APPENDIX D

BIOLOGICAL EVALUATION FOR

SENSITIVE PLANT 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 re-issue term grazing permits on 8 cattle allotments administered by the Beaver Ranger District to the sensitive plants known or suspected to occur on the Fishlake National Forest (see Table 1). The purpose of this biological evaluation is to make a determination regarding the effects of the proposed action on the status of these species. Table 1 indicates the suitability of the analysis area for these sensitive plant species and the justification for eliminating those species with unsuitable habitat from further evaluation.

Table 1. Suitability of habitat for regionally sensitive plant species. Habitat characteristics for each of the following species was reviewed and based on information found within Rodriguez (2004), Madsen (2003), Clark (2002), Tuhy (1992), Atwood et al. (1991), and Spahr et al. (1991).

SPECIES	SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES	
	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
Barneby Woody Aster *Aster kingii* var. *barnebyana*		No suitable habitat within the analysis area. Strongly associated with Precambrian quartzite cliffs and ledges not present in the analysis area. Only occurs on the Fillmore District at high elevations in the Canyon Mountains.
Bicknell Milkvetch *Astragalus consobrinus*		No suitable habitat within the analysis area. Only known from Curtis, Navajo, Carmel, Mancos Shale, and gypsiferous soils not present in the analysis area. Only known to occur on the Loa Ranger District.
Tushar Paintbrush *Castilleja parvula* var. *parvula*	**X**	
Pinnate Spring-Parsley *Cymopterus beckii*		No suitable habitat within the analysis area. Only found in Navajo sandstone, Cutler, and Wingate Formations not present in the analysis area. Only known to occur on the Loa Ranger District.
Creeping Draba *Draba sobolifera*	**X**	
Nevada Willowherb *Epilobium nevadense*		No suitable habitat within the analysis area. Strongly associated with Precambrian quartzite cliffs and ledges not present in the analysis area. Only occurs on the Fillmore District at high elevations in the Canyon Mountains.

SPECIES	SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES	
	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
Elsinore Buckwheat *Eriogonum batemanii* var. *ostlundii*	X	
Fish Lake Naiad *Najas caespitosa*		No suitable habitat within the analysis area. Associated with shallow water environments on Fish Lake. Only known to occur on the Loa Ranger District.
Little Penstemon *Penstemon parvus*		No suitable habitat within the analysis area. Strongly associated with tertiary volcanic gravels not present in the analysis area. Only known to occur on the Loa Ranger District with a single suspected population on the Richfield Ranger District.
Ward's Beardtongue *Penstemon wardii*	X	
Arizona willow *Salix arizonica*	X	
Beaver Mountain Groundsel *Senecio castoreus*	X	
Peterson's Catchfly *Silene petersonii*		No suitable habitat within the analysis area. Strongly associated with open calcareous limestone talus not present in the analysis area. Not known to occur on the Fishlake National Forest.
Bicknell Thelesperma *Thelesperma subnudum* var. *alpinum*		No suitable habitat within the analysis area. Only found on Navajo Sandstone and Carmel Formations not present in the analysis area. Only known to occur on the Loa Ranger District. Endemic to Wayne county.
Sevier Townsendia *Townsendia jonesii* var. *lutea*		No suitable habitat within the analysis areas. Strongly associated with Arapien shale not present in the analysis area. Endemic to Sevier, Piute, Juab, and Sanpete counties.

II. 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. Assist States in achieving their goals for conservation of endemic species.

2. As part of the National Environmental Policy Act process, review programs and activities, through a biological evaluation, to determine their potential effect on sensitive species.

3. Avoid or minimize impacts to species whose viability has been identified as a concern.

4. If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward Federal listing.)

5. Establish management objectives in cooperation with the States when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the FWS or NMFS and the States.

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 (EA).

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 Service1986) is to "identify and improve habitat for sensitive, threatened and endangered species including participation in recovery efforts for both plants and animals".

III. 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 following management requirement would be mandatory for the Re-issuance of Term Grazing Permits on Eight Cattle Allotments within the Tushar Mountain Range: Birch Creek West Drainage - yearly maintenance of the livestock exclosures prior to livestock turnout, monitoring during the grazing season to ensure exclosures are functioning and that standards are not being exceeded on portions of the stream outside of the exclosures, and a end of season evaluation of the grazing season on whether the exclosures were effective and standards were met on Birch Creek West.

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

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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.

IV. CUMULATIVE EFFECTS AREA

The cumulative effects area for sensitive plant 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.

V. DESCRIPTION OF AFFECTED SPECIES

Information concerning life histories, suitable habitats, threats, and ecology of the sensitive plant 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 in the Dixie National Forest Supervisor's Office in Cedar City, UT.

VI. EFFECTS OF THE PROPOSED ACTION

Tushar Paintbrush

Existing Condition

Tushar Paintbrush is endemic to the Tushar mountain range in south-central Utah. It can be found in high elevation alpine areas on igneous gravels and outcrops between 10,000 and 12,100 feet elevation. This species is only known to occur on the Beaver Ranger District of the Fishlake National Forest

(Madsen 2003). There are 45 known discrete locations of Tushar Paintbrush on the Beaver Ranger District (Madsen 2003). This species is only distributed in Beaver and Piute Counties. This plant species is distributed at high elevations in the Joe Lott Fish Creek, Cottonwood, North Beaver, North-Indian Creek, Marysvale, Ten Mile, and Circleville Allotments. Potentially suitable habitat for this plant species only occurs at high elevations within these seven allotments.

Direct and Indirect Effects

The Utah Division of Wildlife Resources Big Game Range Trend Studies Program has established two monitoring transects for Tushar paintbrush on the Beaver Ranger District. These transects were established as part of a re-introduction program for the mountain goat on the Tushar Mountain Range. Past data on these transects show that Tushar paintbrush is palatable and being eaten by grazing animals (possibly mountain goats). However, this would indicate that this species does have palatability and could be grazed by livestock. Therefore, direct effects to the Tushar paintbrush from this proposed action may include grazing, trampling, and other direct disturbances associated with grazing activities. Indirect effects to the Tushar paintbrush from this proposed action could result from accelerated erosion and dispalcement of soil. This may result from the reduction of forage and cover vegetation from implementing the proposed action. The proposed action may also affect the vegetative composition and diversity in potentially suitable habitat for Tushar paintbrush. The proposed action may change vegetation patterns that may result in effects to the Tushar paintbrush and their habitats.

The re-issuance of term grazing permits on these 8 allotments (proposed action) may contribute to problems related to noxious weeds. Livestock operations and their associated activities can result in the spread of noxious weeds. Disturbance from livestock can create a seedbed for noxious weeds to colonize. Livestock may also transport noxious weed seeds from adjacent land ownerships onto the Fishlake National Forest, which may establish new weed infestations. Because livestock are sometimes transported long distances for various reasons, there is also an increased risk of introducing new noxious weeds into the area that do not currently exist on the Fishlake National Forest. Finally, livestock grazing may reduce the dominance of grass and forb species on rangelands that may, in turn, reduce the competition to noxious weeds attempting to establish on the Fishlake National Forest. The proposed action may increase the risk of further noxious weed invasion, proliferation, and spread. This may indirectly affect the Tushar paintbrush by allowing these aggressive noxious species to compete for resources in these suitable habitats. This may reduce populations of the Tushar paintbrush in each of the allotments where it occurs.

These effects would be minimized because Tushar paintbrush grows at high elevations (10,000 + feet) in rocky, lower forage production capability, environments where livestock generally are not present in great numbers. Livestock utilization in these upland alpine environments is not as prevalent as they would be in lower elevation riparian areas. Furthermore, the maximum allowable forage use criteria described in Table 1-2 of the proposed action outlines an upland grass/forb utilization of 40-60%. Since Tushar paintbrush is a high alpine upland forb, even if it were grazed by livestock at proper use levels, it would sustain a maximum 60% reduction of the stem. Tushar paintbrush is a perennial species with a stout woody caudex root mass (Atwood et al. 1991) that would resist uprooting from grazing. These proper use criteria would retain vegetation attributes within these high alpine communities at sustainable levels. Therefore, this proposed action may impact these Tushar

paintbrush individuals and/or their habitat but is not likely to cause a trend to federal listing or a loss of viability.

Cumulative Effects

Past, present, and reasonably foreseeable activities within the cumulative effects area include private land ownership (subdivision construction activities), grazing, animal re-introductions, 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.

Re-issuing grazing permits in combination with animal re-introductions, seeding, fires, timber operations, irrigation diversion/development, and noxious weed control may alter alpine vegetation composition and densities, which may reduce potentially suitable habitat for Tushar paintbrush and may affect individuals. Re-issuance of grazing permits in combination with timber/thinning operations, fire suppression/wildfire/prescribed fire, firewood and post cutting, and mining have affected watershed capabilities (BRWA 2002-2003) from increased erosion and changes in vegetation. These changes may contribute to population and potentially suitable habitat declines for the Tushar paintbrush. Re-issuing grazing permits in combination with recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to Tushar paintbrush habitat degradation and loss. Also, increased erosion from grazing in combination with recreational activities may cause sediment loss and further degradation of potentially suitable Tushar paintbrush habitats. With the exception of recreation and mining, many of these past, present, and reasonably forseeable activities are less prevalent at high elevation alpine sites where the Tushar paintbrush occurs. Grazing at proper use levels, as described in the proposed action, would mitigate many of these potential impacts. Therefore, this proposed action in combination with these past, present, and reasonably foreseeable activities listed above may impact Tushar paintbrush individuals and/or their habitats but are not likely to cause a trend to federal listing or a loss of viability.

Creeping Draba

Existing Conditions

Creeping draba is found in alpine tundra and high elevation spruce/fir communities in igneous gravels and talus on the Tushar mountain range of the Fishlake National Forest. It only occurs on the Beaver Ranger District of the Fishlake National Forest (Madsen 2003). There are 24 known locations for this species on the Beaver Ranger District (Madsen 2003). These populations occur in the Joe Lott Fish Creek, Cottonwood, and North-Indian Creek Allotments of the analysis area. The North-Indian Creek Allotment is included in the scope of the proposed action. Potentially suitable habitat for creeping draba also occurs on the Ten Mile, Circleville, and Marysvale Allotments. Potentially suitable habitat for creeping draba is characterized by high elevation (10,000 + feet) open igneous gravels and talus

with little vegetation cover. This species also occurs in krummholtz-like spruce-fir open talus communities.

Direct, Indirect, and Cumulative Effects

Since grazing livestock will not occur on open talus and gravel substrates with little vegetation cover or in spruce-fir krummholtz open talus communities, there will be no direct, indirect, and/or cumulative effects to creeping draba individuals and/or its habitat as a result of this proposed action.

Elsinore Buckwheat

Existing Condition

Elsinore Buckwheat is found in shadscale, mixed desert shrub, sagebrush, juniper and ponderosa pine communities on igneous gravels between 5,200 and 6,650 feet elevation (Madsen 2003).
An exhaustive survey of all known locations and habitat for this species was performed by Joel Tuhy and the Utah Natural Heritage Program in the 1990's (Tuhy 1992). There are four populations that occur on the Beaver Ranger District. These occur on the Joe Lott Fish Creek Allotment at the northeast corner of the Beaver District (Madsen 2003). Potential habitats for this species are found on the periphery of the Sevier Valley. Elsinore buckwheat is not known to exist anywhere within the proposed action area, however, populations near the district boundary near Piute Reservoir would indicate potentially suitable habitat on the Junction Allotment. Therefore, potentially suitable habitat for Elsinore Buckwheat is only found on the Junction and Joe Lott Fish Creek Allotments. The proposed action will only have direct and indirect effects to potentially suitable habitat on the Junction Allotment.

Direct and Indirect Effects

Since there are no known populations anywhere within the proposed action area, there will be no direct and indirect effects to Elsinore buckwheat individuals resulting from the proposed action. Potentially suitable habitat for Elsinore buckwheat in the Junction Allotment may be affected by implementation of the proposed action.

These effects to potentially suitable habitat may result from the reduction of forage and cover vegetation from implementing the proposed action. The proposed action may also affect the vegetative composition and diversity in potentially suitable habitat for Elsinore buckwheat. The proposed action may change vegetation patterns that may result in effects to Elsinore buckwheat and their habitats.

The re-issuance of term grazing permits on these 8 allotments (proposed action) may contribute to problems related to noxious weeds. Livestock operations and their associated activities can result in the spread of noxious weeds. Disturbance from livestock can create a seedbed for noxious weeds to colonize. Livestock may also transport noxious weed seeds from adjacent land ownerships onto the Fishlake National Forest, which may establish new weed infestations. Because livestock are sometimes transported long distances for various reasons, there is also an increased risk of introducing new noxious weeds into the area that do not currently exist on the Fishlake National Forest. Finally, livestock grazing may reduce the dominance of grass and forb species on rangelands that may, in turn,

reduce the competition to noxious weeds attempting to establish on the Fishlake National Forest. The proposed action may increase the risk of further noxious weed invasion, proliferation, and spread. This may indirectly affect potentially suitable habitats by allowing these aggressive noxious species to compete for resources.

The maximum allowable forage use criteria described in Table 1-2 of the proposed action outlines an upland grass/forb utilization of 40-60%. These proper use criteria levels would maintain vegetation attributes in these potentially suitable habitats that would foster plant composition stability and competition thwarting the success of invading noxious weeds. Therefore, this proposed action may impact Elsinore buckwheat individuals and/or their habitat but is not likely to cause a trend to federal listing or a loss of viability.

Cumulative Effects

Past, present, and reasonably foreseeable activities within the cumulative effects area include private land ownership (subdivision construction activities), grazing, animal re-introductions, 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.

Re-issuing grazing permits in combination with chaining/mechanical treatments, seeding, fires, irrigation diversion/development, and noxious weed control may alter upland vegetation composition and densities, which may reduce potentially suitable habitat for Elsinore buckwheat. Re-issuance of grazing permits in combination with p/j thinning, mechanical treatments, fire suppression/wildfire/prescribed fire, firewood and post cutting, and mining have affected watershed capabilities (BRWA 2002-2003) from increased erosion and changes in vegetation. These changes may contribute to potentially suitable habitat degradation for Elsinore buckwheat. Re-issuing grazing permits in combination with recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to Elsinore buckwheat habitat degradation and loss. Also, increased erosion from grazing in combination with recreational activities may cause sediment loss and further degradation of potentially suitable Elsinore buckwheat habitats. Grazing at proper use criteria levels, as described in the proposed action, would mitigate some of these impacts by preserving structure, density, composition, and vigor of vegetation resources in these habitats. This proposed action in combination with these past, present, and reasonably foreseeable activities listed above may impact Elsinore buckwheat individuals and/or their habitat but are not likely to cause a trend to federal listing or a loss of viability.

Ward's Beardtongue

Existing Condition

Ward's beardtongue is found in desert shrub, pinyon/juniper, sagebrush, shadscale, and greasewood communities on the Bald Knoll, Arapien Shale, and Colton Formations between 5,200 and 8,400 feet elevation. Ward's beardtongue is one of the most widely distributed sensitive plant species on the Forest occurring on the Fillmore, Beaver, and Richfield, and Loa Ranger Districts (Madsen 2003). However, there are only 4 populations found on the Beaver Ranger District (Madsen 2003). All of these populations occur in the northeast corner of the Joe Lott Fish Creek Allotment where these geologic substrates occur. This Allotment is not in the proposed action area. There is no other known locations or potentially suitable habitat for Ward's Beardtongue in the proposed action area.

Direct, Indirect, and Cumulative Effects

Since there is no presence of individuals or potentially suitable habitat within the proposed action area, there will be no direct, indirect, and/or cumulative effects to Ward's beardtongue individuals and/or its habitat as a result of this proposed action.

Arizona Willow

Existing Condition

Arizona willow is found on wet meadows, streamsides, seeps and springs in saturated soils near perennial water between 8,300 and 10,800 feet elevation (Madsen 2003). There are 23 populations of Arizona willow on the Loa and Richfield Ranger Disricts of the Fishlake National Forest (Madsen 2003). These populations consist of 55 separate sites of Arizona willow that contain between 4,400 and 14,300 individual plants (Rodriguez 2004). Recent surveys for this species have expanded its Forest range considerably in the past few years (Rodriguez 2004). An interagency Conservation Agreement and Strategy was completed for this species in 1995. There are no known populations of Arizona willow in the analysis area for this proposed action. However, potentially suitable habitats for Arizona willow do occur at elevations above 8,300 feet in the all of the allotments that meet this criterion.

Direct and Indirect Effects

Since Arizona willow is not known to occur within the analysis area, there will be no direct or indirect effects to individuals from the implementation of this proposed action. There is potentially suitable habitat that may occur in the analysis area. Changes in riparian vegetation and the introduction of noxious weeds from permitting cattle grazing may also have effects to wet meadow and riparian aquatic systems that provide Arizona willow habitat. Flow reduction 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 potentially suitable habitat for Arizona willow.

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. Several smaller watersheds within the Greater Beaver River Watershed area (includes part of the analysis 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.

Fishlake National Forest Level II Riparian Inventories were completed in 2003 for the west side of the Beaver Ranger District (2003 Level II Riparian Inventory in draft). These inventories support the BRWA conclusion and document problems with current grazing management, overgrazing, and/or heavy grazing on Little North Creek, Pine Creek, North Wildcat Creek, Wildcat Creek, North Fork of North Creek, Pole Creek, South Fork of North Creek, South Birch Creek, and Big Twist Creek. These creeks all occur on the Pine Creek/Sulphur Beds, North-Indian Creek, and South Beaver Allotments within the analysis area where potentially suitable habitat for Arizona willow may occur. The Level II Riparian Inventory summarizes its' conclusion for the Big Twist Creek Area (South Beaver Allotment):

"The conditions seen on these watersheds do not meet the objectives of healthy watersheds and riparian systems. This is primarily due to livestock and recreation management, which can be changed for the betterment for the land...There has been such deterioration in plant production that the amount of forage currently growing on these rangelands does not sustain the stocking rates."

These inventories document overutilization in these streamcourses. This overutilization is a direct result of non-compliance with the proper use criteria. When proper use criteria are not adhered to, as documented by these Riparian Level II Inventories, resource damage occurs. When adequate vegetation monitoring is not performed on the ground and livestock is not removed, proper use thresholds are crossed. Strict adherence to the proper use criteria, as outlined in this proposed action, would protect riparian areas from the kind of degradation described above. 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 but within recoverable 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 the character and proper functioning condition of healthy riparian areas and improve conditions in unhealthy riparian areas like those described above.

Some of these riparian habitats provide potentially suitable habitats for Arizona willow that may be affected by re-issuing term grazing permits in these 8 allotments on the Beaver Ranger District. Therefore, this proposed action may impact Arizona willow individuals and/or their habitat but is not likely to cause a trend to federal listing or a loss of viability.

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 plant 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, fishing, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) use, and campground/roads/trails maintenance and development. Grazing, fires, fire management activities (drafting water from streams/lakes), timber/thinning operations, hydroelectric development, irrigation diversion/development, and noxious weed control has altered riparian and upland vegetation composition and densities and riparian environments, which has reduced habitat for Arizona willow in some cases and created habitat in others.

Water manipulation, draught, hydroelectric/municipal water development, and mining activities within the cumulative effects area may have affected potential habitat for Arizona willow. Water manipulation from the maintenance of range improvements (specified in the proposed action) may contribute to these major factors within the cumulative effects area. Other management activities listed above that contribute to erosion and sediment loading into streams (i.e. thinning/timber operations, mining, recreation, fire, etc.) may affect potential habitat for Arizona willow when coupled with this proposed action. However, strict adherence to the proper use criteria, as outlined in the proposed action, will mitigate some of these impacts. Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with this proposed action may impact Arizona willow individuals and/or their habitat but is not likely to cause a trend toward federal listing or a loss of viability.

Beaver Mountain Groundsel

Existing Condition

Beaver mountain groundsel is found on alpine tundra and high elevation spruce/fir communities on open igneous gravels and talus on the Tushar Mountain Range of the Fishlake National Forest. It only occurs on the Beaver Ranger District of the Fishlake National Forest above 10,800 feet elevation (Madsen 2003). There are 9 known locations for this species on the Beaver Ranger District all of which occur on the Joe Lott Fish Creek, North-Indian Creek, and Cottonwood Creek Allotments (Madsen 2003). The North-Indian Creek Allotment is included in the scope of this proposed action.

Potentially suitable habitat for Beaver Mountain groundsel also occurs on the Ten Mile, Circleville, and Marysvale Allotments. Potentially suitable habitat for creeping draba is characterized by high elevation (10,800 + feet) open igneous gravels and talus with little vegetation cover. This species also occurs in krummholtz-like spruce-fir open talus communities.

Direct, Indirect, and Cumulative Effects

Since grazing livestock will not occur on open talus and gravel substrates with little vegetation cover or in spruce-fir krummholtz open talus communities, there will be no direct, indirect, and/or cumulative effects to Beaver Mountain groundsel individuals and/or its habitat as a result of this proposed action.

VII. COMPLIANCE WITH MANAGEMENT DIRECTION

This biological evaluation process has served to review the effects of implementing the proposed action of the re-issuance of term grazing permits on eight cattle allotments, Beaver Mountain Tushar Range project on sensitive plant species. Adverse impacts that may affect the viability of the species have been avoided.

VIII. DETERMINATION

As a result of this evaluation and requirements:

1) It is our professional determination that implementation the proposed action of the re-issuance of term grazing permits on eight cattle allotments, Beaver Mountain Tushar Range project may impact Tushar paintbrush, Elsinore buckwheat, and Arizona willow individuals and/or their habitats but is not likely to cause a trend toward federal listing or a loss of viability.

2) It is our professional determination that implementation the proposed action of the re-issuance of term grazing permits on eight cattle allotments, Beaver Mountain Tushar Range project will have no impact on creeping draba, Ward's beardtongue, and Beaver mountain groundsel individuals and/or their habitats.

IX. MANAGEMENT RECOMMENDATIONS

The following management recommendation is advised:

1. Record all future observations of sensitive species and implement appropriate management strategies to protect species viability.

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XI. CONTRIBUTORS

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