APPENDIX C

BIOLOGICAL ASSESSMENT FOR

THREATENED, ENDANGERED, PROPOSED, AND CANDIDATE SPECIES

FOR THE

RE-ISSUANCE OF TERM GRAZING PERMITS ON EIGHT CATTLE ALLOTMENTS
BEAVER MOUNTAIN TUSHAR RANGE

ON THE

BEAVER RANGER DISTRICT

FISHLAKE NATIONAL FOREST

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I. INTRODUCTION

This Biological Assessment (BA) analyzes the potential effects of the proposed action to issue term grazing permits on 8 cattle allotments administered by the Beaver Ranger District to threatened, endangered, proposed, and candidate species known or suspected to occur on the Fishlake National Forest. The names and status of these species and the occurrence of suitable habitat within the analysis area are shown in Table 1. Presently there are no proposed species known to occur on the Fishlake National Forest. The purpose of this biological assessment is to make a determination regarding the effects of the proposed action on the status of these species and determine whether informal/formal consultation or conference with the U.S. Fish and Wildlife Service (FWS) is required.

Table 1. Names, status, and occurrence of suitable habitat for endangered, threatened, and candidate species known or suspected to occur on the Fishlake National Forest. Habitat characteristics for each of the following species was reviewed and based on information found within Rodriguez (2004), Madsen (2003), Atwood et al. (1991), and Spahr et al. (1991).

SPECIES	STATUS	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
San Rafael Cactus *Pediocactus despainii*	Endangered		Only known to occur on the Loa Ranger District. Endemic to Emery and Wayne counties. No suitable habitat in the analysis area.
*Bald Eagle *Haliaeetus leucocephalus*	Threatened	**X**	
Mexican Spotted Owl *Strix occidentalis lucida*	Threatened		No steep or narrow canyons for roosting/ nesting in the vicinity of the analysis area. Not recognized by the FWS as occurring in Beaver, Piute, or Millard county. The small portions of Iron and Garfield Counties at the southern end of the Beaver Ranger District have no suitable canyon habitat according the Willey / Spotsky 2000 MSO Model.
Utah Prairie Dog *Cynomys parvidens*	Threatened	**X**	
Maguire's Daisy *Erigeron maguirei*	Threatened		No suitable habitat within the analysis area. Strongly associated with Wingate, Chinle, and Navajo sandstone not present in the analysis area. Only known to occur on the Loa Ranger District.
Last Chance Townsendia *Townsendia aprica*	Threatened		No suitable habitat within the analysis area. Strongly associated with Arapien and Mancos shale not present in the analysis area. Only known to occur on the Loa and Richfield Ranger Districts.
Rabbit Valley Gilia *Gilia caespitosa*	Candidate		No suitable habitat within the analysis area. Strongly associated with Carmel and Navajo sandstone not present in the analysis area. Only known to occur on the Loa Ranger District.
Western Yellow-Billed Cuckoo *Coccyzus americanus occidentalis*	Candidate	**X**	

***** Suitable as wintering habitat only.

II. CONSULTATION TO DATE

A letter was received from Henry R. Maddux, Utah Field Supervisor for the U.S. Fish and Wildlife Service, on May 12, 2003 concurring with the endangered, threatened, and candidate species that may occur on the Fishlake National Forest. Species on the list included: bald eagle, Mexican spotted owl,

Utah prairie dog, San Rafael cactus, Last Chance Townsendia, Maguire's daisy, Rabbit Valley Gilia, and Western yellow-billed cuckoo.

III. CURRENT MANAGEMENT DIRECTION

Current Policy as stated in Forest Service Manual 2670.3 as amended on June 23,1995 (WO Amendment 2600-95-7 – USDA Forest Service 1995) includes the following direction:

1. Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System, State and Private Forestry, and Research activities and programs.

2. Establish through the Forest planning process objectives for habitat management and/or recovery of populations, in cooperation with States, the Fish and Wildlife Service (FWS) (or National Marine Fisheries Service (NMFS)), and other Federal agencies.

3. Through the biological evaluation process, review actions and programs authorized, funded, or carried out by the Forest Service to determine their potential for effect on threatened and endangered species and species proposed for listing.

4. Avoid all adverse impacts on threatened and endangered species and their habitats except when it is possible to compensate adverse effects totally through alternatives identified in a biological opinion rendered by the FWS; when an exemption has been granted under the act; or when the FWS biological opinion recognizes an incidental taking. Avoid adverse impacts on species proposed for listing during the conference period and while their Federal status is being determined.

5. Initiate consultation or conference with the FWS or NMFS, when the Forest Service determines that proposed activities may have an effect on threatened or endangered species; is likely to jeopardize the continued existence of a proposed species; or result in the destruction or adverse modification of critical or proposed critical habitat.

6. Identify and prescribe measures to prevent adverse modification or destruction of critical habitat and other habitats essential for the conservation of endangered, threatened, and proposed species. Protect individual organisms or populations from harm or harassment as appropriate.

The Forest Service follows a two-tier planning process. The first tier, the Fishlake Land and Resource Management Plan (Forest Plan); the second, the site-specific project planning level that is represented by the Environmental Assessment or Environmental Impact Statement.

The Forest Plan was prepared in accordance with the National Forest Management Act of 1976, the regulations at 36 CFR 219, and the National Environmental Policy Act of 1979, and was approved in June of 1986.

A goal documented in the Fishlake National Forest Land and Resource Management Plan (USDA Forest Service 1986) is to "identify and improve habitat for sensitive, threatened and endangered species including participation in recovery efforts for both plants and animals".

IV. CUMULATIVE EFFECTS AREA

The cumulative effects area for endangered, threatened, proposed, and candidate species includes the entire Beaver Ranger District (see attached Map 2 – District Boundary). This area was selected on the basis of continuity and adjacency with habitats on the Fishlake National Forest for the species being analyzed. Cumulative effects will be based on species' use during spring, summer and fall time periods. Where winter use areas (i.e. bald eagle) are known, they will be addressed.

V. DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to reissue 10-year term grazing permits to continue authorizing cattle grazing, on eight allotments within the Beaver Mountain Tushar Range analysis area.
Implementation of existing Allotment Management Plans (AMPs) would prescribe the manner by which livestock operations would be conducted and would**:**

1. Continue livestock grazing with current permitted numbers and seasons of use.
2. Revise allotment management plans to incorporate objectives and action plans to maintain or achieve desired conditions.
3. Maintain the existing inventory of structural range improvements, allowing maintenance and/or reconstruction when necessary.
4. Through appropriate re-treatment, maintain moderately high forage production levels on vegetation type-conversion sites where it is economically practical.
5. Cooperate with permittees in improving rangeland stewardship and compliance with forage utilization standards, management prescriptions, and livestock accountability.
6. Emphasize rangeland monitoring to assess the effectiveness of objectives and action plans in achieving desired conditions.

This proposed action does not intend to address changes in cattle numbers or grazing seasons. The underlying principle of the proposed action is that adherence to site-specific resource use standards, designed to meet desired conditions, mitigate the need to address capacity and stocking rates. The number and class of livestock, season of use, and grazing system required to meet desired conditions is a permit administration decision, not a NEPA decision.

None of the project allotments require new structural range improvements (fences or water developments) for cattle management. The proposed action does include provision for maintenance of existing structural and non-
structural range improvements. Vegetation type-conversions (sagebrush and pinion-juniper to grass/forb types) would be subject to periodic maintenance on the North-Indian Creek, Marysvale, Circleville, Ten Mile, Cottonwood, South Beaver, and Pine Creek/Sulphurdale Allotments. Maintenance of existing structural range improvements would include 113 miles of fences, 27 cattle guards, 48 developed springs, 48 stock ponds, 29 miles of pipeline, and 60 watering troughs. Noxious weed infestations would require treatment on all of the allotments except Ten Mile, Junction, and Cottonwood, where no noxious weeds are currently inventoried.

The allotments are located in portions of Beaver, Iron, Garfield, Piute, or Millard Counties in west-central Utah along the eastern edge of the Basin and Range province. The location of these allotments within the analysis area is displayed on the vicinity maps on pages *i* and *ii*. The decision associated with this proposal and analysis will determine where livestock can graze, when grazing will occur and what specific guidelines will be established to regulate the timing, intensity, and duration of grazing.

TABLE 1-1 ALLOTMENT INVENTORIES					
Beaver Ranger District					
Allotment	**Acres**	**Livestock Class**	**Permitted Number**	**Season Of Use**	**Grazing System**
North-Indian Creek	34,858	Cow-calf pairs	640	7/21-9/30	Deferred Rotation
Marysvale	6,338	Cow-calf pairs	147	6/1-9/30	Rest Rotation
Ten Mile	12,620	Cow-calf pairs	200	6/11-10/10	Rest Rotation
Circleville	38,019	Cow-calf pairs	359	6/1-10/15	Rest Rotation
Pine Creek/Sulphurdale	29,537	Cow-calf pairs	600	6/16-9/30	Rest Rotation
Junction	6,172	Cow-calf pairs	35	11/1-2/15	Winter
South Beaver	45,596	Cow-calf pairs	520	6/1-10/15	Rest Rotation
Cottonwood	500	Cow-calf pairs	30	6/1-7/31	Seasonal Deferred

The proposal focuses on authorization of cattle grazing at proper use under prescribed utilization levels identified in the Forest Plan and implemented through an Allotment Management Plan, which is incorporated under the terms and conditions of the grazing permit. Satisfactory rangeland management and livestock permitting requires prescribed levels of AMP development, management implementation, monitoring, permit administration, rangeland inventory, analysis, and compliance inspection. The critical element influencing effects of grazing is the implementation, monitoring, and enforcement of management prescriptions, including forage utilization standards.

Forage utilization criteria for upland and riparian areas are currently incorporated in Part 3 of the grazing permit and prescribe allowable use levels for both upland and riparian sites. The prescription for riparian areas is a uniform 4" stubble height. Reaching the 4" stubble height triggers the time to move livestock, either between units or off the allotment. This criteria allows no manipulation to plan use of expected regrowth—once the 4" stubble height is reached, livestock are moved, without the opportunity for twice-over use. Allowable upland forage utilization ranges from 40-60 percent on grass/forb types. Livestock are moved to the next pasture or removed from the allotment when any utilization threshold (upland forage utilization, streambank alteration, riparian forage utilization, riparian vegetation stubble height, or riparian woody browse utilization) is reached. Livestock are moved when a shift in preference from herbaceous to woody species is noted. Meeting or exceeding one of these threshold levels initiates a move of livestock (either to the next pasture or off the allotment). See Table 1-2.

TABLE 1-2 Maximum Allowable Forage Use Criteria		
Vegetation Type	**Stubble Height/Use**	**Comments**
Riparian Hydric Species	4"	Triggers the time to move livestock between units or off the allotment
Riparian Emphasis Management Areas	6"	Triggers the time to move livestock between units or off the allotment
Non-hydric Sod-Forming Grass Species in Riparian Areas	1 ½ "	Primarily Kentucky bluegrass--Triggers the time to move livestock between units or off the allotment
Wheatgrass Seedings	60%	Management option to exceed 60% use to maintain healthy seedings
Riparian/Upland Browse Sprouts and Young-Aged Plants	≤40%	# of current year's available twigs removed
Riparian/Upland Mature Browse	≤50%	# of current year's available twigs removed
Upland Grass/Forb	40-60% of key species; varies by grazing sys & desired condition	% of current year's growth
Riparian Ground Cover	Maintain ground cover of at least 70% within riparian areas	

The proposal also focuses on the use of existing AMP's to prescribe the manner by which livestock operations would be conducted. The current AMP's are old and even though changes to grazing strategies, boundaries, and permitted numbers have been refined over time through administrative procedures, revisions may be necessary to ensure proper use of the resource and to evaluate progress toward meeting desired conditions through attainment of interim resource management objectives.

TABLE 1-3
ALLOTMENT AMP REVISION NEEDS ANALYSIS

Allotment	AMP Year	TEPS Fish Present	Elk Critical Habitat	Potential Elk Conflicts	Fragile Riparian Areas	Noxious Weeds Present (Acres)	Current Capacity Partly Dependant On Vegetation Treatments
North Indian	1981	X	No		X	518	X
Marysvale	1994		No	X	X	288	X
Ten Mile	1975	X	No		X		X
Circleville	1985	X	No		X	97	X
Pine Creek/Sulphurdale	1986	X	No	X	X	2431	X
Junction	1978		No		X		
South Beaver	1987	X	No	X	X	71	X
Cottonwood	1987		No	X	X		X

Proposed management actions common to all eight allotments included in AMP revisions are:

1. Implement allotment specific objectives that will direct livestock management to either maintain desired conditions or improve rangelands to desired conditions within prescribed timeframes.
2. Authorize management of livestock and construction or maintenance of improvements that will eliminate or minimize conflicts between livestock and other uses and result in meeting objectives.
3. Develop action plans to meet resource goals, objectives, and management requirements for a wide array of rangeland resources and uses concurrent with livestock grazing.
4. Incorporate Forest Plan standards and guidelines (as amended) for forage utilization and riparian area management.
5. Develop a monitoring plan that describes a measurable means of determining whether goals and objectives are being met.

VI. DESCRIPTION OF AFFECTED SPECIES

Information concerning life histories, suitable habitats, existing conditions, threats, and ecology of threatened, endangered, and candidate species that are known or suspected to occur on the Fishlake National Forest can be found within the *Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of the Fishlake National Forest, Version 3.0* (Rodriguez 2004). This paper is located at the Dixie National Forest Supervisor's Office in Cedar City, UT.

VII. EFFECTS OF THE PROPOSED ACTION

The proposal focuses on authorization of cattle grazing at proper use under prescribed utilization levels identified in the Fishlake Forest Plan (USDA 1986) and described in the proposed action. Within this Biological Assessment, effects of the proposed action (grazing at proper use levels) are disclosed. The Dixie National Forest developed a comprehensive literature review of the effects of livestock grazing of natural resources in 1995 (USDA 1995). This was prepared as a reference document for reviewing accumulated research literature describing the effects of livestock grazing at proper use and no grazing.

The proper use criteria referenced in this Dixie 1995 document are similar (with some alterations) to the proper use criteria outlined in this proposed action. The wildlife habitats found on the Dixie National Forest (analyzed in the 1995 document) and in the analysis area for this project are also similar. Therefore, this document was reviewed to help assess general effects of grazing at proper use to wildlife species and wildlife habitats.

Bald Eagle

Existing Condition

Historical and recent observations of bald eagle presence have been recorded around lakes and the lower elevational fringes of the Beaver Mountain Tushar Range analysis area during the winter months. Periodic winter bald eagle surveys performed between 1979-2003 have never documented a roosting site anywhere on the Beaver Ranger District. The nearest known historic roosting site is located in Kanosh Canyon on the Fillmore Ranger District approximately 20 air miles to the north of the analysis area. No critical habitat for the bald eagle has been designated on the Fishlake National Forest (Rodriguez 2004). Bald eagles can only be found on the Fishlake National Forest during the late fall, winter, and early spring months. The Northern States Bald Eagle Recovery Plan states that the primary characteristic of winter habitat is abundant and available food supply in conjunction with one or more suitable night roost sites. At winter areas, bald eagles commonly roost in large groups. In the Pacific Northwest, these communal roosts are usually located in mature multi-layered forest stands with mean tree diameters ranging from 20-24 inches and heights between 81-91 feet (Rodriguez 2004). Bald eagles migrate back to their breeding grounds in other areas during the late spring, summer, and early fall months.

Direct and Indirect Effects

During the winter months when migrating bald eagles may be found in the analysis area, livestock are generally not present. The exception to this is in the Junction allotment where winter cattle use is allowed from November 1 through February 15. In this 6,172 acre allotment, there are currently 35 cow-calf pairs permitted for winter use. Direct effects from permitting grazing cattle to individual wintering bald eagles would not occur. However, direct and indirect effects to bald eagle foraging habitat and, consequently, prey species for the bald eagle would occur as a result of the proposed action. Reduced forage and cover for prey species as a result of permitting cattle grazing in these eight allotments may reduce the productivity of small prey animals that provide an energy base for wintering bald eagles. The reduction in forage base and cover in these allotments would increase the bald eagles' ability to locate and capture individual prey species. The proposed action requires adherence to proper use criteria. Under these criteria (outlined in in Table 1-2 above), stubble heights (or % use) specified in riparian and upland environments would not allow overutilization of the vegetation resource. Therefore, habitat effectiveness for prey species of the bald eagle would not be compromised substantially.

Changes in riparian vegetation from permitting cattle grazing and the introduction of noxious weeds by permitting cattle use may also have effects to aquatic systems that provide habitats for aquatic prey species that wintering bald eagles feed on. Flow reductions of streams and springs within watersheds and centralizing the water into stock ponds and troughs also may effect watershed effectiveness. This may further reduce the availability of suitable water sources for bald eagle prey species. The Beaver River Watershed Assessment completed in 2002-2003 for the Beaver River Watershed includes the Pine

Creek/Sulphurdale, North Indian, and South Beaver Allotments. These allotments comprise approximately 110,000 acres which equates to 63% of the project area. The Beaver River Watershed Assessment (hereafter referred to as BRWA) describes, in detail, existing condition of various ecological resources on the landscape. The BRWA documents major vegetation changes in certain cover types. Much of this change can be attributed to wildfire suppression. However, the BRWA also attributes some of this vegetation change to grazing by domestic livestock and wildlife. The BRWA concludes that vegetation changes that have occurred over the past 150 years has substantially reduced the carrying capacity for grazing and browsing ungulates (hooved mammals), and perhaps may be partially responsible for concentrating use in riparian areas. As a result, the BRWA concludes that proper use thresholds for bank stability, riparian stubble heights, or browse use are typically exceeded before upland slopes are fully utilized. "The grazing indices suggest that some watersheds and streams may be incurring excess use even if upland slopes are not being adversely affected" (BRWA 2002-2003). This statement suggests that riparian areas may be more heavily impacted by current grazing management practices than the uplands in some areas. Bald eagle foraging habitat and prey species may be affected by these impacts in riparian areas.

However, the maximum allowable forage use criteria described in Table 1-2 of the proposed action outlines an upland grass/forb utilization of 40-60% and maintaining ground cover of at least 70% in riparian areas. Under this proposed action, there would still be reduced forage and cover but within acceptable limits. Current year's growth would be retained at 40% or greater on upland sites and riparian species would be retained at 1 1/2"- 6" depending on management area and/or species. Riparian areas would retain a minimum of 70% ground cover. Riparian upland browse would be retained at a minimum of 40-50% depending on age class. These proper use criteria would retain enough vegetation cover to keep prey species for bald eagles from declining both in riparian and upland areas. These criteria would also allow for vegetation to rebound from this utilization. Furthermore, bald eagles generally use the analysis area in the winter when vegetation is not actively growing and prey species may not be as heavily dependent on active vegetative growth. Critical habitat has never been identified on the Fishlake National Forest and no winter roost sites have ever been found within the analysis area. Therefore, the proposed action may affect but is not likely to adversely affect the bald eagle and/or its habitat.

Cumulative Effects

Past, present, and reasonably foreseeable activities within the cumulative effects area include private land ownership (subdivision construction activities), grazing, recreation, timber and thinning operations, reforestation and seeding of burned areas, chaining, seeding of native and non-native species, fire suppression, natural and prescribed fire, pesticide application, noxious weed control, and other special uses such as mining, hydroelectric operations, firewood and post cutting, municipal water developments, and irrigation diversion. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) use, and campground/roads/trails maintenance and development.

Reissuing grazing permits in combination with chaining, seeding, fires, timber operations, irrigation diversion/development, and noxious weed control have and will continue to alter riparian and upland vegetation composition and densities, which may reduce winter foraging habitat for bald eagles, small mammals (prey), and aquatic species (prey) in some cases and create habitat in others. Maintenance of vegetation-type conversions as specified in the proposed action may increase forage and cover potential

for some small mammal prey species in pinyon-juniper and sagebrush cover types. However, the action of reissuing grazing permits would then reduce the forage and cover available in these conversions to prey species. Reissuance of grazing permits in combination with timber/thinning operations, fire suppression/wildfire/prescribed fire, firewood and post cutting, and mining have affected watershed capabilities and stream corridors (BRWA 2002-2003) from increased erosion and changes in vegetation. Reissuing grazing permits in combination with recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to bald eagle winter foraging habitat fragmentation, habitat loss, creation of travel corridors, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Also, increased erosion from grazing in combination with recreational activities may cause sediment loss and further degradation of riparian aquatic systems. However, grazing at proper use levels as described in the proposed action would offset many of these impacts. By retaining a standard for vegetation structure, density, and composition as allowed for by these proper use criteria, many of these impacts may be alleviated.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with this proposed action may affect but is not likely to adversely affect the bald eagle and/or its habitat.

Utah Prairie Dog

Existing Condition

The Utah prairie dog's range is limited to five counties in south-central Utah (Iron, Garfield, Piute, Wayne, Sevier) (Rodriguez 2004). Of these, the Utah prairie dog presently occurs in three areas, as described in the Utah Prairie Dog Recovery Plan (USFWS 1991): The Awapa Plateau, the Paunsaugunt region along the East Fork of the Sevier, and the West Desert region of east Iron County (Rodriguez 2004). This proposed action analysis area is not included in any of these regions. Presently, there are no known prairie dogs in the analysis area or on the Fishlake National Forest. Historically, there was a transplant site in the Rocky Pond area of the Beaver Ranger District (Rodriguez 2004). This area is located within the South Beaver Allotment of the analysis area. To date, these transplants have been considered unsuccessful with low reproductive rates as well as no dogs currently occupying the site (Rodriguez 2004). Basic habitat requirements considered for the Utah prairie dog are deep well-drained soil , vegetation low enough so that prairie dogs can see over or through, and suitable forage (Spahr et al. 1991). Moist forage available throughout the summer is also needed (Rodriguez 2004). No critical habitat has been designated for the Utah prairie dog on the Fishlake National Forest (Rodriguez 2004). However, potentially suitable habitat for the Utah prairie dog can be found at lower elevation sites scattered throughout the analysis area.

Direct and Indirect Effects

With the exception of the Junction Allotment which is grazed during the winter months, this proposed action would issue grazing permits for a range of time periods from late spring to early fall (Proposed Action Section V – Table 1-1). Since there are no Utah prairie dogs known to occur within the analysis area, direct and indirect effects of reissuing grazing permits to Utah prairie dog individuals would not occur. However, effects to potentially suitable habitat within the analysis area may occur. At a Utah Prairie Dog Recovery Team Meeting in Springville, UT on 2/3/2004, Dr. Mark Richie disclosed findings

that the shorter the vegetation, the better the vigilance (feeding) of Utah prairie dogs because they are able to more effectively watch for predators. The reissuance of grazing permits on these 8 allotments may affect potentially suitable Utah prairie dog habitat by creating shortened stubble heights (shorter vegetation) and increase the ability of the Utah prairie dog to watch for predators. This effect to habitat would reduce the risk of predation for Utah prairie dogs.

The reissuance of grazing permits on these eight allotments may affect Utah prairie dog weights. At a Utah Prairie Dog Recovery Team Meeting in Springville, UT on 2/3/2004, Dr. Mark Richie disclosed findings that spring grazing (by the end of May) increased Utah prairie dog weights while summer grazing reduced weights. Fall grazing had no effect on prairie dog weights. Since grazing authorized in this proposed action is post June 1 (Junction Allotment excepted) into the late summer/early fall, prairie dog weights would be reduced or stay the same. It is assumed that these findings are a result of forage and cover availability during different periods of grazing use. Reissuance of grazing permits in these 8 allotments would result in reduced forage and cover on potentially suitable habitat that may affect Utah prairie dog weights. Other effects from reissuing grazing permits to potentially suitable habitat within the analysis area are soil compaction from trampling cattle and irrigation diversion/water displacement and development from maintaining stock ponds and troughs for livestock use. McDonald 1992 found that colonies lacking moist vegetation are decimated by drought because prairie dogs are unable to obtain sufficient water and nutrients (Rodriguez 2004). The displacement of water through these water developments (maintained under this proposed action) may reduce potentially suitable habitat for Utah prairie dogs in some cases, and create habitat in others.

The Beaver River Watershed Assessment completed in 2002-2003 for the Beaver River Watershed includes the Pine Creek/Sulphurdale, North Indian, and South Beaver Allotments. These allotments comprise approximately 110,000 acres which equates to 63% of the project area. The Beaver River Watershed Assessment (BRWA) describes, in detail, existing condition of various ecological resources on the landscape. The BRWA documents major vegetation changes in certain cover types. Much of this change can be attributed to wildfire suppression. However, the BRWA also attributes some of this vegetation change to grazing by domestic livestock and wildlife. The BRWA concludes that vegetation changes that have occurred over the past 150 years has substantially reduced the carrying capacity for grazing and browsing ungulates (hooved mammals). These vegetation changes, where they have occurred, in Utah prairie dog potentially suitable habitat may affect this habitat. The Utah Prairie Dog Recovery Plan (USFWS 1991) states that the vegetative height within the colony must be low enough to allow standing prairie dogs to scan their environment for predators. For this reason, controlled grazing is compatible with prairie dog colonies (USFWS 1991). Grazing at proper use levels, as described in the proposed action, would maintain vegetation needed for potentially suitable Utah prairie dog habitats. Currently, there is no critical habitat designated on the Fishlake National Forest and no prairie dogs are known to occur. Therefore, the proposed action may affect but is not likely to adversely affect the Utah prairie dog and/or its habitat.

Cumulative Effects

Past, present, and reasonably foreseeable activities within the cumulative effects area include private land ownership (subdivision construction activities), grazing, recreation, timber and thinning operations, reforestation and seeding of burned areas, chaining, seeding of native and non-native species, fire suppression, natural and prescribed fire, pesticide application, noxious weed control, and other special uses such as mining, hydroelectric operations, firewood and post cutting, municipal water developments,

and irrigation diversion. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) use, and campground/roads/trails maintenance and development.

Reissuing grazing permits in combination with chaining, seeding, fires, timber operations, irrigation diversion/development, and noxious weed control may alter low gradient riparian and upland vegetation composition and densities, which may reduce potentially suitable Utah prairie dog habitat, in some cases, and create habitat in others. Maintenance of vegetation-type conversions as specified in the proposed action may increase colony-building and forage potential in pinyon-juniper and sagebrush cover types. The proposed action of reissuing grazing permits would then reduce the forage and cover available in these conversions which, in turn, increases vigilance (feeding) (Utah Prairie Dog Recovery Team Meeting - Richie 2/3/2004). Reissuance of grazing permits in combination with timber/thinning operations, fire suppression/wildfire/prescribed fire, firewood and post cutting, and mining have affected watershed capabilities and stream corridors (BRWA 2002-2003) from increased erosion and changes in vegetation. Reissuing grazing permits in combination with recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to potentially suitable Utah prairie dog habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Grazing at proper use levels, as described in the proposed action, would help to mitigate vegetation changes that contribute to these impacts. The effects of the past, present, and reasonably foreseeable activities listed above in combination with this proposed action may affect but is not likely to adversely affect the Utah prairie dog and/or its habitat.

Western yellow-billed cuckoo

Existing Condition

There are 4,226 acres of potentially suitable western yellow-billed cuckoo habitat on the Fishlake National Forest. Potentially suitable habitat includes riparian habitats below 7,000 feet, with a cottonwood/willow overstory, dense brushy understories, and slopes less than 10% (Rodriguez 2004). The proposed action analysis area contains potentially suitable habitat in City Creek, North Creek and along the Clear Creek corridor (including Fish Creek and Mill Creek). Portions of City Creek, Clear Creek, Fish Creek, and Mill Creek below 7,000 feet were surveyed for western yellow-billed cuckoos in 2003. All of these surveyed potentially suitable riparian habitats lacked the dense brushy understories needed for the western yellow-billed cuckoo. No western yellow-billed cuckoos were found during these surveys. Additional surveys on other riparian streamcourses throughout the Beaver Ranger District were performed in 2002. No western yellow-billed cuckoos were detected during these surveys. To date, there have been no western yellow-billed cuckoos found in the analysis area or on the Fishlake National Forest.

Direct and Indirect Effects

Since there are no western yellow-billed cuckoos known to exist in the proposed action analysis area, there will be no direct or indirect effects to western yellow-billed cukoo individuals. However, since there is potentially suitable habitat for this species, reissuing grazing permits may effect potentially suitable habitat.

Changes in riparian vegetation from permitting cattle grazing and the introduction of noxious weeds by permitting cattle use may also have effects to aquatic systems that provide habitats for the western yellow-billed cuckoo. Flow reduction of streams and springs within watersheds and centralizing the water into stock ponds and troughs also may effect watershed effectiveness. The Beaver River Watershed Assessment completed in 2002-2003 for the Beaver River Watershed includes the Pine Creek/Sulphurdale, North Indian, and South Beaver Allotments. These allotments comprise approximately 110,000 acres which equates to 63% of the project area. The Beaver River Watershed Assessment (BRWA) describes, in detail, existing condition of various ecological resources on the landscape. The BRWA documents major vegetation changes in certain cover types. Much of this change can be attributed to wildfire suppression. However, the BRWA also attributes some of this vegetation change to grazing by domestic livestock and wildlife. The BRWA concludes that vegetation changes that have occurred over the past 150 years has substantially reduced the carrying capacity for grazing and browsing ungulates (hooved mammals), and perhaps may be partially responsible for concentrating use in riparian areas. As a result, the BRWA concludes that proper use thresholds for bank stability, riparian stubble heights, or browse use are typically exceeded before upland slopes are fully utilized. "The grazing indices suggest that some watersheds and streams may be incurring excess use even if upland slopes are not being adversely affected" (BRWA 2002-2003). This statement suggests that riparian areas may be more heavily impacted by current grazing management practices in some areas than the uplands. Potentially suitable western yellow-billed cuckoo habitat may be affected by these impacts in riparian areas.

Utilization by livestock and wildlife coupled with the tendency of cattle to concentrate in riparian areas may cause declines in desireable species for the western yellow-billed cuckoo such as willow. These types of vegetation changes may contribute to a loss of multi-layered brushy understories and also to the low-gradient nature of streamcourses at lower elevations. These changes may effect the overall suitablilty of riparian habitats for the western yellow-blled cuckoo. Several smaller watersheds within the Greater Beaver River Watershed area document overstocking rates in reference to livestock stocking rates in comparison to suitable watershed area and AUM stocking in comparison to riparian AUM production (BRWA 2002-2003). This would indicate that current grazing management practices may be exceeding watershed and riparian capabilities in some areas. This may affect potentially suitable western yellow-billed cuckoo habitats. However, the maximum allowable forage use criteria described in Table 1-2 of the proposed action outlines an upland grass/forb utilization of 40-60% and maintaining ground cover of at least 70% in riparian areas. Under this proposed action, there would still be reduced vegetation from grazing livestock, but within acceptable limits. Current year's growth would be retained at 40% or greater on upland sites and riparian species would be retained at 1 1/2"- 6" depending on management area and/or species. Riparian areas would retain a minimum of 70% ground cover. Riparian upland browse would be retained at a minimum of 40-50% depending on age class. The implementation of these proper use criteria would improve vegetation structure, composition, and density in riparian areas. These criteria would also allow for vegetation to rebound from past overutilization. This will improve, or at the very least, stop degradation to vegetation in riparian areas. Potentially suitable western yellow-billed cuckoo habitat in these riparian areas may benefit.

Approximately 75% of the western yellow-billed cuckoo diet is comprised of grasshoppers and catepillars (Rodriguez 2004). The other 25% is a myriad of insect species. This prey base population could possibly be affected by changes in the riparian aquatic corridors. Sediment loading into the stream from increased erosion (i.e. compaction from trampling), percent of stream shading (i.e. understory vegetation loss), and

increased organic matter (i.e. cattle manure) are just a few factors that may alter aquatic biota and, consequently, composition and density of various insect populations. Some types of insects may increase while others decline.

Western yellow-billed cuckoos are not known to occur on the Fishlake National Forest and much of the surveyed habitat within the analysis area fails to posess dense brushy understories for the cuckoo. Some western yellow-billed cuckoo potentially suitable habitats within the analysis area do posess these components. Strict adherence to proper use criteria will minimize vegetation changes that may contribute to these impacts on these habitats. Therefore, the proposed action may affect but is not likely to adversely affect the western yellow-billed cuckoo and/or its habitat.

Cumulative Effects

Past, present, and reasonably foreseeable activities within the cumulative effects area include private land ownership (subdivision construction activities), grazing, recreation, timber and thinning operations, reforestation and seeding of burned areas, chaining, seeding of native and non-native species, fire suppression, natural and prescribed fire, pesticide application, noxious weed control, and other special uses such as mining, hydroelectric operations, firewood and post cutting, municipal water developments, and irrigation diversion. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) use, and campground/roads/trails maintenance and development.

Reissuing grazing permits in combination with chaining, seeding, fires, timber operations, irrigation diversion/development, and noxious weed control have and continue to alter riparian vegetation composition and densities, which may reduce potentially suitable habitat for the western yellow-billed cuckoo and aquatic insects (prey) in some cases and create habitat in others. Reissuance of grazing permits in combination with timber/thinning operations, fire suppression/wildfire/prescribed fire, firewood and post cutting, and mining have affected watershed capabilities and stream corridors (BRWA 2002-2003) from increased erosion and changes in vegetation. Reissuing grazing permits in combination with recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to western yellow-billed cuckoo habitat fragmentation, habitat loss, creation of travel corridors, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Also, increased erosion from grazing in combination with recreational activities may cause sediment loss and further degradation of riparian aquatic systems. However, grazing at proper use levels as described in the proposed action would offset many of these impacts. By retaining a standard for vegetation structure, density, and composition as allowed for by these proper use criteria, many of these impacts will be alleviated.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with this proposed action may affect but is not likely to adversely effect the western yellow-billed cuckoo and/or its habitat.

VIII. COMPLIANCE WITH MANAGEMENT DIRECTION

This biological assessment process has served to review the effects of implementing the proposed action of re-issuance of term grazing permits on eight cattle allotments, Beaver Mountain Tushar Range project

on endangered, threatened, proposed, and candidate species. Adverse impacts that may affect the viability of the species have been avoided.

IX. DETERMINATION

As a result of this assessment and requirements, it is our professional determination that implementation of the proposed re-issuance of term grazing permits on eight cattle allotments, Beaver Mountain Tushar Range project may affect individuals or habitat, but is not likely to adversely affect the bald eagle, Utah prairie dog, Western yellow-billed cuckoo and/or their habitats.

X. MANAGEMENT RECOMMENDATIONS

The following management recommendations are advised:

1. Report and record any sightings of endangered, threatened, and proposed species and implement appropriate protection measures as stated in any recovery plans.

2. Continue cooperation with the U.S. Fish and Wildlife Service to recover listed species.

XI. LITERATURE CITED

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