 2005). Fingerling Colorado River cutthroat trout have occassionally been stocked into Buckeye Creek below the dam to provide a stream fishing experience, while catchable rainbow trout are stocked into Buckeye Reservoir. Buckeye Reservoir (and the connected Geyser Creek and Geyser Ditch) is infected with whirling disease. The fish disease is not known to have spread to other drainages on the La Sal Mountains. Livestock grazing is not considered a significant factor in the direct transmission of the whirling disease organism (Whirling Disease Institute 2007).

Properly functioning condition assessments on the Roc Creek terrace (Vanderbilt 2006) have established that springs/wetlands in the allotment were currently in proper functioning condition or functioning at risk with an upward trend. Conditions appear to have improved under the current grazing management since the initial visual inspection assessments were made in 2000-2001 for the Moab Range EA. Based on ID reconnaissance as reported in the Hydrologist Report (Vanderbilt 2006), the riparian areas in the allotment meet *Forest Plan* Direction and Standards. Riparian vegetation, where present, is adequate in both composition and density to provide for soil protection.

Direct and Indirect Effects: There would be no impact to streams/watersheds that contain conservation populations of Colorado River cutthroat trout. Cattle from the North Paradox allotment do not graze in Roc Creek, which is affected principally by water diversions/additions and high artifical flows. The steep, rocky channel in West Paradox Creek is not dependent on vegetation for streambank stability, so has not been impacted by livestock grazing (Vanderbilt 2006).

Cumulative Effects: The proposed action does not add cumulatively to the unrelated actions that have had the most effect on native trout.

III. DETERMINATION OF EFFECTS

Threatened and Endangered Wildlife Species: It is my determination that maintaining current livestock grazing management on the North Paradox allotment would not affect the following threatened or endangered wildlife species that do not occur in the project area: black-footed ferret and the candidate species western yellow-billed cuckoo.

Maintaining current management of livestock grazing on the North Paradox allotment may affect, but is not likely to adversely affect Mexican spotted owls. Livestock grazing occurs outside of PACs, but within potential Mexican spotted owl habitat, and is at levels that maintain the woody and herbaceous vegetation necessary for cover of rodent prey species and grazing does not limit the implementation of fire management that would reduce the risk of uncharacteristic wildfire.

Maintaining current management of livestock grazing on the North Paradox allotment may affect, but is not likely to adversely affect southwestern willow flycatcher habitat as livestock use under the current management in the unoccupied suitable habitat has not reduced suitability. Regeneration or maintenance of woody vegetation is not impaired by trampling or utilization.

There would be no effect to Canada lynx as the project area does not contain suitable habitat.

The USFWS (Western Colorado Field Office) concurred with these determinations in a letter dated September 26, 2007.

Threatened and Endangered Fish Species: Maintaining current livestock management would not adversely affect any of the drainages where these species occur, and there would be no effects to the quantity and quality of habitat. Grazing activities on the allotment do not limit recovery of the species. Therefore, it is my determination that the proposed action would not affect the bonytail, humpback chub, Colorado pikeminnow, razorback sucker, or their critical habitats.

Threatened and Endangered Plant Species: No listed plant species or their habitats occur within the allotment area. Therefore, it is my determination that the proposed action would not affect the Uinta Basin hookless cactus, clay-loving wild buckwheat or Navajo sedge.

Sensitive Animal Species: Maintaining current livestock management would have no impact to greater sage-grouse or Columbia spotted frog, as the species do not occur in the area.

The potential impacts of current grazing management on the spotted bat and western big-eared bat are not well documented, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species since their critical roosting habitat will not be impacted.

The allotment is not known or expected to be used by nesting or wintering bald eagles. Current management in the project area does not impact bald eagles or their habitat.

There is a potential for grazing-related impacts to northern goshawk habitat and prey species, but under current livestock management, grazing has not been contributing to a functioning-at-risk condition. The proposed action will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species.

There are no known peregrine falcon territories on the allotment, suitable nesting and foraging habitat is not grazed, so no impact is expected from livestock grazing.

Flammulated owls are well-distributed on the Moab district, and are known to occur in the North Paradox allotment. Indirect impacts of grazing to insect prey populations may impact individuals, but would not likely contribute to a trend towards Federal listing or a loss of viability to the species as grazing does not impact the primary limiting factor to populations (nest cavity availability).

Maintaining current livestock management would have no impact to three-toed woodpeckers as livestock grazing does not affect their nesting or foraging habitat.

There would be no impacts to streams/watersheds that contain conservation populations of Colorado River cutthroat trout.

Sensitive Plant Species: Boreal rock-jasmine, La Sal daisy and Canyonlands lomatium have not been found on the North Paradox allotment. Therefore, it is my determination that maintaining current livestock management would not impact these sensitive plant species.

SUMMARY OF CONCLUSION OF EFFECTS
Threatened and Endangered Species

Species	No Effect	May Affect, Not Likely to Adversely Affect	Likely To Adversely Affect	Beneficial Effect
Mexican spotted owl		X		
Southwestern willow flycatcher		X		
Canada lynx	X			
Black-footed ferret	X			
Bonytail	X			
Humpback chub	X			
Colorado pikeminnow	X			
Razorback sucker	X			
Western yellow-billed cuckoo	X			
Uinta Basin hookless cactus	X			
Clay-loving wild buckwheat	X			
Navajo sedge	X			

SUMMARY OF CONCLUSION OF IMPACTS

Sensitive Species

Species	No Impact	May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing or Loss Of Viability To The Population Or Species	Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability	Beneficial Impact
Spotted bat		X		
Western big-eared bat		X		
Bald eagle	X			
Northern goshawk		X		
Peregrine falcon	X			
Flammulated owl		X		
Three-toed woodpecker	X			
Greater sage-grouse	X			
Columbia spotted frog	X			
Colorado River cutthroat trout	X			
Sweet-flowered rock-jasmine	X			
La Sal daisy	X			
Canyonlands lomatium	X			

IV. Forest Plan Consistency, Discussion of Extraordinary Circumstances and Consideration of Best Available Science

Forest Plan Consistency - The project will comply with applicable Wildlife and Fish Resource Management for Forest-wide, General Big Game Winter Range, Range and Timber Management Unit direction (USDA Forest Service 1986).

Forest-wide Direction
C01 01 - Habitat needs for Management Indicator Species – see Wildlife Report
02 - Manage habitat for recovery of endangered and threatened species.
04 - Manage habitat of sensitive species to keep them from becoming threatened or endangered.
05 - Maintain and/or improve habitat and habitat diversity for minimum viable populations of existing vertebrate wildlife species.
06 - Provide for habitat needs of cavity-nesting birds, raptor and small animals.
08 - Manage waters capable of supporting self-sustaining fish populations to provide for those populations.

Management Unit Direction General Winter Range
C01 01 - Provide big-game habitat needed to help achieve the big-game population objectives identified in interagency herd unit plans.
D02 01 - Manage livestock grazing to complement big-game habitat.

Management Unit Direction Range
C01 01 - Balance wildlife use with grazing capacities and habitat.

Discussion of Extraordinary Circumstances - Forest Service policy directs that a project may be categorically excluded from documentation in an environmental impact statement (EIS) or environmental assessment (EA) only if there are no extraordinary circumstances. Included in the list of resource conditions that should be considered in determining whether extraordinary circumstances warrant further analysis and documentation in an EA or and EIS are: Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species. Presence of one or more of these resource conditions does not in itself constitute an extraordinary circumstance. It is the degree to which the proposed action could potentially affect one of these resources that determines whether an extraordinary circumstance exists**.**

The Federally listed species Mexican spotted owl and southwestern willow flycatcher were considered in the effects analysis. The USFWS concurred with the May Affect, Not Likely to Adversely Affect determination for the proposed action due to the insignificant or discountable effects to these listed species. The potential for these species to actually occur in the allotment is low. There is no designated critical habitat for any federally listed species near the project area. The Forest Service sensitive species known to occur in the project area are the northern goshawk, flammulated owl and three-toed woodpecker. The analysis showed that continued

livestock grazing on the allotment would not impact the viability of these species. Four other sensitive species (western big-eared bat, spotted bat, bald eagle and peregrine falcon) potentially occur in the allotment, but the degree to which the proposed action might affect these species is very limited (see effects determinations in the BA/BE). It is my opinion that no extraordinary circumstances exist for biological resources that would preclude the use of a categorical exclusion for the continuation of current management on the North Paradox Range Allotment.

Consideration of Best Available Science - The analysis in the Biological Assessment/Biological Evaluation considers the best available science. The analysis focuses on species present in the project area, which was determined through site visits, site-specific inventories/surveys and knowledge of the life history requirements of each species and occupancy of similar habitat types on the Forest. Habitat suitability was determined through site visits and review of life histories and habitat requirements as outlined in Federal Register listings and/or species Recovery Plans. The analysis includes a summary of the credible scientific evidence which is relevant to evaluating reasonably foreseeable impacts. When appropriate, the conclusions are based on scientific analysis that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

The relevant science considered for this analysis consists of several key elements. For wildlife, fisheries and botany resources, the elements of science used are:

- Site specific data from inventory and monitoring, field reviews.
- Forest vegetation layers (existveg.mdb).
- Scientific literature - Refer to References section.
- The effects to wildlife, fisheries and botany resources on other allotments in the area have been considered in the analysis.

Northern goshawk territory monitoring and surveys have been conducted each year since 1999 (MLNF 2007) following regional goshawk inventory protocol and this information was considered in the project analysis. General information from *The Northern Goshawk in Utah: Habitat Assessment and Management Recommendations* (Graham et al. 1999) and the *1998 Conservation Strategy and Agreement for the Management of Northern Goshawk Habitat in Utah* as incorporated in the 2000 Northern Goshawk Forest Plan amendment (USDA Forest Service 1986, as amended, #14) is also utilized.

Fleischner's (1994) literature review includes references to many articles that document effects to ecosystems from livestock grazing. Fleischner (1994) concedes that there are difficulties in interpreting and comparing grazing effects and practices due to a lack of baseline information, differences in management and difficulty in quantifying grazing intensity. Many of the studies cited in Fleischner (1994) concern heavy grazing or overgrazing compared to no grazing. Rebuttals to Fleischner's article have also been published (Brown and McDonald 1995). Stewart et al (2002)

documents that deer and elk avoid areas used by cattle, often using slopes which are not available to cattle. The study does not include any conclusions about impacts to big game populations due to this resource partitioning.

While grazing impacts to ecosystems have certainly been documented, the scientific studies and reviews point out that the effects vary greatly between species, habitat and management (grazing intensity and season of use). It is also recognized that moderate grazing is compatible with wildlife (Rickel 2005, Zwartjes et al 2005).

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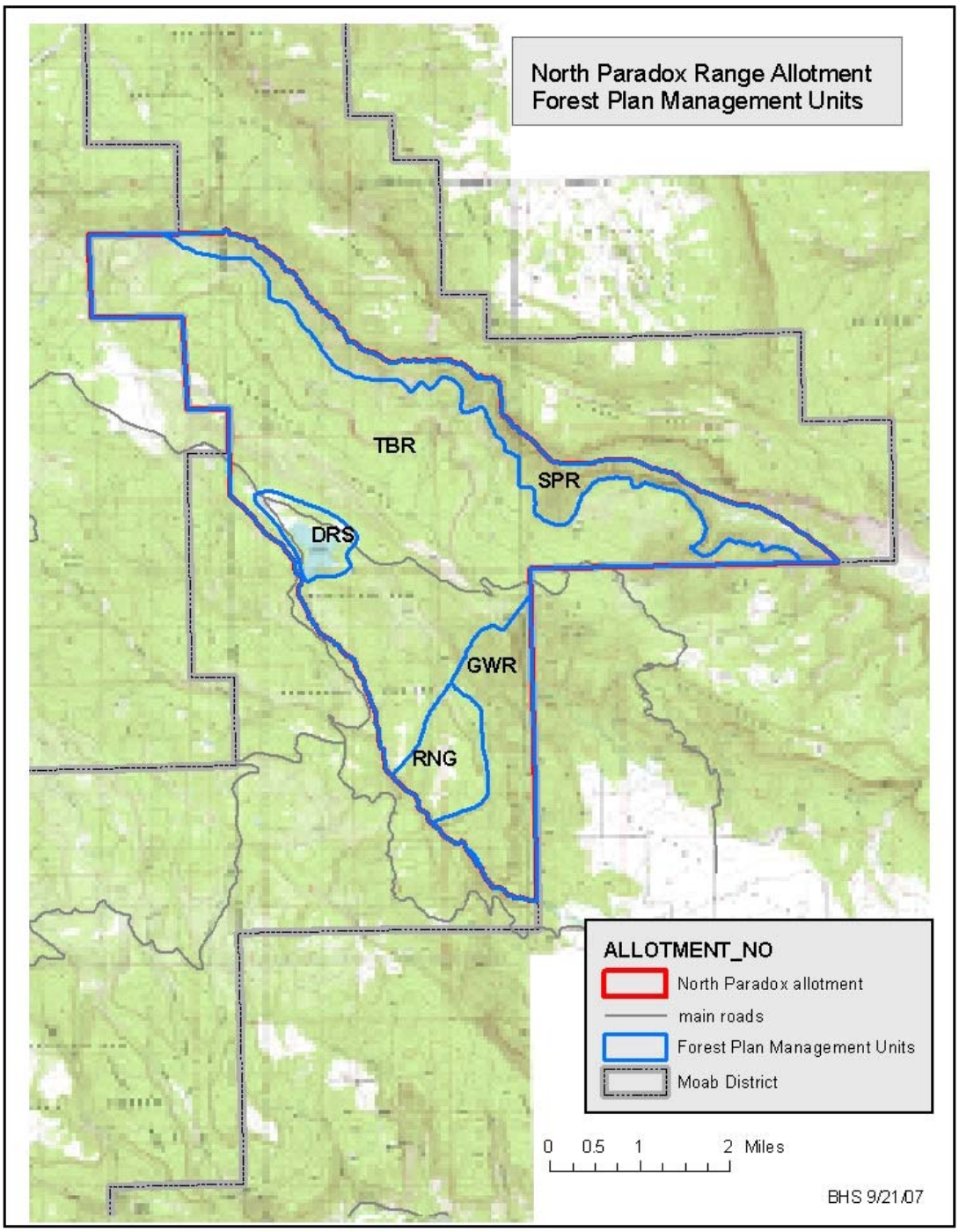
APPENDIX 1



North Paradox range allotment, Forest Plan management units.