Vertebrate Wildlife Specialist Report

OHV Route Designation Project

USDA-Forest Service
Fishlake National Forest

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INTRODUCTION TO THE WILDLIFE REPORT

Thresholds for human interactions with wildlife species is a topic of great debate in the scientific community, especially those thresholds surrounding the dramatic increase in Off-Highway Vehicle (OHV) use across public lands. The focus of effects discussed in this document center around the overall reduction of roads, and additionally, reducing the practice of unrestricted cross country motorized travel. In general, the combination of the effects of reducing motorized access and especially the proliferation of additional routes will increase habitat effectiveness regardless of current route density. Further reductions in route density may be required in the future once these species thresholds and relative visitor use patterns are better understood. This document does not address how each of the 5 alternatives fit with respect to varying opinions on road densities tolerated by certain species. Note- the authors most often use "roads" as a label meaning motorized routes which can be motorized roads or trails.

Through this analysis it has been determined that any reduction of open roads or trails, and the use that would occur on them, would be beneficial to wildlife species over time. It is recognized that open road densities may still exceed the recommended level discussed in the scientific literature. However, as a result of all action alternatives open road densities will be decreased and perhaps more important to all wildlife, cross country travel will be discontinued. Selection of the no action alternative will allow the continued growth and use of user created roads and trails, as well as unrestricted cross country travel. These elements combined would continue to decreases habitat effectiveness for all wildlife species discussed in the document.

The purpose and need of this project does not include a habitat effectiveness and roads analysis, rather, the focus of effects is on the reduction of motorized travel and the discontinuation of allowing new user created routes.

Potentially suitable habitat is addressed within this document and referenced in the Fishlake Life History Report (Rodriguez, 2006). These habitat coverage's were developed by identifying habitat requirements for each species, GAP data and/or soils derived vegetation data were then used to map potentially suitable habitat across the Forest. It is recognized that the number of acres discussed as potentially suitable habitat may be higher than actual or occupied habitat. These possible differences in acres could occur due to the resolution of the GAP data used for the analysis, which were based at the Forest scale. These data are continually being refined at the project level. Potentially suitable habitat for the Utah prairie dog was determined by using known translocation sites as provided by the Utah Division of Wildlife Resources. Currently there are no known Utah prairie dogs on the Fishlake National Forest.

AFFECTED ENVIRONMENT

Introduction

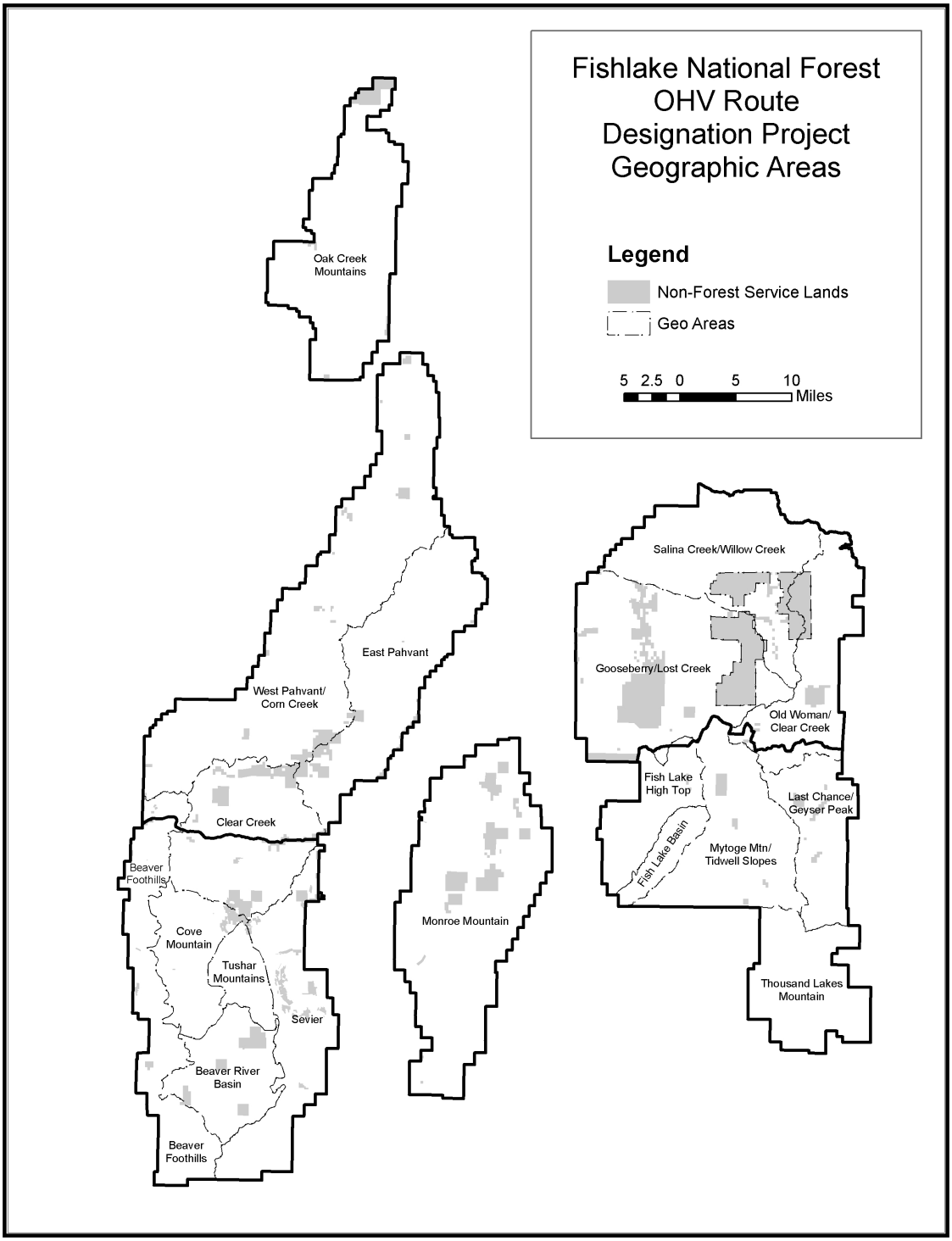
The 1,454,374 acre Fishlake National Forest ranges from near 5,000 feet in elevation to 12,169 at Delano Peak and is comprised of wildlife indicative of diverse vegetative communities, from sagebrush-steppe to alpine tundra, that occur in this region of south-central Utah. To facilitate finer scale analysis, the Forest has been dissected beyond the 4 Ranger Districts into 18 Geographic Areas (GA) shown in Table 1 (see also Map 1).

Table 1. Shown are the 18 Geographic Areas (GA) delineated on the Fishlake Forest, arranged by Ranger District, along with their relative sizes.

GA Name	District	Acres
Beaver Foothills	Fillmore	5,897
Canyon Range	Fillmore	115,532
East Pahvant	Fillmore	106,779
Clear Creek	Fillmore	38,331
West Pahvant	Fillmore	204,847
District Total:	Fillmore	**471,387**
Fishlake Basin	Loa	16,962
Fish Lake Hightop	Loa	40,277
Gooseberry/Lost Creek	Loa	1,124
Last Chance/Geyser Peak	Loa	48,236
Mytoge Mtn/Tidwell Slopes	Loa	81,844
Old Woman Plateau	Loa	8,917
Thousand Lakes Mtn	Loa	65,803
District Total:	Loa	**263,163**
Beaver Foothills	Beaver	71,216
Beaver River Basin	Beaver	46,045
Clear Creek	Beaver	40,210
Indian Creek/North Creek	Beaver	42,311
Piute Front	Beaver	76,685
Tushar Mnts	Beaver	20,971
District Total:	Beaver	**297,438**
Fish Lake Hightop	Richfield	738
Gooseberry/Lost Creek	Richfield	108,044
Monroe Mtn	Richfield	163,901
Mytoge Mtn/Tidwell Slopes	Richfield	36
Old Woman Plateau	Richfield	57,579
Salina Creek	Richfield	92,089
District Total:	Richfield	**422,387**
Grand Total:		**1,454,374**

This wildlife report will cover all terrestrial vertebrate wildlife species listed as Threatened, Endangered, Candidate, Sensitive, or Management Indicator Species (MIS) on the Fishlake National Forest. In addition, priority neo-tropical migratory bird species identified by the Utah Partners in Flight Avian Conservation Strategy (Parrish et al. 2002) and also U.S Fish and Wildlife Service, Birds of Conservation Concern that occur within the Forest, will also be addressed. Table 2 shows the federally listed and candidate species (USFWS, 2005), Regional Forester's Sensitive Species (USDA, 2003) of known

Map 1. Shown are the various Geographic Areas identified on the Fishlake National Forest associated with the Travel Plan project.



or expected occurrence on the Forest, Management Indicator Species (USDA, 1986), and migratory bird species of concern. These tables indicate where the species is to be carried forward in the document for further analysis according to its distribution on the Forest.

This report will cover all expected direct, indirect, and cumulative effects/impacts to all species referred to above, with habitat or documented sightings within the Fishlake National Forest. The Biological Assessment and the Biological Evaluation are included in the project file. The entire Forest was used to assess existing condition for all species. Cumulative Effects Area, (CEA) is the entire Forest for each species and will be discussed individually if any direct or indirect effects/impacts are expected with implementation of any alternative.

The white paper "Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of Dixie National Forest" (Rodriguez, 2006) is a comprehensive description of life histories, population trends and habitat requirements for species that occur or have habitat within the Forest, and is hereby incorporated by reference.

Table 2. Shown are all USFWS recognized threatened, endangered, and candidate vertebrate wildlife species; Regional Forester's Sensitive Species; and Management Indicator Species on the Fishlake National Forest and their occurrence by Ranger District and Geographic Area (GA).

Species	Status	Fillmore	Loa	Beaver	Richfield
Threatened (T), Endangered (E) and Candidate (C) Species					
Mexican Spotted Owl	T		10		
Bald Eagle	T	All GAs	All GAs	All GAs	All GAs
Utah Prairie Dog	T		6,9	1	16
Yellow-Billed Cuckoo	C	unknown	unknown	unknown	unknown
Intermountain Regional Forester's Sensitive Species					
Peregrine Falcon	Sensitive			1*	
Spotted Bat	Sensitive	unknown	unknown	unknown	unknown
Townsend's Big-eared bat	Sensitive	4,5*			
Northern Goshawk	Sensitive	All	All	All	All
Flammulated Owl	Sensitive		10*		
Three-toed Woodpecker	Sensitive	All	All	All	All
Sage Grouse	Sensitive		7,9,10	1	17
Pygmy Rabbit	Sensitive		9*		17
Fishlake National Forest Management Indicator Species (MIS)					
Elk	MIS	All	All	All	All
Mule Deer	MIS	All	All	All	All
Northern Goshawk	MIS	All	All	All	All
Sage Nesters[1]	MIS	All	All	All	All
Cavity Nesters[2]	MIS	All	All	All	All
Riparian Guild[3]	MIS	All	All	All	All

* Limited known distribution, however, is likely to occur in additional locations.

[1]-- Brewer's Sparrow, Vesper Sparrow, Sage Thrasher

[2]-- Hairy Woodpecker, Western Bluebird, Mtn. Bluebird
[3]-- Lincoln's Sparrow, Song Sparrow, Yellow Warbler, MacGillivray's Warbler

Key to Geographic Areas:

Beaver Foothills	1
Clear Creek	2
East Pahvant	3
Oak Creek Mtns	4
West Pahvant / Corn Creek	5
Fish Lake Basin	**6**
Fish Lake High-top	7
Last Chance / Geyser Peak	8
Mytoge Mtn / Tidwell Slopes	9
Thousand Lakes Mtn	10
Beaver River Basin	11
Clear Creek	**12**
Cove Mtn	13
Sevier	14
Tushar Mtns	15
Gooseberry/Lost Creek	16
Monroe Mtn	17
Old Woman / Clear Creek	18
Salina Creek / Willow Creek	19

Federally Listed Threatened, Endangered, or Candidate (TEC) Terrestrial Vertebrate Wildlife

Mexican Spotted Owl
For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition: The Mexican spotted owl was listed as a threatened species in 1993 and is managed under the Mexican Spotted Owl Recovery Plan. Extensive surveys during the 1990's, resulted in the location of more than 20 Mexican spotted owl nests in southeastern Utah (HDRC, 1993). All of these are on National Park Service administered lands, such as Zion and Capitol Reef National Monument (Rodriguez, 2006). Critical habitat has been designated on the neighboring Dixie National Forest.

Existing Condition and method of analysis: There are approximately 331 acres of potentially suitable habitat on the Loa District restricted to Wayne County. These acres occur within the Thousand Lakes Mtn. GA where no motorized routes occur, and only 0.4% of this habitat is designated as open to cross-country travel (see Table 3). After several years of surveying mixed conifer habitats, owl specialists determined that suitable nesting habitat in Utah consisted of steep walled, narrow, cool canyons and not plateau tops. During recent years, suitable coniferous habitats within Wayne County were extensively surveyed for Mexican spotted owls with one being detected back in 1992; but to date, no Mexican spotted owl nests have ever been discovered on the Fishlake National Forest.

Potentially suitable Mexican spotted owl (MSO) breeding and roosting habitat (canyons) were identified in the 1997 and 2000 Willey/Spotskey habitat models and are used for initial evaluation of potential nesting and roosting habitat in-or-around proposed projects. Dixie and Fishlake National Forest biologists identified additional (modeled) potential MSO habitat in mixed conifer cover types on slopes greater than 40% in order to include areas that might have been left out of the Willey/Spotskey models due to the resolution of data that these models were based upon. There is an estimated 331 acres of potential suitable habitat on the Loa District in the Thousand Lakes GA (Table 3).

Analysis will be based on changes in road density and the amount of unrestricted travel in potential suitable habitat for spotted owls.

Table 3. Shown is the amount of Mexican Spotted Owl habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Thousand Lakes Mtn.	Loa	331	0	0	0.4
District Total:		**331**	**0**	**0**	**0.4**

Bald Eagle

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition: The Bald Eagle was listed as a threatened species in 1978 and is managed under the Northern States Bald Eagle Recovery Plan. Bald Eagles range across North America, breeding from just south of the arctic tundra to the southern United States and Baja, California. These eagles generally move south to open water during winter.

Bald eagles occur on the Fishlake National Forest during late fall and winter months. Bald eagles forage and roost near open water bodies across the forest. They roost communally and have perennially used the same roost trees on the Forest. Once water bodies freeze moving into winter, eagles move down in elevation, largely off the Forest, to forage. There are no known bald eagle nest sites on the Fishlake National Forest, although the public occasionally reports the sighting of individuals sometimes during summer months.

Existing Condition and Method of Analysis: Bald Eagles have been documented using National Forest System administered lands (NFS) during late fall, and early winter on all Ranger Districts but no winter concentration areas have been identified by the UDWR or Forest Service. There are approximately 142,540 acres of potentially suitable habitat on the Fishlake National Forest comprised of areas around lakes, ponds, and reservoirs. The road density averages 2.5 roads per square mile within this habitat with 63% designated as open to cross-country travel (Table 4).

Road density and the amount of unrestricted travel will be analyzed around water bodies comprising potential suitable habitat for Bald Eagles.

Table 4. Shown is the amount of Bald Eagle habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Canyon Range	Fillmore	1,982	6.1	2.0	93
Clear Creek	Fillmore	5,181	26.7	3.3	92
East Pahvant	Fillmore	6,729	35.8	3.4	100
West Pahvant	Fillmore	5,895	28.4	3.1	57
District Total:		**19,787**	**97.1**	**3.1**	**84**
Fishlake Basin	Loa	10,990	33.6	2.0	48
Fish Lake Hightop	Loa	6,681	15.1	1.4	17
Gooseberry/Lost Creek	Loa	312	1.7	3.5	71
Last Chance/Geyser Peak	Loa	7,653	24.0	2.0	44
Mytoge Mtn/Tidwell Slopes	Loa	11,648	47.0	2.6	81
Old Woman Plateau	Loa	2,643	7.6	1.8	100
Thousand Lake	Loa	4,168	11.1	1.7	6
District Total:		**44,094**	**140**	**2.0**	**51**
Beaver Foothills	Beaver	3,054	7.5	1.6	92
Beaver River Basin	Beaver	9,496	52.8	3.6	58
Clear Creek	Beaver	3,523	11.9	2.2	87
Indian Creek/North Creek	Beaver	2,143	5.5	1.6	57
Piute Front	Beaver	1,567	6.8	2.8	80
Tushar Mnts	Beaver	1,948	3.0	1.0	5
District Total:		**21,730**	**87.5**	**2.6**	**64**
Fish Lake Hightop	Richfield	31	0.3	6.0	44
Gooseberry/Lost Creek	Richfield	10,707	40.1	2.4	31
Monroe Mtn	Richfield	29,716	170.4	3.7	90
Old Woman Plateau	Richfield	6,996	20.8	2.0	75
Salina Creek	Richfield	9,479	7.9	0.5	14
District Total:		**56,929**	**239.4**	**2.7**	**64**
Grand Total:		**142,540**	**564**	**2.5**	**63**

Utah Prairie Dog

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:

The Utah prairie dog was listed as an endangered species in June of 1973 (Rodriguez, 2006). Because of the improved status of the species and the overwhelming increases seen on private lands since 1976, the U. S. Fish and Wildlife Service reclassified the species to Threatened in May of 1984. Since the reclassification in 1984 population numbers have fluctuated on private and public lands and the species still remains

threatened. No critical habitat has been designated for the Utah prairie dog on the Fishlake National Forest.

The Utah prairie dog's range is limited to five counties in south-central Utah (Iron, Garfield, Piute, Wayne, Sevier). Historically, Utah prairie dogs inhabited nine Utah counties and populations are estimated at 95,000 prior to 1920. By the 1960's, the Utah prairie dog numbers and distribution were reduced due to disease, poisoning, drought, and habitat alteration due to cultivation and grazing. By 1972, there were an estimated 3,300 prairie dogs in 37 colonies (USFWS 1991).

Existing Condition and method of analysis:
There are approximately 428 acres of potentially suitable habitat on the Fishlake National Forest comprised of areas around primarily, former translocation sites. The road density averages 0.6 roads per square mile within this habitat with 76% designated as open to cross-country travel (Table 5).

Road density and the amount of unrestricted travel will be analyzed within potential suitable habitat for Utah Prairie Dogs.

Table 5. Shown is the amount of Utah Prairie Dog habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Fishlake Basin	Loa	137	0.3	1.4	26
Mytoge Mtn/Tidwell Slopes	Loa	286	0.1	0.1	100
District Total:		**423**	**0.3**	**0.5**	**76**
Beaver Foothills	Beaver	5	0.05	6.3	100
District Total:		**5**	**0.05**	**6.3**	**100**
Grand Total:		**428**	**0.4**	**0.6**	**76**

Yellow-billed Cuckoo
For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:
Western yellow-billed cuckoos are obligate riparian nesters–they only breed in streamside forests, especially those dominated by willow and cottonwood stands. The humid, shady environment provided by these forests provides a protective microclimate protecting nesting birds, eggs, and fledglings from the desiccating heat and dryness prevalent in late summer across the western U.S. East of the Continental Divide, where nesting occurs 3-4 weeks earlier and within landscapes which are generally more humid, eastern yellow-billed cuckoos use a broader range of nesting habitats, including some areas of upland forests and parks. Most nesting in the west occurs within relatively large

patches of riparian forest, usually 25 to 100 acres in extent. Habitat use and selection in South American wintering grounds is not well known.

Existing Condition and method of analysis: Potentially suitable acres
There are approximately 2,664 acres of potentially suitable habitat on the Fishlake National Forest comprised of suitable riparian habitats. The road density averages 12.4 miles of road per square mile within this habitat with 89% designated as open to cross-country travel (Table 6). Surveys for yellow-billed cuckoos have been conducted in riparian habitats with suitable vegetative structural characteristics on the Forest, but none have been detected. It is suspected that these Forest habitats are in fact too high in elevation for nesting habitat but additional surveys are planned.

Changes in road density and the amount of unrestricted travel will be analyzed within potential suitable habitat for Yellow-billed Cuckoos.

Table 6. Shown is the amount of Yellow-billed Cuckoo habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	33	0.2	3.1	99
Clear Creek	Fillmore	78	1.1	9.0	100
West Pahvant	Fillmore	790	11.6	9.4	82
District Total:		**901**	**12.8**	**9.1**	**84**
Thousand Lakes Mtn	Loa	46	0	0	42
District Total:		**46**	**0**	**0**	**42**
Beaver Foothills	Beaver	109	1.8	10.7	95
Clear Creek	Beaver	540	8.9	10.5	99
Piute Front	Beaver	79	1.4	11.1	100
District Total:		**729**	**12.1**	**11.0**	**98**
Gooseberry/Lost Creek	Richfield	616	16.1	16.7	98
Monroe Mtn	Richfield	73	1.3	11.0	93
Old Woman Plateau	Richfield	22	0.1	2.9	100
Salina Creek	Richfield	278	9.1	21.0	68
District Total:		**989**	**26.6**	**17.2**	**89**
Grand Total:		**2,664**	**51.4**	**12.4**	**89**

USDA, Forest Service, Region 4 Sensitive Wildlife Species

Peregrine Falcon

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:
The peregrine falcon was de-listed as an Endangered species in 1999 (Federal Register,

Vol. 64, No. 164, Wednesday, August 25, 1999)--it is currently managed as a Regional Sensitive Species. There is one known nest site on the Fishlake NF, in Indian Creek on the Beaver District. Activity and productivity varies annually (Rodriguez, 2006).

Existing Conditions and Method of Analysis: With the recent de-listing, a Proposed Monitoring Plan for the American Peregrine Falcon in the United States (66 F. R. 39523) prescribes monitoring of peregrine falcon territories every third year beginning in 2002 and ending in 2014. Monitoring has been conducted for nesting peregrine falcons on the Beaver RD since 1992 (Table 7). The eyrie has not been active since 1993, but monitoring continues nearly every year. Romin and Muck (1999) indicated that a seasonal buffer of 1 mile around peregrine falcon nest sites was applicable to minimize effects from project activities on nesting falcons.

Table 7. Shown is a summary of peregrine falcon success based on monitoring of the Indian Creek territory located within the Fishlake NF, 1992-2005. Numbers indicate the number of peregrine falcons that fledged during a particular year.

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
3	3	N/M	N/O	N/O	N/O	N/M	N/M	N/M	N/M	N/O	N/O	N/M	N/O

N/O- Territory not occupied this year.
N/M- This territory was not monitored this year.

There are approximately 12,425 acres of potentially suitable habitat on the Fishlake National Forest comprised of steep rocky cliff terrain. The road density averages less than 0.1 roads per square mile within this habitat with 52% designated as open to cross-country travel (Table 8).

Road density and the amount of unrestricted travel will be analyzed in and around cliff areas comprising potential suitable habitat for Peregrine Falcon.

Table 8. Shown is the amount of Peregrine Falcon habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Canyon Range	Fillmore	1,107.4	0	0	31
Clear Creek	Fillmore	189.7	0	0	100
East Pahvant	Fillmore	682.0	0	0	36
West Pahvant	Fillmore	3,551	0.2	0	73
District Total:		**5,531**	**0.2**	**0**	**61**
Fishlake Basin	Loa	3	0	0	0
Fish Lake Hightop	Loa	62	0	0	10
Last Chance/Geyser Peak	Loa	44	0	0	76
Mytoge Mtn/Tidwell Slopes	Loa	18	0	0	0
Old Woman Plateau	Loa	10	0	0	56
Thousand Lakes Mtn	Loa	885	0	0	8

District Total:		**1,022**	**0**	**0**	**12**
Beaver Foothills	Beaver	244	0	0	82
Beaver River Basin	Beaver	417	0.1	0.1	86
Clear Creek	Beaver	177	0.1	0.2	96
Indian Creek/North Creek	Beaver	291	0	0	26
Piute Front	Beaver	1,108	0.1	0	74
Tushar Mnts	Beaver	486	0.1	0.1	1
District Total:		**2,723**	**0.3**	**0.1**	**60**
Gooseberry/Lost Creek	Richfield	317	0	0	22
Monroe Mtn	Richfield	1342	0	0	33
Old Woman Plateau	Richfield	1,005	0	0	81
Salina Creek	Richfield	485	0	0	5
District Total:		**3149**	**0**	**0**	**43**
Grand Total:		**12,425**	**0.5**	**0**	**52**

Spotted Bat & Townsend's Big-eared Bat
For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006). Because these species use similar habitats and forage on similar species they will be analyzed together.

Reference Condition:
Spotted bats have not been documented on the Forest, though formal surveys were conducted on all Districts (Lengas 1994, Foster 1993). Townsend's Big-eared bats were recently documented on the Forest in 2003 in an abandoned mine in Millard County on the Fillmore RD. In fact, 10 of 34 mines appeared to at least serve as roost locations for Townsend's Big-eared bats.

Existing Condition and method of analysis:
There are approximately 11,568 acres of potentially suitable habitat on the Fishlake National Forest comprised of rocky outcrops and cliffs at elevations suspected to be used by these species. The road density averages less than 0.1 roads per square mile within this habitat with 55% designated as open to cross-country travel (Table 9).

Road density and the amount of unrestricted travel will be analyzed in and around cliff areas comprising potential suitable habitat for these bat species.

Table 9. Shown is the amount of potential Townsend's Big-eared and Spotted Bat habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Canyon Range	Fillmore	1,107.35	0	0	31
Clear Creek	Fillmore	189.7	0	0	100
East Pahvant	Fillmore	682	0	0	36
West Pahvant	Fillmore	3,549	0.2	0	73
District Total:		**5,529**	**0.2**	**0**	**61**

Fish Lake Hightop	Loa	6	0	0	100
Last Chance/Geyser Peak	Loa	44	0	0	76
Old Woman Plateau	Loa	4.5	0	0	100
Thousand Lakes Mtn	Loa	853	0	0	9
District Total:		**907**	**0**	**0**	**13**
Beaver Foothills	Beaver	244	0	0	82
Beaver River Basin	Beaver	409	0.1	0.1	87
Clear Creek	Beaver	177	0.1	0.2	96
Indian Creek/North Creek	Beaver	272	0	0	28
Piute Front	Beaver	1,003	0.1	0	80
Tushar Mnts	Beaver	63	0.1	0.6	6
District Total:		**2,169**	**0.3**	**0.1**	**74**
Gooseberry/Lost Creek	Richfield	317	0	0	22
Monroe Mtn	Richfield	1,206	0	0	33
Old Woman Plateau	Richfield	1,005	0	0	81
Salina Creek	Richfield	2,963	0	0	6
District Total:		**2,963**	**0**	**0**	**44**
Grand Total:		**11,568**	**0.5**	**0**	**55**

Northern Goshawk, Flammulated Owls, and Three-toed Woodpeckers
Because these species use similar habitats, e.g. forested vegetation communities excluding pinyon/juniper, they will be discussed together. For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:
The Northern Goshawk is both a Regional Forester's Sensitive Species and a Management Indicator Species on the Fishlake National Forest. Annual forest-wide monitoring of Goshawk territories, show a stable trend despite several years of below average precipitation levels.

Flammulated Owls have been surveyed on the Fishlake National Forest since 1992. These survey efforts were combined with forest-wide Mexican Spotted Owl inventories. Firewood gathering along roads and other activities that reduce snags are a threat to nesting habitat. No Flammulated Owl nests have been documented on the Forest, however vocalizations have been detected.

Three-toed Woodpeckers are a Priority Migratory Bird Species according to Parrish et al., (2002). Utah is important to three-toed woodpeckers because 26-50% of the species total breeding distribution is in Utah (Rodriguez, 2006). Formal surveys have been conducted on the Forest, these surveys have been focused in areas of spruce beetle infestation and areas proposed for vegetative treatment.

Existing Condition and method of analysis:
There are approximately 394,428 acres of potentially suitable habitat on the Fishlake National Forest comprised of forested areas. The road density averages 1.0 road per square mile within this habitat with 51% designated as open to cross-country travel (Table 10). Goshawks are typically surveyed for in areas proposed for treatment, not systematically Forest wide. Because of this, known territories are only a minimal

estimate of the birds using the Forest. There are 30 known Goshawk territories on the Forest spread across all 4 Ranger Districts (Table 11). An analysis of known nest locations and distance to current roads showed a range of 30 to over 1,300 meters.

Changes in road density and the amount of unrestricted travel will be analyzed in forested habitats suitable for Goshawks, Flammulated Owls, and Three-toed Woodpeckers.

Table 10. Shown is the amount of potential Northern Goshawk, Flammulated Owl, and Three-toed Woodpecker habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Clear Creek	Fillmore	708	1.9	1.7	88
East Pahvant	Fillmore	4,939	3.4	0.4	84
West Pahvant	Fillmore	52,281	37.6	0.5	62
District Total:		**57,928**	**42.9**	**0.5**	**65**
Fishlake Basin	Loa	8,921	16.4	1.2	22
Fish Lake Hightop	Loa	23,829	33.0	0.9	22
Gooseberry/Lost Creek	Loa	601	1.2	1.2	43
Last Chance/Geyser Peak	Loa	6,469	16.9	1.7	69
Mytoge Mtn/Tidwell Slopes	Loa	29,779	40.7	0.9	80
Old Woman Plateau	Loa	3,479	6.0	1.1	100
Thousand Lakes Mtn	Loa	17,415	34.8	1.3	4
District Total:		**90,492**	**148.7**	**1.1**	**44**
Beaver Foothills	Beaver	16,748	14.5	0.6	80
Beaver River Basin	Beaver	38,046	166.6	2.0	60
Clear Creek	Beaver	6,741	15.7	1.5	61
Indian Creek/North Creek	Beaver	33,194	14.3	0.3	28
Piute Front	Beaver	23,420	28.1	0.8	55
Tushar Mnts	Beaver	8,468	6.6	0.5	3
District Total:		**126,615**	**195.8**	**1.0**	**49**
Fish Lake Hightop	Richfield	136	0.1	0.6	9
Gooseberry/Lost Creek	Richfield	20,055	34.7	1.1	23
Monroe Mtn	Richfield	59,691	109.8	1.2	70
Mytoge Mtn/Tidwell Slopes	Richfield	3	0	0	0
Old Woman Plateau	Richfield	17,858	53.2	1.9	84
Salina Creek	Richfield	21,650	23.3	0.7	4
District Total:		**119,392**	**221.1**	**1.2**	**52**
Grand Total:		**394,427**	**608.4**	**1.0**	**51**

Table 11. Shown are the number of Goshawk territories by Ranger District and Geographic Area on the Fishlake National Forest.

GA Name	District	Number of Goshawk Territories
Canyon Range	Fillmore	1
East Pahvant	Fillmore	1

West Pahvant	Fillmore	1
Fishlake Basin	Loa	1
Fish Lake Hightop	Loa	1
Gooseberry/Lost Creek	Loa	1
Mytoge Mtn/Tidwell Slopes	Loa	3
Thousand Lakes Mtn	Loa	4
Beaver River Basin	Beaver	2
Piute Front	Beaver	1
Gooseberry/Lost Creek	Richfield	6
Monroe Mtn	Richfield	11

Sage Grouse
For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition: Life History
Sage grouse are solely dependent on sagebrush-dominated habitats (Rodriguez, 2006). Sagebrush is an essential part of sage-grouse brood habitat, nesting cover, and year-round diet (Rodriguez, 2006). Because little information exists on the Fishlake National Forest, a determination concerning trend is difficult. However, low population numbers have been documented throughout the west, therefore it is assumed that Forest populations are in similar condition.

Existing Condition and method of analysis:
There are approximately 540,086 acres of potentially suitable habitat on the Fishlake National Forest comprised of sagebrush-dominated areas. The road density averages 1.9 miles of road per square mile within this habitat with 79% designated as open to cross-country travel (Table 12). There are known populations of sage grouse on the Richfield, Beaver and Loa Ranger Districts. Sage grouse have been documented on the south end of Monroe Mountain near the Hell's Hole and Forshea Mountain areas. Sage grouse have also been documented using these areas in spring through winter with one known lek. Sage grouse have also been documented on the lower Mytoge Mountain near the Forest boundary and also near Forsyth Reservoir on Highway 72. They have been documented during the summer months on the upper Mytoge, Sevenmile, and the Tidwell Slopes. The Beaver District birds have been documented using the Rocky Reservoir area during summer and early fall (brood rearing).

Road density and the amount of unrestricted travel will be analyzed in sagebrush dominated habitats suitable for sage grouse.

Table 12. Shown is the amount of potential Sage Grouse habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	2,166	13.8	4.1	98
Canyon Range	Fillmore	59,819	181.4	1.9	91

Clear Creek	Fillmore	30,737	84.0	1.8	92
East Pahvant	Fillmore	38,371	154.8	2.6	91
West Pahvant	Fillmore	72,056	168.2	1.5	74
District Total:		**203,149**	**602.2**	**1.9**	**85**
Fishlake Basin	Loa	2,965	23.6	5.1	30
Fish Lake Hightop	Loa	7,315	33.1	2.9	62
Gooseberry/Lost Creek	Loa	370	2.7	4.7	71
Last Chance/Geyser Peak	Loa	32,879	89.5	1.7	55
Mytoge Mtn/Tidwell Slopes	Loa	38,983	194.7	3.2	86
Old Woman Plateau	Loa	3,569	13.2	2.4	100
Thousand Lakes Mtn	Loa	28,404	66.9	1.5	19
District Total:		**114,486**	**423.7**	**2.4**	**58**
Beaver Foothills	Beaver	18,972	55.7	1.9	86
Beaver River Basin	Beaver	597	1.3	1.4	83
Clear Creek	Beaver	22,349	77.3	2.2	95
Indian Creek/North Creek	Beaver	885	2.2	1.6	20
Piute Front	Beaver	35,339	85.8	1.6	90
District Total:		**78,141**	**222.4**	**1.8**	**89**
Fish Lake Hightop	Richfield	254	0.7	1.7	19
Gooseberry/Lost Creek	Richfield	43,053	186.5	2.8	74
Monroe Mtn	Richfield	73,860	353.1	3.1	91
Old Woman Plateau	Richfield	14,758	70.5	3.1	90
Salina Creek	Richfield	12,386	47.8	2.5	29
District Total:		**144,308**	**658.5**	**2.9**	**80**
Grand Total:		**540,084**	**1,906.8**	**2.3**	**79**

Pygmy Rabbit

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition: Life History

Pygmy rabbits are generally limited to areas on deep soils with tall, dense sagebrush, which they use for cover and food. Individual sagebrush plants in areas inhabited by pygmy rabbits are often 6 feet (1.8 m) or more in height. Extensive, well-used runways interlace the sage thickets and provide travel and escape routes. Dense stands of big sagebrush along streams, roads, and fencerows provide dispersal corridors for pygmy rabbits. Pygmy rabbits are seldom found in areas of sparse vegetative cover and seem to be reluctant to cross open space (Rodriguez, 2006).The pygmy rabbit is the only native leporid that digs burrows.

Existing Condition and method of analysis:

There are approximately 52,752 acres of potentially suitable habitat on the Fishlake National Forest comprised of tall sagebrush communities. The road density averages 3.6 roads per square mile within this habitat with 85% designated as open to cross-country travel (Table 13). There are only two known locations documented on the Fishlake National Forest. One location has been identified on the Loa Ranger District and the second location on the Richfield Ranger District.

Changes in road density and the amount of unrestricted travel will be analyzed in sagebrush communities suitable for Pygmy Rabbits.

Table 13. Shown is the amount of potential Pygmy Rabbit habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	863	9.5	7.1	100
Canyon Ridge	Fillmore	13,173	82.6	4.0	99
Clear Creek	Fillmore	2,206	22.5	6.5	98
East Pahvant	Fillmore	6,965	60.7	5.6	93
West Pahvant	Fillmore	2,622	22.8	5.6	88
District Total:		**25,829**	**198.1**	**4.9**	**96**
Fish Lake Hightop	Loa	9	0	3.0	95
Last Chance/Geyser Peak	Loa	4,405	12.7	1.9	35
Mytoge Mtn/Tidwell Slopes	Loa	1,064	7.4	4.5	92
Old Woman Plateau	Loa	52	0.2	1.9	99
Thousand Lakes Mtn	Loa	5,055	23.8	3.0	41
District Total:		**10,585**	**44.1**	**2.7**	**44**
Beaver Foothills	Beaver	2,930	19.0	4.1	97
Beaver River Basin	Beaver	24	0.1	2.2	0
Clear Creek	Beaver	2,593	21.4	5.3	99
Indian Creek/North Creek	Beaver	11	0.1	4.2	50
Piute Front	Beaver	2,223	12.2	3.5	86
District Total:		**7,781**	**52.8**	**4.3**	**94**
Gooseberry/Lost Creek	Richfield	4,786	30.1	4.0	97
Monroe Mtn	Richfield	3,229	24.1	4.8	98
Old Woman Plateau	Richfield	199	0.9	2.8	100
Salina Creek	Richfield	343	3.5	6.6	64
District Total:		**8,557**	**58.6**	**4.4**	**96**
Grand Total:		**52,753**	**353.5**	**4.3**	**85**

Fishlake Forest Management Indicator Species (MIS)

The white paper "Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of Fishlake National Forest" (Rodriguez, 2006) is a comprehensive description of life histories and habitat requirements for species that occur or have habitat within the Forest boundaries, and is hereby incorporated by reference.

Deer and Elk
For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition: All references to "deer" in this document refer to mule deer (*Odocoileus hemionus*), endemic to the Fishlake National Forest unless otherwise noted. Population estimates of deer throughout the Utah Division of Wildlife Resources (UDWR) Southern region, including Beaver, Fillmore, Monroe and Plateau Units have trended down since 2001 until last year. The lack of fawn recruitment was attributed to multi-year drought conditions and degrading winter ranges. This trend improved with 2004 population estimates up some 24% across the units mentioned previously from 57,300 in 2003 to 70,825 in 2004 (UDWR 2005).

Elk herds on the Forest are actively managed by antlerless hunts in an attempt to maintain them at herd objective levels. Within the same Southern Region referenced above, elk herds have increased some 26% since 2002 to 13,730 estimated for 2004. The antlerless permits have likewise increased from 1250 to 2145 during this same time period (UDWR 2005).

Existing Condition and method of analysis:
The Forest comprises parts of five of UDWR's 30 Wildlife Management Units, sometimes referred to as hunt units. These include #16 Central Mountains, Manti; #25 Plateau, Fishlake/Thousand Lakes; #21 Fillmore; #22 Beaver, and #23 Monroe. Because of their relationship to population dynamics, both key winter range and key summer use or calving/fawning habitat will be analyzed according to effectiveness based on road densities and amounts of unrestricted travel allowed in these habitats. Big Game herd unit objectives and current status along with the percentage of winter and summer range on the Forest is included in Table 14.

Table 14. Shown are all UDWR's herd units containing Fishlake National Forest land and the status of deer and elk populations along with the proportion of winter habitat within the herd unit which lies within the Forest boundary.

	DEER		ELK	
Units	Status (% of herd objective)	% of winter Range USFS	Status (% of herd objective)	% of winter Range USFS
Central Mtns, Manti	79	9	78	14
Fillmore	78	39	88	45
Beaver	86	14	95	34
Monroe	68	25	88	32
Plateau	61	13	73	24

Winter Range-Deer
The UDWR has delineated and classified by value, deer wintering habitat on the Fishlake National Forest. Deer habitat shapefiles (dated 07/2005) were obtained from the UDWR's website and both "high value" and "critical" winter range polygons were combined for all summaries and analyses. There are approximately 475,109 acres of deer winter range on the Forest containing some 1,158 miles of motorized routes resulting in

an average of 1.6 miles of road per square mile (Table 15). The current travel plan allows cross-country travel on some 62% of the Forest landscape (see pages 8-9, Chapter 1 of DEIS); this designation is not distributed evenly across the Forest, since fully 76% of the deer winter range discussed previously is open (Table 15).

Table 15. Shown is the amount of deer winter range on the Fishlake National Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	2,717	11.6	2.7	97
Canyon Range	Fillmore	35,074	121.9	2.2	90
Clear Creek	Fillmore	2,496	8.6	2.2	100
East Pahvant	Fillmore	51,374	116.1	1.5	81
West Pahvant	Fillmore	47,894	105.8	1.4	89
District Total:		**139,555**	**364.0**	**1.7**	**87**
Fish Lake Hightop	Loa	2,611	9.4	2.3	91
Last Chance/Geyser Peak	Loa	28,302	57.8	1.3	48
Mytoge Mtn/Tidwell Slopes	Loa	17,848	70.7	2.5	89
Old Woman Plateau	Loa	1,320	3.7	1.8	100
Thousand Lakes Mtn	Loa	36,928	67.2	1.2	18
District Total:		**87,010**	**208.7**	**1.5**	**46**
Beaver Foothills	Beaver	43,096	109.7	1.6	93
Beaver River Basin	Beaver	363	1.4	2.5	63
Clear Creek	Beaver	4,497	13.6	1.9	100
Indian Creek/North Creek	Beaver	537	0.7	0.8	47
Piute Front	Beaver	34,659	82.7	1.5	89
District Total:		**83,152**	**208.1**	**1.6**	**92**
Gooseberry/Lost Creek	Richfield	59,645	243.8	2.6	86
Monroe Mtn	Richfield	43,687	116.5	1.7	87
Old Woman Plateau	Richfield	16,789	70.6	2.7	94
Salina Creek	Richfield	45,277	148.9	2.1	36
District Total:		**165,397**	**579.7**	**2.2**	**73**
Grand Total:		**475,114**	**1,360.5**	**1.8**	**75**

Winter Range-Elk

The UDWR has delineated and classified by value, elk wintering habitat on the Fishlake Forest. Elk habitat shapefiles (dated 07/2005) were obtained from the UDWR's website and both "high value", "yearlong substantial" and "critical" winter range polygons were combined for all summaries and analyses. There are approximately 545,711 acres of elk winter range on the Forest containing some 1,225 miles of motorized routes resulting in an average of 1.4 miles of road per square mile (Table 16). The current travel plan allows cross-country travel on over 62% of the Forest landscape (see pages 8-9, Chapter 1 of DEIS); this designation is not distributed evenly across the Forest, since fully 74% of the elk winter range discussed previously is open (Table 16).

Table 16. Shown is the amount of elk winter range on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	5,832	15.6	1.7	73
Canyon Range	Fillmore	3,481	9.2	1.7	88
Clear Creek	Fillmore	5,998	10.9	1.2	92
East Pahvant	Fillmore	15,375	55.8	2.3	100
West Pahvant	Fillmore	92,203	129.3	0.9	82
District Total:		**122,888**	**220.7**	**1.2**	**84**
Fish Lake Basin		5,388	17.6	2.1	12
Fish Lake Hightop	Loa	7,342	20.3	1.8	93
Last Chance/Geyser Peak	Loa	36,889	86.0	1.5	55
Mytoge Mtn/Tidwell Slopes	Loa	34,570	121.9	2.3	84
Old Woman Plateau	Loa	5,101	12.6	1.6	100
Thousand Lakes Mtn	Loa	31,860	51.6	1.0	12
District Total:		**121,148**	**310.0**	**1.6**	**54**
Beaver Foothills	Beaver	32,420	95.4	1.9	96
Clear Creek	Beaver	1,455	10.5	4.6	100
Indian Creek/North Creek	Beaver	186	0	0	0
Piute Front	Beaver	36,667	90.7	1.6	90
District Total:		**70,727**	**196.5**	**1.8**	**93**
Gooseberry/Lost Creek	Richfield	70,597	254.3	2.3	75
Monroe Mtn	Richfield	59,187	176.1	1.9	89
Old Woman Plateau	Richfield	50,071	167.2	2.1	86
Salina Creek	Richfield	51,096	140.2	1.8	34
District Total:		**230,952**	**737.8**	**2.0**	**72**
Grand Total:		**545,715**	**1,465.0**	**1.7**	**74**

Summer Use—Fawning/Calving Areas

Again, shapefiles were obtained from UDWR's website and critical and high value deer summer habitat areas were combined for analysis. Because fawn parturition and rearing takes place at a range of elevations and in a variety of habitat types, the DWR has delineated these classes of habitat based on observational data and in some cases limited amounts of radio-telemetry data. Important site specific variables typical of key fawning areas in the West are slopes less than 15%, and forest community types with heavier ground cover--like those with shrub-sapling structural classes found below 9400 feet in elevation, and close proximity to water (de Vos et al 2003). There are approximately 971,493 acres of deer fawning habitat on the Forest containing some 1,894 miles of motorized routes resulting in an average of 1.3 miles of road per square mile (see Table 17). The current travel plan allows cross-country travel on some 62% of the Forest landscape (see pages 8-9, Chptr 1 of DEIS), which is very near the 59% of deer fawning habitat discussed previously (Table 17).

Table 17. Shown is the amount of deer summer/fawning habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized

routes and resultant road density. Also shown is the current percentage of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	3,180	4.0	0.8	50
Canyon Range	Fillmore	75,912	99.4	0.8	64
Clear Creek	Fillmore	35,580	85.9	1.5	90
East Pahvant	Fillmore	53,793	111.5	1.3	69
West Pahvant	Fillmore	156,945	208.3	0.9	62
District Total:		**325,410**	**509.1**	**1.0**	**67**
Fish Lake Basin	Loa	16,962	43.5	1.6	33
Fish Lake Hightop	Loa	37,666	71.2	1.2	25
Goseberry/Lost Creek	Loa	1,124	4.4	2.5	55
Last Chance/Geyser Peak	Loa	19,933	70.6	2.3	64
Mytoge Mtn/Tidwell Slopes	Loa	63,996	193.3	1.9	82
Old Woman Plateau	Loa	7,597	19.3	1.6	100
Thousand Lakes Mtn	Loa	28,874	58.3	1.3	4
District Total:		**176,152**	**460.7**	**1.7**	**51**
Beaver Foothills	Beaver	28,121	40.3	0.9	79
Beaver River Basin	Beaver	45,682	159.8	2.2	61
Clear Creek	Beaver	35,524	131.6	2.4	84
Indian Creek/North Creek	Beaver	41,775	31.8	0.5	32
Piute Front	Beaver	41,861	76.2	1.2	65
Tushar Mtns	Beaver	20,971	27.2	0.8	3
District Total:		**213,932**	**466.8**	**1.4**	**56**
Fish Lake Hightop	Richfield	738	2.1	1.8	15
Gooseberry/Lost Creek	Richfield	48,399	130.9	1.7	23
Monroe Mtn	Richfield	119,636	404.8	2.2	78
Mytoge Mtn/Tidwell Slopes	Richfield	36	0.1	1.3	0
Old Woman Plateau	Richfield	40,790	112.5	1.8	79
Salina Creek	Richfield	46,399	57.9	0.8	9
District Total:		**255,999**	**708.2**	**1.8**	**55**
Grand Total:		**971,493**	**2,144.8**	**1.4**	**59**

Elk calving habitat was also delineated in conjunction with UDWR biologists based on radio-telemetry data from research in the past decade coupled with pre-season herd classification observations. There is a strong tie to aspen community types in relationship to elk calving in the West, especially on the Fishlake Forest (Flinders 1996). There are approximately 202,405 acres of elk calving habitat on the Forest containing some 507 miles of motorized routes resulting in an average of 1.6 miles of road per square mile (see Table 18). The current travel plan allows cross-country travel on some 62% of the Forest landscape (see pages 8-9, Chptr 1 of DEIS), which is higher than the 50% of elk calving habitat discussed previously (Table 18).

Table 18. Shown is the amount of elk calving habitat on the Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current percentage of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Clear Creek	Fillmore	2,372	11.2	3.0	92
East Pahvant	Fillmore	366	4.1	7.1	100
West Pahvant	Fillmore	8,916	21.1	1.5	46
District Total:		**11,654**	**36.3**	**2.0**	**57**
Fish Lake Hightop	Loa	12,491	26.2	1.3	40
Gooseberry/Lost Creek	Loa	868	3.8	2.8	64
Last Chance/Geyser Peak	Loa	2,828	11.7	2.7	42
Mytoge Mtn/Tidwell Slopes	Loa	6,834	20.2	1.9	87
Old Woman Plateau	Loa	4,286	13.8	2.1	100
Thousand Lakes Mtn	Loa	7,663	19.6	1.6	6
District Total:		**34,970**	**95.3**	**1.7**	**50**
Beaver Foothills	Beaver	13,833	14.8	0.7	85
Beaver River Basin	Beaver	29,986	105.5	2.3	55
Clear Creek	Beaver	2,318	2.0	0.6	35
Indian Creek/North Creek	Beaver	3,313	0.6	0.1	43
Piute Front	Beaver	15,775	16.4	0.7	48
Tushar Mountains	Beaver	2,087	3.0	0.9	8
District Total:		**67,313**	**142.3**	**1.4**	**57**
Fish Lake Hightop	Richfield	413	1.7	2.6	25
Gooseberry/Lost Creek	Richfield	26,963	83.9	2.0	25
Monroe Mtn	Richfield	26,771	148.6	3.6	95
Old Woman Plateau	Richfield	6,951	16.1	1.5	66
Salina Creek	Richfield	27,371	35.4	0.8	4
District Total:		**88,468**	**285.7**	**2.1**	**43**
Grand Total:		**202,405**	**559.6**	**1.8**	**50**

Motorized Cross-Country Travel
With 76% of deer winter range and 73% of elk winter range across the Forest open to unrestricted motorized travel, significant animal disturbance and vegetation impacts can occur during winter and spring months; especially in those areas targeted for antler shed gathering where enthusiasts can drive directly through the winter habitat in search of antlers or even chase animals in an attempt to cause antlers to drop off. During the fall, big game hunters can also take advantage of the majority (62%) of the Forest designated open to this type of travel to pursue game into areas not accessed by authorized trails and the proliferation of such user created trails is evident.

Northern Goshawk—see discussion under Sensitive Species Section

Sage Nesters
Various Sage Nesters were selected as Fishlake National Forest Management Indicator Species (MIS) to represent sagebrush ecosystems. Species selected include the Brewer's sparrow, Vesper sparrow and sage thrasher. All three species are dependent on sagebrush ecosystems and build nests on the ground or in shrubs. Diets may contain insects, grasses, forbs, seeds and berries.

For a detailed description of habitat, reproduction and food requirements, see Rodriguez

(2006).

Brewer's Sparrow *(Spizella breweri)*
The Brewer's sparrow is a common summer resident and breeder in mountains and higher valley. It breeds in treeless shrub habitats with moderate canopy, especially in sagebrush. The Brewer's sparrow breeds locally above pinyon-juniper belt.

Vesper Sparrow (*Pooecetes gramineus*)
The Vesper sparrow is found in shrub steppe, grasslands, savannas, weedy pastures, fields, sagebrush, arid scrub, and woodland clearings. An Idaho study found this species was more abundant in prescribed burn areas of juniper than in old growth or clearcut. The Vesper sparrow is a common summer resident occurring in sparse or open stands of sagebrush, low sagebrush, and similar habitats. In winter months, it occupies grasslands, croplands, and open brushlands. It mostly arrives on breeding grounds in April and departs by October. Wintering individuals often arrive in September and depart in March or April.

Sage Thrasher (*Oreoscoptes montanus*)
The sage thrasher occurs primarily in sagebrush and low sagebrush habitats. It is mainly limited to semiarid sagebrush plains, but may extend into junipers and mountain-mahogany habitats near sagebrush. This species breeds on level or moderately sloping sites with sagebrush of moderate density (Rodriguez, 2006). The Fishlake National Forest has expanded the search for sage related species to include the sage thrasher. Between 2002-2003 there were 14 detections of sage thrasher on the Fishlake National Forest. These detections occurred on the Richfield Ranger District in the Hell's Hole area. Additional field surveys will continue to add to the knowledge concerning trend on or around the Fishlake National Forest. As demonstrated below, the overall trend of this species between 1968 and 1998 has been in a downward trend by 2.9% annually.

Existing Condition and method of analysis:
There are approximately 661,740 acres of potentially suitable habitat on the Fishlake National Forest comprised of sagebrush communities. The road density averages 1.7 roads per square mile within this habitat with 77% designated as open to cross-country travel (Table 19). Potentially suitable habitat occurs on all four Districts of the Forest.

Changes in road density and the amount of unrestricted travel will be analyzed in Sage Nesters suitable habitat.

Table 19. Shown is the amount of potential Sage Nesters habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	2,167	13.8	4.1	98

Canyon Range	Fillmore	59,888	181.4	1.9	91
Clear Creek	Fillmore	32,098	87.4	1.7	92
East Pahvant	Fillmore	47,607	164.9	2.2	87
West Pahvant	Fillmore	89,704	181.0	1.3	73
District Total:		**231,465**	**628.4**	**1.7**	**83**
Fishlake Basin	Loa	3,357	23.6	4.5	27
Fish Lake Hightop	Loa	8,562	33.5	2.5	66
Gooseberry/Lost Creek	Loa	370	2.7	4.7	71
Last Chance/Geyser Peak	Loa	36,554	96.2	1.7	53
Mytoge Mtn/Tidwell Slopes	Loa	41,935	197.0	3.0	87
Old Woman Plateau	Loa	3,862	13.4	2.2	100
Thousand Lakes Mtn	Loa	38,977	73.2	1.2	16
District Total:		**133,616**	**439.6**	**2.1**	**54**
Beaver Foothills	Beaver	33,353	76.1	1.5	88
Beaver River Basin	Beaver	3,704	11.2	1.9	88
Clear Creek	Beaver	26,206	82.1	2.0	90
Indian Creek/North Creek	Beaver	7,552	12.2	1.0	43
Piute Front	Beaver	45,857	104.6	1.5	89
District Total:		**116,671**	**286.1**	**1.6**	**86**
Fish Lake Hightop	Richfield	254	0.7	1.7	19
Gooseberry/Lost Creek	Richfield	49,403	218.6	2.8	77
Monroe Mtn	Richfield	96,677	373.7	2.5	88
Old Woman Plateau	Richfield	19,143	72.3	2.4	90
Salina Creek	Richfield	14,510	56.5	2.5	27
District Total:		**179,987**	**721.8**	**2.6**	**80**
Grand Total:		**661,739**	**2,075.8**	**2.0**	**77**

Cavity Nesters

Cavity Nesters are Fishlake National Forest Management Indicator Species (MIS) that represent species dependent on tree cavities for portions of their life cycle. Species selected include the hairy woodpecker, western bluebird and mountain bluebird. While the hairy woodpecker excavates its own nesting cavity, both the western and mountain bluebird rely on cavities excavated by others or use natural tree cavities.

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:

Hairy Woodpecker (*Picoides villosus*)

The hairy woodpecker is a fairly common, permanent resident of mixed conifer and riparian deciduous habitats from sea level to 2700 m (0-9000 ft). This species uses stands of large, mature trees and snags of sparse to intermediate density. Cover is provided also by cavities. The hairy woodpecker uses relatively open or patchy stands of conifers with adjacent riparian habitats and abundant snags. Tree/shrub, tree/herbaceous, and shrub/ herbaceous ecotones are important.

Western Bluebird (*Sialia mexicana*)

This species requires trees and shrubs for cover. Typically, it rests in a tree when it's not foraging, but it also uses fences or shrubs. The western bluebird is uncommon in habitats

without at least a few trees or large shrubs, even in winter. It nests and roosts in the cavity of a tree or snag. It frequents open woodlands. The western bluebird requires suitable nesting and roosting cavity, usually in a snag or tree near open habitat for foraging; it also needs low perches to search for prey. A variety of other coniferous habitats are used, primarily open-canopied mature forests, especially edges. In winter, it leaves higher portions of nesting range and becomes more widespread in lowlands.

Mountain Bluebird (*Sialia currucoides*)
The Mountain bluebird is a fairly common summer resident in sparse to open forests and other open habitats from about 1200-3700 m (4000-12,000 ft) in the mountains and foothills of the state. Most individual's winter below 1500 m (5000 ft), withdrawing from higher, snowy portions of breeding range. This species prefers open terrain with an occasional tree, rock, fence post, power line, or building, for foraging perch and other cover. It requires suitable cavities for roosting and nesting, usually in a snag or dead portion of tree. Breeders are most numerous where meadows, grasslands, or other open habitats edge on woodland or rock formations affording suitable nesting sites. In winter, this species occurs in virtually any open or sparsely wooded habitat, but shows a preference for agricultural fields and pastures. Breeders return to higher portions of nesting range March to June, depending on elevation and snow conditions, and depart by October or November.

Existing Condition and method of analysis:
There are approximately 539,016 acres of potentially suitable habitat on the Fishlake National Forest comprised of sagebrush communities. The road density averages 0.9 miles of road per square mile within this habitat with 55% designated as open to cross-country travel (Table 20). Potentially suitable habitat occurs on all four Districts of the Forest.

Changes in road density and the amount of unrestricted travel or cross-country travel will be analyzed in Cavity Nester suitable habitat.

Table 20. Shown is the amount of potential Cavity Nester habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	22,636	1.7	0.4	60
Canyon Range	Fillmore	50,429	31.9	0.4	51
Clear Creek	Fillmore	3,515	9.0	1.6	90
East Pahvant	Fillmore	41,908	62.5	1.0	69
West Pahvant	Fillmore	69,362	54.3	0.5	64
District Total:		**167,848**	**159.3**	**0.6**	**62**
Fishlake Basin	Loa	8,922	16.4	1.2	22
Fish Lake Hightop	Loa	23,829	32.8	0.9	22
Gooseberry/Lost Creek	Loa	602	1.2	1.2	43
Last Chance/Geyser Peak	Loa	7,050	17.3	1.6	71

Mytoge Mtn/Tidwell Slopes	Loa	30,000	41.1	0.9	79
Old Woman Plateau	Loa	3,533	6.0	1.1	100
Thousand Lakes Mtn	Loa	18,198	35.4	1.3	4
District Total:		**92,132**	**150.0**	**1.0**	**44**
Beaver Foothills	Beaver	26,650	38.4	0.9	86
Beaver River Basin	Beaver	38,046	116.6	2.0	60
Clear Creek	Beaver	9,736	35.4	2.3	71
Indian Creek/North Creek	Beaver	33,288	14.3	0.3	28
Piute Front	Beaver	24,654	34.1	0.9	57
Tushar Mtns	Beaver	8,468	6.6	0.5	3
District Total:		**140,841**	**245.4**	**1.1**	**54**
Fish Lake Hightop	Richfield	136	0.1	0.6	9
Gooseberry/Lost Creek	Richfield	25,886	49.1	1.2	38
Monroe Mtn	Richfield	60,732	118.2	1.3	71
Mytoge Mtn/Tidwell Slopes	Richfield	3	0	0	0
Old Woman Plateau	Richfield	19,128	60.3	2.0	82
Salina Creek	Richfield	32,308	51.1	1.0	16
District Total:		**138,192**	**278.7**	**1.3**	**53**
Grand Total:		**539,014**	**833.5**	**1.0**	**55**

Riparian Nesters

Riparian nesters were selected as Fishlake National Forest Management Indicator Species (MIS) to represent bird species dependent on riparian areas during their breeding period. Species selected include the Lincoln's sparrow, song sparrow, yellow warbler, and MacGillivray's warbler

For a detailed description of habitat, reproduction and food requirements, see Rodriguez (2006).

Reference Condition:

Lincoln's Sparrow (*Melospiza lincolnii*)

Nest records for this species indicate that it probably breeds sparingly across the northern portions of the state (Rodriguez, 2006). This species has a western range in the continental United States that extends from the Rocky Mountains to the Pacific Coast. The Lincoln's Sparrow is a short- to long-distance migrant. Some individuals winter in southern portions of the United States, while others over-winter in Central America. This species nests and feeds (primarily on insects) on the ground. Therefore, a critical habitat need is a well-developed ground cover of Sphagnum and other mosses to provide nesting cover (Brewer et al. 1991).

Song Sparrow (*Melospiza melodia*)

At all seasons, it prefers riparian, fresh or saline emergent wetland, and wet meadow habitats. It breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and in fresh or saline emergent vegetation. The song sparrow usually avoids densely wooded habitats, except along forest edges. This species requires low, dense vegetation for protective cover, usually near water, in emergent vegetation, or in other moist areas. The male typically sings from an exposed perch at moderate height in shrub, tall herb, or low tree.

Yellow Warbler *(Dendroica petechia)*
The Northern Yellow Warblers are neotropical migrants that breed within North America and winter from Mexico to northern South America. Within North America they breed throughout most of Alaska and Canada and the lower 48 States except for Texas and the extreme south and southeast. Yellow Warblers nest in shrubby growth by swamps and watercourses, in wet scrub, tree foliage, mangroves, gardens, shrubberies and berry patches. Dense growth may be preferred in order to reduce nest predation and brood parasitism.

MacGillivray's Warbler (*Oporornis tolmiei*)
The MacGillivray's warbler apparently eats mostly insects. It forages low in shrubs or on the ground in dense thickets. It gleans foliage and branches and scrapes and probes ground litter. Young may take sap from sapsucker drillings in willows (Rodriguez, 2006). Willow, alder, and other dense shrubs in riparian areas or in moist woodlands provide cover at all seasons. Drier shrub habitats near water are used to a lesser extent. The MacGillivray's warbler nests between May and July, with peak activity in June. It lays 3-6 eggs, usually 4. Incubation is 11-13 days, by the female only.

Existing Condition and method of analysis:
There are approximately 18,021 acres of potentially suitable habitat on the Fishlake National Forest comprised of riparian communities. The road density averages 6.4 roads per square mile within this habitat with 70% designated as open to cross-country travel (Table 21). Potentially suitable habitat occurs on all four Districts of the Forest.

Changes in road density and the amount of unrestricted travel will be analyzed in Riparian Nesters suitable habitat.

Table 21. Shown is the amount of potential Riparian Nester habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) with the accompanying miles of motorized routes and resultant road density. Also shown is the current proportion of these acres designated "unrestricted", where cross-country travel is allowed.

GA Name	District	Acres	Motorized miles	Road density (miles/mile^2)	Unrestricted Travel (%)
Beaver Foothills	Fillmore	32	0.1	2.0	100
Canyon Range	Fillmore	36	0.3	4.5	68
Clear Creek	Fillmore	419	2.3	3.5	95
East Pahvant	Fillmore	41	0.3	3.9	82
West Pahvant	Fillmore	2,110	26.0	7.9	76
District Total:		**2,639**	**28.9**	**7.0**	**79**
Fishlake Basin	Loa	1,123	3.7	2.1	19
Fish Lake Hightop	Loa	909	1.7	1.2	23
Gooseberry/Lost Creek	Loa	10	0.1	3.8	88
Last Chance/Geyser Peak	Loa	541	6.7	7.9	91
Mytoge Mtn/Tidwell Slopes	Loa	1,675	14.0	5.4	79
Old Woman Plateau	Loa	163	0.8	3.0	100
Thousand Lakes Mtn	Loa	275	1.4	3.3	49

District Total:		**4,696**	**28.3**	**3.9**	**54**
Beaver Foothills	Beaver	596	7.2	7.7	92
Beaver River Basin	Beaver	296	0.9	1.9	70
Clear Creek	Beaver	1,071	17.8	10.6	95
Indian Creek/North Creek	Beaver	368	3.2	5.5	49
Piute Front	Beaver	469	4.5	6.1	84
Tushar Mtns	Beaver	84	0.1	0.4	4
District Total:		**2,884**	**33.6**	**7.4**	**82**
Fish Lake Hightop	Richfield	106	0.9	5.6	44
Gooseberry/Lost Creek	Richfield	2,091	32.7	10.0	72
Monroe Mtn	Richfield	2,161	19.9	5.9	85
Old Woman Plateau	Richfield	2,093	26.2	8.0	71
Salina Creek	Richfield	1,351	21.5	10.2	47
District Total:		**7,801**	**101.2**	**8.3**	**71**
Grand Total:		**18,020**	**192.0**	**6.8**	**69**

Species of Concern

Executive Order 13186 of January 10, 2001 provides broad guidelines to federal agencies on migratory bird conservation responsibilities. To implement the provisions of the Executive Order, the Forest Service and U.S. Fish and Wildlife Service (USFWS) developed an Interagency Memorandum of Understanding (MOU) for the conservation of migratory birds. In compliance with the MOU, selected priority bird species of concern will be identified and addressed in this document.

Effective management of avian communities depends on identifying the species and habitat most in need of conservation efforts. Partners in Flight (PIF) used a ranking system to identify priority species for conservation action in Utah. The PIF priority species list is used as a tool by federal and state agencies to assist in the prioritization of bird species that should be considered for conservation action (Parrish 2002).

The Mexican spotted owl, sage grouse, Brewer's sparrow, yellow-billed cuckoo and three-toed woodpecker were selected as species of concern from the priority species list. These species will represent cliff, shrub-steppe, high desert scrub, lowland riparian and conifer habitat on the Forest. Life History Information on these species can be found in *Life History and Analysis of Endangered, Threatened, Candidate, Sensitive and Management Indicator Species of the Fishlake National Forest (*Rodriguez, 2006). This citation is incorporated here by reference.

Cumulative Effects Area (CEA)

The cumulative effects area (CEA) for the wildlife species analyzed in this document includes approximately 492,934 acres on the Fillmore Ranger District, 267,251 acres on the Loa Ranger District, 313, 056 acres on the Beaver Ranger District and 490,989 acres on the Richfield Ranger District. Together, this area represents approximately 1,564,230 acres of habitat. This CEA was selected based on the scope of this project and the variety

of species involved. It includes known or predicted use areas by species analyzed in this document during all or portions of their life cycle.

Past, Present and Reasonably Foreseeable Future Activities within the CEA

Past Activities

Over time, there have been numerous natural and human caused activities that have shaped the CEA into what it is today. Most of these activities have occurred at some level on each District of the Forest. These activities include the following but are not limited to: natural fire, insect and disease, prescribed fire, fire suppression, livestock grazing, fence construction, livestock water development, sagebrush/woodland thinning, reseeding, noxious weed control, reservoir development, irrigation/culinary water development, road and trail construction, timber harvest, reforestation, fuel wood gathering, game management, game and fish introduction, campground development, boat dock development, cabin development, private land in-holding, recreation and non recreation special uses, fishing, ice fishing, hiking, camping, hunting, snowmobiling, off-road ATV use and mining.

Reasonably Foreseeable Future Activities

Reasonably foreseeable future actions have been listed in the Schedule of Proposed Actions (SOPA). Those projects are described in Appendix C of the FEIS by Ranger District. The reader is asked to refer to this section for information about these known future projects.

Past, present and reasonably foreseeable future actions have been considered when addressing cumulative effects for each wildlife species analyzed in this document.

ENVIRONMENTAL CONSEQUENCES

Three action alternatives were developed and analyzed in detail to contrast with the No Action Alternative. Below is a brief definition of these actions. For more detailed descriptive summary, the reader should refer to Chapter Two of the FEIS.

- Alternative One – No Action Alternative. Describes the existing conditions.
- Alternative Two – Proposed Action. Released with Notice of Intent.
- Alternative Three – Modified Proposed Action. Draft EIS preferred alternative.
- Alternative Four – Combines suggestions from public and advocacy groups.
- Alternative Five – FEIS preferred alternative which combines suggestions from public and advocacy groups after receiving input on draft EIS.

All action alternatives dramatically reduce unrestricted or cross-country travel but do not eliminate it entirely. This is due primarily to “open use areas” and the ability to travel off-route to dispersed recreation sites and for fuel wood gathering, etc. The “No Action Alternative” currently allows up to 300 feet from open roads for dispersed camping and fuel wood gathering. Alternative Two would allow for 300 feet from designated roads and trails to access dispersed camping at existing sites; while Alternative Three through Five would allow for only 150 feet from *designated* roads and trails for dispersed camping at *existing* sites.

Open Use Areas: For the purposes of modeling, "open use areas" includes designated open use areas and the areas within the dispersed camping distance designations. This is done for simplicity, but it somewhat creates a worst-case comparison between No Action and the action alternatives. Use within the designated open use areas is essentially unrestricted although users are not supposed to cause "resource damage" in any case. The dispersed camping exemption in No Action is similarly unrestricted with regards to cross-country travel. In the action alternatives, the distance designation states that motorized travel must occur on an existing route within the specified distance from an open designated route. The designation permits travel off of a designated route, but not off an existing route. The designation does not permit creation of new routes. Therefore, the estimation of areas potentially open to motorized cross-country travel in the action alternatives is overestimated. Areas truly open to motorized cross-country travel, particularly in the No Action alternative, are less than indicated by the modeling as well. On site terrain features such as dense woody vegetation, large rocks, uneven and steep slopes reduce the total amount of area where motorized vehicles can actually travel. Though it is difficult to determine, the actual footprint of open use areas is smaller than what is indicated in the analysis tables.

Federally Listed Threatened, Endangered, or Candidate Vertebrate Species

Mexican Spotted Owl

Potential Mexican spotted owl breeding habitat is limited on the Fishlake National Forest to the Thousand Lakes Geographical Area (GA) of the Loa Ranger District. In this area, there are approximately 331 acres of potential breeding habitat available. Based on field validation of potentially suitable habitat, as described by Spotsky and Willy (USFWS), suitable habitat was identified. Most of these areas were surveyed for two consecutive years (2003-2004). Despite surveys, there have been no documented nest locations of Mexican spotted owls on the Loa Ranger District to date.

Table 22. Shown is a comparison of Mexican Spotted Owl habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel in acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Thousand Lakes Mtn.	0	0.0	0.0	0.0	0.0	0.4	0.4	0.1	0.1	0.1
Loa District Total:	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.4**	**0.4**	**0.1**	**0.1**	**0.1**

Environmental Consequences Specific to the No Action Alternative (1)

There are no roads or motorized trails within suitable spotted owl breeding habitat on the District. However, because motorized access is allowed 300 feet from designated roads located outside spotted owl habitat to access dispersed campsites, up to 1.2 acres, or 0.4%

of habitat could be impacted, if it were physically possible. However, areas that were validated as suitable are currently not legal to access off road, as they are in areas closed to motorized vehicles year round. Because designated and off-road motorized access does not occur in spotted owl breeding habitat that includes steep-walled canyon terrain, there would be no effect to spotted owl individuals or habitat as a result of implementing the No Action Alternative.

Environmental Consequences Common to all Action alternatives

Similar to the No Action alternative, there would be no roads or motorized trails proposed in any of the action alternatives within suitable spotted owl breeding habitat. There would be a slight reduction in unrestricted motorized travel into potentially suitable habitat, from 1.18 acres in Alternative Two to 1.17 acres in Alternative Three through Five. Because cross-country travel would either not be permitted or accessible in potentially suitable habitat, there would be no effect on individuals or habitat as a result of implementing the action alternatives 2-5.

Cumulative Effects

No Action Alternative

Because there were no incremental effects to Mexican spotted owl individuals or breeding habitat as a result of implementing the No Action Alternative, there would be no cumulative effects to this listed species.

All Action Alternatives

Because there were no incremental effects to Mexican spotted owl individuals or breeding habitat as a result of implementing Alternative Two, Alternative Three or Alternative Four, there would be no cumulative effects to this listed species.

Determinations and Rationale

No Action Alternative

Because suitable breeding habitat is not legal to access by cross-country motorized travel, habitat is not accessible to motorized vehicles and there are no known populations, there would be no effect to the Mexican spotted owl or its habitat as a result of implementing the No Action Alternative.

All Action Alternatives

Because suitable breeding habitat would not be accessible by cross-country motorized travel and there are no known spotted owl populations, there would be no effect on the Mexican spotted owl or its habitat as a result of implementing any of the action alternatives.

Bald Eagle

Bald eagles are only known to occur on the Fishlake National Forest during the non-breeding period, that includes the late fall, winter and early spring months. During this time they usually concentrate around open water where fish and waterfowl are present, are low elevation open steppe habitats. Once the lakes freeze, they generally move to the

valleys and feed on small mammals and carrion. Potential wintering habitat has been identified on the Fishlake National Forest using computer generated habitat models that includes upland habitat and lakes and streams. Over 142,000 acres of potentially suitable winter foraging habitat is available on the Forest for the bald eagle.

Table 23. Shown is a comparison of Bald Eagle habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Canyon Range	2.0	1.7	1.8	1.4	1.9	93	17	10	8	10
Clear Creek	3.3	2.7	2.7	2.3	2.7	92	27	14	12	14
East Pahvant	3.4	3.0	2.6	1.9	2.4	100	29	13	10	13
West Pahvant	3.1	3.0	2.9	2.1	3.1	57	29	15	11	16
Fillmore District Total:	**3.1**	**2.8**	**2.6**	**2.0**	**2.6**	**84**	**27**	**14**	**11**	**14**
Fish Lake Basin	2.0	1.8	1.8	1.8	1.9	48	1	0	0	0
Fish Lake Hightop	1.4	0.9	1.0	0.8	1.2	17	7	4	3	5
Gooseberry/Lost Creek	3.5	2.7	3.2	3.2	3.3	71	28	17	17	17
Last Chance/Geyser Peak	2.0	1.3	1.3	1.3	1.5	44	10	6	5	5
Mytoge /Tidwell Slopes	2.6	1.5	1.7	1.2	1.8	81	14	8	6	9
Old Woman Plateau	1.8	1.3	1.4	1.3	1.6	100	14	8	7	9
Thousand Lakes Mtn.	1.7	1.6	1.6	0.8	1.6	6	17	9	4	7
Loa District Total:	**2.0**	**1.4**	**1.5**	**1.3**	**1.7**	**51**	**9**	**5**	**4**	**5**
Beaver Foothills	1.6	1.3	1.4	0.8	1.5	92	14	7	3	7
Beaver River Basin	3.6	3.1	3.2	2.9	2.2	58	26	14	13	14
Clear Creek	2.2	1.6	1.6	1.6	1.9	87	15	8	8	8
Indian Creek/North Creek	1.6	0.6	0.6	0.6	1.0	57	7	4	4	6
Piute Front	2.8	2.4	2.3	2.3	2.3	80	23	12	11	10
Tushar Mtns	1.0	0.6	0.7	0.6	0.7	5	6	3	3	3
Beaver District Total:	**2.6**	**2.1**	**2.1**	**1.9**	**2.2**	**64**	**19**	**10**	**9**	**10**
Fish Lake Hightop	6.0	6.0	6.0	5.8	6.0	44	44	27	27	27
Gooseberry/Lost Creek	2.4	2.0	2.0	1.5	2.1	31	17	9	6	9
Monroe Mtn	3.7	2.8	2.7	1.8	2.8	90	27	14	9	14
Old Woman Plateau	2.0	1.5	1.5	1.2	1.5	75	16	8	6	8
Salina Creek	0.5	0.5	0.5	0.4	0.5	14	5	2	2	2
Richfield District Total:	**2.7**	**2.1**	**2.1**	**1.4**	**2.1**	**64**	**20**	**10**	**7**	**10**
Grand Total:	**2.5**	**2.0**	**2.0**	**1.5**	**2.1**	**63**	**18**	**9**	**7**	**9**

Environmental Consequences Specific to No Action Alternative (1) - Forest

Under the current travel plan, there are currently 564 miles of designated roads and motorized trails on the Forest that occur in winter eagle habitat. Continuation of the current condition would also mean allowing unrestricted travel on over 89,560 acres, or 63% of the eagle potential winter habitat (142,540 total acres) on the Forest (Table 4 & 23). These disturbances have the potential to interrupt foraging and impact vegetation that supports eagle prey. Impacts to this species may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

Designated motorized roads and trails within eagle winter habitat on the Forest, would incrementally drop under each action alternative from 564 miles under the current plan down to 340 miles under Alternative 4. In addition, unrestricted travel would also be reduced incrementally under each alternative from 63% of potential habitat, down to 7% of potential habitat for the eagle (Table 23). Based on public scoping and new information, Alternative 5 sits incrementally between Alternative 2 and 3. Overall, these action alternatives would improve habitat for the bald eagle on the Forest over what occurs today. Impacts to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District - Bald Eagle:

Environmental Consequences Specific to the No Action Alternative (1)

Compared to the action alternatives, the no action alternative has both a higher road density per square mile and number of acres of unrestricted travel. Over 80 percent of potential bald eagle habitat on the District is currently being administered for unrestricted travel, which is the highest on the Forest. Road density currently averages 3.1 miles/square mile on the District, and varies from 2.0 to 3.4 miles/ square mile amongst GAs. Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in bald eagle habitat effectiveness.

Motorized use normally drops off during the period when bald eagles are more likely to be on the District, due to lower recreational demands (except during the hunting season) and poor accessibility during the winter months. Some motorized use of the foothills continues throughout the year, depending on the openness of the winter. Access into most other areas containing potential bald eagle winter habitat becomes increasingly limited to over-snow motorized vehicle use only.

Under current conditions, bald eagles have continued to be documented around the periphery of the District in areas populated with jackrabbits and near highways where they are often seen feeding on road-killed big game. Displacement of foraging eagles by motorized vehicle traffic under the current conditions is rare, thus wintering bald eagles appear to have adapted to current motorized use on the Fillmore Ranger District.

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Unrestricted travel in Bald Eagle habitat on the Fillmore District changes from the current state of 84% to 27% in Alternative 2, 14% in Alternative 3, 11% for Alternative 4, and 14% for Alternative 5. Likewise, road density changes from 3.1 miles/square mile currently, to 2.8 in Alternative 2, 2.6 in Alternative 3, 2.0 for Alternative 4, and 2.6 for

Alternative 5 (Table 23). The most dramatic change is the reduction in unrestricted travel which should halt the expansion of motorized routes within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 2

Compared to the other alternatives, Alternative 2 has the highest road density per square mile and number of acres of unrestricted travel, although they are much less than the No Action Alternative. Under Alternative 2, a number of undesignated routes that are currently being used would either be classified, permanently closed (obliterated/gated) or seasonally closed for a decrease in overall road density by 0.3 miles/square mile. There is one proposed "open use" play area on the Fillmore District in the East Pahvant GA adjacent to the Interstate just west of Richfield of 780 acres in size. Soils in the area support little vegetation and is already heavily disturbed by ATVs. The proposed amount of habitat allowing for unrestricted travel in Alternative 2 would decrease cross-country travel to 28% of suitable bald eagle habitat, compared to the current 84% use. Cross-country or unrestricted travel would be limited to purposes allowed only within 300 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 3

Alternative 3 proposes a slightly lower average road density within potential bald eagle habitat than Alternative 2, but reduces overall road densities by 0.5 miles/square mile compared to the No Action. The difference between Alternative 2 and 3 is that some of the currently undesignated routes would either, be obliterated, would not be open year round or would change from motorized to non-motorized use under Alternative 3. There is one proposed "open use" play area on the Fillmore District in the East Pahvant GA adjacent to the Interstate just west of Richfield of 780 acres in size. Soils in the area support little vegetation and is already heavily disturbed by ATVs. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop by 70% under Alternative 3, compared to the No Action Alternative. This change would reduce unrestricted travel to about 14% of potential bald eagle habitat compared to 84% under the No Action Alternative. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 4

The difference between Alternative 4 and the other action alternatives is that it reduces the amount of motorized travel. This will occur by controlling the number of unauthorized routes that will be authorized by only allowing those routes used as private land access and for special uses. In addition, certain trails not currently part of the travel plan will be removed. Alternative 4 proposes less average road density within potential bald eagle habitat than any other alternative. Overall road densities would be reduced by approximately 1.1 miles/square mile compared to the No Action. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop by 73% under Alternative 4, compared to the No Action Alternative. This change would reduce unrestricted travel to 11% of potential bald eagle habitat compared to 84% under the No

Action Alternative. There are no "open use" play areas proposed on the Fillmore District under this alternative. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 5

Numerically, Alternative 5 is just like Alternative 3 in terms of route density and the reduction of cross-country travel. The differences lie in specific route designations and the absence of one "open use" area west of Richfield. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Alternative 4 would result in the highest degree of habitat effectiveness given the lowest resultant road density and lowest amount of unrestricted travel.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Habitat improvement projects (i.e. seeding, pinyon/juniper chainings and thinnings, prescribed burning, and water developments) across the Forest have helped to maintain various prey populations for bald eagles. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to bald eagle habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid bald eagle roost trees will not impact eagles themselves, but will improve forage production for potential prey species that benefit from earlier successional stages.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4 or 5 may affect bald eagle individuals, but

these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued bald eagle use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Loa Ranger District - Bald Eagle:

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 140 miles of motorized roads and trails within potential bald eagle foraging habitat on the Loa Ranger District. Road density within this habitat averages about 2.0 miles of road/square mile. Under the current road density levels, however, eagles do not appear to be displaced from foraging or roosting opportunities, in the Fish Lake Basin or Gooseberry/Lost Creek Geographical Areas (GA), where road density, winter recreation and bald eagle use is higher than anywhere else on the District (Table23). This could be partially due to winter conditions, where access is limited on roads covered in deep snow and because bald eagles are tolerant of some disturbance as long as it is not directed at them.

Under the No Action Alternative, unrestricted travel would continue on over 50% of potential bald eagle habitat on the District. Given the amount of unrestricted travel currently allowed and increased OHV popularity, implementation of this alternative would mean the risk of additional motorized routes within potentially suitable habitat. The large areas currently restricted to designated routes under the current travel plan help remove some of this risk. Implementation of the No Action Alternative would have a greater risk of impacts to the productivity of soils and vegetation that supports eagle prey in upland winter habitat as well as have the potential to increase disturbances to foraging eagles than any other Action Alternative. Over time, these disturbances could lead to a decrease in bald eagle habitat effectiveness.

The Loa District has not been identified as critical winter concentration area for the bald eagle as use is low and unpredictable. Motorized use is also typically low in the winter months when bald eagles are present and travel most often occurs over snow. Current use does not appear to be disrupting foraging opportunities for upland carrion or around the lakes and streams where eagles most often concentrate. Therefore, implementation of the No Action Alternative may affect bald eagle individuals but these impacts would be low.

Environmental Consequences Common to all Action Alternatives

Designated motorized roads and trails within eagle winter habitat on the District, would be reduced by up to 15-35%, depending on the selected alternative (Table 23). Although Alternative Five would propose the highest road density levels and Alternative Four the lowest, Alternative Two would close more roads in documented bald eagle foraging and roosting habitat. Because the current road density levels do not appear to be displacing foraging or roosting bald eagles, the reduction in road density in each of the Action Alternatives would not measurably improve foraging conditions for the bald eagle.

Even though the No Action Alternative has large blocks of restricted travel areas, the Action Alternatives would restrict travel to designated roads and motorized trails, except for the 150-300 foot wide travel areas to access dispersed campsites from designated roads. Consequently, unrestricted travel would be reduced by 82-92% in potential foraging habitat, depending on the selected alternative. Alternative Four would reduce unrestricted travel in potential bald eagle habitat more than any other alternative, particularly in those GA's that have documented bald eagles in the winter months.

Although all Action Alternatives would reduce impacts to soil and vegetation that supports eagle prey in upland winter habitat as well as reduce disturbances to foraging eagles, this beneficial effect would be low. The Loa District has not been identified as critical winter concentration area for the bald eagle as use is low and unpredictable. Motorized use is also typically low in the winter months when snow and bald eagles are present and current use does not appear to be disrupting foraging opportunities where eagles have been documented. Implementation of any action alternative may improve bald eagle habitat effectiveness, but these improvements would be small.

Cumulative Effects

No Action Alternative

There are approximately 44,094 acres that have been identified as potential foraging and roosting habitat for wintering bald eagles within the CEA. The footprint of existing motorized roads and trails currently occupies about 1.3% of this habitat. Road density within the CEA is on average about 2 miles/square mile, although there are some local areas with a higher number of roads. These local areas contribute incrementally towards cumulative effects that reduce habitat effectiveness for bald eagles. Because the current motorized system occupies a small proportion of available habitat and bald eagles foraging and roosting does not appear to be disrupted under the current use, the contribution to cumulative effects would be low.

Although there are large blocks of land that restrict motorized use to designated roads, there are also large blocks of land that are open to cross-country travel under the current plan. Unrestricted or cross-country motorized travel is currently allowed in 51% of potential bald eagle foraging habitat within the CEA. This action, which would continue unrestricted travel into bald eagle winter habitat, when combined with past, present, and reasonably foreseeable activities would reduce habitat effectiveness for the bald eagle within the CEA over time.

All Action Alternatives

There are approximately 44,094 acres that have been identified as potential foraging and roosting habitat for wintering bald eagles within the CEA. The footprint for the proposed motorized system would occupy about .8-1.1% of this habitat. Road density would be reduced on average by about 15-35% and range between 1.3 and 1.7 miles/square mile, depending on the selected alternative (Table 23). Although Alternative Four would reduce the road density within the CEA more than any other alternative, Alternative Two would reduce road density more in the areas where bald eagles have been observed to improve habitat effectiveness. Because the current motorized system occupies a small proportion of available habitat and bald eagle foraging and roosting does not appear to be disrupted under the current use, the contribution to cumulative effects would be low.

Implementation of the action alternatives would reduce unrestricted travel within the CEA by 82-92%. Where 52% of potential habitat was open to cross-country travel under the No Action Alternative, the Action Alternatives would reduce this to between 4-9% of bald eagle winter habitat, with Alternative Four reducing the amount the most. The motorized travel changes proposed in all action alternatives, when combined with past, present, and reasonably foreseeable activities, would improve habitat effectiveness over time by reducing physical disturbances to soils and vegetation that support bald eagle prey and reducing the potential for disturbances to foraging eagles.

Determinations and Rationale

No Action Alternative

The No Action Alternative would increase the risk of motorized expansion into potential winter foraging habitat due to the large areas that are open to cross-country travel. These actions would contribute to the degradation of soils and vegetation that supports eagle prey in upland winter habitat as well as have the potential to increase disturbances to foraging eagles more than any other Action Alternative. These effects would be low as, the District is not considered critical habitat, eagles are not common on the District, nor do they appear to be displaced by current motorized activities, because the activities are not directed at them. Implementation of the No Action Alternative may therefore effect, but would not likely adversely affect bald eagle individuals or their habitat.

All Action Alternatives

The motorized travel changes proposed in all Action Alternatives would help reduce physical disturbances to soils and vegetation created by cross-country travel and decrease the potential for disturbances to foraging bald eagles. Implementation of any of these action alternatives would incrementally improve habitat effectiveness for the bald eagle. Implementation of the Action Alternatives may have a beneficial effect on the bald eagles, but this affect is expected to be low, as the District is not considered critical habitat, eagles are not common on the District, nor do they appear to be displaced by current motorized activities, because these activities are not directed at them.

Beaver Ranger District – Bald Eagle:

Environmental Consequences Specific to the No Action Alternative (1)

Compared to the action alternatives, the no action alternative has both a higher road density per square mile and number of acres of unrestricted travel. Some 64% of potential bald eagle habitat on the District is currently being administered for unrestricted travel, which is the second highest on the Forest. Road density currently averages 2.6 miles/square mile on the District, and varies from 3.6 to 1.0 miles/square mile amongst GAs. Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in bald eagle habitat effectiveness.

Motorized use normally drops off during the period when bald eagles are more likely to be on the District, due to lower recreational demands (except during the hunting season) and poor accessibility during the winter months. Some motorized use of the foothills continues throughout the year, depending on the openness of the winter. Access into most other areas containing potential bald eagle habitat becomes increasingly limited to over-snow motorized vehicle use only.

Under current conditions, bald eagles have continued to be documented around the periphery of the District in areas populated with jackrabbits and near highways where they are often seen feeding on road-killed big game. Displacement of foraging eagles by motorized vehicle traffic under the current conditions is rare, thus wintering bald eagles appear to have adapted to current motorized use on the Beaver Ranger District.

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Unrestricted travel in Bald Eagle habitat on the Beaver District changes from the current state of 64% to 19% in Alternative 2, 10% in Alternative 3, 9% for Alternative 4, and 10% for Alternative 5. Likewise, road density changes from 2.6 miles/square mile currently, to 2.1 in Alternative 2 and 3, 1.9 for Alternative 4, and 2.2 for Alternative 5. The most dramatic change is the reduction in unrestricted travel which will halt the expansion of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Alternative 4 would result in the highest degree of habitat effectiveness given the lowest resultant road density and lowest amount of unrestricted travel.

Alternative 2

Compared to the other action alternatives, Alternative 2 has the second highest road density per square mile and the highest number of acres of unrestricted travel, although they are much less than the No Action Alternative. Under Alternative 2, a number of undesignated routes that are currently being used would either be authorized,

permanently closed (obliterated/gated) or seasonally closed for a decrease in overall road density by 0.5 miles/square mile. The proposed amount of habitat allowing for unrestricted travel in Alternative 2 would drop by 45%**,** reducing cross-country travel to 19% of suitable bald eagle habitat, compared to the current 64% use. Cross-country or unrestricted travel would be limited to purposes allowed only within 300 feet of motorized routes. There are no "open use" play areas proposed on the Beaver District. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 3

Alternative 3 proposes the same average road density within potential bald eagle habitat as Alternative 2. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop by 54% under Alternative 3 compared to the No Action Alternative. This change would reduce unrestricted travel to 10% of potential bald eagle habitat compared to 64% under the No Action Alternative. There are no "open use" play areas proposed on the Beaver District. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 4

The difference between Alternative 4 and the other action alternatives is that it reduces the amount of motorized travel. This will occur by controlling the number of unauthorized routes that will be authorized by only allowing those routes used as private land access and for special uses. In addition, certain trails not currently part of the travel plan will be removed. Alternative 4 proposes less average road density within potential bald eagle habitat than any other alternative. Overall road densities would be reduced by approximately 0.7 miles/square mile compared to the No Action. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop by 55% under Alternative 4 compared to the No Action Alternative. This change would reduce unrestricted travel to 9% of potential bald eagle habitat compared to 64% under the No Action Alternative. There are no "open use" play areas proposed on the Beaver District. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 5

Numerically, Alternative 5 is much like Alternative 3 in terms of route density and the reduction of cross-country travel. The differences lie in specific route designations and a slightly lower route density by 0.1 miles/sq. mile of potential habitat. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Habitat improvement projects (i.e. seeding, pinyon/juniper chainings and thinnings, prescribed burning, and water developments) across the Forest have helped to maintain various prey populations for bald eagles. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to bald eagle habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid bald eagle roost trees will not impact eagles themselves, but will improve forage production for potential prey species that benefit from earlier successional stages.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4 or 5 may affect bald eagle individuals, but these cumulative effects would not adversely affect population numbers or the viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued bald eagle use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Richfield Ranger District – Bald Eagle:

Environmental Consequences Specific to the No Action Alternative (1)

There is approximately 56,929 acres of potential Bald Eagle habitat on the District. Compared to the action alternatives, the no action alternative has both a higher road density per square mile and number of acres of unrestricted travel. Some 63% of potential bald eagle habitat on the District is currently being administered for unrestricted travel, which is the second highest on the Forest. Road density currently averages 2.5 miles/square mile on the District, and varies from 0.4 to 6.0 miles/square mile amongst GAs. Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in bald eagle habitat effectiveness.

Motorized use normally drops off during the period when bald eagles are more likely to be on the District, due to lower recreational demands (except during the hunting season) and poor accessibility during the winter months. Some motorized use of the foothills continues throughout the year, depending on the openness of the winter. Access into most other areas containing potential bald eagle habitat becomes increasingly limited to over-snow motorized vehicle use only.

Under current conditions, bald eagles have continued to be documented around the periphery of the District in areas populated with jackrabbits and near highways where they are often seen feeding on road-killed big game. Displacement of foraging eagles by motorized vehicle traffic under the current conditions is rare, thus wintering bald eagles appear to have adapted to current motorized use on the Richfield Ranger District.

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Unrestricted travel in Bald Eagle habitat on the Richfield District changes from the current state of 64%, to 20% in Alternative 2, 10% in Alternative 3, 7% for Alternative 4, and 10% for Alternative 5. Likewise, road density changes from 2.7 miles/sq. mile currently, to 2.1 in Alternative 2, 2.1 in Alternative 3, and 1.4 for Alternative 4 and 2.1 for Alternative 5. The most dramatic change is the reduction in unrestricted travel which will halt the expansion of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 2

Compared to the other alternatives, Alternative 2 has the second highest road density per square mile and number of acres of unrestricted travel, although they are much less than the No Action Alternative. Under Alternative 2, a number of undesignated routes that are currently being used would either be authorized, permanently closed (obliterated/gated) or seasonally closed for a decrease in overall road density by 0.6 miles/square mile. The

proposed amount of habitat allowing for unrestricted travel in Alternative 2 would drop 20%, reducing cross-country travel to 19% of suitable bald eagle habitat, compared to the current 64% use. Cross-country or unrestricted travel would be limited to purposes allowed only within 300 feet of motorized routes. There are no "open use" play areas proposed on the Richfield District. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 3

Alternative 3 proposes a slightly higher average road density within potential bald eagle habitat than Alternative 2, but reduces overall road densities by 0.6 miles/square mile compared to the No Action. The difference between Alternative 2 and 3 is that some of the currently undesignated routes would either, not be obliterated, would be open year round or would change from non-motorized to motorized use under Alternative 3. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop to 10% under Alternative 3 compared to the No Action Alternative. This change would reduce unrestricted travel to 10% of potential bald eagle habitat compared to 64% under the No Action Alternative. There are no "open use" play areas proposed on the Richfield District. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

Alternative 4

The difference between Alternative 4 and the other action alternatives is that it reduces the amount of motorized travel. This will occur by controlling the number of unauthorized routes that will be authorized by only allowing those routes used as private land access and for special uses. In addition, certain trails not currently part of the travel plan will be removed. Alternative 4 proposes less average road density within potential bald eagle habitat than any other alternative. Overall road densities would be reduced by approximately 1.3 miles/square mile compared to the No Action. The proposed amount of unrestricted motorized travel within potential bald eagle habitat would drop to 7% under Alternative 4 compared to the No Action Alternative. This change would reduce unrestricted travel to 8% of potential bald eagle habitat compared to 64% under the No Action Alternative. There are no "open use" play areas proposed on the Richfield District. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Alternative 4 would result in the highest degree of habitat effectiveness given the lowest resultant road density and amount of unrestricted travel.

Alternative 5

Numerically, Alternative 5 is much like Alternative 3 in terms of route density and the reduction of cross-country travel. There are no differences in route density (0.0 miles/sq.

mile) of potential habitat. Cross-country or unrestricted travel would be limited to purposes allowed only within 150 feet of motorized routes. Some of these changes would occur within bald eagle habitat, thus increasing habitat effectiveness over time.

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Alternative 4 would result in the highest degree of habitat effectiveness given the lowest resultant road density and lowest amount of unrestricted travel

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in bald eagle habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Habitat improvement projects (i.e. seeding, pinyon/juniper chainings and thinnings, prescribed burning, and water developments) across the Forest have helped to maintain various prey populations for bald eagles. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to bald eagle habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid bald eagle roost trees will not impact eagles themselves, but will improve forage production for potential prey species that benefit from earlier successional stages.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4, or 5 may affect bald eagle individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued bald eagle use on the

Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by enhancing mammal prey, by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Utah Prairie Dog

Basic habitat requirements for the Utah prairie dog include deep, well-drained soil, vegetation low enough to see over and through, and suitable forage. Of the nearly million and a half acres on the Forest, there are approximately 428 acres that have had relatively recent prairie dog occupation (Rodriguez, 2006) due to translocations by the UDWR. These areas are based on 4 transplant sites on the Loa and Beaver Districts. Prairie dogs may not have occurred on these sites historically. Over 98% of these acres occur on the Loa Ranger District.

Table 24. Shown is a comparison of historic Utah Prairie Dog habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Fish Lake Basin	1.4	0.8	0.8	0.8	1.0	26	0	0	0	0
Mytoge /Tidwell Slopes	0.1	0	0	0	0.1	100	3	0	0	1
Loa District Total:	**0.5**	**0.3**	**0.3**	**0.3**	**0.4**	**76**	**2**	**0**	**0**	**1**
Beaver Foothills	6.3	6.3	6.3	6.3	6.3	100	77	37	37	37
Beaver District Total:	**6.3**	**6.3**	**6.3**	**6.3**	**6.3**	**100**	**77**	**37**	**37**	**37**
Grand Total:	**0.6**	**0.3**	**0.3**	**0.3**	**0.5**	**76**	**3**	**0**	**0**	**1**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the current travel plan, there is a little over 1/3 mile of designated roads and motorized trails on the Forest that occur in the 428 acres of Utah prairie dog hidtoric habitat. Because there is currently very little designated motorized use, and the placement of these motorized routes are outside any known or historic colony this impact would not be measurable to the prairie dog. Continuation of the current condition would allow unrestricted travel on over 325 acres, or 76%, of the prairie dog habitat on the Forest (Table 24). These disturbances have the potential to interrupt foraging and impact vegetation that supports prairie dogs. Impacts to this species may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

Designated motorized roads and trails within historical prairie dog habitat on the Forest, would not change under the current plan. Because this use is already minimal, the continued use of these travel ways would not be measurable to the Utah prairie dog. Unrestricted travel at the Forest level would incrementally drop from 76% of this habitat under the current plan, down to near 1% of in Alternative 5 (Table 24). Alternatives 3 and 4 have similar proposals and improve historic habitat for the prairie dog more than any other action alternative on the Forest. These improvements would occur by reducing habitat fragmentation, and impacts to soils and vegetation that support the prairie dog. Impacts to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Loa Ranger District – Utah Prairie Dog:

The Loa District provides the majority of habitat with approximately 423 acres of previously occupied colonies. These former colonies were created from transplanted prairie dog individuals. UDWR conducted prairie dog transplants in the late 1970s through the early 1990s into what was thought to be potential habitat. Prairie dogs were last counted at these sites as late as 2001even though monitoring has continued through 2006. It is unknown at this time why these sites have not been more successful. Perhaps the habitat was not suitable for them. There is only anecdotal evidence that suggests that prairie dogs once occurred historically on the Loa Ranger District, but no records are available. The prairie dog transplant sites occur in 2 Geographical Areas, the Mytoge Mtn/Tidwell Slopes and the Fish Lake Basin.

Environmental Consequences Specific to the No Action Alternative (1)

The No Action alternative contains about one third of a mile (.33) of road within the 423 acres of prairie dog habitat. Because there is currently very little designated motorized use within prairie dog habitat, and the placement of these motorized routes are outside any known or historic colony, this impact would not be measurable to the prairie dog.

About 76% of potential prairie dog habitat on the District is administered as unrestricted travel under the current plan. Given the amount of unrestricted travel currently allowed and increased OHV popularity, implementation of this alternative would mean the risk of additional motorized routes within potentially suitable habitat. Unrestricted travel into prairie dog habitat can impact burrow systems and reduce the productivity of the soils and vegetation that supports prairie dogs. Over time, these disturbances would result in a decrease in prairie dog habitat effectiveness. Because there are currently no occupied prairie dog transplant sites, there would be no effects to individuals or populations.

Environmental Consequences Common to all Action Alternatives

There would be a 20-40% reduction in the number of miles of motorized roads and trails/square mile within potential prairie dog habitat, depending on the Action Alternative selected (Table 24). Alternatives Two through Four would have similar road density reductions, while Alternative Five would reduce road density the least of the Action Alternatives within potential habitat. Although road reductions in prairie dog

habitat have the ability to reduce habitat fragmentation and other impacts to prairie dogs, these proposed changes would not have a measurable affect, because there is currently very little designated motorized use within prairie dog habitat and the placement of these motorized routes are outside any known or historic colony.

Unrestricted travel would also be reduced by as much as 97-100%, depending on the action alternative selected (Table 24). Although Alternative Three and Four would reduce unrestricted travel more than the other alternatives, all would reduce potential impacts to burrow systems and soils and vegetation that supports prairie dog. These changed conditions would improve habitat effectiveness for the prairie dog on the District over what occurs today. Because there are currently no occupied prairie dog transplant sites, there would be no effects to individuals or populations.

Cumulative Effects

No Action Alternative

There are approximately 423 acres of potentially suitable prairie dog habitat within the CEA. Potentially suitable habitat was based on prairie dog transplants to these sites by UDWR. The footprint of the existing motorized road and trail system physically occurs on less than 1% of potential habitat, although there are no roads that occur on or immediately adjacent to any translocation site. Road density within potential habitat averages about 0.5 mile/square mile. Because current roads and trails occur on a small proportion of available habitat, with low road density levels and they do not occur on or adjacent to any translocation site, impacts from the existing transportation system would not be measurable to the prairie dog within the CEA.

Unrestricted travel is currently permitted within 76% of potential prairie dog habitat within the CEA. This action would increase the risk of additional motorized routes within potentially suitable habitat which could impact burrow systems and reduce the productivity of the soils and vegetation that supports prairie dogs. This action, when combined with past, present, and reasonably foreseeable activities, would, reduce habitat effectiveness for the Utah prairie dog within the CEA.

All Action Alternatives

There are approximately 423 acres of potentially suitable prairie dog habitat within the CEA. The footprint proposed for the motorized transportation system in each of the Action Alternatives would physically occur on much less than 1% of potential habitat due to proposed road closures. Road density within potential habitat would be reduced by 20-40% within the CEA. Similar to the No Action Alternative no motorized roads or trails would occur on or adjacent to any translocation site. The incremental improvements in potential prairie dog habitat within the CEA due to road reductions would not be measurable because existing road densities are already low and they do not occur on or immediately adjacent to any translocation site.

The Action Alternatives would reduce cross-country or unrestricted travel in potential prairie dog habitat within the CEA by 97-100%. These proposed changes would reduce potential impacts to burrow systems and soils and vegetation that supports prairie dog.

The motorized travel changes proposed in all Action Alternatives, especially proposed reductions in unrestricted travel when combined with past, present, and reasonably foreseeable actions, would improve habitat effectiveness for the Utah prairie dog within the CEA.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would have the highest number of designated motorized routes and unrestricted travel within potential prairie dog habitat compared to the other Action Alternatives. Because the current road density level is low (0.5 mile/square mile) and there are no roads on or immediately adjacent to any translocation site, impacts from the existing transportation system would be low.

On the other hand, approximately 76% of potential habitat is at risk of motorized travel expansion, which could impact burrow systems and reduce the productivity of the soils and vegetation that support prairie dogs. Because there has been no activity at any of the translocation sites since 2001, and no future translocations are planned until further evaluated, there would be no impacts to prairie dog individuals or populations under the current plan. Potential habitat is at risk of being degraded, although even these areas need to be further evaluated to see if indeed they were suitable sites. Implementation of the No Action Alternative may therefore effect, but would not likely adversely affect potential prairie dog habitat on the Loa Ranger District.

All Action Alternatives

Implementation of any of the Action Alternatives would reduce motorized travel in potential habitat by 20-40%. Incremental improvements to habitat due to road reductions would be low however, because the current road density level is already low (.5 mile/square mile) and there are no roads on or immediately adjacent to any translocation site.

Unrestricted travel would be reduced by 97-100%, depending on the alternative selected. These actions would improve habitat effectiveness for the prairie dog by reducing physical disturbances to soils, vegetation and burrow systems. The translocation sites have not been active since 2001 and there are no plans for future translocations at these sites until further evaluation. Therefore, implementation of any of these Action Alternatives may have a beneficial effect on potential prairie habitat, but these effects would be low, as transplant sites are currently unoccupied and may remain so until further evaluated.

Beaver Ranger District – Utah Prairie Dog:

Environmental Consequences Specific to the No Action Alternative (1)

The current road density within prairie dog habitat under the existing plan appears relatively high, upon closer analysis it is revealed that this includes only 5 acres of habitat on the District with an access road in a portion of it. This habitat represents a failed translocation area on the southwest portion of the District near Rocky Reservoir, the posts and wire from a fence constructed to exclude predators are still evident. The entire 5

acres is currently considered open to unrestricted travel. Unrestricted travel reduces soil productivity due to compaction and erosion and impacts vegetation that supports prairie dog populations, as well as destroying burrow systems.

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within this habitat. Over time, these would result in a decrease in Utah Prairie Dog habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

The proposed road densities within prairie dog habitat would not change from the existing travel plan with any of the action alternatives. Similar to the No Action Alternative, road density in prairie dog habitat is based on the road within the 5 acres of habitat considered historically occupied on the Beaver District. The most dramatic difference between the No Action Alternative and all the Action Alternatives is the reduction in overall unrestricted travel.

Alternative 2

There would be no changes to road density levels within prairie dog habitat under Alternative 2. No changes in road designations would take place in prairie dog habitat located in the Beaver Foothills GA. However, some of the roads would be seasonally closed from January through mid April. These proposed changes would not affect prairie dogs or their habitat, if occupied, because they would be under snow in burrows in most years during this time.

Unrestricted travel would be reduced overall within prairie dog habitat, except for the 300-foot access along designated routes would still be open for the potential of cross-country travel. Unrestricted travel would be reduced from 100% of prairie dog habitat to 78%. Overall reduction of unrestricted travel would improve habitat effectiveness for prairie dogs, especially if these sites were occupied. Unrestricted travel would be reduced under this action alternative, and reduce the potential for impacts to soil and vegetation that support prairie dog populations.

Alternative 3, 4, and 5

Alternatives 3, 4, and 5 have nearly identical proposed actions within prairie dog habitat and will be discussed together. Similar to all other alternatives, there would be no changes to road density levels within prairie dog habitat under Alternatives 3, 4, and 5. The changes in road designations proposed in Alternative 2 would be similar to those proposed in these alternatives (See Alternative 2 for seasonal road closure discussion).

Unrestricted travel would be dramatically reduced within prairie dog habitat under these alternatives. These alternatives would maintain a 150-foot access strip along designated routes, down from 300 foot wide, as in Alternatives 1 and 2. Unrestricted travel would be reduced under these alternatives, lowering the potential for impacts to soil and vegetation that support prairie dog populations thus increasing habitat effectiveness.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in Utah prairie dog habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and burrow systems.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued Utah Prairie Dog use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and burrow systems. Therefore, implementation of any of these alternatives may impact individuals or habitat but is not likely to adversely affect species viability

Richfield Ranger District – Utah Prairie Dog

There are no known Utah Prairie Dog colonies (active or historical) on the Richfield Ranger District. Therefore, no analysis was done for UPD.

Yellow-billed Cuckoo

The yellow-billed cuckoo has not been documented on the Forest to date despite survey attempts. Few areas, with potentially suitable habitat, occur across the Forest because they are restricted to riparian habitat containing cottonwood and willow overstory and dense brushy understories below 7,000 feet elevation. Through computer generated habitat models, approximately 2,664 acres have been identified as being potentially suitable on the Fishlake National Forest.

Table 25. Shown is a comparison of Yellow-billed Cuckoo habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)	Unrestricted Travel (% of area)

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	3.1	1.8	1.8	1.8	3.1	99	28	7	7	15
Clear Creek	9.0	8.5	8.9	8.5	8.9	100	33	32	29	32
West Pahvant	9.4	9.3	9.5	8.5	9.5	82	67	46	41	45
Fillmore District Total:	**9.1**	**8.9**	**9.1**	**8.3**	**9.2**	**84**	**63**	**44**	**39**	**43**
Thousand Lakes Mtn.	0	0	0	0	0	42	0	0	0	0
Loa District Total:	**0**	**0**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**
Beaver Foothills	10.7	10.4	10.4	10.3	10.4	95	45	34	34	34
Beaver River Basin	10.5	9.7	8.8	8.4	8.9	99	44	26	24	26
Piute Front	11.1	8.8	8.8	8.8	8.9	100	57	28	27	32
Beaver District Total:	**11.0**	**9.7**	**9.0**	**8.7**	**9.1**	**98**	**45**	**27**	**26**	**28**
Gooseberry/Lost Creek	16.7	16.6	16.6	16.4	16.7	98	48	32	32	31
Monroe Mtn	11.0	5.6	5.6	4.8	5.6	93	15	16	11	13
Old Woman Plateau	2.9	2.9	2.9	2.9	2.9	100	80	30	30	30
Salina Creek	21.0	19.2	19.6	19.0	20.0	68	36	26	24	25
Richfield District Total:	**17.2**	**16.2**	**16.3**	**16.0**	**16.5**	**89**	**43**	**29**	**28**	**28**
Grand Total:	**12.4**	**11.7**	**11.6**	**11.1**	**11.7**	**89**	**49**	**33**	**31**	**33**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the current travel plan, there are approximately 51 miles of designated roads and motorized trails on the Forest that occur in over 2,664 acres of potential yellow-billed cuckoo habitat. This translates to about 12.4 miles of roads per square mile. This relatively high road density may already be negatively affecting habitat effectiveness. Continuation of the current condition would also mean allowing unrestricted travel on over 2,377 acres, or 89%, of the yellow-billed cuckoo potential habitat on the Forest (Table 6 & 25). These disturbances have the potential to interrupt nesting and foraging if cuckoos were present, and impact vegetation that supports the cuckoo. Because the yellow-billed cuckoo is not known to occur on the Forest, impacts to individuals and species would not occur. Impacts to potential habitat may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

Designated motorized roads and trail density within potential yellow-billed cuckoo habitat would be incrementally reduced under each action alternative from 11.7 miles of road per square mile down to 11.1 miles of road per square mile under Alternative 4. These changes would not measurably reduce the overall high road density that occurs in potential habitat on some of the Districts. On the other hand, unrestricted travel would be reduced incrementally under each alternative from 89% of potential habitat, down to 31% of potential habitat (Table 25). These changes would improve habitat effectiveness for the yellow-billed cuckoo on the Forest over what occurs today. Because the yellow-billed cuckoo is not known to occur on the Forest, impacts to individuals and species would not occur. Impacts to potential habitat may vary by district.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District– Yellow-billed Cuckoo:

Environmental Consequences Specific to the No Action Alternative (1)

Approximately 901 acres were identified on the District, occurring in 3 Geographic Areas having low elevation riparian areas. Although there are some riparian areas that appear to perhaps have appropriate vegetative characteristics, no cuckoos have been detected during surveys. These riparian areas are often the focus of much of the recreation activity on the District because they are the primary access routes onto the Forest; they are popular for dispersed camping and for fishing. The road density averages 9.1 miles/square mile for the District with 84% of this habitat open to unrestricted travel. Given this amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in yellow-billed cuckoo habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

These action alternatives, for the most part, reduce road density and the amount of unrestricted travel. Given the level of routes that already exist in these low elevation riparian corridors, the reductions are not as dramatic as those seen for other habitats. Motorized access on the District is commonly found in narrow canyon bottoms paralleling the stream. Thus, any reduction in road density and/or unrestricted travel would contribute to more effective habitat for the yellow-billed cuckoo over time.

Alternative 2

This alternative has a somewhat lower road density than the No Action Alternative by 0.2 miles/square mile because of the road densities in Clear Creek and West Pahvant GA's. Unrestricted travel drops from 84% to 63% across the District with this alternative and would result in more effective habitat for cuckoos over time.

Alternative 3, 4 and 5

These alternatives are very close in terms of their respective changes to road density and unrestricted travel reductions. These alternatives both go further than Alt. 2 and reduce unrestricted travel down to 44%, 39%, and 43% for Alt. 3, 4, and Alt. 5, respectively. Road densities remain close to the No Action Alternative because few routes within these riparian corridors are affected by the changes proposed. Most slightly decrease road density with the exception of Alternative 5, which increases road density by 0.01 miles/ sq. mile when compared to the No Action Alternative. Thus, although there have been no confirmed sightings of yellow-billed cuckoos on the District, these action alternatives would contribute to more effective potentially suitable habitat by reducing unrestricted travel.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in yellow-billed cuckoo habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to yellow-billed cuckoo habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid impacting riparian vegetation directly or indirectly, far downstream; will not impact cuckoos themselves.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4, or 5 may affect yellow-billed cuckoo individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued yellow-billed use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Loa Ranger District – Yellow-billed Cuckoo:

Environmental Consequences Specific to No Action Alternative (1)

Approximately 46 acres were identified on the Loa Ranger District as being potentially suitable to the yellow-billed cuckoo. These areas occur in the Thousand Lakes Geographic Area (GA) in the Sand and Sulphur Creek area at the southern edge of the District. There are no designated motorized roads or trails within potentially suitable yellow-billed cuckoo habitat with this GA. As a consequence there would be no disturbances to cuckoo habitat due the current transportation system.

Approximately 19 acres are open to unrestricted travel in potential cuckoo habitat, which accounts for about 42% of the habitat. Unrestricted travel has the potential to reduce soil

productivity due to compaction and erosion and impact vegetation, decreasing the value of cuckoo habitat. The only place on the District where unrestricted travel may occur in potential cuckoo habitat already has a developed road nearby and off-road access into this area is difficult to negotiate due to rocks and vegetation. Therefore the risk of unrestricted travel use would be low and not measurably affect potential cuckoo habitat. In the remaining portion of habitat within the GA, the current plan restricts motorized travel year round and is therefore not affected by cross-country use.

Because there have been no confirmed sightings of yellow-billed cuckoos on the District, and habitat is not measurably impacted by existing use, there would be no effects to them or their habitat as a result of implementing the No Action Alternative.

Environmental Consequences Common to all Action Alternatives

Both Alternative Two and Five contain seasonally closed areas to motorized travel in the Sulphur Creek area where potentially suitable yellow-billed cuckoo habitat has been identified. Because snowmobile travel would not occur in a dense understory environment and the yellow-billed cuckoo, if it occurred in the area, would migrate away at this time, the proposed changes would have no affect on this species or habitat. There would be no other differences between the action alternatives, and so they will be discussed together in this section.

Similar to the No Action Alternative, there would be no designated roads proposed within potentially suitable yellow-billed cuckoo habitat under any of the action alternatives. The only difference between the action alternatives and the No Action Alternative is that unrestricted travel would be eliminated within potentially suitable habitat. Because it would be difficult, if not impossible to access these rocky and dense understory riparian areas anyway, the proposed reductions in unrestricted travel would not affect the yellow-billed cuckoo or potential habitat.

Cumulative Effects

No Action Alternative

Because there would be no measurable incremental effects to the yellow-billed cuckoo or its habitat with the implementation of this No Action, there would be no cumulative effects when combined with past, present and reasonably foreseeable future actions.

All Action Alternatives

Because there would be no measurable incremental effects to the yellow-billed cuckoo or its habitat with the implementation of any of the Action Alternatives, there would be no cumulative effects when combined with past, present and reasonably foreseeable future actions.

Determinations and Rationale

No Action Alternative

Because there have been no confirmed sightings of yellow-billed cuckoos on the District, and the 19 acres of habitat where unrestricted travel is allowed would not be impacted by motorized use, there would be no effects to this species or habitat as a result of implementing the No Action Alternative.

All Action Alternatives

Implementation of any Action Alternative would not affect this species or its habitat as a result of reducing unrestricted travel because these areas are not accessible to off road use anyway.

Beaver – Yellow-billed Cuckoo

Environmental Consequences Specific to the No Action Alternative (1)

Approximately 728 acres were identified on the District, occurring in 3 Geographic Areas having low elevation riparian areas. Although there are some riparian areas that appear to have appropriate vegetative characteristics, no cuckoos have been detected during surveys. These riparian areas are often the focus of much of the recreation activity on the District because they are the first areas visitors see when they enter the Forest, they are popular for dispersed camping and for fishing. The road density averages 10.5 miles/square mile for the District with 99% of this habitat open to unrestricted travel. Given this amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in yellow-billed cuckoo habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

These action alternatives both reduce road density and the amount of unrestricted travel. Given the level of routes that already exist in these low elevation riparian corridors, the reductions are not as dramatic as those seen for other habitats. Motorized access on the District is commonly located in narrow canyon bottoms paralleling the stream. Having said this, any reduction in road density along with unrestricted travel would contribute to more effective habitat for the yellow-billed cuckoo over time.

Alternative 2

This alternative has a lower road density than the No Action Alternative but higher than the other alternatives at 9.7 miles/square mile. Most of the habitat on the District is in the Clear Creek GA (540 acres) where the road density remains the highest amongst this alternative for all GA's. Unrestricted travel drops from 99% to 67% across the District with this alternative and would contribute to more effective suitable habitat for cuckoos over time.

Alternative 3 and 4

These alternatives are very close in terms of their respective changes to road density and unrestricted travel reductions. These alternatives both go further than Alt. 2 and reduce unrestricted travel down to 43% and 42% for Alt. 3 and Alt. 4, respectively. Road densities remain close to the No Action Alternative because few routes within these riparian corridors are affected by the changes proposed, except in the before mentioned Clear Creek GA where road density is reduced. Thus, although there have been no confirmed sightings of yellow-billed cuckoos on the District, these action alternatives would contribute to more effective suitable habitat by reducing unrestricted travel and to a degree, road density.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in yellow-billed cuckoo habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to yellow-billed cuckoo habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid impacting riparian vegetation directly or indirectly, far downstream; will not impact cuckoos themselves.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3 or 4 may affect yellow-billed cuckoo individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued yellow-billed use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Richfield – Yellow-billed Cuckoo

Environmental Consequences Specific to the No Action Alternative (1)

Approximately 989 acres of potential habitat identified on the District, occurring in 4 Geographic Areas having low elevation riparian areas. Although there are some riparian areas that appear to have appropriate vegetative characteristics, no cuckoos have been detected during surveys. These riparian areas are often the focus of much of the recreation activity on the District because they are the first areas visitors see when they enter the Forest, they are popular for dispersed camping and for fishing. The road density averages 17.2 miles/square mile for the District with 89% of this habitat open to unrestricted travel. Given this amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these would result in a decrease in yellow-billed cuckoo habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

These action alternatives both reduce road density and the amount of unrestricted travel. Given the level of routes that already exist in these low elevation riparian corridors, the reductions are not as dramatic as those seen for other habitats. Motorized access on the District is commonly located in narrow canyon bottoms paralleling the stream. Having said this, any reduction in road density along with unrestricted travel would contribute to more effective habitat for the yellow-billed cuckoo over time.

Alternative 2

This alternative has a lower road density than the No Action Alternative but higher than the other alternatives at 16.2 miles/square mile. Most of the habitat on the District is in the Gooseberry-Lost Creek GA (602 acres) where the road density remains the highest amongst this alternative for all GA's. Unrestricted travel drops from 89% to 43% across the District with this alternative and would contribute to more effective suitable habitat for cuckoos over time.

Alternative 3, 4 and 5

These alternatives are very close in terms of their respective changes to road density and unrestricted travel reductions. These alternatives both go further than Alt. 2 and reduce unrestricted travel down to 29%, for Alt. 3 28% for Alt. 4 and Alt. 5 respectively. Although there have been no confirmed sightings of yellow-billed cuckoos on the District, these action alternatives would contribute to more effective suitable habitat by reducing unrestricted travel and to a degree, road density.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable

habitat. Over time, these may result in a decrease in yellow-billed cuckoo habitat effectiveness.

All Action Alternatives
The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to yellow-billed cuckoo habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid impacting riparian vegetation directly or indirectly, far downstream; will not impact cuckoos themselves.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3 , 4 or 5 may affect yellow-billed cuckoo individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale
No Action Alternative
Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued yellow-billed use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives
The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel.

Region IV Sensitive Species

Peregrine Falcon
Most peregrine falcon eyries in Utah are situated on high ledges on south facing mountain cliff faces and river gorges. Cliffs are generally composed of sandstone, limestone, quartzite or volcanic materials. Typically these areas are difficult to access. Only one eyrie has been documented on the Forest to date, but over 12,000 acres of

potentially suitable breeding habitat has been identified using computer-generated models (Rodriguez, 2006).

Table 26. Shown is a comparison of Peregrine Falcon habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Canyon Range	0	0	0	0	0	31	1	0	0	0
Clear Creek	0	0	0	0	0	100	1	0	0	0
East Pahvant	0	0	0	0	0	36	0	0	0	0
West Pahvant	0	0	0	0	0	73	2	0	0	0
Fillmore District Total:	**0**	**0**	**0**	**0**	**0**	**61**	**1**	**0**	**0**	**0**
Fish Lake Hightop	0	0	0	0	0	10	0	0	0	0
Last Chance/Geyser Peak	0	0	0	0	0	76	0	0	0	0
Old Woman Plateau	0	0	0	0	0	56	0	0	0	0
Thousand Lakes Mtn.	0	0	0	0	0	8	1	0	0	0
Loa District Total:	**0**	**0**	**0**	**0**	**0**	**12**	**1**	**0**	**0**	**0**
Beaver Foothills	0	0	0	0	0	82	0	0	0	0
Beaver River Basin	0.1	0.1	0.1	0.1	0.1	86	3	1	1	0
Clear Creek	0.2	0.2	0.2	0.2	0.2	96	8	1	1	1
Indian Creek/North Creek	0	0	0	0	0	26	0	0	0	0
Piute Front	0	0	0	0	0	74	3	1	1	1
Tushar Mtns	0.1	0.1	0.1	0.1	0.1	1	1	1	1	1
Beaver District Total:	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**60**	**2**	**1**	**0**	**0**
Gooseberry/Lost Creek	0	0	0	0	0	22	1	0	0	0
Monroe Mtn	0	0	0	0	0	33	0	0	0	0
Old Woman Plateau	0	0	0	0	0	81	0	0	0	0
Salina Creek	0	0	0	0	0	5	2	0	0	0
Richfield District Total:	**0**	**0**	**0**	**0**	**0**	**43**	**1**	**0**	**0**	**0**
Grand Total:	**0**	**0**	**0**	**0**	**0**	**52**	**1**	**0**	**0**	**0**

Environmental Consequences Specific to No Action Alternative (1) - Forest

Under the current travel plan, there is currently less than 1/2 mile of designated roads or motorized trails on the Forest that occur in peregrine potential falcon habitat. Because habitat is typically difficult to access due to its steep, rocky characteristics, continuation of this action would not impact peregrine habitat. There may be impacts to nesting peregrines if use of these travel ways increases above historical use within one mile of occupied habitat.

Implementing the No Action Alternative would allow unrestricted travel on close to 6,500 acres, or 52%, of potential peregrine falcon habitat on the Forest (Table 8 & 26). Because peregrine habitat is typically difficult to access, impacts to this habitat would not likely occur. Affects to nesting peregrines may occur if unrestricted travel occurs above historical amounts within 1 mile of occupied habitat. Affects of the No Action to this

species may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

The ½ mile or less of currently designated roads and motorized trails on the Forest would be closed in all action proposals. Because peregrine habitat is typically difficult to access due to its steep, rocky characteristics, implementation of any action alternative would not measurably improve potential peregrine habitat, unless one of these roads happen to be within 1 mile of occupied habitat.

Unrestricted travel would also be reduced from 52% of habitat, down to 1% of habitat in Alternative 2. Alternative 3, 4 and 5 essentially eliminate unrestricted travel in potential peregrine habitat (Table 26). Because peregrine habitat is typically difficult to access due to its steep, rocky characteristics, implementation of any action alternative would not measurably improve potential peregrine habitat, unless reductions in unrestricted travel occurs within 1 mile of occupied habitat. Affects to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Peregrine Falcon

Environmental Consequences Specific to the No Action Alternative (1)

Based on suitable nesting habitat, 5,531 acres were identified on the Fillmore Ranger District for peregrine falcons, more than any other District. There are no known eyrie/nest locations on the Fillmore District to date. The area surrounding Scipio Reservoir and those water bodies south of Lynndyl could serve as foraging habitat for peregrines nesting on the cliff faces of the District. Due to the physical structure of peregrine falcon nesting habitat, it is not typically accessible to motorized travel. This may explain why there are few roads within any potential habitat. Continuation of this existing condition would mean allowing unrestricted travel in 61% of the area identified as suitable for peregrine nesting with the current associated road density nearly 0. This road density would be somewhat greater within the 1 mile area surrounding nests that are likely to disturb nesting activity. Potentially suitable habitat within these unrestricted areas is not typically accessible due to its steep nature. Nonetheless, the implementation of this alternative would result in a decrease of habitat effectiveness over time through the growth of motorized routes adjacent to suitable peregrine habitat.

Environmental Consequences Common to all Action Alternatives

As was mentioned above in the No Action Alternative, peregrine falcon breeding habitat is not typically accessible to motorized travel and explains why there are few designated roads or motorized trails within any potential habitat. With the implementation of each of the action alternatives, there would still be some designated roads and motorized trails within a mile or less of potentially suitable habitat, although some of the roads that were unauthorized and used in the No Action Alternative would be obliterated, while others

would be authorized for motorized use. All alternatives show a reduction in road density and substantial reduction in unrestricted travel.

Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Each of the action alternatives proposes to reduce unrestricted motorized use, which would reduce potential disruptions to peregrines if there happened to be an active eyrie in the vicinity. There are other areas containing large tracts of potentially suitable peregrine falcon nesting habitat on the District that are far from existing roads or motorized trails and that are either closed year round to motor vehicles or restricted to designated routes year round. All suitable peregrine habitat would increase in effectiveness upon the implementation of any of the action alternatives through the reduction in unrestricted travel and lower road density over time.

Alternative 2

Some of the existing roads that are within one mile of potentially suitable habitat would either remain authorized, become authorized, or would be obliterated. Implementation of alternative 2 would reduce unrestricted travel from 61% of the suitable habitat to 1%. Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Because there would be a reduction in unrestricted travel and lower road density in this alternative, there would be an increase in habitat effectiveness for the peregrine falcon through time.

Alternative 3,4 and 5

Please see the above discussion for effects common to all action alternatives. Similar to all action alternatives, these would result in fewer roads in potentially suitable habitat. The travel plan proposed in Alternatives 3, 4 and 5 would create an overall reduction in designated motorized routes within one mile of potential habitat and lower unrestricted travel to near 1% of the suitable habitat in the District on average. Because there would be a reduction in unrestricted travel and designated roads in these alternatives, there would be an increase in habitat effectiveness for the peregrine falcon through time; more so than in Alternative 2.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in peregrine suitable habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to peregrine habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid operating adjacent to suitable nesting habitat and/or during the nesting period will not impact peregrines.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4 or 5 may affect peregrine falcon individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued peregrine falcon use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives

Implementation of Alternatives 2, 3, 4 or 5 would reduce road density and unrestricted travel in suitable habitat while also restricting travel in Indian Creek (known eyrie location) to street legal only. Implementation of these alternatives would further reduce unrestricted travel and enhance the likelihood of peregrines occupying suitable nesting habitat over time by lowering the risk of disturbance. These alternatives would enhance habitat effectiveness and would likely benefit this species and their habitat.

Loa Ranger District – Peregrine Falcon:

Based on habitat mapping technology, potentially suitable nesting habitat was identified on about, 1,022 acres on the Loa Ranger District. Some of the most promising areas, where several sightings have occurred in the past, are located in the southeastern portion of the Thousand Lakes Geographic Area (GA). Although there have been documented sightings, no eyries have been documented, despite survey efforts. Due to the nature of peregrine falcon breeding habitat that most often contains steep sandstone ledges, it is not typically accessible to motorized travel, although there may be roads located above or below these physical barriers.

Environmental Consequences Specific to the No Action Alternative (1)

There are currently no designated roads or motorized trails within potentially suitable peregrine nesting habitat on the District nor are there any within a mile of the most

suitable looking habitat in the southeastern portion of the Thousand Lakes GA. There are some roads and trails within a mile of less suitable looking habitat in the southern portion of the GA however. Disturbances from motorized travel and human presence at such proximity could disrupt peregrine falcon nesting if habitat was occupied. Because there have been no peregrines documented in this area, impacts to nesting peregrine individuals from the existing motorized travel system would be low or absent.

Continuation of the No Action Alternative would theoretically allow unrestricted travel in 12% of potential nesting habitat. But these areas are not typically accessible to motorized use and the most suitable habitat, in the southeastern portion of the GA is closed year round to cross-country travel. There are some areas in the southern portion of the GA that are open to cross-country travel that fall within a mile of potential nesting habitat. Disturbances from motorized travel at such proximity could disrupt peregrine falcon nesting if habitat was occupied. Because these areas include such a small proportion of available habitat and no eyries have been documented in the area, impacts to nesting individuals would be low or absent.

Environmental Consequences Common to all Action Alternatives

There would be no designated roads or motorized trails proposed within potential breeding habitat as a result of implementing any of the action alternatives. A small proportion of roads would be closed within 1 mile of potential breeding habitat however, and would reduce noise and dust disturbances and potential disruptions if there was an active eyrie. Because there are no documented eyries near these existing roads, the proposed motorized road reductions would have a low if any beneficial affect on peregrine breeding success.

A common theme with each of the action alternatives is the reduction in unrestricted motorized travel in potential breeding habitat. Unrestricted travel includes motorized travel to dispersed camping between 150-300 feet from the road or trail. This use would be reduced by 92-100%, depending on the selected alternative (Table 26). Although unrestricted travel would be reduced or totally eliminated in potentially suitable nesting habitat in each of the action alternatives, this habitat is not typically accessible to motorized travel and would not be directly affected. What would be reduced is unrestricted motorized use, with its associated noise and human disturbances, within a mile of potential habitat. These proposed changes would improve habitat effectiveness in peregrine habitat if habitat was occupied. Because there are no documented eyries where there is potential for off road use these beneficial impacts would be low if at all.

Alternatives Two, Three and Five propose a 189-192 acre area that would be unrestricted to OHV use. This proposed open area is located on the Velvet Ridge in the southern portion of the Thousand Lakes Geographical Area, and within a mile or less of potential breeding habitat. If this potentially suitable habitat was occupied by peregrine, the proposed use may have an impact on peregrine nesting success, due to increased disturbances created by human activity. No peregrines have been documented in this area to date however, so impacts to breeding indiviudals would be low if at all.

Cumulative Effects

No Action Alternative

There are approximately 1,009 acres of habitat that that may provide potentially suitable habitat for the peregrine falcon within the 267,251 acre CEA. None of this habitat is physically occupied by roads or motorized trails under the current road management plan. Because existing motorized roads and trails would not impact habitat, there would be no contribution to cumulative effects.

Unrestricted travel can theoretically occur on about 12% (124 acres) of potential habitat within the CEA, but these areas, in reality are not accessible due to steep and rocky physical barriers. However, unrestricted travel does occur within a mile of potential habitat which can reduce habitat effectives for nesting peregrines due to noise and human disturbances if habitat was occupied. To date, there are no documented eyries in these areas. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel would incrementally decrease habitat effectiveness for these species on the District, but this contribution would be low.

All Action Alternatives

There are approximately 1,009 acres of habitat that may provide potentially suitable habitat for the peregrine falcon within 267,251 acre CEA. There would be no motorized roads or trails proposed in any of the action alternatives. Because the proposed motorized travel system would not impact habitat, there would be no contribution to cumulative effects.

All action alternatives would decrease between 92-100% the amount of unrestricted travel in potential nesting habitat within the CEA, depending on the alternative selected (Table 26). Although this habitat is not accessible to motorized travel, these actions would also reduce the risk of motorized disturbances within a mile or less of potential habitat. Alternatives Two, Three and Five on the other hand, propose large (189-192 acre) "open use" play areas within a mile of potential nesting habitat which would reduce habitat effectiveness for the peregrine falcon when combined with past, present and reasonably foreseeable future actions. Implementation of Alternatives Four on the other hand would reduce off road travel more than any other alternative and does not propose any "open use" play area within a mile of potential nesting habitat. Implementation of Alternative Four, when combined with past, present and reasonably foreseeable future actions, would improve habitat effectiveness for the peregrine falcon, if this habitat was occupied. Because there are no documented eyries in this area, the contribution to cumulative effects would be low.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would contribute to the risk of motorized expansion to within a mile of potential peregrine falcon nesting habitat in portions of the Thousand Lakes GA. Noise and the presence of humans would reduce habitat effectiveness for peregrine falcon, especially if the habitat was occupied. Because there

are currently no designated motorized roads or trails within potential peregrine breeding habitat, and there are no documented eyries within 1 mile of any designated motorized route, impacts to peregrine falcon individuals would be low if at all and not contribute to a trend towards federal listing or cause a loss of viability to the population.

Action Alternatives

Because there are currently no motorized trails within potential habitat and none are proposed in the alternatives, there would be a minimal if any beneficial impact on peregrine nesting habitat as a result of implementing any of the action alternatives. The proposed cross-country travel restrictions would however, reduce noise and human disruptions within a mile of potential habitat and improve nesting effectiveness for peregrines if habitat was occupied. On the other hand, the "open use" areas proposed for unrestricted OHV use proposed in Alternatives Two, Three and Five that are within a mile of potentially suitable nesting habitat, would have an impact on peregrines due to increased human disruptions, especially if these areas were occupied. Because there have been no documented eyries, impacts to peregrine nesting habitat effectiveness would be low, if at all and not contribute to a trend towards federal listing or cause a loss of viability.

Beaver Ranger District – Peregrine Falcon

Environmental Consequences Specific to the No Action Alternative (1)

Based on suitable nesting habitat, 2,723 acres were identified on the Beaver Ranger District for peregrine falcons (Table 8). The only known eyrie on the Forest occurs on this District near Manderfield Reservoir in Indian Creek in the Cove Mtn. GA. This eyrie has not been active since 1993, with no activity detected in the area this year either. Other observations of peregrines have been documented during the nesting period but no nests have been located. Another suspected location is in Poison Creek near Delano Peak. The area surrounding Piute Reservoir on the east side of the District could serve as foraging habitat for peregrines nesting on the cliff faces especially within the Sevier GA with 1,108 acres of suitable habitat. Although the District contains other suitable habitat not mentioned and there have been documented sightings, no other eyries have been identified, despite survey efforts. Due to the nature of peregrine falcon breeding habitat, it is not typically accessible to motorized travel. This may explain why there are few roads within any potential habitat. Continuation of this existing condition would mean allowing unrestricted travel in 60% of the area identified as suitable for peregrine nesting and some 0.1 miles of road /square mile. This road density would be somewhat greater within the 1 mile area surrounding nests that are suspected to disturb nesting activity. Potentially suitable habitat within these unrestricted areas is not typically accessible due to its steep nature. Nonetheless, the implementation of this alternative would result in a decrease of habitat effectiveness over time through the growth of motorized routes in suitable peregrine habitat.

Specific to the Eyrie in Indian Creek, continuation of the current condition would allow for unrestricted motorized use in the canyon where disturbance near the cliffs could increase.

Environmental Consequences Common to all Action Alternatives

As was mentioned above in the No Action Alternative, peregrine falcon breeding habitat is not typically accessible to motorized travel and explains why there are few designated roads or motorized trails within any potential habitat. With the implementation of each of the action alternatives, there would still be some designated roads and motorized trails within a mile or less of potentially suitable habitat, although some of the roads that were unauthorized and used in the No Action Alternative would be obliterated, while others would be authorized for motorized use. All alternatives show a reduction in road density and substantial reduction in unrestricted travel. Several small routes will be obliterated in Indian Creek (known eyrie location) in all action alternatives, thus reducing road density.

Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Each of the action alternatives proposes to reduce unrestricted motorized use, which would reduce potential disruptions to peregrines if there happened to be an active eyrie in the vicinity. There are other areas containing large tracts of potentially suitable peregrine falcon nesting habitat on the District that are far from existing roads or motorized trails and that are either closed year round to motor vehicles or restricted to designated routes year round. Most of these areas are on the east side of the District in the Sevier GA. All suitable peregrine habitat would increase in effectiveness upon the implementation of any of the action alternatives through the reduction in unrestricted travel and lower road density over time, especially in Indian Creek which changes to street legal traffic only on designated routes.

Alternative 2

Some of the existing roads that are within one mile of potentially suitable habitat would either remain authorized, become authorized, or would be obliterated. This action would create more of an overall reduction in designated motorized roads and trails near potential habitat than Alternative 1, and would reduce unrestricted travel from 60% of the suitable habitat to 2%. Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Because there would be a reduction in unrestricted travel and designated roads in this alternative, there would be an increase in habitat effectiveness for the peregrine falcon through time.

Alternative 3,4 and 5

Please see the above discussion for effects common to all action alternatives. Similar to all action alternatives, there would be fewer roads in potentially suitable habitat. The travel plan proposed in Alternatives 3, 4 and 5 would create an overall reduction in designated motorized routes within one mile of potential habitat and lower unrestricted travel to 1% or lower of the suitable habitat in the District on average. Because there would be a reduction in unrestricted travel and designated roads in these alternatives, there would be an increase in habitat effectiveness for the peregrine falcon through time; more so than in Alternative 2.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in peregrine suitable habitat effectiveness. The known eyrie on the beaver District has not been active for over 10 years but would continue to be vulnerable to disturbance from motorized vehicles through unrestricted travel.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and recreational infrastructure (roads, trails, structures, and campground development) may contribute to peregrine habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid suitable operating adjacent to suitable nesting habitat and/or during the nesting period will not impact peregrines.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4 or 5 may affect peregrine falcon individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued peregrine falcon use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives

Implementation of Alternatives 2, 3, 4 or 5 would reduce road density and unrestricted travel in suitable habitat while also restricting travel in Indian Creek (known eyrie location) to street legal only. Implementation of these alternatives would further reduce unrestricted travel and enhance the likelihood of peregrines occupying suitable nesting

habitat over time by lowering the risk of disturbance. These alternatives would enhance habitat effectiveness and would likely benefit this species and their habitat.

Richfield Ranger District – Peregrine Falcon

Environmental Consequences Specific to the No Action Alternative (1)

Based on suitable nesting habitat, 3,149 acres were identified on the Richfield Ranger District for peregrine falcons. The only known eyrie on the Forest occurs on the Beaver Ranger District, however there have been sightings in the Salina Creek drainage north of I-70. Irritated pair of peregrine falcons were reported by a wildlife biologist-fire fighter while putting out a fire off the rim near the Jack Adley Monument in the Accord Lakes area. The area surrounding Piute Reservoir on the south west side of Monroe Mountain and Otter Creek Reservoir on the south east side of Monroe Mountain could serve as foraging habitat for peregrines. Nesting on the cliff faces near these Reservoirs could exist especially within the Monroe GA because there are 1,342 acres of suitable habitat. Although the District contains other suitable habitat not mentioned and there have been documented sightings, no other eyries have been identified, despite survey efforts. Due to the nature of peregrine falcon breeding habitat, it is not typically accessible to motorized travel. This may explain why there are few roads within any potential habitat. Continuation of this existing condition would mean allowing unrestricted travel in 52% of the area identified as suitable for peregrine nesting and 0.05 miles of road /square mile. This road density would be somewhat greater within the 1 mile area surrounding nests that are suspected to disturb nesting activity. Potentially suitable habitat within these unrestricted areas is not typically accessible due to its steep nature. Nonetheless, the implementation of this alternative would result in a decrease of habitat effectiveness over time through the growth of motorized routes in suitable peregrine habitat.

Environmental Consequences Common to all Action Alternatives

As was mentioned above in the No Action Alternative, peregrine falcon breeding habitat is not typically accessible to motorized travel and explains why there are few designated roads or motorized trails within any potential habitat. With the implementation of each of the action alternatives, there would still be some designated roads and motorized trails within a mile or less of potentially suitable habitat, although some of the roads that were unclassified and used in the No Action Alternative would be obliterated, while others would be classified for motorized use. All alternatives show a reduction in road density and substantial reduction in unrestricted travel.

Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Each of the action alternatives proposes to reduce unrestricted motorized use, which would reduce potential disruptions to peregrines if there happened to be an active eyrie in the vicinity. There are other areas containing large tracts of potentially suitable peregrine falcon nesting habitat on the District that are far from existing roads or motorized trails and that are either closed year round to motor vehicles or restricted to designated routes year round. All suitable peregrine habitats would increase in effectiveness upon the

implementation of any of the action alternatives through the reduction in unrestricted travel and lower road density over time.

Alternative 2

Some of the existing roads that are within one mile of potentially suitable habitat would either remain authorized, become authorized, or would be obliterated. This action would create more of an overall reduction in designated motorized roads and trails near potential habitat than Alternative 1, resulting in 0.0 miles/square mile District wide. Implementation of alternatives 2 would reduce unrestricted travel from 43% of the suitable habitat to 1%. Although there would still be some unrestricted motorized travel in potentially suitable habitat, these areas are not typically accessible due to the nature of the habitat. Because there would be a reduction in unrestricted travel and designated roads in this alternative, there would be an increase in habitat effectiveness for the peregrine falcon through time.

Alternative 3,4 and 5

Please see the above discussion for effects common to all action alternatives. Similar to all action alternatives, there would be fewer roads in potentially suitable habitat. The travel plan proposed in Alternatives 3, 4 and 5 would create an overall reduction in designated motorized routes within one mile of potential habitat and lower unrestricted travel to 1% or lower of the suitable habitat in the District on average. Because there would be a reduction in unrestricted travel and designated roads in these alternatives, there would be an increase in habitat effectiveness for the peregrine falcon through time; more so than in Alternative 2.

Cumulative Effects

No Action Alternative

Given the amount of unrestricted travel currently allowed, implementation of this alternative would likely mean the proliferation of additional routes within suitable habitat. Over time, these may result in a decrease in peregrine suitable habitat effectiveness.

All Action Alternatives

The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to soils, vegetation and water created by cross-country travel. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

Past, present, and reasonably foreseeable activities within the cumulative effects area include grazing, recreation, timber and thinning operations, reforestation, seeding of native and non-native species, natural and prescribed fire, noxious weed control, and other special uses such as small mine claims, firewood and post cutting. Recreation-related activities include hunting, camping, day/picnic use, hiking, horseback riding, all-terrain vehicle (ATV & OHV) and snowmobiling. Recreational activities and

recreational infrastructure (roads, trails, structures, and campground development) may contribute to peregrine habitat fragmentation, habitat loss, air pollution, audio and visual disturbance, and other disturbances caused by wildlife/public interactions. Timber activities that avoid suitable operating adjacent to suitable nesting habitat and/or during the nesting period will not impact peregrines.

Therefore, the effects of the past, present, and reasonably foreseeable activities listed above in combination with Alternatives 2, 3, 4 and 5 may affect peregrine falcon individuals, but these cumulative effects would not adversely affect population numbers or viability of this species.

Determinations and Rationale

No Action Alternative

Implementation of this alternative would decrease habitat effectiveness over time due to an increase in motorized travel routes. Although there may be a decrease in habitat effectiveness over time, these effects would not limit continued peregrine falcon use on the Forest. Therefore, this alternative may impact individuals or habitat but is not likely to adversely affect species viability or population numbers.

All Action Alternatives

Implementation of Alternatives 2, 3, 4 and 5 would reduce road density and unrestricted travel in suitable habitat while also restricting travel in Indian Creek (known eyrie location) to street legal only. Implementation of these alternatives would further reduce unrestricted travel and enhance the likelihood of peregrines occupying suitable nesting habitat over time by lowering the risk of disturbance. These alternatives would enhance habitat effectiveness and would likely benefit this species and their habitat.

Spotted Bat & Townsend's Big-eared Bat

Both the spotted and Townsend's big-eared bat are considered rare on the Forest. To date, the spotted bat is only suspected, while the Townsend's big-eared bat has only been documented on the Fillmore Ranger District where they have been found using abandoned mines. Moths are their primary prey, which are foraged along forest edges, openings and around open water. Foraging areas do not appear to be a limiting factor on the Forest.

The most limiting factor for these bats is the shortage of suitable roosting sites. Although the big-eared bat will roost in old buildings, caves and mine shafts, both species will use rock crevices on steep rock faces. The spotted bat is found in relatively remote undisturbed areas, suggesting they may be sensitive to human disturbances. Through computer generated habitat modeling, potentially suitable roosting habitat was identified on the Forest. Approximately 11,568 acres of potential habitat occurs for these bat species on the Forest (Table 9) Rodriguez (2006). Roosting habitat for these bats on the Forest is typically difficult to access by motorized vehicles due its rocky and steep terrain. Besides habitat alteration by mining or construction activities, human disturbance to roosting bats usually takes the form of rock climbing activities or spelunking (cave/mine exploration).

Table 27. Shown is a comparison of Spotted Bat & Townsend's Big-eared Bat habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Canyon Range	0	0	0	0	0	31	1	0	0	0
Clear Creek	0	0	0	0	0	100	1	0	0	0
East Pahvant	0	0	0	0	0	36	0	0	0	0
West Pahvant	0	0	0	0	0	73	2	0	0	0
Fillmore District Total:	**0**	**0**	**0**	**0**	**0**	**61**	**1**	**0**	**0**	**0**
Fish Lake Hightop	0	0	0	0	0	100	0	0	0	0
Last Chance/Geyser Peak	0	0	0	0	0	76	0	0	0	0
Old Woman Plateau	0	0	0	0	0	100	0	0	0	0
Thousand Lakes Mtn.	0	0	0	0	0	9	1	0	0	0
Loa District Total:	**0**	**0**	**0**	**0**	**0**	**13**	**1**	**0**	**0**	**0**
Beaver Foothills	0	0	0	0	0	82	0	0	0	0
Beaver River Basin	0.1	0.1	0.1	0.1	0.1	87	3	1	1	0
Clear Creek	0.2	0.2	0.2	0.2	0.2	96	8	1	1	1
Indian Creek/North Creek	0	0	0	0	0	28	0	0	0	0
Piute Front	0	0	0	0	0	80	3	1	1	1
Tushar Mtns	0.6	0.6	0.6	0.6	0.6	6	6	4	4	4
Beaver District Total:	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**74**	**3**	**1**	**1**	**0**
Gooseberry/Lost Creek	0	0	0	0	0	22	1	0	0	0
Monroe Mtn	0	0	0	0	0	33	0	0	0	0
Old Woman Plateau	0	0	0	0	0	81	0	0	0	0
Salina Creek	0	0	0	0	0	6	2	0	0	0
Richfield District Total:	**0**	**0**	**0**	**0**	**0**	**44**	**1**	**0**	**0**	**0**
Grand Total:	**0**	**0**	**0**	**0**	**0**	**55**	**1**	**0**	**0**	**0**

Environmental Consequences Specific to No Action Alternative (1) - Forest

Under the current travel plan, there are few (less than 0.1 miles/sq mile) designated roads and motorized trails on the Forest that occur in potential bat roosting habitat. This is due to the poor accessibility to these sites. Continued use of existing travel ways would therefore not impact potential bat roosting habitat.

Implementation of the current travel plan would allow for unrestricted travel in over 6,417 acres, or 55%, of potential bat roosting habitat on the Forest (Table 27). Because roosting sites are not accessible to motorized use, these disturbances would not likely impact roosting habitat. Affects to these bat species may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

Areas that are currently open to cross-country or unrestricted motorized travel contribute very little to the disruption of potential bat roosting habitat, because it is largely not accessible to motorized vehicles. Therefore the changes proposed in the action

alternatives that would reduce unrestricted travel Forest wide from 55% under the No Action to 1% or less in the Action Alternatives, change very little the likelihood of disturbances to bat roosting habitat. Thus, there would be no impacts to the spotted bat and Townsend's big-eared bat as a result of implementing the action alternatives. Affects to these bat species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Spotted Bat and Townsend's Big-eared Bat

Environmental Consequences Specific to the No Action Alternative (1)

The spotted and Townsend's big-eared bat roost in habitat that is typically cliffy, rocky and difficult to access by motorized travel. Approximately 5,528 acres of potentially suitable habitat was identified on the District. There have been past mining activities on the Fillmore District, which has resulted in creating roosting habitat, as these bat species occasionally use these mine entrances. To both protect the public and allow for continued bat use, many of the accessible mine openings are being fitted with grates over the openings. Implementation of the No Action Alternative would allow the continued use of unrestricted travel in 61% of potential habitat. However, most bat roosting habitat (cliffs) occurs in areas not accessible to motorized travel. Therefore, implementation of the No Action Alternative would have no impact on the spotted bat or the Townsend's big-eared bat roosting habitat.

Environmental Consequences Common to all Action Alternatives

Impacts from current travel plan areas open to cross-country or unrestricted travel are not resulting in a decrease in potential bat roosting habitat effectiveness, due to poor accessibility. Thus, those changes proposed in the action alternatives that would reduce the number of acres in unrestricted travel from 3,373 acres presently (61%of suitable) down to less than 1% of the suitable habitat, would not measurably affect potential roosting habitat effectiveness. Therefore, there would be no impacts to the spotted bat or Townsend's big-eared bat as a result of implementing any of the action alternatives on the Fillmore District.

Cumulative Effects

Because there were no incremental effects to the spotted bat and Townsend's big-eared bat as a result of implementing Alternative 1, 2, 3, 4 or 5, there would be no cumulative effects to these sensitive species.

Determinations and Rationale

There were no effects to the spotted bat and Townsend's big-eared bat, because there would be no impacts to potentially suitable roosting habitat. Therefore, there would be no affects to these bat species the District as a result of implementing Alternative 1, 2, 3, 4 or 5.

Loa Ranger District Spotted Bat and Townsend's Big-eared Bat:

Environmental Consequences Specific to the No Action Alternative (1)

The spotted and Townsend's big-eared bat roost in habitat that is typically steep, rocky and difficult to access by motorized travel. This may explain why under the current motorized travel plan there are no designated or undesignated motorized roads or trails within potential bat roosting habitat. Although unrestricted travel might theoretically occur on 118 acres of potential habitat, in reality this habitat is not accessible to motorized use and would not be impacted as a result of implementing the No Action Alternative.

Environmental Consequences Common to all Action Alternatives

Similar to the No Action Alternative there are no designated or undesignated motorized roads or trails within potential bat roosting habitat due its steep rocky terrain. Although unrestricted travel would be reduced from 118 acres currently (the No Action Alternative), in reality this habitat is not accessible to motorized use and would not be impacted as a result of implementing any of the Action Alternatives.

Cumulative Effects

There were no incremental effects to the spotted bat and Townsend's big-eared bat as a result of implementing the No Action Alternative or any of the Action Alternatives, therefore there would be no cumulative effects to these species when combined with past, present and reasonably foreseeable actions.

Determinations and Rationale

No impacts would occur to spotted or Townsend's bat individuals or potential roosting habitat with the implementation of the No Action Alternative or any of the Action Alternatives because roosting habitat is inaccessible to motorized travel.

Beaver Ranger District – Spotted Bat and Townsend's Big-eared Bat

Environmental Consequences Specific to the No Action Alternative (1)

The spotted and Townsend's big-eared bat roost in habitat that is typically cliffy, rocky and difficult to access by motorized travel. Approximately 2,169 acres of potentially suitable habitat was identified on the District. There have been past mining activities on the Beaver District, which has resulted in creating roosting habitat, as these bat species occasionally use these mine entrances. To both protect the public and allow for continued bat use, these mine openings are being fitted with grates over the openings. Implementation of the No Action Alternative would allow the continued use of unrestricted travel in 74% of potential habitat. However, most bat roosting habitat (cliffs) occurs in areas not accessible to motorized travel. Therefore, implementation of the No Action Alternative would have no impact on the spotted bat or the Townsend's big-eared bat roosting habitat.

Environmental Consequences Common to all Action Alternatives

Impacts from current travel plan areas open to cross-country or unrestricted travel are not resulting in a decrease in potential bat roosting habitat effectiveness, due to poor accessibility. Thus, those changes proposed in the action alternatives that would reduce the number of acres in unrestricted travel from 1,605 acres presently (74% of suitable) down to 20 acres or 1% of the suitable habitat, would not affect potential roosting habitat

effectiveness. Therefore, there would be no impacts to the spotted bat or Townsend's big-eared bat as a result of implementing any of the action alternatives on the Beaver District.

Cumulative Effects

Because there were no incremental effects to the spotted bat and Townsend's big-eared bat as a result of implementing Alternative 1, 2, 3, 4 or 5, there would be no cumulative effects to these sensitive species.

Determinations and Rationale

There were no effects to the spotted bat and Townsend's big-eared bat, because there would be no impacts to potentially suitable roosting habitat. Therefore, there would be no affects to these bat species on the Beaver Ranger District as a result of implementing Alternative 1, 2, 3, 4 or 5.

Richfield Ranger District – Spotted Bat and Townsend's Big-eared Bat

Environmental Consequences Specific to the No Action Alternative (1)

The spotted and Townsend's big-eared bat roost in habitat that is typically cliffy, rocky and difficult to access by motorized travel. Approximately 2,963 acres of potentially suitable habitat was identified on the District. There have been past mining activities on the Richfield District, which has resulted in creating roosting habitat, as these bat species occasionally use these mine, shaft entrances. Implementation of the No Action Alternative would allow the continued use of unrestricted travel in 44% of potential habitat. However, most bat roosting habitat (cliffs) occurs in areas not accessible to motorized travel. Therefore, implementation of the No Action Alternative would have no impact on the spotted bat or the Townsend's big-eared bat roosting habitat.

Environmental Consequences Common to all Action Alternatives

Impacts from current travel plan areas open to cross-country or unrestricted travel are not resulting in a decrease in potential bat roosting habitat effectiveness, due to poor accessibility. Thus, those changes proposed in the action alternatives that would reduce the number of acres in unrestricted travel from 2,963 acres presently (44% of suitable) down to 44 acres or 1% of the suitable habitat, would not affect potential roosting habitat effectiveness. Therefore, there would be no impacts to the spotted bat or Townsend's big-eared bat as a result of implementing any of the action alternatives on the Richfield District.

Cumulative Effects

Because there were no incremental effects to the spotted bat and Townsend's big-eared bat as a result of implementing Alternative 1, 2, 3, 4 or 5, there would be no cumulative effects to these sensitive species.

Determinations and Rationale

There were no effects to the spotted bat and Townsend's big-eared bat, because there would be no impacts to potentially suitable roosting habitat. Therefore, there would be

no affects to these bat species on the Beaver Ranger District as a result of implementing Alternative 1, 2, 3, 4 or 5.

Northern Goshawk

The northern goshawk is associated with coniferous and mixed conifer forests throughout much of the Northern Hemisphere. Goshawks seem to prefer older-aged, dense forests on north to east facing aspects, with moderate to low slopes, often times near water. The goshawk preys on numerous forest dwelling small mammals and birds. Snags, down dead and variable sized trees are important habitat attributes to support a variety of prey species. Based on vegetation mapping, approximately 394,428 acres of potentially suitable nesting habitat were identified on the Fishlake National Forest. This estimate may be high, as site specific attributes were not available at this scale. Although some of these acres may be of only marginal quality due to site specific needs, our knowledge of historic and currently active goshawk nesting territories fit within the general areas predicted for potentially suitable habitat.

Nest distance from established roads on the Fishlake Forest range between less than 50 feet to a mile and half. The average distance is about 1,500 feet. How goshawks respond to motorized traffic is difficult to predict but based on monitoring experience on the Fishlake, it appears to depend on the individual bird or what it has become accustomed to. Nests next to an established road may be successful because the travel ways are not heavily used, motorized use patterns have been well established, and/or the disturbances are not directed at the nest itself.

Table 28. Shown is a comparison of Northern Goshawk habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Clear Creek	1.7	1.7	1.7	1.5	1.7	88	16	9	8	9
East Pahvant	0.4	0.3	0.4	0.3	0.3	84	4	2	2	2
West Pahvant	0.5	0.4	0.4	0.3	0.4	62	5	3	2	2
Fillmore District Total:	**0.5**	**0.5**	**0.5**	**0.3**	**0.4**	**65**	**5**	**3**	**2**	**2**
Fish Lake Basin	1.2	1.2	1.1	1.1	1.2	22	1	0	0	0
Fish Lake Hightop	0.9	0.6	0.8	0.5	0.8	22	7	4	3	4
Gooseberry/Lost Creek	1.2	0.8	1.1	1.1	1.1	43	10	7	7	7
Last Chance/Geyser Peak	1.7	0.9	1.0	0.9	1.1	69	12	6	5	6
Mytoge /Tidwell Slopes	0.9	0.6	0.6	0.6	0.7	80	7	3	3	4
Old Woman Plateau	1.1	0.9	0.9	0.8	1.0	100	12	6	5	6
Thousand Lakes Mtn.	1.3	1.0	1.0	0.6	1.1	4	11	5	3	4
Loa District Total:	**1.1**	**0.8**	**0.8**	**0.6**	**0.9**	**44**	**8**	**4**	**3**	**4**
Beaver Foothills	0.6	0.5	0.5	0.3	0.6	80	6	3	1	3
Beaver River Basin	2.0	1.7	1.7	1.6	1.8	60	16	8	8	8
Clear Creek	1.5	1.0	1.1	1.1	1.2	61	11	6	6	6
Indian Creek/North Creek	0.3	0.1	0.1	0.1	0.1	28	2	1	1	1

Piute Front	0.8	0.6	0.6	0.6	0.6	55	6	3	3	3
Tushar Mtns	0.5	0.3	0.3	0.3	0.3	3	4	2	2	2
Beaver District Total:	**1.0**	**0.8**	**0.8**	**0.7**	**0.8**	**49**	**8**	**4**	**4**	**4**
Fish Lake Hightop	0.6	0.3	0.3	0.3	0.3	9	5	2	2	2
Gooseberry/Lost Creek	1.1	0.9	0.9	0.7	1.0	23	10	5	4	5
Monroe Mtn	1.2	1.0	1.0	0.7	1.0	70	13	6	4	5
Old Woman Plateau	2.0	1.1	1.1	0.8	1.1	84	14	6	5	7
Salina Creek	0.7	0.5	0.5	0.4	0.5	4	6	3	2	3
Richfield District Total:	**1.2**	**0.9**	**0.9**	**0.7**	**0.9**	**52**	**11**	**5**	**4**	**5**
Grand Total:	**1.0**	**0.8**	**0.8**	**0.6**	**0.8**	**51**	**8**	**4**	**3**	**4**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the current travel plan, there are about 608 miles of designated roads and motorized trails on the Forest that occur in the 394,427 acres of potential goshawk habitat. This equates to an open road density of 1.0 mile per square mile of habitat (Table 10 & 28). Roads and motorized trails contribute to habitat fragmentation and decrease productive lands that support goshawk prey. Current Forest road density levels appear to have a low impact on goshawk habitat effectiveness. Differences may occur at the district level, where road density levels may be high in localized areas.

Continuation of the current condition would allow cross-country travel on 201,949 acres, some 51% of goshawk potential habitat on the Forest. This action would allow some unrestricted travel in potential habitat. Effects from unrestricted travel are difficult to evaluate, as it is difficult to monitor the frequency and intensity of this use. The continuation of use on these unrestricted routes would decrease habitat effectiveness. Impacts to this species may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

There would be few changes to the number of designated roads and motorized trails proposed in the action alternatives. At the Forest level, road density would drop by 0.2-0.4 miles of roads per square mile. These changes would not measurably improve habitat effectiveness for the goshawk, except where roads are permanently closed in localized areas having high-density levels, or where a specific road or trail is contributing to poor goshawk nesting success.

Unrestricted travel would be reduced incrementally under each alternative from 51% of potential habitat under the No Action Alternative, to 8% in Alternative 2, to 4% in Alternative 3 and 5, and down to 3% in Alternative 4 (Table 28). Overall, these changes would improve habitat effectiveness for the goshawk by reducing the potential risk of expanded travel ways into goshawk home range territories. Affects of this action to this species may vary by district. For more details specific to the district level, see District headings below.

<u>The following disclosure of effects will be displayed by Ranger District:</u>

Fillmore Ranger District – Northern Goshawk

Environmental Consequences Specific to the No Action Alternative (1)

There are numerous roads and trails (43 miles) within potentially suitable goshawk habitat under the existing travel plan. Some of these roads and trails were not formally constructed or authorized as being a part of the designated roads or motorized trail system. Motorized travel into northern goshawk home range territories, fragments habitat and can reduce its effectiveness by permanently reducing productive lands that support goshawk prey. It is unknown at what level road density becomes an issue concerning nesting success. On the Fillmore Ranger District, known goshawk territories occur in potentially suitable habitat with road densities between 1.7 and 0.4 miles of road per square mile within the GA. It is unknown if current road densities are affecting nesting success within known goshawk territories on the District, though it is likely that type of route and frequency of use could also play a role in disturbance at some point.

Implementation of this alternative would continue to allow unrestricted travel in 65% of potentially suitable habitat, near known goshawk territories, and in potential habitat where surveys have not been conducted. In most cases, cross-country travel does not occur through dense forested stands where goshawks tend to nest. However, this activity does occur on occasion, especially when vehicles begin using foot and horse trails, or pushing trails into new areas. User created trails within goshawk home range territories tend to increase habitat fragmentation, create noise disturbances and impacts to soils and plants that support goshawk prey, reducing overall habitat effectiveness. This activity currently has minimal impacts on known goshawk nest territories on the District. However, over time, the expansion of unauthorized routes will decrease habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Few roads would be permanently closed in any of the action alternatives within potential goshawk habitat on the District as indicated in the table above. Overall, road density is highest in *Alternative 2* and *Alternative 3,* lower in *Alterative 5,* and lowest in *Alternative 4* compared to the No Action Alternative. Although reductions in road density would reduce fragmentation and impacts to soil and vegetation that support goshawks, and their prey, these changes would be minor, and not have a measurable beneficial impact on habitat effectiveness. Impacts to habitat would decrease the most where road closures are proposed near known or historic goshawk territories or in areas where localized road density levels are the highest. The proposed seasonal and over snow closures proposed in the action alternatives would not have any impact on the goshawk, as most of these areas are outside potential nesting habitat.

As indicated in the table above, unrestricted motorized travel would decline in each of the action alternatives from 65% of potential goshawk habitat in the No Action Alternative, down to as low as 2% of potential goshawk habitat in *Alternatives 4* and *5*. Reductions in unrestricted motorized travel would reduce the potential risk of ever expanding motorized travel into potential habitat and thus, improve habitat effectiveness. Implementation of any of these action alternatives would therefore have a beneficial impact on goshawk individuals and habitat.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce goshawk habitat effectiveness by allowing unrestricted travel into portions of goshawk habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through goshawk territories and potential habitat would continue to decrease habitat effectiveness across the District. The combination of these uses and their effects on habitat for goshawk prey would decrease prey species habitat effectiveness as well over time.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel across the District and within goshawk territories. The No Action alternative current allows unrestricted travel within 65% of potential goshawk habitat. All alternatives would decrease this impact to range between 5% and 2%. Therefore, implementation of any action alternative in combination with past, present and reasonably foreseeable future actions in combination with the discontinued use of unrestricted travel through goshawk territories and suitable habitat would increase habitat effectiveness across the District. The combination of these changes and their effects on habitat for goshawk prey would improve habitat effectiveness for prey species over time as well.

Determinations and Rationale

No Action Alternative

The risk of increased disturbances to nesting goshawk and increased fragmentation and impacts to soil and water that supports goshawk prey would occur as a result of unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for the goshawk and its prey. Implementation of Alternative 1 may therefore affect potential goshawk habitat and individuals on the District, but it would not lead towards federal listing or cause a loss of viability to the population.

Alternative 2

Implementation of Alternative 2 would decrease the number of designated roads and motorized trails near known goshawk territories. This action would decrease habitat fragmentation and reduce motorized disturbances in these areas. Road reductions in combination with less unrestricted motorized travel would improve habitat effectiveness for the goshawk.

Alternative 3,4 and 5

Implementation of Alternative 3, 4 or 5 would result in essentially the same number of designated roads near known goshawk territories as Alternative 2; while these alternatives would permit less unrestricted travel than Alternative 2. Far less unrestricted travel, as compared to the no action, would reduce the potential risk of expanding motorized travel into potential habitat and improve habitat effectiveness over time.

Loa District – Northern Goshawk:

Environmental Consequences Specific to the No Action Alternative (1)

Within the estimated 90,493 acres of potentially available habitat there are about 149 miles of roads and trails on the Loa Ranger District under the existing travel plan. The road density within this area is on average about 1.1 miles of road/sq mi and impacts less than 1% of potential habitat. Most of these roads are classified and have been long established, while there are others that were not formally constructed or classified as being a part of the designated roads or motorized trail system.

Motorized travel into goshawk home range territories can fragment habitat and reduce its effectiveness by impacting soils and vegetation that support goshawk prey. It is unknown at what level road density becomes an issue concerning nesting success. There are no known goshawk territories that occur where localized road densities are greater than 4 miles of road per square mile, while all known nests appear to occur in areas where the localized road density is at or below 2-3 miles/square mile. All nests that have been selected by goshawks occur within less than a mile of a road, the closest being 250 feet and the average distance about 1/3 mile. Based on monitoring experience goshawk nesting success appears to be more related to prey densities, weather patterns and structural habitat changes rather than impacts from the current use of the motorized transportation system. There are some localized areas within potential habitat that exceeds 2-3 miles/sq mi. It is unknown if the areas that currently have high road densities are preventing future goshawk occupation, but these impacts are considered low, as high road density areas are generally small and/or localized where adjacent habitat is available.

Implementation of this alternative would continue to allow unrestricted travel in over 40% of potentially suitable habitat. In most cases, cross-country travel does not occur through dense forested stands where goshawks tend to nest. However, this activity does occur on occasion, especially when motorized vehicles begin using foot and horse trails, or pushing trails into new areas. User created trails within goshawk home range territories can increase habitat fragmentation, create noise disturbances and impacts to soils and plants that support goshawk prey, reducing overall habitat effectiveness. This activity currently has minimal impacts on known goshawk nest territories on the District, but over time, the potential for expansion of unrestricted routes would decrease habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Implementation of the Action Alternatives would close some designated and undesignated motorized roads and trails in potential goshawk breeding habitat. These actions would reduce road density by 18-45%, depending on the selected alternative compared to the No Action Alternative. Alternative Four would reduce more, and Alternative Five would reduce less than any other action alternative (Table 28). Although reductions in road density would generally reduce habitat fragmentation and impacts to soil and vegetation that support goshawks, impacts would decrease the most where road closures are proposed near known or historic goshawk territories or in areas where localized road density levels exceed 2-3 miles of road/square mile. Alternative Two would obliterate more roads near existing goshawk territories than any other

alternative. Because the current road densities in existing territories do not appear to be impacting nesting success, based on annual monitoring experience, the improvements in habitat effectiveness as a result of implementing any of the Action Alternatives would be low.

As indicated in Table 28, unrestricted motorized travel would decline by as much as 81-93%, depending on the alternative selected, compared to the No Action Alternative. Reductions in unrestricted or cross-country travel would reduce the risk of motorized expansion into potential habitat over what is permitted today, which would reduce habitat fragmentation and disturbances to soil and water that support prey. Implementation of Alternative Four would reduce the risk of unrestricted travel into potential habitat more than any other alternative.

Cumulative Effects

No Action Alternative

There are approximately 90,492 acres of potentially suitable habitat within the 267,251 acre Cumulative Effects Area (CEA). The footprint of existing motorized roads and trails physically occupies less than 1% of this habitat. Road density in potential goshawk breeding habitat within the CEA is on average 1.1 miles/square mile. Impacts to goshawks under the current action, specific to the Loa Ranger District, are considered low at this time as road density in known goshawk nesting habitat does not appear to be impacting nesting success. Furthermore, less than 1% of potential habitat within the CEA is impacted by roads or motorized trails under the current road management plan.

Under the No Action Alternative, unrestricted travel is allowed in over 40% of potential goshawk habitat within the CEA. This use is not typically an issue on the District at this time, as these areas are generally difficult to access due to forested conditions. But over time, with increased OHV popularity, there would be an increased risk of motorized travel expansion into potential goshawk habitat. As a result, habitat effectiveness would decline with the degradation of soils and vegetation that support prey, and disruptions to nesting goshawks. Implementation of the No Action Alternative would therefore incrementally contribute to cumulative impacts to goshawk habitat and individuals, when combined with past, present and reasonably foreseeable future actions on the District.

Action Alternatives

There are approximately 90,492 acres of potentially suitable habitat within the 267,251 acre CEA. The motorized system proposed in the action alternatives would physically occupy about 0.5% or less of potential habitat within the CEA. Since some roads would be closed under these actions, road density would be reduced by 18-45%, depending on the alternative selected (Table 28). Unrestricted travel would additionally be reduced by 81-93% within the CEA compared to the No Action Alternative. Although impacts to goshawks from road density and unrestricted travel under the current travel plan are considered low at this time, all action alternatives would reduce the risk of habitat fragmentation and disturbances to goshawk and their prey. Implementation of all Action Alternatives in combination with past, present and reasonably foreseeable future actions would therefore improve habitat effectiveness across the District for the northern goshawk.

Determinations and Rationale

No Action Alternative

Impacts to goshawks and their habitat under the current action, specific to the Loa Ranger District, is considered low at this time as road density and off road use in known goshawk habitat is not a present issue. Over time, however, habitat effectiveness would decrease with increased OHV popularity and risk of expansion into over 40% of potential goshawk habitat. Impacts would include increased habitat fragmentation, degradation of soils and vegetation that support prey, and disruptions to nesting goshawks. Implementation of the No Action Alternative would affect goshawk habitat and individuals, but because these impacts are currently low, it would not contribute to a trend towards federal listing or cause a loss of viability to the population.

Action Alternatives

Although impacts to goshawks from road density and unrestricted travel under the current travel plan are considered low at this time, all Action Alternatives would decrease road density and future risks of unrestricted travel form 40% of potential habitat down to 8% or less of potential habitat. These reductions would reduce the risk of habitat fragmentation and disturbances to goshawk and their prey. Implementation of all Action Alternatives would improve habitat effectiveness for the northern goshawk and not lead to a trend toward federal listing or cause a loss of viability to the population.

Beaver Ranger District – Northern Goshawk

Environmental Consequences Specific to the No Action Alternative (1)

There are numerous roads and trails (196 miles) within potentially suitable goshawk habitat under the existing travel plan. Some of these roads and trails were not formally constructed or authorized as being a part of the designated roads or motorized trail system. Motorized travel into northern goshawk home range territories, fragments habitat and can reduce its effectiveness by permanently reducing productive lands that support goshawk prey. It is unknown at what level road density becomes an issue concerning nesting success. On the Beaver Ranger District, known goshawk territories occur in potentially suitable habitat with road densities between 2.0 and 0.8 miles of road per square mile within the GA. Current road densities do not appear to be affecting nesting success within known goshawk territories on the District, because 2 of the 3 known nests are in the Beaver River Basin GA, which has the highest road density on the District within suitable habitat.

Implementation of this alternative would continue to allow unrestricted travel in 49% of potentially suitable habitat, near known goshawk territories, and in potential habitat where surveys have not been conducted. In most cases, cross-country travel does not occur through dense forested stands where goshawks tend to nest. However, this activity does occur on occasion, especially when vehicles begin using foot and horse trails, or pushing trails into new areas. User created trails within goshawk home range territories tend to increase habitat fragmentation, create noise disturbances and impacts to soils and plants that support goshawk prey, reducing overall habitat effectiveness. This activity

currently has minimal impacts on known goshawk nest territories on the District. However, over time, the expansion of unauthorized routes will decrease habitat effectiveness.

Environmental Consequences Common to all Action Alternatives

Few roads would be permanently closed in any of the action alternatives within potential goshawk habitat on the District as indicated in the table above. Overall, road density is lowest in *Alternative 4* (0.7 mi/sq mi) and somewhat lower in *Alternatives 2, 3 and 5* (0.8 mi/sq mi) as compared to the No Action Alternative (1.0 mi/sq mi). Although reductions in road density would reduce fragmentation and impacts to soil and vegetation that support goshawks, and their prey, these changes would be minor, and not have a measurable beneficial impact on habitat effectiveness. Impacts to habitat would decrease the most where road closures are proposed near occupied or historic goshawk territories or in areas where localized road density levels are the highest. *Alternative 4* would obliterate more roads near existing goshawk territories than any other alternative. The proposed seasonal and over snow closures proposed in the action alternatives would not have any impact on the goshawk, as most of these areas are outside potential nesting habitat.

As indicated in the table above, unrestricted motorized travel would decline in each of the action alternatives from 49% of potential goshawk habitat in the No Action Alternative, down to as low as 4% of potential goshawk habitat in *Alternatives 3* through *5*. Reductions in unrestricted motorized travel would reduce the potential risk of ever expanding motorized travel into potential habitat and thus, improve habitat effectiveness. *Alternatives 3,4 or 5* would reduce this risk more than any other alternative. Implementation of any of these action alternatives would therefore have a beneficial impact on goshawk individuals and habitat.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce goshawk habitat effectiveness by allowing unrestricted travel into portions of goshawk habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through goshawk territories and potential habitat would continue to decrease habitat effectiveness across the District. The combination of these uses and their effects on habitat for goshawk prey would decrease prey species habitat effectiveness over time.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel across the district and within goshawk territories. The No Action alternative current allows unrestricted travel within 49% of potential goshawk habitat. All alternatives would decrease this impact to range between 8% and 4%. Therefore, implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through goshawk territories and suitable habitat would continue to increase habitat effectiveness across the District. The

combination of these uses and their effects on habitat for goshawk prey would improve habitat for prey species over time as well.

Determinations and Rationale

No Action Alternative

The risk of increased disturbances to nesting goshawk and increased fragmentation and impacts to soil and water that supports goshawk prey would occur as a result of unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for the goshawk and its prey. Implementation of Alternative 1 may therefore affect potential goshawk habitat and individuals on the District, but it would not lead towards federal listing or cause a loss of viability to the population.

Alternatives 2

Implementation of Alternative 2 would decrease the number of designated roads and motorized trails similar to other action alternatives near goshawk territories. This action would decrease habitat fragmentation and reduce motorized disturbances in these areas. Road reductions in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for the goshawk.

Alternatives 3,4 and 5

Implementation of Alternative 3, 4 or 5 would result in essentially the same number of designated roads near known goshawk territories as Alternative 2; while these alternatives would permit less unrestricted travel than Alternative 2. Less unrestricted travel would reduce the risk of expanded motorized travel into potential habitat and improve habitat effectiveness over time.

Richfield Ranger District – Northern Goshawk

Environmental Consequences Specific to the No Action Alternative (1)

There are numerous roads and trails (183 miles) within potentially suitable goshawk habitat under the existing travel plan. Some of these roads and trails were not formally constructed or authorized as being a part of the designated roads or motorized trail system. Motorized travel into northern goshawk home range territories, fragments habitat and can reduce its effectiveness by permanently reducing productive lands that support goshawk prey. It is unknown at what level road density becomes an issue concerning nesting success. On the Richfield Ranger District, known goshawk territories occur in potentially suitable habitat with road densities between 1.1 and 0.0 miles of road per square mile within the GA. Current road densities do not appear to be affecting nesting success within known goshawk territories on the District, because 11 of the 17 known nests are in Monroe Mountain GA which has the second highest road density on the District within suitable habitat.

Implementation of this alternative would continue to allow unrestricted travel in 52% of potentially suitable habitat, near known goshawk territories, and in potential habitat where surveys have not been conducted. In most cases, cross-country travel does not occur through dense forested stands where goshawks tend to nest. However, this activity

does occur on occasion, especially when vehicles begin using foot and horse trails, or pushing trails into new areas. User created trails within goshawk home range territories tend to increase habitat fragmentation, create noise disturbances and impacts to soils and plants that support goshawk prey, reducing overall habitat effectiveness. This activity currently has minimal impacts on known goshawk nest territories on the District. However, over time, the expansion of unauthorized routes will decrease habitat effectiveness. Implementation of the No Action Alternative would therefore have the potential to impact individuals and habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Environmental Consequences Common to all Action Alternatives

Few roads would be permanently closed in any of the action alternatives within potential goshawk habitat on the District as indicated in the table above. Overall, road density is highest in *Alternative 2* and lowest in *Alternative 3, 4 and 5* compared to the No Action Alternative. Although reductions in road density would reduce fragmentation and impacts to soil and vegetation that support goshawks, and their prey, these changes would be minor, and not have a measurable beneficial impact on habitat effectiveness. Impacts to habitat would decrease the most where road closures are proposed near known or historic goshawk territories or in areas where localized road density levels are the highest. *Alternative 2* would obliterate more roads near existing goshawk territories than any other alternative. The proposed seasonal and over snow closures proposed in the action alternatives would not have any impact on the goshawk, as most of these areas are outside potential nesting habitat.

As indicated in the table above, unrestricted motorized travel would decline in each of the action alternatives from 52% of potential goshawk habitat in the No Action Alternative, down to as low as 4% of potential goshawk habitat in *Alternative 4*. Reductions in unrestricted motorized travel would reduce the potential risk of ever expanding motorized travel into potential habitat and thus, improve habitat effectiveness. *Alternative 4* would reduce this risk more than any other alternative. Implementation of any of these action alternatives would therefore have a beneficial impact on goshawk individuals and habitat, and would not lead to a trend towards federal listing or cause a loss of viability to the population.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce goshawk habitat effectiveness by allowing unrestricted travel into portions goshawk habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through goshawk territories and potential habitat would continue to decrease habitat effectiveness across the District. The combination of these uses and their effects on habitat for goshawk prey would decrease prey species habitat over time.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel across the district and within goshawk territories. The No Action alternative current allows unrestricted travel within 52% of potential goshawk habitat. All alternatives would decrease this

impact to range between 11% for Alt. #2, 5% for Alt. #3, 4% for Alt. #4 and 5 % for Alt. #5. Therefore, implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through goshawk territories and suitable habitat would continue to increase habitat effectiveness across the District. The combination of these uses and their effects on habitat for goshawk prey would improve habitat for prey species over time.

Determinations and Rationale

No Action Alternative

The risk of increased disturbances to nesting goshawk and increased fragmentation and impacts to soil and water that supports goshawk prey would occur as a result of unrestricted travel under this alternative. These impacts would decrease habitat effectiveness for the goshawk and its prey. Implementation of Alternative 1 may therefore affect potential goshawk habitat and individuals on the District, but it would not lead towards federal listing or cause a loss of viability to the population.

Alternative 2

Implementation of Alternative 2 would decrease the number of designated roads and motorized trails near known goshawk territories to a 0.9% level. This action would decrease habitat fragmentation and reduce motorized disturbances in these areas. Road reductions in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for the goshawk. Implementation of Alternative 2 may therefore impact individuals or habitat, but would not lead to a trend toward federal listing or cause a loss of viability to the population.

Alternatives 3 ,4 and 5

Implementation of Alternative 3, 4 and 5 would result in a 0.9% level, 0.7% level, 0.9% respectively of unrestricted travel ; Far less unrestricted travel would reduce the potential risk of expanded motorized travel into potential habitat and improve habitat effectiveness over time. Implementation of Alternative 3, 4 or 5 would result in essentially the same number of designated roads near known goshawk territories as Alternative 2; while these alternatives would permit less unrestricted travel than Alternative 2. Less unrestricted travel would reduce the risk of expanded motorized travel into potential habitat and improve habitat effectiveness over time.

Flammulated Owl and Three-toed Woodpecker

Flammulated owls and three-toed woodpeckers are both dependent on tree cavities for nesting purposes and are associated with mature conifer vegetation types. The biggest threat to these species is the loss of mature trees and snags for nesting habitat due to timber harvesting, fire, fire suppression and fuel wood gathering. Because they both require somewhat similar habitats, they will be evaluated together in this section. Where differences occur they will be noted. Potentially suitable habitat for both species was identified using GIS vegetation information. Approximately 394,428 acres of potentially suitable breeding and foraging habitat occurs for both species on the Forest. This estimate may be high, as site specific attributes were not available at this scale. Though

all these acres may not be considered the most ideal habitat, our knowledge of historic and currently active sites fit within the areas predicted for potentially suitable habitat.

The flammulated owl is a secondary cavity nester, which means they rely on previously excavated cavities in large diseased or dead trees. Within the mixed conifer habitat type, flammulated owls tend to be attracted to areas with large mature pines or Douglas fir with more open understories for maneuverability, although responses have been documented in spruce cover types as well. The flammulated owl is a neo-tropical migratory bird that occurs on the Forest only during the breeding period.

The three-toed woodpecker has been identified as a "priority bird species" by Utah Partners in Flight, (Parrish 2002). Three-toed woodpeckers use many forest types, but are particularly attracted to spruce forests that have been previously burned or where some level of bark beetle activity occurs. The three-toed woodpecker is a primary cavity nester who creates its own cavity. They rely on snags for feeding, perching nesting and roosting throughout their life cycle.

Table 29. Shown is a comparison of Three-toed Woodpecker and Flammulated Owl habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Clear Creek	1.7	1.7	1.7	1.5	1.7	88	16	9	8	9
East Pahvant	0.4	0.3	0.4	0.3	0.3	84	4	2	2	2
West Pahvant	0.5	0.4	0.4	0.3	0.4	62	5	3	2	2
Fillmore District Total:	**0.5**	**0.5**	**0.5**	**0.3**	**0.4**	**65**	**5**	**3**	**2**	**2**
Fish Lake Basin	1.2	1.2	1.1	1.1	1.2	22	1	0	0	0
Fish Lake Hightop	0.9	0.6	0.8	0.5	0.8	22	7	4	3	4
Gooseberry/Lost Creek	1.2	0.8	1.1	1.1	1.1	43	10	7	7	7
Last Chance/Geyser Peak	1.7	0.9	1.0	0.9	1.1	69	12	6	5	6
Mytoge /Tidwell Slopes	0.9	0.6	0.6	0.6	0.7	80	7	3	3	4
Old Woman Plateau	1.1	0.9	0.9	0.8	1.0	100	12	6	5	6
Thousand Lakes Mtn.	1.3	1.0	1.0	0.6	1.1	4	11	5	3	4
Loa District Total:	**1.1**	**0.8**	**0.8**	**0.6**	**0.9**	**44**	**8**	**4**	**3**	**4**
Beaver Foothills	0.6	0.5	0.5	0.3	0.6	80	6	3	1	3
Beaver River Basin	2.0	1.7	1.7	1.6	1.8	60	16	8	8	8
Clear Creek	1.5	1.0	1.1	1.1	1.2	61	11	6	6	6
Indian Creek/North Creek	0.3	0.1	0.1	0.1	0.1	28	2	1	1	1
Piute Front	0.8	0.6	0.6	0.6	0.6	55	6	3	3	3
Tushar Mtns	0.5	0.3	0.3	0.3	0.3	3	4	2	2	2
Beaver District Total:	**1.0**	**0.8**	**0.8**	**0.7**	**0.8**	**49**	**8**	**4**	**4**	**4**
Fish Lake Hightop	0.6	0.3	0.3	0.3	0.3	9	5	2	2	2
Gooseberry/Lost Creek	1.1	0.9	0.9	0.7	1.0	23	10	5	4	5
Monroe Mtn	1.2	1.0	1.0	0.7	1.0	70	13	6	4	5
Old Woman Plateau	2.0	1.1	1.1	0.8	1.1	84	14	6	5	7

Salina Creek	0.7	0.5	0.5	0.4	0.5	4	6	3	2	3
Richfield District Total:	**1.2**	**0.9**	**0.9**	**0.7**	**0.9**	**52**	**11**	**5**	**4**	**5**
Grand Total:	**1.0**	**0.8**	**0.8**	**0.6**	**0.8**	**51**	**8**	**4**	**3**	**4**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the current travel plan, there are 608 miles of roads and motorized trails on the Forest that occur in the 394,428 acres of potential flammulated owl and three-toed woodpecker habitat. This translates to 1 mile of road per square mile of habitat at the Forest level. Because overall road density levels are relatively low within available habitat, impacts from designated roads and motorized trails to flammulated owl and three-toed woodpecker populations are minimal. Higher road densities may occur at the District level in localized areas.

Continuation of the current condition would allow unrestricted travel on over 201,949 acres, or 51%, of the potential habitat that occurs on the Forest (Table 29). In most cases, cross-country motorized travel does not occur through dense forest environments that provide nesting habitat for the flammulated owl and three-toed woodpecker. Exceptions may occur where motorized vehicles begin using foot and horse trails, or push trails into new areas. These disturbances have the potential to fragment habitat, and impact vegetation that supports these species, reducing habitat effectiveness. Unrestricted travel would also increase access for fuel wood gathers and the removal of snags; that provide breeding habitat for the flammulated owl and three-toed woodpecker. Affects of this action to the flammulated owl and three-toed woodpecker may vary by district. For more details specific to the district level, see District headings below.

Environmental Consequences Common to all Action Alternatives - Forest

There would be few changes to the miles of roads and motorized trails proposed in the action alternatives. At the Forest level, road density would drop by 0.2-0.4 miles of roads per square mile. These changes would not measurably improve habitat effectiveness for the flammulated owl or three-toed woodpecker at the Forest level.

Unrestricted travel would be reduced incrementally under each alternative. Overall, the proposed changes would improve habitat effectiveness for the flammulated owl and three-toed woodpecker by reducing the risk of expanded travel ways into potential habitat. Affects of this action to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Flammulated Owl and Three-toed Woodpecker

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are approximately 43 miles of motorized routes on the Fillmore Ranger District that occur within 57,928 acres of potential flammulated owl and three-toed woodpecker habitat. This equates to 0.5 miles of road per square mile of habitat on the District. Because overall road density levels are low, impacts from

designated roads and motorized trails to flammulated owl and three-toed woodpecker populations are likely minimal.

Continuation of the current condition would allow unrestricted travel on approximately 37,653 acres, or 65%, of the District's potential flammulated owl and three-toed woodpecker habitat. Over time, unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species, reducing habitat effectiveness. Over time, unrestricted travel would also lead to the increase in routes for access by fuel wood gathers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Although unrestricted motorized access into flammulated owl and three-toed habitat is limited due to the timbered structure of the habitat, implementation of the No Action Alternative will reduce habitat effectiveness compared to any action alternative.

Environmental Consequences Common to all Action Alternatives

At the District level there would be minimal reductions to the number of designated roads and motorized trails proposed in the action alternatives. These road density levels would drop by 0.1-0.2 miles of roads per square mile. Though the road density changes are small and difficult to discriminate between, these incremental changes would reduce impacts to vegetation and snags that support these species, thus increasing habitat effectiveness for the flammulated owl and three-toed woodpecker over time.

Unrestricted travel would be reduced incrementally under each alternative from 65% of potential habitat under the No Action Alternative, to 5% in *Alternative 2,* 3% in *Alternative 3,* and 2% in *Alternatives 4 and 5*. These proposed changes would improve overall habitat effectiveness for the flammulated owl and three-toed woodpecker by halting the expansion of user created motorized routes that fragment habitat and accelerate the loss of snags which provide breeding habitat for these cavity dependent species. Because *Alternative 4* and 5 propose the least roads and consequently the least amount of unrestricted travel, these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than *Alternatives 2 or 3*.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would increase risks of habitat fragmentation, impacts to soils and vegetation that support prey for owls and accelerate the loss of snags by allowing continued unrestricted travel into portions of potential habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through flammulated owl and three-toed woodpecker habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within flammulated owl and three-toed woodpecker habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to prey habitat and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in

combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the flammulated owl and three-toed woodpecker across the District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports the flammulated owl and three-toed woodpecker. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of this alternative may impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Alternative 2 and 3

Implementation of Alternative 2 or 3 would reduce impacts to potential flammulated owl and three-toed woodpecker habitat that occur under the No Action Alternative. Implementation of one of these alternatives would improve habitat effectiveness and may therefore benefit the flammulated owl and three-toed woodpecker.

Alternative 4 and 5

Because Alternatives 4 or 5 propose the lowest road density and the least potential unrestricted travel, these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than Alternatives 2 or 3.

Loa Ranger District – Flammulated Owl and Three-toed Woodpecker:

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are about 149 miles of designated roads and motorized trails on the Loa Ranger District that occur within the 90,493 acres of potential flammulated owl and three-toed woodpecker habitat. Road density within this area is on average about 1.1 miles of road per square mile. The current transportation system occupies less than 1% of potential habitat on the District. High road densities can fragment habitat, increase disturbances and increase the removal of snags by fuel wood gathers. Because the proportion of habitat impacted by motorized roads and trails is low and the current road density within this area is low while higher road densities are confined to isolated areas where adjacent habitat is available, impacts to flammulated owl and three-toed woodpecker habitat and/or populations would be low with the use of the current transportation system.

Cross-country or unrestricted motorized access can increase the risk of fragmenting habitat and impacting vegetation that supports the flammulated owl and three-toed woodpecker. This use can also increase the potential for access by fuel wood gathers who remove snags which provide breeding habitat for these cavity dependent species. Continuation of the current condition would allow unrestricted travel on approximately 39,738 acres, or 44%, of the District's potential flammulated owl and three-toed

woodpecker habitat. Although this use is typically limited due to the heavy forested conditions, the risk of increased unrestricted travel expansion into potential habitat over time would decrease habitat effectiveness for the flammulated owl and three-toed woodpecker.

Environmental Consequences Common to all Action Alternatives

Because some designated and undesignated motorized roads and trails are proposed to be closed in each of the action alternatives, road density would be reduced by as much as 18-45%, depending on the selected alternative (Table 28), within potentially suitable three-toed woodpecker and flammulated owl habitat. Alternative Four proposes the lowest road density and Alternative Five the highest compared to the other Action Alternatives, but all Action Alternatives would help decrease habitat fragmentation and disturbances and improve habitat effectiveness for the flammulated owl and three-toed woodpecker populations.

In addition to reducing the number of designated motorized roads and trails, the Action Alternatives would reduce cross-country or unrestricted travel by as much as 81-93%, depending on the selected alternative (Table 28), within potential habitat. This would be accomplished by restricting travel to designated roads and trails for the most part. Alternative Four would reduce unrestricted travel the most, while Alternative Five the least compared to the other Action Alternatives. These proposed changes would improve overall habitat effectiveness for the flammulated owl and three-toed woodpecker by reducing the potential risk of expanded travel ways that fragment habitat and accelerate the loss of snags which provide breeding habitat for these cavity dependent species.

Cumulative Effects

No Action Alternative

There are approximately 90,492 acres of habitat that are available to the flammulated owl and three-toed woodpecker within the 267,251 acre CEA. Less than 1% of this habitat is physically occupied by roads or motorized trails under the current road management plan, with road densities averaging about 1.1 miles per square mile. Because the proportion of potential habitat impacted by existing roads is low and road density levels are generally low, the contribution to cumulative effects would be low.

On the other hand, unrestricted travel is currently permitted on over 40% (39,738 acres) of potential habitat within the CEA. Impacts of unrestricted motor travel into potential habitat on the District are currently considered low, as these areas are typically difficult to access due to heavy forested conditions. But over time, with increased OHV popularity, there would be increased risk of expansion into portions of potential habitat resulting in increased risks of habitat fragmentation, impacts to soils and vegetation to support prey and accelerated loss of snags. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through flammulated owl and three-toed woodpecker habitat would incrementally decrease habitat effectiveness for these species across the District.

All Action Alternatives

There are approximately 90,492 acres of habitat that are available to the flammulated owl and three-toed woodpecker within the 267,251 acre CEA. The motorized road and trail system would occupy much less than 1% of potential habitat as additional roads would be closed with each of the Action Alternatives. Road density would be reduced by about 18-45%, depending on the selected alternative (Table 28), thereby improving habitat effectiveness for the flammulated owl and three-toed woodpecker populations. Because the proportion of potential habitat impacted by existing roads is low and road density levels are generally low, the contribution to cumulative effects would be low.

The action alternatives would decrease by about 80-90% the amount of unrestricted travel potential habitat within the CEA, depending on the alternative selected (Table 28). Although Alternative Four would reduce cross-country travel more than any other Action Alternative, all actions would reduce the risk of habitat fragmentation, impacts to habitat and loss of snags by fuel wood gatherers. Implementation of the Action Alternatives in combination with past, present and reasonably foreseeable future actions would therefore improve habitat effectiveness across the District for the flammulated owl and three-toed woodpecker.

Determinations and Rationale

No Action Alternative

Because the proportion of potential habitat occupied by existing roads is low (<1%) and road density levels are low (1.1 mile/square mile) impacts from the use of the existing motorized travel system would be low. Unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of snags by fuel wood gatherers and impact vegetation that supports the flammulated owl and three-toed woodpecker. Cross-country motorized travel into potential habitat is generally limited due to poor accessibility and current impacts are considered low. Implementation of this alternative may therefore impact the flammulated owl and three-toed woodpecker but it would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Action Alternatives

Implementation of any of the action alternatives would reduce motorized routes in flammulated owl and three-toed woodpecker habitat by about 18-45% and reduce unrestricted motorized travel by about 80-90%, depending on the alternative selected. Alternative Four would reduce road density and unrestricted travel more than any alternative, but all actions would reduce risks of disturbances and improve habitat effectiveness for these species. Given that the motorized system occupies a small proportion of total available habitat and that travel into potential habitat is generally limited due to poor accessibility, improvements to habitat effectiveness would be low. Implementation of the action alternatives may therefore impact the flammulated owl and three-toed woodpecker but it would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Beaver Ranger District – Flammulated Owl and Three-toed Woodpecker

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are approximately 196 miles of motorized routes on the Beaver Ranger District that occur within the 126,616 acres of potential flammulated owl and three-toed woodpecker habitat. This translates to roughly 1 mile of road per square mile of habitat on the District. Because overall road density levels are low, impacts from designated roads and motorized trails to flammulated owl and three-toed woodpecker populations are likely minimal.

Continuation of the current condition would allow unrestricted travel on approximately 63,512 acres, or 49%, of the District's potential flammulated owl and three-toed woodpecker habitat. Unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species over time, reducing habitat effectiveness. Over time, unrestricted travel would also lead to the increase in routes for access by fuel wood gathers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Because unrestricted motorized access into flammulated owl and three-toed habitat is limited due to the timbered structure of the habitat, implementation of the No Action Alternative may impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Environmental Consequences Common to all Action Alternatives

At the District level there would be minimal reductions to the number of roads and motorized trails proposed in the action alternatives. These road density levels would drop from 0.2 to 0.3 miles of roads per square mile. *Alternative 4* proposes lower road densities than *Alternative2, 3 or 5* in potential habitat. Though these road density changes are small and difficult to discriminate between, these incremental changes would reduce impacts to vegetation and snags that support these species, thus increasing habitat effectiveness for the flammulated owl and three-toed woodpecker over time.

Unrestricted travel would be reduced incrementally under each alternative from 49% of potential habitat under the No Action Alternative, to 8% in *Alternative 2,* and to 4% in *Alternatives 3, 4 and 5*. These proposed changes would improve overall habitat effectiveness for the flammulated owl and three-toed woodpecker by halting the expansion of user created motorized routes that fragment habitat and accelerates the loss of snags which provide breeding habitat for these cavity dependent species. Because *Alternative 3,4 and 5* propose the least roads and least amount of unrestricted travel, any of these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than *Alternative 2*. Implementation of the action alternatives may therefore benefit individuals or increase habitat effectiveness.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would increase risks of habitat fragmentation, impacts to soils and vegetation to support prey for owls and accelerate the loss of snags by allowing continued unrestricted travel into portions of potential habitat.

Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through flammulated owl and three-toed woodpecker habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within flammulated owl and three-toed woodpecker habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to prey habitat and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the flammulated owl and three-toed woodpecker across the District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports the flammulated owl and three-toed woodpecker. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of this alternative may impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Alternative 2

Implementation of Alternative 2 would reduce impacts to potential flammulated owl and three-toed woodpecker habitat that occur under the No Action Alternative. Implementation of this alternative may therefore impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Alternatives 3, 4 and 5

Because Alternative 3, 4 and 5 propose lower road densities and less potential unrestricted travel, these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than Alternative 2. Implementation of one of these alternatives may therefore benefit flammulated owls and three-toed woodpeckers and increase habitat effectiveness.

Richfield Ranger District – Flammulated Owl and Three-toed Woodpecker

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are approximately 182.8 miles of motorized routes on the Richfield Ranger District that occur within the 119,392 acres of potential flammulated owl and three-toed woodpecker habitat. This means, there is approximately 1.0 mile of road per square mile of habitat on the District. Because overall road density levels are low, impacts from designated roads and motorized trails to flammulated owl and three-toed woodpecker populations are likely minimal.

Continuation of the current condition would allow unrestricted travel on approximately 119,391 acres, or 52%, of the District's potential flammulated owl and three-toed woodpecker habitat. Unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species over time, reducing habitat effectiveness. Over time, unrestricted travel would also lead to the increase in routes for access by fuel wood gathers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Because unrestricted motorized access into flammulated owl and three-toed habitat is limited due to the timbered structure of the habitat, implementation of the No Action Alternative may impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Environmental Consequences Common to all Action Alternatives

At the District level there would be minimal reductions to the number of roads and motorized trails proposed in the action alternatives. These road density levels would drop by 0.2-0.3 miles of roads per square mile. *Alternative 3, 4 and 5* propose lower road densities than *Alternative 2* in potential habitat. Though these road density changes are small and difficult to discriminate between, these incremental changes would reduce impacts to vegetation and snags that support these species, thus increasing habitat effectiveness for the flammulated owl and three-toed woodpecker over time.

Unrestricted travel would be reduced incrementally under each alternative from 52% of potential habitat under the No Action Alternative, to 11% in *Alternative 2,* and to 5% *Alternative 3* and to 4% in *Alternative* and to 5% in *Alternative 5*. These proposed changes would improve overall habitat effectiveness for the flammulated owl and three-toed woodpecker by halting the expansion of user created motorized routes that fragment habitat and accelerates the loss of snags which provide breeding habitat for these cavity dependent species. Because *Alternative 3,4, and 5* propose the least roads and least amount of unrestricted travel, either of these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than *Alternative 2*. Implementation of the action alternatives may therefore impact individuals or habitat, but would not contribute towards a trend toward federal listing or cause a loss of viability to the species.

Cumulative Effects

No Action Alternative

Implementation of No Action Alternative would increase risks of habitat fragmentation, impacts to soils and vegetation to support prey for owls and accelerate the loss of snags by allowing continued unrestricted travel into portions of potential habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through flammulated owl and three-toed woodpecker habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within flammulated owl and three-toed woodpecker habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to prey habitat and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the flammulated owl and three-toed woodpecker across the Richfield Ranger District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports the flammulated owl and three-toed woodpecker. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of this alternative may impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Alternative 2

Implementation of Alternative 2 would reduce impacts to potential flammulated owl and three-toed woodpecker habitat. Implementation of this alternative may therefore impact the flammulated owl and three-toed woodpecker, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Alternatives 3, 4 and 5

Because Alternative 3, 4 and 5 propose lower road densities and less potential unrestricted travel, these actions would improve habitat effectiveness for the three-toed woodpecker and flammulated owl more than Alternative 2. Implementation of one of these alternatives may therefore benefit flammulated owls and three-toed woodpeckers and increase habitat effectiveness.

Greater Sage Grouse

Sage grouse are dependent on sagebrush-dominated landscapes throughout their life history. Sagebrush is an essential part of sage grouse brood habitat, nesting cover and year-round diet. Potentially suitable habitat occurs on all four Districts on the Forest and includes about 540,084 acres. Known sage grouse populations occur (for at least part of the year) on the Loa, Beaver and Richfield Ranger Districts. Sage grouse use the Forest mostly for brood rearing, but it is also used somewhat as winter habitat. There are two known active leks, one each on the Richfield and Loa Districts.

Table 30. Shown is a comparison of Sage Grouse habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)	Unrestricted Travel

						(% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	4.1	2.8	2.8	2.7	3.3	98	15	9	8	11
Canyon Range	1.9	1.7	1.6	1.3	1.5	91	15	9	7	8
Clear Creek	1.8	1.4	1.5	1.1	1.5	92	14	8	6	7
East Pahvant	2.6	1.8	1.8	1.1	2.0	91	16	9	5	10
West Pahvant	1.5	1.3	1.3	1.0	1.3	74	14	7	5	7
Fillmore District Total:	**1.9**	**1.5**	**1.5**	**1.1**	**1.6**	**85**	**15**	**8**	**6**	**8**
Fish Lake Basin	5.1	4.4	4.7	4.0	4.8	30	10	7	4	7
Fish Lake Hightop	2.9	2.0	2.3	1.9	2.5	62	15	10	8	11
Gooseberry/Lost Creek	4.7	2.4	3.7	3.7	3.8	71	26	20	19	20
Last Chance/Geyser Peak	1.7	1.2	1.3	1.1	1.5	55	8	4	4	4
Mytoge /Tidwell Slopes	3.2	1.9	2.0	1.7	2.4	86	17	10	8	11
Old Woman Plateau	2.4	1.8	1.9	1.6	2.2	100	17	10	9	11
Thousand Lakes Mtn.	1.5	0.9	1.1	0.8	1.2	19	8	5	4	5
Loa District Total:	**2.4**	**1.5**	**1.7**	**1.4**	**1.9**	**58**	**12**	**7**	**6**	**8**
Beaver Foothills	1.9	1.5	1.6	1.4	1.7	86	14	7	6	7
Beaver River Basin	1.4	0.8	0.8	0.8	1.1	83	3	1	1	2
Clear Creek	2.2	1.7	1.7	1.6	1.8	95	14	7	6	7
Indian Creek/North Creek	1.6	1.0	1.0	1.0	1.0	20	9	5	5	5
Piute Front	1.6	0.9	1.0	0.9	1.0	90	9	5	5	5
Beaver District Total:	**1.8**	**1.3**	**1.3**	**1.2**	**1.4**	**89**	**12**	**6**	**6**	**6**
Fish Lake Hightop	1.7	1.5	1.5	1.5	1.5	19	7	3	3	3
Gooseberry/Lost Creek	2.8	1.8	1.9	1.3	2.0	74	17	9	6	10
Monroe Mtn	3.1	2.3	2.1	1.5	2.2	91	21	11	7	11
Old Woman Plateau	3.1	2.2	2.2	1.8	2.3	90	20	11	9	12
Salina Creek	2.5	1.9	1.9	1.6	2.0	29	13	7	6	7
Richfield District Total:	**2.9**	**2.1**	**2.1**	**1.5**	**2.1**	**80**	**19**	**10**	**7**	**10**
Grand Total:	**2.3**	**1.7**	**1.7**	**1.3**	**1.8**	**79**	**15**	**8**	**6**	**8**

Environmental Consequences Specific to No Action Alternative – Forest

Under the existing travel plan, there are approximately 1,907 miles of roads and motorized trails on the Forest that occur in potential sage grouse habitat. This use translates to an overall road density of 2.3 miles of road per square mile of habitat. Higher road density levels may occur on the Districts in localized areas. Motorized routes can fragment habitat and reduce important forage and hiding cover, thereby reducing habitat effectiveness for sage grouse. Some areas of the Forest may be more impacted by current road density levels than others. For more details specific to the district level, see District headings below.

Continuation of the current condition would allow unrestricted travel on 425,271 acres, or 79% of potential sage grouse habitat on the Forest (Table 30). Over time, unrestricted travel would lead to an increase of motorized travel in sage grouse habitat that is not accounted for in current road density models. Increased motorized use would further increase habitat fragmentation and reduce important forage and hiding cover for sage grouse. Loss of herbaceous cover would increase the risk of predation and allow disturbance to grouse during critical periods, such as breeding, brood rearing, and winter.

Implementation of the No Action Alternative would decrease sage grouse habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives - Forest

Implementation of any of the action Alternatives would reduce current road density by 0.5 to 1.0 mile per square mile. Although the overall road density is low at the Forest level, localized road densities may be high in some areas and continue to impact sage grouse habitats.

Unrestricted travel would be reduced forest-wide from 79% of potential habitat under the No Action Alternative, to 15% in Alternative 2, to 8% in Alternative 3 and 5, and down to 6% in Alternative 4 (Table 30). These proposed changes would increase habitat effectiveness for sage grouse on the Forest by reducing the risk of expanding motorized travel into suitable habitat and impacts to soils and vegetation that support grouse. Affects of this action to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Greater Sage Grouse

Approximately 203,149 acres of potential sage grouse habitat occurs on the Fillmore Ranger District, although grouse have not been documented using National Forest System lands.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 602 miles of roads and motorized trails that occur in potential sage grouse habitat under the current travel plan. This use translates to an average road density of 1.9 miles of road per square mile of habitat at the District level. Motorized travel routes can fragment habitat and reduce forage production that support grouse.

Continuation of the current condition would allow unrestricted travel on approximately 85% of potential sage grouse habitat, on the District. Over time, unrestricted travel would increase the number of motorized travel routes in sage grouse habitat. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage grouse. Loss of herbaceous cover would increase the risk of predation and allow disturbance to grouse during critical periods, such as breeding, brood rearing, summer and winter habitat. Implementation of the No Action Alternative would decrease sage grouse habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

Implementation of any of the Action Alternatives would reduce current designated roads and motorized trails from 0.3 to 0.8 miles per square mile. Seasonal closures from January to mid April, aimed at protecting wintering big game, would also lower this road density further but few, if any, grouse are considered to winter on the Forest. Although proposed road density changes are limited in potential habitat, they would improve habitat effectiveness for the sage grouse.

Unrestricted travel would be reduced in potential sage grouse habitat from 85% under the No Action Alternative to 15% in *Alternative 2*, to 8% in *Alternatives 3 & 5, and to* 6% of potential habitat in *Alternative 4*. The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to grouse and vegetation caused by unrestricted or cross-country travel. These reductions in unrestricted travel would also reduce the risk of expanding motorized routes into potential habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support and protect sage grouse populations. Implementation of any action alternatives would mean nearly the same level of road density. But because *Alternative 4* would result in less potential unrestricted travel coupled with the lowest road density, this alternative would result in the highest degree of habitat effectiveness.

These proposed changes would increase habitat effectiveness for sage grouse on the Forest by reducing the risk of expanding motorized travel into suitable habitat and impacts to soils and vegetation that support grouse.

Cumulative Effects

No Action Alternative

Implementation of No Action Alternative would allow for continued motorized route expansion in sage grouse habitat over time, leading to habitat fragmentation and impacts to soils and vegetation that support sage grouse. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage grouse on the Fillmore Ranger District.

All Action Alternatives

All action alternatives would decrease the miles of roads and motorized routes, as well as the amount of unrestricted travel, into suitable sage grouse habitat. These reductions in use would decrease habitat fragmentation and disturbance to individuals and vegetation that support this species. Implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage grouse on the Fillmore Ranger District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, disturb birds, destroy nests, and reduce forage and herbaceous production. Loss of herbaceous cover increases the risk of predation and allows disturbance to grouse during critical periods. Implementation of the No Action Alternative may therefore impact sage grouse habitat and individuals, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Alternative 2

Implementation of Alternative 2 would improve habitat effectiveness for sage grouse by reducing habitat fragmentation and impacts to forage production and hiding cover. .

Alternative 3,4 and 5

Because Alternative 3, 4 and 5 propose lower road densities and less potential unrestricted cross-country travel, these actions would improve habitat effectiveness for the sage grouse more than Alternative 2.

Loa Ranger District – Greater Sage Grouse:

Approximately 114,486 acres of potential sage grouse habitat occurs on the Loa Ranger District, based on vegetation mapping of available sagebrush habitat. The Loa District is used by sage grouse primarily for brood rearing in the summer months and a limited amount in the winter. Sage grouse populations on the Loa Ranger District are part of a much larger population primarily located on the Parker Mountain. Males on leks have been counted each year since 1967 and represent a percentage of the population. These counts have never been higher than those counted recently in 2002, 2003, 2005 and 2006, which includes leks on or adjacent to the Loa Ranger District.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 424 miles of roads and motorized trails that occur in potential sage grouse habitat under the current travel plan. This use translates to an average road density of about 2.4 miles of road per square mile of habitat at the District level. Higher road density levels occur in localized areas in the Fishlake Basin and Gooseberry Creek/Lost Creek GA's. but sage grouse use is limited or absent in these areas at the present time. The Mytoge/Tidwell Slopes GA which is used as wintering and brood rearing habitat has higher road density levels in localized areas than on average. Motorized travel ways can fragment habitat, impact soils and vegetation that support grouse, reduce hiding cover making them more prone to predation, contribute to mortality due to collisions and displace grouse to less disturbed areas.

Continuation of the current condition would allow unrestricted travel on about 66,525 acres, or 58% of potential sage grouse habitat, on the District. Unrestricted travel would increase the risk of motorized travel into sage grouse habitat that is not accounted for in known road density assessments. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage grouse. Loss of herbaceous cover would increase the risk of predation and allow disturbance to grouse during critical brood rearing, summer and winter periods. Implementation of the No Action Alternative would decrease habitat effectiveness for sage grouse over time.

Environmental Consequences Common to all Action Alternatives

Implementation of the Action Alternatives would reduce current designated roads and motorized trails in potential sage grouse habitat. These actions would reduce road densities in this area on average 21-42%. Some of the proposed permanent road closures would occur in important UDWR identified brood rearing and winter habitat. Alternative Four followed by Alternative Two would permanently reduce more roads in these sensitive areas than any other alternative. Seasonal winter closures, from January to mid

April, proposed in Alternative Five would reduce disturbances to grouse during the critical winter period. Winter closures proposed in Alternative Two are outside winter ranges and would have no affect. The proposed reductions in motorized road miles in the Action Alternatives, but especially Alternative Four and Two, would improve habitat effectiveness for the sage grouse over the current motorized travel plan.

Unrestricted travel would be reduced in potential sage grouse habitat by 79-90%, depending on the alternative selected. Alternative Four would eliminate more cross-country or unrestricted motorized travel followed by Alternative Three and Five than any other alternative (Table 30). Overall, the proposed reductions in unrestricted travel would reduce the risk of expanded motorized travel into potential habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support and protect sage grouse populations. Implementation of all action alternatives would improve habitat effectiveness. Because Alternative Four would permanently close more roads and reduce unrestricted travel in brood rearing and winter habitat, implementation of this Action Alternative would improve habitat effectiveness for the sage grouse more than any other alternative.

Cumulative Effects

No Action Alternative

There are approximately 114,485 acres of potentially suitable habitat within the 267,251 acre CEA. Existing motorized roads and trails physically occupy about 1.5% of this habitat, where road density is on average 2.4 miles/square mile. High road densities coupled with the risk of motorized expansion into 58% of potential habitat would continue to increase the risk of habitat fragmentation and impact soils and vegetation that support sage grouse populations. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage grouse on the Loa Ranger District.

All Action Alternatives

Approximately 114,485 acres of potentially suitable sage grouse habitat occurs within the 267,251 acre CEA. Because road reductions are proposed in each of the Action Alternatives, roads would occupy 1% or less of potential habitat and road densities would be reduced by 21-42%. Cross-country or unrestricted travel would also be reduced in potential sage grouse habitat by 79-90%, depending on the selected alternative. All Action Alternatives would decrease the number of designated roads and motorized trails and the amount of unrestricted travel into potential and actual sage grouse habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support this species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage grouse on the Loa Ranger District.

Determinations and Rationale

No Action Alternative

High road density levels in occupied Geographical Areas coupled with the opportunities for unrestricted travel into large portions of potential habitat would increase the risk of

motorized travel into sage grouse habitat, with a consequence of increased habitat fragmentation and reduced forage and herbaceous production. Loss of herbaceous cover increases the risk of predation and allows disturbance to grouse during critical brood rearing, summer and winter periods. Because the population counts for male grouse, including those on or adjacent to the Loa Ranger District have increased despite the current travel management plan, implementation of the No Action Alternative may impact sage grouse habitat and individuals, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for the sage grouse by reducing habitat fragmentation and impacts to forage production and hiding cover. Although all Action Alternatives would reduce the number of open roads and unrestricted travel more than the No Action Alternative, implementation of Alternative Four would reduce more in brood rearing and winter habitat than any other Action Alternative. Implementation of any of the Action Alternatives would improve habitat effectiveness for the sage grouse and have a beneficial impact on individuals and/or habitat.

Beaver Ranger District – Greater Sage Grouse:

Approximately 78,141 acres of potential sage grouse habitat occurs on the Beaver Ranger District, although grouse have not been documented in all potential areas. Based on historic information from the UDWR, the District has few documented occurrences. No known leks occur, but recently grouse have been documented using the area around Rocky Reservoir in the Beaver Foothills GA (Rodriguez, 2006). The National Forest System lands in this area are considered brood rearing habitat for the Dog Valley lek located on adjacent Bureau of Land Management ground.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 222 miles of roads and motorized trails that occur in potential sage grouse habitat under the current travel plan. This use translates to an average road density of 1.8 miles of road per square mile of habitat at the District level. Road density averages 1.9 miles per square mile in the Beaver Foothills GA where grouse are known to occur. Motorized travel routes can fragment habitat and reduce forage production that support grouse.

Continuation of the current condition would allow unrestricted travel on approximately 69,545 acres, or 89% of potential sage grouse habitat, on the District. Over time, unrestricted travel would increase the number of motorized travel routes in sage grouse habitat. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage grouse. Loss of herbaceous cover would increase the risk of predation and allow disturbance to grouse during critical periods, such as breeding, brood rearing, and winter. Implementation of the No Action Alternative would decrease sage grouse habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

Implementation of any of the Action Alternatives would reduce current designated roads and motorized trails from 0.4 to 0.6 miles per square mile. Seasonal closures from January to mid April, aimed at protecting wintering big game, would also lower this road density further but few, if any, grouse are considered to winter on the Forest. Although proposed road density changes are limited in potential habitat, they would improve habitat effectiveness for the sage grouse.

Unrestricted travel would be reduced in potential sage grouse habitat from 89% under the No Action Alternative to 12% in *Alternative 2*, to 6% in *Alternatives 3, 4* and 5. The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to grouse and vegetation caused by unrestricted or cross-country travel. These reductions in unrestricted travel would also reduce the risk of expanding motorized routes into potential habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support and protect sage grouse populations. Implementation of any action alternatives would mean nearly the same level of road density, but because *Alternative 4 or 5* would also result in less potential unrestricted travel, these alternatives would result in the highest degree of habitat effectiveness.

These proposed changes would increase habitat effectiveness for sage grouse on the Forest by reducing the risk of expanding motorized travel into suitable habitat and impacts to soils and vegetation that support grouse.

Cumulative Effects

No Action Alternative

Implementation of No Action Alternative would allow for continued motorized route expansion in sage grouse habitat over time, leading to habitat fragmentation and impacts to soils and vegetation that support sage grouse. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage grouse on the Beaver Ranger District.

All Action Alternatives

All action alternatives would decrease the miles of roads and motorized routes, as well as the amount of unrestricted travel, into suitable sage grouse habitat. These reductions in use would decrease habitat fragmentation and disturbance to individuals and vegetation that support this species. Implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage grouse on the Beaver Ranger District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, disturb birds, destroy nests, and reduce forage and herbaceous production. Loss of herbaceous cover increases the risk of predation and allows disturbance to grouse during critical periods. Implementation of the No Action

Alternative may therefore lower habitat effectiveness and impact sage grouse habitat and individuals, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Alternative 2
Implementation of Alternative 2 would improve habitat effectiveness for sage grouse by reducing habitat fragmentation and impacts to forage production and hiding cover.

Alternative 3, 4 and 5
Because Alternatives 3, 4 or 4 propose lower road densities and less potential unrestricted travel, these actions would improve habitat effectiveness for the sage grouse more than Alternative 2. Implementation of one of these alternatives may therefore benefit sage grouse.

Richfield Ranger District – Greater Sage Grouse:
Approximately 144,308 acres of potential sage grouse habitat occurs on the Richfield Ranger District, although grouse have not been documented in all potential areas. Based on historic information from the UDWR, the District has few documented occurrences. One documented lek occurs on the south end of Monroe Mountain which is part of the Monroe Mt.GA (Rodriguez, 2006). The National Forest System lands in this area are considered breeding and brood rearing habitat for the Hell's Hole lek.

Environmental Consequences Specific to the No Action Alternative (1)
There are approximately 658 miles of roads and motorized trails that occur in potential sage grouse habitat under the current travel plan. This use translates to an average road density of 2.9 miles of road per square mile of habitat at the District level. Road density averages 2.9 miles per square mile in the Monroe Mountain GA where grouse are known to occur. Motorized travel routes can fragment habitat and reduce forage production that support grouse.

Continuation of the current condition would allow unrestricted travel on approximately 144308 acres, or 80% of potential sage grouse habitat, on the District. Over time, unrestricted travel would increase the number of motorized travel routes in sage grouse habitat. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage grouse. Loss of herbaceous cover would increase the risk of predation and allow disturbance to grouse during critical periods, such as breeding, brood rearing, summer and winter habitat. Implementation of the No Action Alternative would decrease sage grouse habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives
Implementation of any of the Action Alternatives would reduce current designated roads and motorized trails from 2.9 to 1.5-2.1 mile per square mile. Seasonal closures from January to mid April, aimed at protecting wintering big game, would also lower this road density further. Seasonal closures in the Hell's Hole area of Monroe Mt. will keep vehicle traffic from driving next to the lek until mid April. Given proposed road density

changes in potential habitat, these action alternatives would improve habitat effectiveness for the sage grouse.

Unrestricted travel would be reduced in potential sage grouse habitat from 80% under the No Action Alternative to 19% in *Alternative 2*, to 10% in *Alternative 3* and to 7% of potential habitat in *Alternative 4* and to 10% of potential habitat in *Alternative 5*. The motorized travel changes proposed in all action alternatives would improve habitat effectiveness over time by reducing physical disturbances to grouse and vegetation caused by unrestricted or cross-country travel. These reductions in unrestricted travel would also reduce the risk of expanding motorized routes into potential habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support and protect sage grouse populations. Implementation of any action alternatives would mean the same level of road density. But because *Alternative 2, 3, 4 and 5* would result in less potential unrestricted travel, these alternatives would result in the highest degree of habitat effectiveness.

These proposed changes would increase habitat effectiveness for sage grouse on the Forest by reducing the risk of expanding motorized travel into suitable habitat and impacts to soils and vegetation that support grouse.

Cumulative Effects

No Action Alternative

Implementation of No Action Alternative would allow for continued motorized route expansion in sage grouse habitat over time, leading to habitat fragmentation and impacts to soils and vegetation that support sage grouse. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage grouse on the Richfield Ranger District.

All Action Alternatives

All action alternatives would decrease the miles of roads and motorized routes, as well as the amount of unrestricted travel, into suitable sage grouse habitat. These reductions in use would decrease habitat fragmentation and disturbance to individuals and vegetation that support this species. Implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage grouse on the Richfield Ranger District.

Determinations and Rationale

No Action Alternative

Over time, unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, disturb birds, destroy nests, and reduce forage and herbaceous production. Loss of herbaceous cover increases the risk of predation and allows disturbance to grouse during critical periods. Implementation of the No Action Alternative may therefore impact sage grouse habitat and individuals, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Alternative 2

Implementation of Alternative 2 would improve habitat effectiveness for sage grouse by reducing habitat fragmentation and impacts to forage production and hiding cover. Unrestricted travel would be reduced from 80% to 19%. Implementation of these alternatives would not contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Alternative 3, 4 and 5

Because Alternative 3 and 4 propose lower road densities and less potential unrestricted travel, these actions would improve habitat effectiveness for the sage grouse more than Alternative 2. Unrestricted travel would be reduced from 80% to 10% for Alternative 3 and 7% for Alternative 4 and 10% for Alternative 5. Implementation of this alternative may therefore impact sage grouse, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Implementation of one of these alternatives may therefore benefit sage grouse.

Pygmy Rabbit

Pygmy rabbits are dependent on sagebrush landscapes year-round. They are most often found in areas containing tall, dense sagebrush, which they use for food and cover. Sagebrush comprises up to 99% of their diet in winter, while grasses and forbs are also consumed during the summer months. Pygmy rabbits are seldom found in areas of sparse vegetation cover and seem reluctant to cross open spaces, or venture more than 100 meters from their burrow system. Because the pygmy rabbit is the only native leporid that digs burrows, they are generally limited to areas with deep soils. Where soils are shallow, the pygmy rabbit will use holes among rocks or abandoned badger or marmot burrows. Pygmy rabbits in Utah have been located at elevations up to 8,400 feet (Rodriguez, 2006).

Based on GIS mapping techniques, potentially suitable habitat was identified where sagebrush stands occurred at elevations at or below 8,400 feet. Potentially suitable habitat occurs on all four Districts on the Forest and includes about 52,753 acres. This estimate may be somewhat higher than actual or occupied habitat, as site-specific attributes are not available at this scale. Surveys will continue in potential habitat to determine range and distribution at the Forest level. Currently there are only two known populations documented on the Fishlake Forest. One location has been identified on the Loa Ranger District and another on the Richfield Ranger District (Rodriguez, 2006).

Table 31. Shown is a comparison of Pygmy Rabbit habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	7.1	5.8	5.8	5.7	6.3	100	33	18	18	21
Canyon Range	4.0	3.4	3.3	2.8	3.0	99	31	17	14	15

Clear Creek	6.5	4.8	5.5	4.4	5.2	98	34	23	18	22
East Pahvant	5.6	4.2	4.1	2.4	4.3	93	27	18	9	19
West Pahvant	5.6	5.2	5.0	3.4	5.1	88	41	24	17	24
Fillmore District Total:	**4.9**	**4.0**	**3.9**	**3.0**	**3.9**	**96**	**31**	**18**	**13**	**18**
Fish Lake Hightop	3.0	0	0	0	0	95	1	6	1	6
Last Chance/Geyser Peak	1.9	1.4	1.5	1.4	1.8	35	11	6	6	5
Mytoge /Tidwell Slopes	4.5	2.1	2.3	2.1	3.1	92	17	11	10	14
Old Woman Plateau	1.9	0.7	0.7	0.7	1.9	99	26	14	14	20
Thousand Lakes Mtn.	3.0	1.7	2.1	1.7	2.5	41	16	11	9	13
Loa District Total:	**2.7**	**1.6**	**1.9**	**1.6**	**2.3**	**44**	**14**	**9**	**8**	**10**
Beaver Foothills	4.1	3.5	3.6	3.4	4.0	97	25	15	14	14
Beaver River Basin	2.2	0	0	0	2.2	0	0	0	0	0
Clear Creek	5.3	4.4	4.4	4.1	4.6	99	25	15	14	15
Indian Creek/North Creek	4.2	3.0	3.0	3.0	3.0	50	43	26	26	26
Piute Front	3.5	2.0	2.1	2.0	2.4	86	18	10	10	11
Beaver District Total:	**4.3**	**3.4**	**3.4**	**3.2**	**3.7**	**94**	**23**	**14**	**13**	**13**
Gooseberry/Lost Creek	4.0	2.4	2.5	2.1	2.7	97	22	13	11	14
Monroe Mtn	4.8	3.4	3.0	2.3	3.1	98	25	14	10	14
Old Woman Plateau	2.8	1.2	1.2	1.2	1.4	100	7	5	4	5
Salina Creek	6.6	6.3	4.8	3.5	4.8	64	46	20	14	20
Richfield District Total:	**4.4**	**2.9**	**2.8**	**2.2**	**2.9**	**96**	**24**	**13**	**10**	**14**
Grand Total:	**4.3**	**3.2**	**3.3**	**2.6**	**3.4**	**85**	**25**	**15**	**12**	**15**

Environmental Consequences Specific to No Action Alternative (1) – Forest

There are currently 354 miles of roads and motorized trails within the entire 52,752 acres identified as potentially suitable for pygmy rabbits on the Forest. This use translates to an overall road density of 4.3 miles of road per square mile of habitat. Higher road density levels may occur on the Districts. Roads at high densities, fragment habitat and reduce important forage and hiding cover values, thereby reducing habitat effectiveness for the pygmy rabbit. For more details specific to the District, see District headings below.

Continuation of the current condition would allow unrestricted travel on 45,026 acres, or 85% of the potential pygmy rabbit habitat that occurs on the Forest (Table 31). Because 85% of the suitable habitat is open to unrestricted travel, this Alternative allows the greatest risk to pygmy rabbit habitat out of all the Alternatives. Risk would be in the form of trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential for increased predation.

Environmental Consequences Common to all Action Alternatives - Forest

The number of miles of motorized roads and trails within potential pygmy rabbit habitat would be reduced as much as 20-40% in the Action Alternatives, thereby reducing road density levels from 4.3 miles of road/square mile to between 2.6 -3.4 miles of road per square mile, depending on the alternative selected. Although all of the Action Alternatives would reduce impacts to soil and vegetation that supports pygmy rabbits, Alternative 4 would reduce the number of motorized roads and trails in potential habitat more than any alternative.

Unrestricted travel would likewise be reduced in suitable habitat, forest-wide from 85% in the No Action, to 12-25%, depending on the alternative selected (See Table 31). Although Alternative 4 would reduce unrestricted travel more than any other alternative, the proposed changes in each action alternative would reduce the risk of expanding motorized travel into potential habitat and decrease impacts to soils and vegetation that support pygmy rabbits. Affects of this action to this species may vary by district. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Pygmy Rabbit:
Approximately 25,829 acres of potentially suitable pygmy rabbit habitat occurs on the District. Habitat is limited because they are not found above 8,400 feet elevation in Utah and they are dependent on sagebrush ecosystems containing relatively deep soils for burrowing. Based on project level surveys, no known populations occur on the District. Surveys will be continued in potentially suitable habitat to determine the range and distribution of the pygmy rabbit on the District.

Environmental Consequences Specific to the No Action Alternative (1)
Under the current plan there are 198 miles of roads and motorized trails within the entire 25,829 acres of potentially suitable pygmy rabbit habitat on the District. This equates to 4.9 miles of road per square mile of habitat. Road density levels vary between the 5 GA's identified as having suitable habitat from 4.0 to 7.1 miles per square mile. Motorized routes and travel activity, contribute to lowering habitat effectiveness through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans hunting cottontail rabbits which can appear very similar.

Continuation of the No Action Alternative would allow unrestricted travel on 96% of the potential pygmy rabbit habitat on the District. Implementation of the No Action Alternative would decrease pygmy rabbit habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives
Implementation of any Action Alternative would incrementally reduce road density levels from 4.9 miles per square mile of habitat in the current condition, to 4.0 in *Alternative 2*, 3.9 in *Alternative*s 3 & 5, and to as low as 3.0 miles per square mile in *Alternative 4*. *Alternative 4* proposes the lowest road density by 0.9 miles per square mile lower than the next higher alternative. Seasonal road closures proposed in the action alternatives for big game winter range would result in lower road densities during the Jan. to mid-April closure.

Unrestricted travel would be reduced in suitable habitat on the District from 96% in the No Action, to 31% in *Alternative 2*, 18% in *Alternative 3 & 5*, and down to 13% in *Alternative 4*. Overall, the proposed changes in each action alternative would reduce the risk of expanding motorized travel into potential habitat and decrease impacts to soils and

vegetation that support pygmy rabbits. Reductions to unrestricted travel proposed in *Alternative 3,4 and 5,* along with lower road densities, would decrease impacts to pygmy rabbit habitat more than Alternative 2; and thus increase habitat effectiveness.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would continue to allow risks of habitat fragmentation and impacts to soils and vegetation that support the pygmy rabbit over time due to unrestricted travel. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for this sagebrush dependent species on the District.

All Action Alternatives

All action alternatives would decrease the density of roads and motorized trails and the amount of unrestricted travel into potential suitable pygmy rabbit habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support this species. Implementation of any action alternative in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the pygmy rabbit on the District.

Determinations and Rationale

No Action Alternative

Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for the pygmy rabbit by reducing the number of designated roads and unrestricted motorized use in potential habitat. These changes would reduce fragmented habitats and impacts to soils and vegetation that support the pygmy rabbit. Although Alternative 4 would reduce road density and unrestricted travel more than any other alternative, Alternative Five is the only Alternative that provides protection to rabbits and their burrow systems from over snow machines in the winter months in some areas. Implementation of any of the Action Alternatives would improve habitat effectiveness for the pygmy rabbit above the current conditions and may therefore have a beneficial impact on individuals and/or habitat.

Loa Ranger District – Pygmy Rabbit:

Approximately 10,585 acres of potentially suitable pygmy rabbit habitat has been estimated to occur on the District based on GIS mapping technology. Habitat is limited

because they are not found above 8,400 feet elevation in Utah and they are dependent on sagebrush ecosystems containing relatively deep soils for burrowing. Forest System Lands may be at the upper most extent of their elevational range, as they are more common and widespread off the Forest on lower elevation Bureau of Land Management (BLM) lands. It is possible that fewer acres are actually suitable for this species on the District than have been estimated. Surveys within potential habitat have identified one population which is located in the Mytoge/Tidwell Slope Geographical Area (GA). Validating potential habitat followed by field surveys has will continue to help define the actual range and distribution of the pygmy rabbit on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current plan there are about 44 miles of designated roads and motorized trails within potentially suitable pygmy rabbit habitat on the Loa Ranger District. Road density is on average about 2.7 miles of road per square mile of habitat (Table 31). Some geographic areas have lower road density levels (1.9), while others are much higher (4.5). Motorized travel, especially at high densities can fragment habitat, reduce forage production and predator cover, thereby reducing habitat effectiveness for the pygmy rabbit. At the local level, the square mile around the known population of pygmy rabbit, has an estimated road density value of about 2.0 miles/square mile. There are no roads through the center of this known population.

Continuation of the No Action Alternative would allow unrestricted travel on 4,676 acres, or 44%, of the potential pygmy rabbit habitat on the District. The potential risk for this additional use is not accounted for in the current road density level assessment. An increase in motorized use in potential or actual habitat would further fragment habitat and reduce important forage and hiding cover values. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative.

Environmental Consequences Common to all Action Alternatives

Implementation the Action Alternatives would reduce the number of motorized roads and trails in potential habitat by about 15-40%, depending on the alternative selected. Alternative Two and Four would eliminate more roads in the geographical area where pygmy rabbits have been found more than any other alternative. The proposed road closures would help decrease habitat fragmentation and improve herbaceous forage production and predator cover which would increase habitat effectiveness for the pygmy rabbit.

Although Alternative Five proposes to close the fewest roads than any other action alternative, this is the only alternative that proposes winter closure areas in some existing and potential pygmy rabbit habitat. These seasonal motorized travel closures would reduce the potential risk of over snow machines impacting snow tunnels used by pygmy rabbits during the winter.

Cross-country or unrestricted travel would be reduced by as much as 68-82%, depending on the selected alternative (Table 31). Alternative Four would reduce more unrestricted travel than any other alternative and Alternative Two the least. Overall, the proposed

changes in each action alternative would reduce the risk of expanded motorized travel into potential habitat and decrease impacts to soils and vegetation that support the pygmy rabbit than what occurs under the current travel plan. These actions would improve habitat effectiveness for the pygmy rabbit.

Cumulative Effects

No Action Alternative

There are approximately 10,585 acres of potentially suitable habitat for the pygmy rabbit within the CEA. Although less than 2% of this habitat is managed for motorized travel, some localized areas have fairly high road density levels. High road density coupled with unrestricted travel on about 44% of potential habitat would continue to increase risks of habitat fragmentation and impacts to soils and vegetation that support the pygmy rabbit. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for this sagebrush dependent species on the Loa Ranger District.

All Action Alternatives

There are approximately 10,585 acres of potentially suitable habitat for the pygmy rabbit within the CEA. Between 1-1.5% of this habitat would be managed for motorized travel. Road density would be reduced by 15-41%, depending on the selected alternative (Table 31). Cross-country or unrestricted travel would also be reduced in potential habitat by 68-82%. All action alternatives would decrease the number of designated roads and motorized trails and the amount of unrestricted travel into potential and actual pygmy rabbit habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support this species. Implementation of any of the action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the pygmy rabbit on the Loa Ranger District.

Determinations and Rationale

No Action Alternative

The current road density levels when combined with unrestricted travel would further increase the potential for habitat fragmentation that reduces important forage and predator cover values for the pygmy rabbit. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative. Because more favorable habitat is located south of the District on BLM lands where the pygmy rabbit is more common and widespread, and no motorized roads or trails occur through known occupied habitat, impacts of this action would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for the pygmy rabbit by reducing the number of designated roads and unrestricted motorized use in potential habitat. These changes would reduce fragmented habitats and impacts to soils and vegetation that support the pygmy rabbit. Although Alternative 4 would reduce road density and unrestricted travel more than any other alternative, Alternative Five is

the only Alternative that provides protection to rabbits and their burrow systems from over snow machines in the winter months. Implementation of any of the Action Alternatives would improve habitat effectiveness for the pygmy rabbit above the current conditions and may therefore have a beneficial impact on individuals and/or habitat.

Beaver Ranger District – Pygmy Rabbit:

Approximately 7,780 acres of potentially suitable pygmy rabbit habitat occurs on the District. Habitat is limited because they are not found above 8,400 feet elevation in Utah and they are dependent on sagebrush ecosystems containing relatively deep soils for burrowing. Based on project level surveys, no known populations occur on the District. Surveys continue in potentially suitable habitat to determine the range and distribution of the pygmy rabbit on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current plan there are 53 miles of roads and motorized trails within the entire 7,781 acres of potentially suitable pygmy rabbit habitat on the District. This equates to 4.3 miles of road per square mile of habitat. Road density levels vary between the 4 GA's identified as having suitable habitat from 2.2 to 5.3 miles per square mile. Motorized routes and travel activity contribute to lowering habitat effectiveness through risks associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans.

Continuation of the No Action Alternative would allow unrestricted travel on 94% of the potential pygmy rabbit habitat on the District. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative and would decrease habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

Implementation of any Action Alternative would incrementally reduce road density levels from 4.3 miles per square mile of habitat in the current condition, to 3.4 in *Alternative 2 & 3,* to 3.2 in *Alternative* 4, and to 3.7 miles per square mile in *Alternative 5*. *Alternative 4* proposes the lowest road density by 0.2 miles per square mile. Seasonal road closures proposed in the action alternatives for big game winter range would result in lower road densities during the Jan. to mid-April closure. Also, snowmobile closures associated with *Alternative* 5 would offer some additional protection to occupied areas from over-snow travel.

Unrestricted travel would be reduced in potential suitable habitat on the District from 94% in the No Action, to 23% in *Alternative 2*, 14% in *Alternative 3*, and down to 13% in *Alternative 4* & 5. Overall, the proposed changes in each action alternative would reduce the risk of expanding motorized travel into potential habitat and decrease impacts to soils and vegetation that support pygmy rabbits. Reductions to unrestricted cross-country travel proposed in *Alternatives 4 and 5,* along with lower road densities, would decrease impacts to pygmy rabbit habitat more than Alternative 2 or 3; and thus increase habitat effectiveness the most.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would continue to allow risks of habitat fragmentation and impacts to soils and vegetation that support the pygmy rabbit over time due to unrestricted travel. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for this sagebrush dependent species on the District.

All Action Alternatives

All action alternatives would decrease the density of roads and motorized trails and the amount of unrestricted travel into potential suitable pygmy rabbit habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support this species. Implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the pygmy rabbit on the District.

Determinations and Rationale

No Action Alternative

Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for the pygmy rabbit by reducing the number of designated roads and unrestricted motorized use in potential habitat. These changes would reduce fragmented habitats and impacts to soils and vegetation that support the pygmy rabbit. Although Alternative 4 would reduce road density and unrestricted travel more than any other alternative, Alternative Five is the only Alternative that provides protection to rabbits and their burrow systems from over snow machines in the winter months in some areas. Implementation of any of the Action Alternatives would improve habitat effectiveness for the pygmy rabbit above the current conditions and may therefore have a beneficial impact on individuals and/or habitat.

Richfield Ranger District – Pygmy Rabbit:

Approximately 8,557 acres of potentially suitable pygmy rabbit habitat occurs on the District. Habitat is limited because they are not found above 8,400 feet elevation in Utah and they are dependent on sagebrush ecosystems containing relatively deep soils for burrowing. One documented population exists on the District within the Monroe Mt. GA. A small population occurs west of Koosharem and is on the border of National

Forest System Lands and Bureau of Land Management System Lands. Surveys will be continued in potentially suitable habitat to determine the range and distribution of the pygmy rabbit on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current plan there are 58.6 miles of roads and motorized trails within the entire 8,557 acres of potentially suitable pygmy rabbit habitat on the District. This equates to 3.4 miles of road per square mile of habitat. Road density levels vary between the 4 GA's identified as having suitable habitat from 1.4 to 6.6 miles per square mile. Motorized routes and travel activity, contribute to lowering habitat effectiveness through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans.

Continuation of the No Action Alternative would allow unrestricted travel on 96% of the potential pygmy rabbit habitat on the District. Implementation of the No Action Alternative would decrease pygmy rabbit habitat effectiveness over time. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative.

Environmental Consequences Common to all Action Alternatives

Implementation of any Action Alternative would incrementally reduce road density levels from 4.4 miles per square mile of habitat in the current condition, to 2.9 in *Alternative 2 & 5, 2.8 in Alt 3 and 2.2 in Alt 4*. *Alternative 4* proposes the lowest road density by 0.6-0.7 miles per square mile lower than Alternative 2, 3, and 5. Seasonal road closures proposed in the action alternatives for big game winter range would result in lower road densities during the Jan. to mid-April closure.

Unrestricted travel would be reduced in suitable habitat on the District from 96% in the No Action, to 24% in *Alternative 2*, 13% in *Alternative 3*, and down to 10% in *Alternative 4* and back to 14% in Alt. 5. Overall, the proposed changes in each action alternative would reduce the risk of expanding motorized travel into potential habitat and decrease impacts to soils and vegetation that support pygmy rabbits. Reductions to unrestricted travel proposed in *Alternative 3 and 4 and 5* along with lower road densities, would decrease impacts to pygmy rabbit habitat more than Alternative 2; and thus increase habitat effectiveness.

Cumulative Effects

No Action Alternative

Implementation of No Action Alternative would continue to allow risks of habitat fragmentation and impacts to soils and vegetation that support the pygmy rabbit over time due to unrestricted travel. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for this sagebrush dependent species on the District.

All Action Alternatives
All action alternatives would decrease the density of roads and motorized trails and the amount of unrestricted travel into potential suitable pygmy rabbit habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support this species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the pygmy rabbit on the District.

Determinations and Rationale
No Action Alternative
Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, the loss of forage production, and the potential of increased harvest by humans. Unrestricted travel for this Alternative is 96%. Implementation of the No Action Alternative would impact potential pygmy rabbit habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives
Implementation of any of the action alternatives would improve habitat effectiveness for the pygmy rabbit by reducing the miles of roads and unrestricted motorized use in potential habitat. Unrestricted travel for these Alternatives is 24% for Alternative 2, 13% for Alternative 3 and 10% for Alternative 4 and 14 for Alternative 5.. These changes would decrease impacts to soils and vegetation that support the pygmy rabbit. Alternative 3, 4, and 5 would improve habitat effectiveness more than Alternative 2. The road from the Koosharem Cemetery to Wood Hollow runs through the known pygmy rabbit population on Monroe Mountain. No alternative restricts travel on this road at any time or season. Implementation of one of these alternatives may therefore impact individuals or habitat, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Management Indicator Species (MIS)

Mule Deer and Rocky Mountain Elk
All references to "deer" in this document refer to mule deer (*Odocoileus hemionus*), endemic to the Fishlake National Forest unless otherwise noted. Population estimates of deer throughout the Utah Division of Wildlife Resources (UDWR) Southern region, including Beaver, Fillmore, Monroe and Plateau Units have trended down since 2001 until last year. The lack of fawn recruitment was attributed to drought, cold winters, and increased predation from large mammals, habitat modifications and degradation This trend improved with 2004 population estimates up some 24% across the units mentioned previously from 57,300 in 2003 to 70,825 in 2004 (UDWR 2005). Elk herds on the Forest are actively managed by antlerless hunts in an attempt to maintain them at herd objective levels. Within the same Southern Region referenced above, elk herds have

increased some 26% since 2002 to 13,730 estimated for 2004. The antlerless permits have likewise increased from 1250 to 2145 during this same time period (UDWR 2005).

Hunting strategies and overall population objectives in Utah are made through the Regional Advisory Council and Wildlife Board process. This process has been designed to involve interested parties in public meetings, given the wide range of interests in Utah. Decisions for all hunting season bag limits, and season dates are rendered based on political as well as biological input. This process demonstrates that the Forest Service does not control hunted game species in the State of Utah; as such, some units may have site-specific areas that are significantly higher than approved herd unit numbers or some that may be slightly lower. However, current population trends of big game across the Fishlake National Forest are stable to slightly up in numbers (Rodriguez, 2006).

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DEER & ELK WINTER RANGE

The UDWR has delineated deer wintering habitat on the Fishlake National Forest. Deer habitat shapefiles (dated 07/2005) were obtained from the UDWR's website and both "high value" and "critical" winter range polygons were combined for all summaries and analyses. There are approximately 475,117 acres of deer winter range on the Forest containing some 1,360 miles of motorized routes resulting in an average of 1.8 miles of road per square mile (see Table 32).

Deer population levels within the Forest fall short of UDWR objectives and deer winter survival has been identified as an important limiting factor to recruitment and population growth. The lowering of road densities through obliteration of redundant routes and seasonal closures within winter range would help to lower stress to wintering big game, thus enhancing survival.

The UDWR has delineated elk wintering habitat on the Fishlake Forest. Elk habitat shapefiles (dated 07/2005) were obtained from the UDWR's website and both "high value", "yearlong substantial" and "critical" winter range polygons were combined for all summaries and analyses. There are approximately 545,715 acres of elk winter range on the Forest containing some 1,465 miles of motorized routes resulting in an average of 1.7 miles of road per square mile (see Table 33).

Habitat effectiveness for big game species is related to hiding cover and open road densities as defined by Lyon (1979). Hiding cover is considered forested areas capable of hiding 90% of a deer or elk at 200 feet. Hiding cover, the amount, juxtaposition, and quality of foraging habitat, habitat effectiveness, and availability of migration corridors are important components for maintaining big game numbers. Not all past studies measuring negative impacts of roads on deer were density explicit; rather the spatial arrangement of routes within various vegetative communities, degree and frequency of use, presence of other ungulates and various ecological characteristics need to be considered(de Vos et al 2003). For the purposes of this analysis, road density and unrestricted or cross-country travel within wintering habitats will be the focus.

Table 32. Shown is a comparison of deer winter habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	2.7	2.0	2.0	1.9	2.4	97	14	7	7	9
Canyon Range	2.2	1.8	1.8	1.4	1.6	90	18	9	7	8
Clear Creek	2.2	1.9	2.2	1.0	2.2	100	18	11	5	11
East Pahvant	1.5	1.1	1.0	0.5	1.0	81	11	6	3	6
West Pahvant	1.4	1.3	1.3	1.0	1.3	89	13	7	5	7
Fillmore District Total:	**1.7**	**1.4**	**1.3**	**0.9**	**1.3**	**87**	**14**	**7**	**5**	**7**
Fish Lake Hightop	2.3	1.6	2.2	1.5	2.3	91	16	11	8	12
Last Chance/Geyser Peak	1.3	1.0	1.0	0.9	1.2	48	5	3	3	2
Mytoge /Tidwell Slopes	2.5	1.3	1.6	1.2	1.8	89	11	7	5	8
Old Woman Plateau	1.8	1.5	1.5	1.4	1.8	100	16	8	8	10
Thousand Lakes Mtn.	1.2	0.7	0.8	0.6	1.0	18	6	4	3	4
Loa District Total:	**1.5**	**1.0**	**1.1**	**0.9**	**1.3**	**46**	**7**	**4**	**3**	**5**
Beaver Foothills	1.6	1.3	1.3	1.2	1.5	93	13	7	6	7
Beaver River Basin	2.5	0.7	0.7	0.7	2.5	63	0	0	0	0
Clear Creek	1.9	1.7	1.7	1.7	1.7	100	10	5	5	5
Indian Creek/North Creek	0.8	0	0	0	0.8	47	0	0	0	5
Piute Front	1.5	0.9	0.9	0.8	1.0	89	9	5	4	4
Beaver District Total:	**1.6**	**1.1**	**1.2**	**1.1**	**1.3**	**92**	**11**	**6**	**5**	**6**
Gooseberry/Lost Creek	2.6	1.8	1.9	1.5	1.9	86	15	8	6	8
Monroe Mtn	1.7	1.3	1.2	0.8	1.2	87	12	6	4	6
Old Woman Plateau	2.7	2.1	2.0	1.7	2.1	94	16	8	6	8
Salina Creek	2.1	1.6	1.6	1.3	1.6	36	13	6	5	7
Richfield District Total:	**2.2**	**1.6**	**1.6**	**1.3**	**1.7**	**73**	**14**	**7**	**5**	**7**
Grand Total:	**1.8**	**1.3**	**1.4**	**1.1**	**1.4**	**75**	**12**	**6**	**5**	**6**

Table 33. Shown is a comparison of elk wintering habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	1.7	1.2	1.2	1.2	1.4	73	6	3	3	4
Canyon Range	1.7	1.3	1.3	1.3	1.3	88	13	7	7	7
Clear Creek	1.2	1.1	1.2	1.0	1.1	92	12	6	5	6
East Pahvant	2.3	1.4	1.4	0.9	1.5	100	15	8	5	8
West Pahvant	0.9	0.8	0.8	0.5	0.8	82	8	4	3	4
Fillmore District Total:	**1.2**	**0.9**	**0.9**	**0.7**	**0.9**	**84**	**9**	**5**	**3**	**5**
Fish Lake Basin	2.1	1.8	1.9	1.5	2.0	12	6	4	2	4
Fish Lake Hightop	1.8	0.9	1.7	0.8	1.8	93	10	9	4	9
Last Chance/Geyser Peak	1.5	1.0	1.1	1.0	1.3	55	7	4	3	3
Mytoge /Tidwell Slopes	2.3	1.2	1.4	1.2	1.6	84	10	6	5	7
Old Woman Plateau	1.6	1.2	1.3	1.2	1.6	100	14	7	6	9
Thousand Lakes Mtn.	1.0	0.6	0.7	0.5	0.8	12	5	3	2	3

Loa District Total:	**1.6**	**1.0**	**1.1**	**0.9**	**1.3**	**54**	**8**	**5**	**4**	**5**
Beaver Foothills	1.9	1.5	1.5	1.4	1.7	96	14	7	7	7
Clear Creek	4.6	4.6	4.3	4.1	4.1	100	28	14	13	13
Indian Creek/North Creek	0	0	0	0	0	0	0	0	0	0
Piute Front	1.6	1.0	1.0	1.0	1.1	90	10	5	5	5
Beaver District Total:	**1.8**	**1.3**	**1.3**	**1.2**	**1.4**	**93**	**12**	**6**	**6**	**6**
Gooseberry/Lost Creek	2.3	1.6	1.7	1.2	1.7	75	14	7	5	8
Monroe Mtn	1.9	1.4	1.3	0.9	1.3	89	14	7	4	7
Old Woman Plateau	2.1	1.6	1.5	1.4	1.6	86	14	7	6	8
Salina Creek	1.8	1.4	1.4	1.1	1.4	34	11	5	4	6
Richfield District Total:	**2.0**	**1.5**	**1.5**	**1.1**	**1.5**	**72**	**13**	**7**	**5**	**7**
Grand Total:	**1.7**	**1.2**	**1.3**	**1.0**	**1.3**	**74**	**11**	**6**	**4**	**6**

Environmental Consequences Specific to the No Action Alternative (Alt 1) -Forest
Continuation of the current condition would mean allowing cross-country travel on 358,477 acres, some 75% of the deer winter range that occurs on the Forest. There is currently 1,360 miles of motorized routes within the entire 475,113 acres designated (see Table 32).

For elk, continuation of the current condition would mean allowing cross-country travel on 402,041 acres, some 74% of the winter range that occurs on the Forest. There is currently some 1,465 miles of motorized routes within the entire 545,715 acres designated for elk (see Table 33).

With 75% of deer winter range and 74% of elk winter range across the Forest open to unrestricted motorized travel, significant animal disturbance and vegetation impacts can occur during winter and spring months; especially in those areas targeted for antler shed gathering where enthusiasts can drive directly through the winter habitat in search of antlers or even chase animals in an attempt to cause antlers to drop off.

Seasonal Closures
With deer winter survival considered to be the most important limiting factor to population growth, desired improvement (controlling winter disturbance) in the current condition relating to motorized route densities led to the formation of the proposed seasonal closures.

The implementation of this Alternative would continue to allow the increase of new roads and motorized trails in big game winter range areas; as well as outright motorized disturbance to animals while on winter range caused by cross-country travel activities. Over time, there would be a decrease in habitat effectiveness for big game winter range because of unrestricted travel by allowing animal, soil and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives - Forest
For deer, all action alternatives reduce unrestricted travel from 75% on winter range down to 12%, 6%, 5% and 6% in Alt. 2, Alt. 3, Alt. 4, and Alt 5, respectively. Likewise,

route densities are reduced from 1.8 miles/square mile down to 1.4 miles/square mile for both Alt. 3 & 5, 1.3 for Alt 2 and as low as 1.1 mile/square mile for Alt. 4.

For elk, all action alternatives reduce unrestricted travel from 74% on winter range down to 11%, 6%, 4% and 6% in Alt. 2, Alt. 3, Alt. 4 and Alt 5 respectively. Likewise, route densities are reduced from 1.7 miles/square mile down to 1.3 miles/square mile for both Alt. 3 & 5, to 1.2 for Alt 2, and as far as 1.0 miles/square mile for Alt. 4.

Seasonal Closures

With deer winter survival considered to be the most important limiting factor to population growth, desired improvement (controlling winter disturbance) in the current condition relating to road densities led to the formation of the proposed seasonal closures. Associated with these action alternatives are seasonal closures on selected big game winter range routes from January 1 through April 15 to lower stress to wintering big game caused by motorized travel. For deer, road densities during this closure period on winter range will be reduced from 1.5 miles/square mile to 1.1, 1.1, 0.9 and 1.1 for Alt. 2, Alt. 3, Alt.4 and Alt 5 respectively (see Table 34). For elk, road densities during this closure period on winter range will be reduced from 1.4 miles/square mile to 1.0, 1.0, 0.8, for Alt. 2, Alt. 3, Alt.4 and Alt. 5 respectively (see Table 35). These numbers do not account for those roads made inaccessible by snow accumulation and thus are a generous estimate of route density during winter.

The implementation of any of these alternatives increase winter range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

Table 34. Shown is a comparison of road densities on deer winter habitat during the seasonal closure period: Jan.1 through April 15 on the Fishlake Forest by Ranger District and Geographic Area (GA), between alternatives.

GA Name	Road density (miles/mile^2)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	2.7	2.0	2.0	1.9	2.4
Canyon Range	2.0	1.6	1.6	1.3	1.4
Clear Creek	2.2	1.9	2.2	1.0	2.2
East Pahvant	1.5	1.1	1.0	0.5	1.0
West Pahvant	1.2	1.3	1.3	1.0	1.3
Fillmore District Total:	**1.6**	**1.3**	**1.3**	**0.9**	**1.3**
Fish Lake Hightop	2.3	1.1	1.5	1.0	1.9
Last Chance/Geyser Peak	1.3	0.6	0.6	0.6	0.6
Mytoge /Tidwell Slopes	1.7	0.8	0.9	0.8	0.9
Old Woman Plateau	1.8	0.9	0.9	0.9	0.4
Thousand Lakes Mtn.	1.0	0.5	0.7	0.5	0.7
Loa District Total:	**1.3**	**0.6**	**0.7**	**0.6**	**0.8**
Beaver Foothills	1.4	1.1	1.2	1.0	1.3
Beaver River Basin	2.5	0.7	0.7	0.7	2.5
Clear Creek	1.9	1.7	1.7	1.7	1.7
Indian Creek/North Creek	0.8	0	0	0	0.8

Piute Front	1.4	0.9	0.9	0.8	1.0
Beaver District Total:	**1.5**	**1.1**	**1.1**	**1.0**	**1.2**
Gooseberry/Lost Creek	1.2	1.2	1.2	1.2	1.3
Monroe Mtn	1.0	0.8	0.7	0.6	0.8
Old Woman Plateau	2.7	1.5	1.6	1.4	1.5
Salina Creek	1.8	1.1	1.2	1.0	1.2
Richfield District Total:	**1.5**	**1.1**	**1.1**	**1.0**	**1.1**
Grand Total:	**1.5**	**1.1**	**1.1**	**0.9**	**1.1**

Table 35. Shown is a comparison of road densities on elk winter habitat during the seasonal closure period: Jan.1 through April 15, on the Fishlake Forest by Ranger District and Geographic Area (GA), between alternatives.

GA Name	Road density (miles/mile^2)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	1.7	1.2	1.2	1.2	1.4
Canyon Range	1.7	1.3	1.3	1.3	1.3
Clear Creek	1.2	1.1	1.2	1.0	1.1
East Pahvant	2.3	1.4	1.5	0.9	1.5
West Pahvant	0.8	0.8	0.8	0.5	0.8
Fillmore District Total:	**1.1**	**0.9**	**0.9**	**0.7**	**0.9**
Fish Lake Basin	2.1	1.8	1.8	1.5	2.0
Fish Lake Hightop	1.8	0.6	1.2	0.5	1.6
Last Chance/Geyser Peak	1.5	0.7	0.7	0.7	0.7
Mytoge /Tidwell Slopes	1.9	0.8	0.8	0.8	0.9
Old Woman Plateau	1.6	0.8	0.8	0.8	0.7
Thousand Lakes Mtn.	0.9	0.4	0.4	0.4	0.5
Loa District Total:	**1.5**	**0.7**	**0.8**	**0.7**	**0.8**
Beaver Foothills	1.6	1.3	1.3	1.1	1.5
Clear Creek	4.6	4.6	4.3	4.1	4.1
Indian Creek/North Creek	0	0	0	0	0
Piute Front	1.6	1.0	1.0	1.0	1.1
Beaver District Total:	**1.6**	**1.2**	**1.2**	**1.1**	**1.3**
Gooseberry/Lost Creek	1.2	1.1	1.2	1.0	1.2
Monroe Mtn	1.3	0.9	0.8	0.7	0.8
Old Woman Plateau	2.1	1.2	1.2	1.1	1.1
Salina Creek	1.6	1.0	1.1	0.9	1.1
Richfield District Total:	**1.5**	**1.0**	**1.1**	**0.9**	**1.0**
Grand Total:	**1.4**	**1.0**	**1.0**	**0.8**	**1.0**

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Deer and Elk Winter Range

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 87% of the total 139,557 acres of deer winter range identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.7 miles/square mile for the District. This varies between the Geographic Areas from 2.7 miles/square mile down to 1.4 mile/square mile. Seasonal closures are minimal under

this alternative only reducing road density in deer winter range during the closure period by 0.1 miles/square mile on the District.

For elk, the implementation of this Alternative would mean continuing to allow unrestricted travel on 84% of the total 122,888 acres of elk winter range identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.2 miles/square mile for the District. This varies between the Geographic Areas from 2.3 miles/square mile down to 0.9 miles/square mile. Seasonal closures are minimal under this alternative only reducing road density in elk winter range during the closure period by 0.1 miles/square mile on the District.

The implementation of this Alternative would continue to allow the increase in new routes in big game winter range areas, as well as outright motorized disturbance to animals while on winter range. Over time, there would be a decrease in habitat effectiveness for big game winter range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

The effects from the differences in road density between alternatives when considered with seasonal closures, are subtle in comparison to the reduction in unrestricted travel accomplished by any action alternative and thus, are analyzed together.

For deer, all action alternatives reduce unrestricted travel from 87% on winter range down to 14%, 7%, 5% and 7% in Alt. 2, Alt. 3, Alt. 4, and Alt. 5,respectively. Likewise, road densities are reduced from 1.7 miles/square mile down to 1.4 for Alt. 2, 1.3 for Alt. 3 & 5, and as low as 0.9 mile/square mile for Alt. 4. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

For elk, all action alternatives reduce unrestricted travel from 84% on winter range down to 9%, 5%, 3% and 5% in Alt. 2, Alt. 3, Alt. 4, and Alt. 5, respectively. Likewise, road densities are reduced from 1.2 miles/square mile down to 0.9 miles/square mile for both Alt. 2, 3 &5, and as far as 0.7 miles/square mile for Alt. 4. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

The deer winter range on the Fillmore District represents 39% of the total winter range identified on the Fillmore Herd Unit by UDWR, likewise the elk winter range comprises 45% of that identified. Interstate-15 construction and subsequent fencing has made some traditional winter ranges difficult for animals to access and focused pressure on areas east of I-15. Thus, it is becoming increasingly important to take steps to maintain the effectiveness of these National Forest System winter ranges. The reduction in unrestricted travel and halting of motorized route expansion associated with the

implementation of any of these action alternatives will increase big game winter range effectiveness over time.

Seasonal Closures
With deer winter survival considered to be the most important limiting factor to population growth, desired improvement (controlling winter disturbance) in the current condition relating to road densities led to the formation of the proposed seasonal closures. Associated with these action alternatives are seasonal closures on selected big game winter range routes from January 1 through April 15 to lower stress to wintering big game caused by motorized travel. For deer, road densities during this closure period on winter range will be reduced from 1.6 miles/square mile to 1.3, 1.3, 0.9 and 1.3 for Alt. 2, Alt. 3, Alt. 4 and Alt.5, respectively (see Table 34). For elk, road densities during this closure period on winter range will be reduced from 1.1 miles/square mile to 0.9, 0.9, 0.7 and 0.9 for Alt. 2, Alt. 3, Alt.4 and Alt.5, respectively (see Table 35). These numbers do not account for those roads made inaccessible by snow accumulation and thus are a generous estimate of road density during winter.

The implementation of any of these alternatives increases winter range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

Cumulative Effects
No Action Alternative
Implementation of this alternative would reduce big game winter range effectiveness by allowing continued unrestricted travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through big game winter range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives
All action alternatives would decrease the amount of unrestricted travel across the District and within big game winter range. The No Action alternative current allows unrestricted travel within 87% of deer and 84% of elk winter habitat. All alternatives would decrease this impact to range between 14% and 5% for deer, and 9% to 3% for elk. There is one proposed “open use” play area on the Fillmore District in the East Pahvant GA adjacent to the Interstate just west of Richfield of 780 acres in size. Soils in the area support little vegetation and is already heavily disturbed by ATVs—(under Alternative 5, this play area is no longer proposed). Seasonal closure areas were carefully chosen to from those areas designated as critical winter range by the UDWR where deer use is on-going not historic. Therefore, implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions in combination with the lowering of unrestricted travel through big game winter range would continue to increase habitat effectiveness across the District. The combination of these changes and their effects on winter range for big game would improve over time.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would result in the highest route density and the most unrestricted cross-country travel within deer and elk winter habitat than any other alternative. This use would increase the potential for motorized expansion and thereby increase the risks of habitat fragmentation, impacts to soils and vegetation that support these species and increase energy expenditures during a time of year when they can least afford it. Although these impacts would decrease habitat effectiveness for deer and elk and impact individuals, populations would continue to persist on the District.

All Action Alternatives

Implementation of any of the Action Alternatives would reduce motorized routes both permanently and seasonally and substantially reduce unrestricted motorized travel into deer and elk winter range. These actions would improve habitat effectiveness for big game by reducing disturbances to wintering animals and decreasing impacts to vegetation that supports them during the winter months. In addition to these proposals, Alternatives Two and Five propose to have area closures to motorized travel during the winter months. Because Alternative Five includes a larger area of winter range, it would provide the greatest protection to wintering animals and their habitat. Therefore, implementation of the Alternative 5 would improve habitat effectiveness for both deer and elk and possibly lead to improved carrying capacities and population trends over time.

Loa District –Deer and Elk Winter Range:

Mule deer and Elk have been identified by the Fishlake National Forest as Management Indicator Species because of their high public interest. Because these big game animals use somewhat similar habitats and both are limited by winter habitat, it was considered appropriate to analyze them together where possible. Where differences occur will be noted. Approximately 87,010 acres of winter habitat was estimated to occur for mule deer and 121,150 acres for elk on the Loa Ranger District.

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

There are approximately 209 miles of motorized roads and trails within deer winter range and about 310 miles in elk winter range on the Loa Ranger District. Current road densities at the District level would continue to be about 1.5 miles/square mile in deer winter range and 1.6 mi/square mile in elk winter range under the No Action Alternative. Road density levels at or below 2-miles/square mile likely provide adequate habitat to meet big game needs for growth and welfare requirements (Christensen 1993). Overall habitat effectiveness would be met with these current road density levels. There are several local areas on the District that have higher road densities. High road densities can increase habitat fragmentation, disturbances to soil and vegetation that support big game and increase energy expenditures during critical winter months. Some of these roads, in most years would be closed to motorized use because of deep snow. The current travel plan also provides for large area closures and seasonal road closures to control motorized

travel during the winter months. These closures help reduce the road density levels and associated impacts in deer and elk high value/critical winter ranges.

Implementation of the No Action Alternative would allow continued unrestricted travel on 46% of deer winter range and 54% of elk winter range identified on the District. The unpredictable nature of unrestricted travel cannot be accounted for in road density assessments and can therefore create much higher levels of disturbance. Areas with unrestricted use would allow for the expansion of motorized vehicles into big game winter range, creating disturbances to wintering animals and impacts to soil and vegetation that supports them. Although the motorized travel area closures and areas restricted to designated routes help reduce these impacts, implementation of the No Action Alternative would have a greater impact on winter range and big game animals than any other alternative primarily due to large areas that would remain open to unrestricted travel.

Environmental Consequences Common to all Action Alternatives

Even though overall road density is not considered high at the District scale, there are localized areas that have somewhat higher density levels that reduce habitat effectiveness for big game under the current travel plan. Implementation of the Action Alternatives would incrementally reduce the density of roads with permanent road closures. Both Alternatives Two and Four would reduce road densities in the high use geographical areas to below 2 miles of road/square mile, thereby reducing fragmented habitats and disturbances and improving habitat effectiveness for big game animals on winter range more than any other Action Alternative.

Some of the roads that are counted towards road density in all seasons may not be accessible in the winter months in most years due to heavy snow accumulation. Winter road density values may therefore be higher than what can be actually accessed in most years. All Action Alternatives propose additional road closures from January 1 through April 15 within portions big game winter range. These actions would seasonally reduce road density levels below values addressed above, during critical times of the year for big game animals. Alternatives Two and Four would provide more seasonal closures in winter range than Alternatives Three and Five (See Table 34 and 35). Seasonal closures would reduce disturbances to big game and would be especially important in dry periods when snow does not prevent access.

In addition to reductions in road density levels, all Action Alternatives would decrease unrestricted motorized travel by 85-93% in deer and elk winter range, depending on the selected alternative (Table 32 and 33). The effects of these actions would appreciably reduce the risk of motorized use expanding into big game winter range, thereby reducing disturbances to wintering animals and impacts to soil and vegetation that supports them. Alternative Four would reduce the risk of wheeled off road travel more than any other Action Alternative. Alternative Two proposes to close about 18,000 acre area within winter range to over snow machines, while Alternative Five would close about a 70,000 acre area to any motorized use including snow machines during the winter months between January through April 15. Implementation of Alternative Five would effectively

reduce the impacts to soil and vegetation that is occurring under the current plan, as well as reduce the disturbances to game animals during a time when they can least afford the stress. The implementation of these alternatives would increase winter range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

Cumulative Effects

No Action Alternative

There are approximately 87,000 acres that have been identified as critical winter range for deer and about 121,150 acres for elk within the 267,251 acre CEA. The footprint of existing motorized roads and trails physically occupies about 1% of this habitat. Road density within the CEA is currently within recommendations of less than 2 miles/square mile of habitat, although some areas have higher road density levels. These areas contribute incrementally to cumulative effects that reduce habitat effectiveness for big game on wintering habitat.

Unrestricted travel is currently permitted on 46% of deer winter range and 54% of elk winter range within the CEA. Some of this area is closed seasonally during the winter months with area closures that prohibit motorized use or are seasonally restricted to designated routes which may help reduce the impacts of unrestricted travel. Cross-country motorized travel at this level however, would reduce big game winter range effectiveness by creating disturbances to wintering animals and impacts to soil and vegetation that supports them. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel would reduce winter range habitat effectiveness within the CEA.

All Action Alternatives

There are approximately 87,000 acres that have been identified as critical winter range for deer and about 121,150 acres for elk within the 267,251 acre CEA. The footprint for the proposed motorized roads and trails would physically impact less than 1% of this habitat. Road density within the CEA would continue to be within recommendations of less than 2 miles/square mile of habitat, although some geographical areas would continue to have higher levels in localized areas. Proposed seasonal closures in all Action Alternatives would reduce road densities to recommended values in all geographic areas, although there may still be some smaller localized areas with higher road densities levels. The proposed road reductions and seasonal closures would reduce habitat fragmentation and winter disturbances in high value and critical winter range and incrementally improve habitat effectiveness for these big game animals within the CEA.

All action alternatives, but especially Alternative Four, would substantially decrease the amount of unrestricted travel across the district within big game winter range. Alternative Five would reduce snow machine disturbances on more acres of winter range than any other alternative, thus effectively reducing the impacts to soil and vegetation that is occurring under the current plan, as well as reducing disturbances to game animals during a time when they can least afford the stress. Implementation of any of the Action

Alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness to wintering elk and deer within the CEA.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would have the highest designated motorized routes and unrestricted travel within deer and elk winter habitat than any other alternative. This use would increase the potential for motorized expansion and thereby increase the risks of habitat fragmentation, impacts to soils and vegetation that support these species and increase energy expenditures during a time of year when they can least afford it. Although these impacts would decrease habitat effectiveness for deer and elk and impact individuals, populations would continue to persist on the District.

All Action Alternatives

Implementation of the Action Alternatives would reduce motorized routes both permanently and seasonally and substantially reduce unrestricted motorized travel into deer and elk winter range. These actions would improve habitat effectiveness for big game by reducing disturbances to wintering animals and decreasing impacts to vegetation that supports them during the winter months. In addition to these proposals, Alternatives Two and Five propose to have area closures to motorized travel during the winter months. Because Alternative Five includes a larger area of winter range, it would provide the greatest protection to wintering animals and their habitat. Implementation of the Action Alternative would therefore improve habitat effectiveness for both deer and elk and possibly lead to improved population trends over time.

Beaver Ranger District – Deer and Elk Winter Range

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 92% of the total 83,147 acres of deer winter range identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.6 miles/square mile for the District. This varies between the Geographic Areas from 2.5 miles/square mile down to 0.8 mile/square mile. Seasonal closures are minimal under this alternative only reducing road density in deer winter range during the closure period by 0.1 miles/square mile on the District.

The implementation of this Alternative would continue to allow the increase in new routes in big game winter range areas, as well as outright motorized disturbance to animals while on winter range. Over time, there would be a decrease in habitat effectiveness for big game winter range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

The effects from the differences in road density between alternatives even when considered with seasonal closures, are subtle in comparison to the reduction in unrestricted travel accomplished by any of the action alternatives and thus, are analyzed together.

For deer, all action alternatives reduce unrestricted travel from 92% on winter range down to 11%, 6%, 5% and 6% in Alt. 2, Alt. 3, Alt. 4 and Alt. 5, respectively. Likewise, road densities are reduced from 1.6 miles/square mile down to 1.1 miles/square mile for both Alt. 2 & 4, to 1.2 for Alt. 3 and down to 1.3 miles/square mile for Alt. 5. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

For elk, all action alternatives reduce unrestricted travel from 93% on winter range down to 12% for Alt. 2 and 6% for all other alternatives. Likewise, road densities are reduced from 1.8 miles/square mile down to 1.3 miles/square mile for both Alt. 2 & 3, 1.2 for Alt. 4, and down to 1.4 miles/square mile for Alt. 5. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

The deer winter range on the Beaver District only represents 14% of the total winter range identified on the Beaver Herd Unit by UDWR, likewise the elk winter range comprises 34% of that identified. Interstate-15 construction and subsequent fencing has made some traditional winter ranges difficult for animals to access and focused pressure on areas immediately east of I-15. Thus, it is becoming increasingly important to take steps to maintain the effectiveness of these National Forest System winter ranges. The reduction in unrestricted travel and halting of motorized route expansion associated with the implementation of any of these action alternatives will increase big game winter range effectiveness over time.

Seasonal Closures

With deer winter survival considered to be the most important limiting factor to population growth, desired improvement (controlling winter disturbance) in the current condition relating to road densities led to the formation of the proposed seasonal closures. Associated with these action alternatives are seasonal closures on selected big game winter range routes from January 1 through April 15 to lower stress to wintering big game caused by motorized travel. For deer, road densities during this closure period on winter range will be reduced from 1.5 miles/square mile to 1.1, 1.1, 1.0 and 1.2 for Alt. 2, Alt. 3, Alt. 4 and Alt. 5, respectively (see Table 31a). For elk, road densities during this closure period on winter range will be reduced from 1.6 miles/square mile to 1.2, 1.2, 1.1 and 1.3 for Alt. 2, Alt. 3, Alt. 4 and Alt. 5, respectively (see Table 32a). These numbers do not account for those roads made inaccessible by snow accumulation and thus are a generous estimate of road density during winter.

The implementation of any of these alternatives increases winter range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce big game winter range effectiveness by allowing continued unrestricted cross-country travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued practice of unrestricted travel through big game winter range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives

All action alternatives would decrease the amount of unrestricted travel across the district and within big game winter range. The No Action alternative current allows unrestricted travel within 92% of deer and 93% of elk winter habitat. All alternatives would decrease this impact to range between 11% and 5% for deer, and 12% to 6% for elk. Therefore, implementation of any action alternative in combination with past, present and reasonably foreseeable future actions in combination with the lowering of unrestricted travel through big game winter range would contribute to increased habitat effectiveness across the District. The combination of these changes and their effects on winter range for big game would improve over time.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would result in the highest route density and the most unrestricted cross-country travel within deer and elk winter habitat than any other alternative. This use would increase the potential for motorized expansion and thereby increase the risks of habitat fragmentation, impacts to soils and vegetation that support these species and increase energy expenditures during a time of year when they can least afford it. Although these impacts would decrease habitat effectiveness for deer and elk and impact individuals, populations would continue to persist on the District.

All Action Alternatives

Implementation of any of the Action Alternatives would reduce motorized routes both permanently and seasonally and substantially reduce unrestricted motorized travel into deer and elk winter range. These actions would improve habitat effectiveness for big game by reducing disturbances to wintering animals and decreasing impacts to vegetation that supports them during the winter months. In addition to these proposals, Alternatives Two and Five propose to have area closures to motorized travel during the winter months. Because Alternative Five includes a larger area of winter range, it would provide the greatest protection to wintering animals and their habitat. Therefore, implementation of the Alternative 5 would improve habitat effectiveness for both deer and elk and possibly lead to improved carrying capacities and population trends over time.

Richfield Ranger District – Deer and Elk Winter Range:

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 73% of the total 165,397 acres of deer winter range identified on the District. Road densities would also remain the highest with this alternative in this habitat at 2.2 miles/square mile for the District. This varies between the Geographic Areas from 2.2 miles/square mile down to 1.3 mile/square mile. Seasonal closures are minimal under this alternative only reducing road density in deer winter range during the closure period by 0.7 miles/square mile on the District.

The implementation of this Alternative would continue to allow the increase in new routes in big game winter range areas, as well as outright motorized disturbance to animals while on winter range. Over time, there would be a decrease in habitat effectiveness for big game winter range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

The effects from the differences in road density between alternatives when considered with seasonal closures, pale in comparison to the reduction in unrestricted travel accomplished by all action alternatives and thus, are analyzed together.

For deer, all action alternatives reduce unrestricted travel from 73% on winter range down to 14%, 7%, 5%, and 7% in Alt. 2, Alt. 3, Alt. 4, Alt 5., respectively. Likewise, road densities are reduced from 2.2 miles/square mile down to 1.6 miles/square mile for both Alt. 2 and Alt 3, 1.3 mile/square mile for Alt. 4 and back up to 1.7 for Alt 5. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

For elk, all action alternatives reduce unrestricted travel from 72% on winter range down to 14%, 7%, 5%, and 7% in Alt. 2, Alt. 3, Alt. 4, Alt. 5, respectively. Likewise, road densities are reduced from 12.0 miles/square mile down to 1.5 miles/square mile for both Alt. 2 & 3 and as far as 1.1 miles/square mile for Alt. 4 then back up to 1.5 for Alt 5. Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in winter range effectiveness over time.

The deer winter range on the Richfield District represents 13% of the total winter range identified on the Plateau Herd Unit and 68% of the total winter range identified on the Monroe Herd Unit by UDWR. Likewise, the elk winter range represents 24% of the total winter range identified on the Plateau Herd Unit and 32% of the total winter range identified on the Monroe Herd Unit by UDWR. Thus, it is becoming increasingly important to take steps to maintain the effectiveness of these National Forest System winter ranges. The reduction in unrestricted travel and decrease in motorized route expansion associated with the implementation of any of these action alternatives will increase big game winter range effectiveness over time.

Seasonal Closures
With deer winter survival considered to be the most important limiting factor to population growth, desired improvement (controlling winter disturbance) in the current condition relating to road densities led to the formation of the proposed seasonal closures. Associated with these action alternatives are seasonal closures on selected big game winter range routes from January 1 through April 15 to lower stress to wintering big game caused by motorized travel. For deer, road densities during this closure period on winter range will be reduced from 1.5 miles/square mile to 1.1, 1.1 and 1.0 for Alt. 2, Alt. 3 and Alt.4, and 1.1 for Alt 5 respectively (see Table 34). For elk, road densities during this closure period on winter range will be reduced from 1.5 miles/square mile to 1.0, 1.2 and 0.9 for Alt. 2, Alt. 3 and Alt.4, and 1.0 for Alt. 5, respectively (see Table 35). These numbers do not account for those roads made inaccessible by snow accumulation and thus are a generous estimate of road density during winter.

The implementation of any of these alternatives increases winter range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

Cumulative Effects
No Action Alternative
Implementation of this alternative would reduce big game winter range effectiveness by allowing continued unrestricted travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through big game winter range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives
All action alternatives would decrease the amount of unrestricted travel across the district and within big game winter range. The No Action alternative current allows unrestricted travel within 73% of deer and 72% of elk winter habitat. All alternatives would decrease this impact to range between 14% and 5% for deer, and 13% to 5% for elk. Therefore, implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions in combination with the lowering of unrestricted travel through big game winter range would continue to increase habitat effectiveness across the District. The combination of these changes and their effects on winter range for big game would improve over time.

Determinations and Rationale
No Action Alternative
The risk of increased disturbances to wintering big game and increased fragmentation and impacts to vegetation that support big game during winter would occur as a result of unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for wintering big game. Implementation of Alternative 1 may therefore

affect big game winter habitat and individuals on the District, but it would not lead towards federal listing or cause a loss of viability to the population.

Alternative 2
Implementation of this Alternative would limit travel to designated routes and reduce unrestricted or cross-country travel, while also instigating seasonal closures to motorized traffic on select winter ranges. This action would decrease habitat fragmentation and reduce motorized disturbances in these areas. Road density reductions during winter in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for wintering big game. This Alternative allows for somewhat higher road densities within winter range and also more opportunity for unrestricted travel due to the 300 foot buffer to access camping sites and for fuel-wood gathering, etc. For these reasons this Alternative would not increase habitat effectiveness to the degree that the other action alternatives would. Thus, the implementation of Alternative 2 may impact individuals or habitat, but would not lead to a trend toward federal listing or cause a loss of viability to the population.

Alternative 3,4, and 5
Implementation of either of these Alternatives would limit travel to designated routes and reduce unrestricted or cross-country travel, while also instigating seasonal closures to motorized traffic on select winter ranges. This action would decrease habitat fragmentation and reduce motorized disturbances in these areas. Road density reductions during winter in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for wintering big game more than in Alternative 2. Implementation of these Action Alternatives may therefore impact individuals or habitat, but would not lead to a trend toward federal listing or cause a loss of viability to the population.

FAWNING/CALVING RANGE
Shape-files were obtained from UDWR's website and critical and high value deer summer habitat areas were combined for analysis. Because fawn parturition and rearing takes place at a range of elevations and in a variety of habitat types, the DWR has delineated these classes of habitat based on observational data and in some cases limited amounts of radio-telemetry data. Important site-specific variables typical of key fawning areas in the West are slopes less than 15%, and forest community types with heavier ground cover--like those with shrub-sapling structural classes found below 9400 feet in elevation, and close proximity to water (de Vos et al 2003). There are approximately 971,493 acres of deer fawning habitat on the Forest containing some 2,145 miles of motorized routes; resulting in an average of 1.4 miles of road per square mile.

Elk calving habitat was also delineated in conjunction with UDWR biologists based on radio-telemetry data from research in the past decade coupled with pre-season herd classification observations. There are approximately 202,405 acres of elk calving habitat on the Forest containing some 560 miles of motorized routes resulting in an average of 1.8 miles of road per square mile.

Though elk calving and deer fawning habitat is not considered limiting on the Forest, the quality and effectiveness of that habitat should be carefully considered and conserved. Maintaining high quality neo-natal habitat ensures higher production values going into winter, when survival and subsequent recruitment are limiting the expansion and in some areas the recovery of big game. This is especially important for deer populations that have been below herd objective.

Table 36. Shown is a comparison of deer fawning/rearing habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	0.8	0.5	0.5	0.5	0.5	50	0	0	0	0
Canyon Range	0.8	0.7	0.7	0.6	0.8	64	8	4	3	4
Clear Creek	1.5	1.2	1.3	1.1	1.2	90	13	7	6	7
East Pahvant	1.3	1.0	1.0	0.7	1.0	69	11	5	4	5
West Pahvant	0.9	0.8	0.8	0.6	0.8	62	8	4	3	4
Fillmore District Total:	**1.0**	**0.9**	**0.9**	**0.6**	**0.9**	**67**	**9**	**5**	**3**	**5**
Fish Lake Basin	1.6	1.5	1.5	1.4	1.6	33	2	1	1	1
Fish Lake Hightop	1.2	0.8	1.0	0.8	1.1	25	8	5	4	5
Gooseberry/Lost Creek	2.5	1.5	2.1	2.1	2.2	55	16	12	12	12
Last Chance/Geyser Peak	2.3	1.4	1.6	1.3	1.7	64	13	8	6	8
Mytoge /Tidwell Slopes	1.9	1.3	1.3	1.1	1.5	82	12	6	6	7
Old Woman Plateau	1.6	1.3	1.3	1.2	1.5	100	13	7	6	8
Thousand Lakes Mtn.	1.3	1.0	1.0	0.6	1.1	4	10	5	3	5
Loa District Total:	**1.7**	**1.2**	**1.2**	**1.0**	**1.4**	**51**	**10**	**6**	**5**	**6**
Beaver Foothills	0.9	0.8	0.9	0.6	0.9	79	8	4	3	4
Beaver River Basin	2.2	1.9	2.0	1.8	2.0	61	16	9	8	8
Clear Creek	2.4	1.8	1.8	1.7	1.9	84	15	8	7	8
Indian Creek/North Creek	0.5	0.3	0.3	0.3	0.3	32	3	1	1	1
Piute Front	1.2	0.9	1.0	0.9	1.0	65	9	5	5	5
Tushar Mtns	0.8	0.3	0.3	0.3	0.3	3	6	2	2	2
Beaver District Total:	**1.4**	**1.1**	**1.1**	**1.0**	**1.1**	**56**	**10**	**5**	**5**	**5**
Fish Lake Hightop	1.8	1.3	1.3	1.3	1.3	15	8	4	4	4
Gooseberry/Lost Creek	1.7	1.4	1.4	0.9	1.5	23	13	7	4	7
Monroe Mtn	2.2	1.7	1.6	1.1	1.6	78	17	8	6	8
Mytoge/Tidwell Slopes	1.3	0	0	0	0	0	1	0	0	0
Old Woman Plateau	1.8	1.2	1.2	1.0	1.3	79	13	7	6	7
Salina Creek	0.8	0.6	0.6	0.5	0.7	9	6	3	3	4
Richfield District Total:	**1.8**	**1.4**	**1.3**	**0.9**	**1.4**	**55**	**14**	**7**	**5**	**7**
Grand Total:	**1.4**	**1.1**	**1.1**	**0.9**	**1.1**	**59**	**11**	**6**	**4**	**6**

Table 37. Shown is a comparison of elk calving/rearing habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)	Unrestricted Travel

						(% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Clear Creek	3.0	2.7	2.7	2.4	2.7	92	26	14	12	14
East Pahvant	7.1	5.0	5.9	3.3	5.7	100	49	29	19	29
West Pahvant	1.5	1.4	1.4	1.3	1.4	46	15	8	7	8
Fillmore District Total:	**2.0**	**1.8**	**1.8**	**1.6**	**1.8**	**57**	**18**	**9**	**9**	**10**
Fish Lake Hightop	1.3	1.0	1.2	0.9	1.3	40	8	5	4	6
Gooseberry/Lost Creek	2.8	1.9	2.4	2.4	2.4	64	21	13	13	13
Last Chance/Geyser Peak	2.7	1.2	1.2	1.2	1.4	42	13	7	7	7
Mytoge /Tidwell Slopes	1.9	1.2	1.3	1.0	1.3	87	13	7	6	7
Old Woman Plateau	2.1	1.7	1.7	1.6	1.8	100	17	9	9	10
Thousand Lakes Mtn.	1.6	1.2	1.2	0.7	1.3	6	11	6	4	6
Loa District Total:	**1.7**	**1.2**	**1.3**	**1.0**	**1.4**	**50**	**12**	**7**	**5**	**7**
Beaver Foothills	0.7	0.7	0.7	0.2	0.7	85	7	4	1	4
Beaver River Basin	2.3	1.9	2.0	1.8	2.0	55	18	10	9	9
Clear Creek	0.6	0.4	0.4	0.4	0.5	35	5	2	2	3
Indian Creek/North Creek	0.1	0	0	0	0	43	0	0	0	0
Piute Front	0.7	0.5	0.5	0.5	0.5	48	5	3	3	3
Tushar Mtns	0.9	0.8	0.9	0.8	0.9	8	9	5	5	5
Beaver District Total:	**1.4**	**1.1**	**1.2**	**1.1**	**1.2**	**57**	**11**	**6**	**5**	**6**
Fish Lake Hightop	2.6	2.3	2.3	2.3	2.3	25	15	8	8	8
Gooseberry/Lost Creek	2.0	1.6	1.6	1.1	1.7	25	15	8	5	8
Monroe Mtn	3.6	3.0	2.9	2.0	3.0	95	29	15	11	15
Old Woman Plateau	1.5	1.0	1.1	0.5	1.1	66	11	6	3	6
Salina Creek	0.8	0.6	0.7	0.5	0.7	4	7	4	3	4
Richfield District Total:	**2.1**	**1.7**	**1.7**	**1.2**	**1.7**	**43**	**16**	**9**	**6**	**9**
Grand Total:	**1.8**	**1.4**	**1.5**	**1.1**	**1.5**	**50**	**14**	**7**	**6**	**7**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Continuation of the current condition would mean allowing cross-country travel on 568,620 acres, some 59% of the deer fawning/rearing habitat that occurs on the Forest. There are approximately 971,493 acres of deer fawning habitat on the Forest containing some 2,145 miles of motorized routes; resulting in an average of 1.4 miles of road per square mile (Table 36).

For elk, continuation of the current condition would mean allowing cross-country travel on 100,436 acres, some 50% of the calving range that occurs on the Forest. There are approximately 202,405 acres of elk calving habitat on the Forest containing some 560 miles of motorized routes resulting in an average of 1.8 miles of road per square mile (Table 37).

Implementation of this No action alternative would decrease habitat effectiveness over time through continuing to allow unrestricted travel in more than half of the habitats recognized as supporting deer fawning and elk calving.

Environmental Consequences Common to all Action Alternatives – Forest

For deer fawning habitat, all action alternatives reduce unrestricted travel from 59% on summer range down to 11%, 6%, 4% and 6% in Alternative 2, Alternative 3, Alternative 4 and Alternative 5, respectively. Likewise, road densities are reduced from 1.4 miles per

square mile down to 1.1 miles per square mile for Alternative 2, 3, & 5 and as low as 0.9 miles per square mile for Alternative 4.

For elk calving habitat, all action alternatives reduce unrestricted travel from 50% on summer range down to 14%, 7%, 6% and 7% in Alternative 2, Alternative 3, Alternative 4, and Alternative 5, respectively. Likewise, road densities are reduced from 1.8 miles per square mile down to 1.4 miles per square mile in Alternative 1, 1.5 for both Alternative 3 & 5 and as far as 1.1 miles per square mile for Alternative 4.

The implementation of any of these alternatives increase fawning/calving habitat effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Deer & Elk Fawning/Calving Range

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 67% of the of deer fawning/rearing habitat identified on the District. Road density is also the highest for deer and elk within this Alternative.

Within elk calving habitat, the implementation of this No Action Alternative would mean continuing to allow unrestricted travel on 57% of the habitat identified on the District. Road densities would also remain the highest with this alternative in this habitat at 2.0 miles per square mile for the District. This varies between the Geographic Areas from 7.1 miles per square mile down to 1.5 miles per square mile.

The implementation of this Alternative would continue to allow the increase in new routes in big game fawning/calving habitat, as well as outright motorized disturbance to these animals while rearing young. Over time, there would be a decrease in habitat effectiveness for big game summer range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

For deer, all action alternatives reduce unrestricted travel from 67% on fawning range down to 9%, 5%, 3% and 5% in Alternative 2, Alternative 3, Alternative 4 and Alternative 5, respectively. Likewise, road densities are reduced from 1.0 miles per square mile to as low as 0.6 miles per square mile for Alternative 4.

For elk, all action alternatives reduce unrestricted travel from 57% on calving habitat down to 18%, 9%, 9% and 10% in Alternative 2, Alternative 3, Alternative 4 and Alternative 5, respectively. Likewise, road densities are reduced from 2.0 miles per square mile down to 1.8 for Alternative 2, 3 & 5, and as low as 1.6 miles per square mile for Alternative 4.

Therefore, the effects of any of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in fawning/calving habitat effectiveness over time.

The implementation of any of these alternatives increases fawning/calving range effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation. Alternative 3, 4 and 5 appear to be similar in motorized travel related reductions and go further than Alternative 2, thus would increase habitat effectiveness more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce big game fawning/calving effectiveness by allowing continued unrestricted travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through big game neo-natal rearing summer range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives

All action alternatives would lower road density and decrease the amount of potential unrestricted travel across the District and within big game reproductive habitat. Therefore, implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would continue to increase habitat effectiveness across the District. The combination of these changes and their effects on fawning/calving habitat for big game would improve over time.

Determinations and Rationale

No Action Alternative

The risk of increasing disturbance to big game as well as increased habitat fragmentation and impacts to vegetation that support big game would occur as a result of continued unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for summering big game over time. Implementation of the No Action Alternative would impact individuals and habitat, but at the current disturbance levels, populations would continue to persist as they have in the past. Future increases of unrestricted motorized use into sensitive habitat over time could reduce productivity and local population trends.

All Action Alternatives

Implementation of any of the Action Alternatives would result in fewer motorized routes in fawning and calving habitat to about 10-40% and result in reducing unrestricted motorized travel by about 85-94%, depending on the alternative selected. Alternative Four would reduce these impacts more than any alternative, but all actions would improve habitat effectiveness for big game by reducing disturbances to animals rearing their young and decreasing impacts to vegetation that supports them during the summer

months. Implementation of any of the Action Alternatives would therefore have a beneficial impact on individuals and habitat.

Loa Ranger District – Elk and Deer Calving and Fawning

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 461 miles of motorized roads and trails within deer fawning habitat and about 95 miles in elk calving habitat on the Loa Ranger District. Current road densities at the District level would continue to be on average about 1.7 miles/square mile in both fawning and calving habitat under the No Action Alternative. Road density levels at or below 2-miles/square mile likely provide adequate habitat to meet big game needs for growth and welfare requirements (Christensen 1993). Overall habitat effectiveness would be met with these current road density levels. However, there are several local areas on the District that have road density levels above 2 miles/square mile. High road densities can reduce the quality of neo-natal habitat, thereby decreasing production values for deer and elk.

Implementation of the No Action Alternative would allow continued unrestricted travel on 51% of deer fawning habitat and 50% of elk calving habitat identified on the District. The unpredictable nature of unrestricted travel cannot be accounted for in road density assessments and can therefore create much higher levels of disturbances to animals while rearing young and to the soil and vegetation that supports them. Implementation of the No Action Alternative would have a greater impact on deer fawning and elk calving individuals and habitat than any other alternative, particularly due to the large areas that are currently open to cross-country travel. Over time, there would be a decrease in habitat effectiveness on big game fawning and calving ranges.

Environmental Consequences Common to all Action Alternatives

Even though the current number of roads per square mile is not considered high at the District scale, there are several local areas that have road density levels that are higher than recommended to meet big game needs for growth and welfare requirements. Implementation of the Action Alternatives would incrementally reduce road density through permanent road closures. Although Alternative Four would close more roads in fawning and calving habitat and reduce District level road density values more than any other alternative, Alternatives Two would reduce road density values at the geographical unit scale to below 2 miles per square mile (Table 36 and 37). The proposed reductions in the number of roads in all Action Alternatives though, would help reduce habitat fragmentation and impacts to fawning and calving individuals and their habitat.

In addition to reductions in road density levels, all action alternatives propose a substantial (~80-90%) reduction in unrestricted motorized travel in fawning and calving areas, depending on the Action Alternative selected. Alternative Four would decrease unrestricted travel the most and Alternative Two the least when compared to the other Action Alternatives (Table 36 and 37). There are more acres of unrestricted travel in Alternative Two because it allows a greater distance from designated roads and trails (300 feet) to campsites than do any of the other Action Alternatives (150 feet), thereby increasing the risk of unrestricted travel into sensitive calving and fawning areas. The

effects of all these Action Alternatives would however reduce the risk of motorized use expanding into big game fawning and calving areas than what occurs under the current travel plan, thereby reducing disturbances to animals rearing their young and impacts to soil and vegetation that supports them.

Cumulative Effects

No Action Alternative

There are approximately 176,152 acres that have been identified as fawning habitat for deer and about 34,970 acres for elk within the 267,251 acre CEA. The footprint of existing motorized roads and trails physically occupies about 1% of this habitat. Road density within the CEA is currently within recommendations of less than 2 miles/square mile of habitat, although some areas have higher road density levels. These local areas contribute incrementally to cumulative effects that reduce habitat effectiveness for big game in fawning and calving habitat. Because the current motorized system occupies a small proportion of available habitat, the contribution to cumulative effects would be low.

Unrestricted travel is currently permitted on 51% of potential deer fawning habitat and 50% of potential elk calving habitat within the CEA. This is mainly due to large areas that are open to motorized travel under the current plan. Risk of unrestricted motorized travel into sensitive fawning and calving areas can reduce the production and well being of animals that are below herd unit objectives. Past, present and reasonably foreseeable future actions in combination with this action in big game neo-natal habitat would reduce habitat effectiveness over time within the CEA.

All Action Alternatives

There are approximately 176,152 acres that have been identified as fawning habitat for deer and about 34,970 acres for elk within the 267,251 acre CEA. The footprint for the proposed motorized roads and trails would physically occupy much less than 1% of this habitat following proposed road reductions. As a result, road density within the CEA would be reduced by 18-41%, depending on the Action Alternative selected (Table 36, Table 37). Adjusted road density values at this scale would be within recommendations of less than 2 miles/square mile of habitat, although some geographical areas would continue to have slightly higher levels in localized areas. Because the proposed motorized system would continue to occupy a small proportion of available habitat, the contribution to cumulative effects would be low.

The Action Alternatives would decrease by about 80-90% the amount of unrestricted travel within big game fawning and calving habitat in the CEA, depending on the selected Alternative. Reductions in cross country motorized travel would be achieved through restricting use to designated roads and/or trails. All action alternatives would both lower road density and decrease the risk of unrestricted travel within the CEA. When combined with past, present and reasonably foreseeable future actions, the proposed actions would improve the effectiveness of big game neo-natal habitat.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would have the highest designated motorized routes and unrestricted travel within fawning and calving habitat than any other alternative. Although road density is within recommended values at the District scale, it is higher in several local geographical areas. Because the current motorized road and trail footprint occupies a small proportion (1%) of total available habitat, overall impacts from these local areas would be low. Under the current plan, large areas open to motorized travel contribute to the risk of expansion into sensitive fawning and calving areas. Approximately 50-51% of potential habitat is at risk of being affected by this action. Implementation of the No Action Alternative would impact individuals and habitat, but at the current disturbance levels, populations would continue to persist as they have in the past. Future increases of unrestricted motorized use into sensitive habitat over time could reduce productivity and local population trends.

All Action Alternatives

Implementation of any of the Action Alternatives would reduce motorized routes in fawning and calving habitat by about 18-40% and reduce unrestricted motorized travel by about 80-90%, depending on the alternative selected. Alternative Four would reduce these impacts more than any alternative, but all actions would improve habitat effectiveness for big game by reducing disturbances to animals rearing their young and decreasing impacts to vegetation that supports them during the summer months. Implementation of the Action Alternatives would therefore have a beneficial impact on individuals and habitat.

Beaver Ranger District – Deer & Elk Fawning/Calving Range

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 56% of the of deer fawning/rearing habitat identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.4 miles/square mile for the District. This varies between the Geographic Areas from 2.4 miles/square mile down to 0.5 mile/square mile.

Within elk calving habitat, the implementation of this No Action Alternative would mean continuing to allow unrestricted travel on 57% of the habitat identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.4 miles/square mile for the District. This varies between the Geographic Areas from 2.3 miles/square mile down to 0.1 mile/square mile.

The implementation of this Alternative would continue to allow the increase in new routes in big game fawning/calving habitat, as well as outright motorized disturbance to these animals while rearing young. Over time, there would be a decrease in habitat effectiveness for big game summer range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

For deer, all action alternatives reduce unrestricted travel from 56% on fawning range down to 10% for Alternative 2 and to 5% for all others. Likewise, road densities are

reduced from 1.4 miles per square mile down to 1.1 for Alternatives 2, 3 & 5, and as low as 1.0 mile per square mile for Alternative 4.

For elk, all action alternatives reduce unrestricted travel from 57% on calving habitat down to 11%, 6%, 5% and 6% in Alternative 2, Alternative 3, Alternative 4 and Alternative 5, respectively. Likewise, road densities are reduced from 1.4 miles per square mile down to 1.1 for Alternatives 2 & 4, and as low as 1.2 miles per square mile for Alternatives 3 & 5.

Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with similar changes in road density that contribute to an increase in fawning/calving habitat effectiveness over time.

The implementation of any of these alternatives increases fawning/calving effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation. Alternative 4 and 5 appear to be similar in motorized travel related reductions and go further than Alternative 2 or 3, thus would increase habitat effectiveness the most.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce big game fawning/calving effectiveness by allowing continued unrestricted travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through big game neo-natal rearing summer range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives

All action alternatives would lower road density and decrease the amount of potential unrestricted travel across the district and within big game reproductive habitat. Therefore, implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would continue to increase habitat effectiveness across the District. The combination of these changes and their effects on fawning/calving habitat for big game would improve over time.

Determinations and Rationale

No Action Alternative

The risk of increasing disturbance to big game as well as increased habitat fragmentation and impacts to vegetation that support big game would occur as a result of continued unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for summering big game over time. Implementation of the No Action Alternative would impact individuals and habitat, but at the current disturbance levels, populations would continue to persist as they have in the past. Future increases of

unrestricted motorized use into sensitive habitat over time could reduce productivity and local population trends.

All Action Alternatives

Implementation of any of the Action Alternatives would result in lower motorized routes in fawning and calving habitat by about 10-20% and less unrestricted motorized travel by about 50%, depending on the alternative selected. Alternative Four would reduce these impacts more than any alternative, but all actions would improve habitat effectiveness for big game by reducing disturbances to animals rearing their young and decreasing impacts to vegetation that supports them during the summer months. Implementation of any of the Action Alternatives would therefore have a beneficial impact on individuals and habitat.

Richfield Ranger District – Elk and Deer Calving and Fawning:

Environmental Consequences Specific to the No Action Alternative (Alt. 1)

Implementation of this Alternative would mean continuing to allow unrestricted travel on 55% of the of deer fawning/rearing habitat identified on the District. Road densities would also remain the highest with this alternative in this habitat at 1.8 miles/square mile for the District. This varies between the Geographic Areas from 2.2 miles/square mile down to 0.5 mile/square mile.

Within elk calving habitat, the implementation of this No Action Alternative would mean continuing to allow unrestricted travel on 43% of the habitat identified on the District. Road densities would also remain the highest with this alternative in this habitat at 2.1 miles/square mile for the District. This varies between the Geographic Areas from 3.6 miles/square mile down to 0.5 mile/square mile.

The implementation of this Alternative would continue to allow the increase in new routes in big game fawning/calving habitat, as well as outright motorized disturbance to these animals while rearing young. Over time, there would be a decrease in habitat effectiveness for big game summer range because of unrestricted travel by allowing animal and vegetation disturbance.

Environmental Consequences Common to all Action Alternatives

For deer, all action alternatives reduce unrestricted travel from 55% on fawning range down to 14%, 7%, 5%, and 7 % in Alternative 2, Alternative 3, and Alternative 4, and Alternative 5 respectively. Likewise, road densities are reduced from 1.8 miles per square mile down to 1.4 for Alternative 2, 1.3 for Alternative 3, and as low as 0.9 mile per square mile for Alternative 4 and then back up to 1.4 for Alternative 5.

For elk, all action alternatives reduce unrestricted travel from 43% on calving habitat down to 17%, 9%, 6% and 9% in Alternative 2, Alternative 3, and Alternative 4, and Alternative 5 respectively. Likewise, road densities are reduced from 2.1 miles per

square mile down to 1.7 for Alternative 2 & 3, and as low as 1.2 miles per square mile for Alternative 4 and then back up to 1.7 for Alternative 5.

Therefore, the effects of these action alternatives is very similar in dramatic reductions of unrestricted travel with more subtle changes in road density that contribute to an increase in fawning/calving habitat effectiveness over time.

The implementation of any of these alternatives increases fawning/calving effectiveness through restricting travel to authorized routes and lowering overall road densities, thus decreasing disturbance to animals and vegetation. Alternative 3, 4, and 5 appear to be similar in motorized travel related reductions and go further than Alternative 2, thus would increase habitat effectiveness more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of this alternative would reduce big game fawning/calving effectiveness by allowing continued unrestricted travel in this habitat. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through big game neo-natal rearing summer range would continue to decrease habitat effectiveness across the District through vegetation destruction and animal disturbance/displacement. The combination of these uses and their effects on habitat would lower its effectiveness over time.

Action Alternatives

All action alternatives would lower road density and decrease the amount of potential unrestricted travel across the district and within big game reproductive habitat. Therefore, implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would continue to increase habitat effectiveness across the District. The combination of these changes and their effects on fawning/calving habitat for big game would improve over time.

Determinations and Rationale

No Action Alternative

The risk of increasing disturbance to big game as well as increased habitat fragmentation and impacts to vegetation that support big game would occur as a result of continued unrestricted travel under this Alternative. These impacts would decrease habitat effectiveness for summering big game over time. Continued motorized trail use in critical deer and elk birthing and rearing areas could have negative population affects over time. Implementation of this No Action Alternative may therefore affect big game fawning/calving habitat and individuals on the District, but it would not lead towards federal listing or cause a loss of viability to the population.

Alternative 2

Implementation of this Alternative would limit travel to designated routes and reduce unrestricted or cross-country travel, limiting habitat fragmentation and reducing motorized disturbances in these areas. Road density reductions in combination with

reductions in unrestricted motorized travel would improve habitat effectiveness for big game. This Alternative allows for somewhat higher road densities within big game summer range and also more opportunity for unrestricted travel due to the 300 foot buffer to access camping sites and for fuel-wood gathering, etc. For these reasons this Alternative would not increase habitat effectiveness to the degree that the other action alternatives would. Thus, the implementation of Alternative 2 may impact individuals or habitat, but would not lead to a trend toward federal listing or cause a loss of viability to the population.

Alternative 3, 4, and 5
Implementation of either of these alternatives would limit travel to designated routes and reduce unrestricted or cross-country travel, limiting habitat fragmentation and reducing motorized disturbances in these areas. Road density reductions in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for big game. Road density reductions in combination with reductions in unrestricted motorized travel would improve habitat effectiveness for summering big game more than in Alternative 2. Implementation of these Action Alternatives may therefore impact individuals or habitat, but would not lead to a trend toward federal listing or cause a loss of viability to the population.

Northern Goshawk

This species is also a Regional Forester's Sensitive Specie; please refer to previous section concerning environmental consequences to this species.

Brewer's Sparrow, Vesper Sparrow and Sage Thrasher

The Brewer's sparrow, Vesper sparrow and sage thrasher species were selected as Fishlake National Forest Management Indicator Species (MIS). Because they depend on sagebrush ecosystems, they will be analyzed together where appropriate. Where differences occur will be noted. The conservation status in Utah for the Vesper sparrow is secure and apparently secure for the Brewer's and sage thrasher (Rodriguez, 2006), even though all three species display a downward trend in state of Utah between 1968 and 2003, based on Breeding Bird Survey data. These data represent a 35 year trend and include points observed on the Fishlake National Forest.

Using vegetation mapping technology, approximately 661,740 acres of potential habitat containing sagebrush was estimated at the Forest level. Potentially suitable habitat occurs on all four Districts of the Forest.

Table 38. Shown is a comparison of Brewer's sparrow, Vesper sparrow and Sage thrasher habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	4.1	2.8	2.8	2.7	3.3	98	16	9	8	11
Canyon Range	1.9	1.7	1.6	1.3	1.5	91	16	9	7	8
Clear Creek	1.7	1.4	1.5	1.1	1.4	92	14	8	6	7
East Pahvant	2.2	1.6	1.5	0.9	1.7	87	15	8	4	9
West Pahvant	1.3	1.2	1.2	0.9	1.2	73	12	6	5	6
Fillmore District Total:	**1.7**	**1.4**	**1.4**	**1.0**	**1.4**	**83**	**14**	**7**	**5**	**7**
Fish Lake Basin	4.5	3.9	4.1	3.6	4.3	27	9	6	3	6
Fish Lake Hightop	2.5	1.7	2.1	1.6	2.2	66	13	9	7	10
Gooseberry/Lost Creek	4.7	2.4	3.7	2.7	3.8	71	26	20	19	20
Last Chance/Geyser Peak	1.7	1.1	1.3	1.1	1.4	53	8	4	4	4
Mytoge /Tidwell Slopes	3.0	1.8	1.9	1.6	2.3	87	16	9	8	11
Old Woman Plateau	2.2	1.7	1.7	1.5	2.0	100	16	9	8	11
Thousand Lakes Mtn.	1.2	0.7	0.8	0.6	1.0	16	6	4	3	4
Loa District Total:	**2.1**	**1.3**	**1.5**	**1.2**	**1.7**	**54**	**10**	**6**	**5**	**7**
Beaver Foothills	1.5	1.2	1.2	1.0	1.3	88	11	6	5	6
Beaver River Basin	1.9	1.5	1.5	1.5	1.9	88	6	3	3	3
Clear Creek	2.0	1.6	1.6	1.4	1.6	90	13	6	6	6
Indian Creek/North Creek	1.0	0.7	0.7	0.7	0.6	43	7	4	3	3
Piute Front	1.5	0.9	0.9	0.9	1.0	89	9	5	5	5
Beaver District Total:	**1.6**	**1.1**	**1.2**	**1.1**	**1.2**	**86**	**10**	**5**	**5**	**5**
Fish Lake Hightop	1.7	1.5	1.5	1.5	1.5	19	7	3	3	3
Gooseberry/Lost Creek	2.8	1.9	2.0	1.4	2.1	77	17	9	6	10
Monroe Mtn	2.5	1.9	1.7	1.2	1.7	88	17	9	6	9
Old Woman Plateau	2.4	1.8	1.8	1.5	1.9	90	17	9	7	9
Salina Creek	2.5	1.9	1.9	1.6	2.0	27	13	7	5	7
Richfield District Total:	**2.6**	**1.9**	**1.8**	**1.3**	**1.9**	**80**	**17**	**9**	**6**	**9**
Grand Total:	**2.0**	**1.5**	**1.5**	**1.2**	**1.6**	**77**	**13**	**7**	**5**	**7**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the existing travel plan, there are approximately 2,076 miles of roads and motorized trails on the Forest that occur in the 661,740 acres of potential sage nester habitat. This use translates to an overall road density of 2.0 miles of road per square mile of habitat. Motorized travel ways can fragment habitat and reduce important forage and cover values, thereby reducing habitat effectiveness for these species. Some areas of the Forest may be more impacted by current road density levels than others. For more details specific to the district level, see District headings below.

Continuation of the current travel plan would allow unrestricted travel on 509,540 acres, or 77% of potential sage nester habitat on the Forest (Table 38). Unrestricted travel would increase the risk of motorized travel into potential habitat that is not accounted for in current road density assessments. Increased motorized use would further increase habitat fragmentation and reduce important forage and cover values for these species over time. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Implementation of the No Action Alternative would decrease sage nester habitat effectiveness and result in more impacts than any other alternative.

Environmental Consequences Common to all Action Alternatives - Forest

Implementation of any of the Action Alternatives would reduce current designated roads and trails from 2.0 miles of road per square mile of habitat under the current plan to between 1.2-1.6 miles/square mile depending on the selected alternative. Alternative 4 would reduce road densities more than any other Action Alternative (Table 38). The reductions proposed in all Action Alternatives would decrease habitat fragmentation and improve important forage and cover values for these species over time.

Unrestricted travel would be reduced forest-wide from 77% in suitable habitat, to between 5-13%, depending on the selected Alternative (Table 38). These proposed reductions would reduce the risk of expanded motorized travel into potential habitat, impacts to soils and vegetation and decrease risk of predation and nest destruction or parasitism. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Sage Nesters:
Approximately 231,465 acres of potential sage nester habitat occurs on the Ranger District.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 628 miles of roads and motorized trails that occur in potential sage nester habitat under the current travel plan. This translates to an overall road density of 1.7 miles of road per square mile of habitat at the District level. The highest road density levels occur in localized areas in the East Pahvant and Beaver Foothills Ga's.

Under the No Action Alternative, unrestricted travel could occur on 83% of potential sage nester habitat on the District. Unrestricted travel would increase the risk of motorized travel into sage nester habitat that is not identified in current road density estimates. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage nester species over time. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Cross-country travel during the nesting season could result in disturbance to the nest or even destruction. Implementation of the No Action Alternative would decrease habitat effectiveness in sage nester habitat.

Environmental Consequences Common to all Action Alternatives

Implementation of any Action Alternative would incrementally reduce road density levels from 1.7 miles per square mile of habitat in the No Action Alternative, to 1.4 in *Alternative 2, 3 & 5,* and down to *1.0 in Alternative 4*. These lower densities would improve habitat effectiveness for sage nesters by decreasing habitat fragmentation and increasing herbaceous production and cover. Because seasonal road closures for wintering big game would only occur between January and mid April, these temporary road closures would lower road densities only outside the nesting season.

Unrestricted travel would be reduced in potential sage nester habitat on the District from 83% under the No Action Alternative, to 14% in *Alternative 2*, to 7% in *Alternatives 3 & 5,* and 6% in *Alternative 4*. These reductions proposed in each action alternative would reduce the chance of expanded motorized travel into potential sage nester habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support sage nester populations. Implementation of any action alternative would improve habitat effectiveness. Because *Alternative 4* reduces unrestricted cross-country travel the most in potential habitat and has the lowest rote density, implementation of this action alternative would improve habitat effectiveness for sage nesters more than Alternatives 2, 3, or 5.

Cumulative Effects

No Action Alternative

Over time, implementation of the No Action Alternative would continue to allow the risk of habitat fragmentation and impacts to soils and vegetation that support sage nester species. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage nesters on the District.

All Action Alternatives

All action alternatives would decrease the route density and the amount of unrestricted travel into potential sage nester habitat. A reduction in this use would decrease the risk of habitat fragmentation, nest destruction, and impacts to soil and vegetation that support these species. Implementation of any action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage nesters on the District.

Determinations and Rationale

No Action Alternative

Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, and nest destruction. Implementation of the No Action Alternative would impact potential sage nester habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the populations or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for sage nesters by reducing the miles of motorized routes and unrestricted motorized use in potential habitat. These changes would decrease impacts to soils and vegetation that support these species. Alternative 3, 4 and 5 would improve habitat effectiveness more than Alternative 2.

Loa Ranger District – Brewer's Sparrow, Vesper Sparrow and Sage Thrasher:

Because the Brewer's sparrow, Vesper sparrow and sage thrasher all use sagebrush cover for nesting, it was considered appropriate to analyze them together for the purposes of this evaluation. Approximately 133,616 acres was identified as potential habitat for the Brewer's sparrow, Vesper sparrow and sage thrasher on the Loa Ranger District using vegetation mapping technology. Although this estimate may be higher than actual or occupied habitat, as site specific information is not available at the District scale, all location occurrences of these species fall within identified potential habitat. Ongoing surveys will continue to help define their range and distribution on the District.

Each of these species displays fluctuating population trends from 1994 through 2003 based on a Breeding Bird Survey transect located on the District in potential habitat. Although these data are limited, current trend for the Brewer's sparrow is up, while the trend is down for both the sage thrasher and Vesper sparrow. Trends for the latter two species are similar to those at the state level, even though all these species are considered apparently secure or secure in the state (Rodriguez, 2006). Few sage thrashers have been encountered on the local transect and none have been documented during other District level bird surveys. The sage thrasher may therefore be very uncommon on the District because of its preference for lower elevation sagebrush stands below 6,000 feet which do not occur on the District. More preferred habitat may be available on BLM land located below the Forest.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 440 miles of designated roads and motorized trails that occur in potential sage nester habitat under the current travel plan. Road density in this area on average is about 2.1 miles of road occur per square mile of habitat at the District level, although higher (4.7) and lower (1.2) road densities occur in different geographical areas (Table 38). High road densities fragment habitat, impact soils and vegetation that support these species and reduce hiding cover making them more prone to predation.

Under the No Action Alternative, unrestricted travel would occur on about 72,820 acres, or 54% of potential sage nester habitat on the District. Unrestricted travel would increase the risk of motorized travel into potential habitat that is not accounted for in current road density assessments. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage nester species. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Implementation of the No Action Alternative has the potential to impact the Brewer's sparrow, Vesper sparrow and sage thrasher individuals and habitat more than any other alternative.

Environmental Consequences Common to all Action Alternatives

Implementation the Action Alternatives would reduce road density levels from 2.1 miles per square mile of habitat in the No Action Alternative, to between 1.2-1.7 miles/square mile, depending on the selected alternative (Table 38). This translates to a 19-43% reduction in the number of motorized roads and trails in potential habitat. Although Alternative Four and Two would eliminate more roads and Alternative Five the fewest, all proposed closures would improve habitat effectiveness for sage nesting species by

decreasing habitat fragmentation and increasing herbaceous forage production and cover for predator avoidance. Because seasonal road and area closures would only occur in the winter months when these species are absent from the Forest these actions proposed in the various alternatives would not affect these species.

Unrestricted travel would be reduced in potential habitat on the District from 54% under the No Action Alternative, to between 5-10%, depending on the selected alternative (Table 38). Alternative Four, then Three and Five would reduce unrestricted travel more than Alternative Two. Overall, the reductions proposed in each action alternative would decrease the risk of expanded motorized travel into potential habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support and protect sage nester populations. Implementation of all action alternatives would improve habitat effectiveness for these species.

Cumulative Effects

No Action Alternative

Approximately 133,616 acres of potential habitat occurs for the Brewer's sparrow, Vesper sparrow and sage thrasher within the 267,251 acre CEA. The existing roads and trails physically occupy about 1.4% of this habitat, where road density is on average about 2.1 miles/square mile. High road densities coupled with the risk of expansion into 54% of potential habitat would continue to increase the risk of habitat fragmentation and impacts to soils and vegetation that support sage nesting species. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for the Brewer's sparrow, Vesper sparrow and sage thrasher on the Loa Ranger District.

All Action Alternatives

Approximately 133,616 acres of potential habitat occurs for the Brewer's sparrow, Vesper sparrow and sage thrasher within the 267,251 acre CEA. Motorized roads and trails that would remain in the Action Alternatives would physically impact between .8 and 1.1% of potential habitat within the CEA, where the average road density would be reduced to between 1.2-1.7 miles of road/square mile from 2.1 in the No Action Alternative. Lowered road densities coupled with reductions in unrestricted travel from 54% of potential habitat down to between 5-10% would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support these species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for the Brewer's sparrow, Vesper sparrow and sage thrasher on the Loa Ranger District.

Determinations and Rationale

No Action Alternative

Current road density coupled with unrestricted travel would increase the risk of motorized travel into potential habitat, with a consequence of increased habitat fragmentation and reduced forage and herbaceous production. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Because all three species are considered to be secure or apparently secure in the state of Utah, implementation of the

No Action Alternative may impact sage nester habitat and individuals, but populations would continue to persist on the District.

All Action Alternatives

Implementation of any of the Action Alternatives would improve habitat effectiveness for the Brewer's sparrow, Vesper sparrow and sage thrasher by reducing the number of designated roads and unrestricted motorized areas in potential habitat. These changes would reduce the risk of fragmented habitats and impacts to soils and vegetation that support these species. Although Alternative 4 would reduce road density and unrestricted travel more than any other alternative, implementation of any of the Action Alternatives would improve habitat effectiveness for the sage nesting species above the current conditions. Implementation of the Action Alternative may therefore have a beneficial impact on individuals and/or habitat, and populations would continue to persist on the District.

Beaver Ranger District – Sage Nesters:

Approximately 116,671 acres of potential sage nester habitat occurs on the Ranger District.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 286 miles of roads and motorized trails that occur in potential sage nester habitat under the current travel plan. This translates to an overall road density of 1.6 miles of road per square mile of habitat at the District level. Higher road density levels occur in localized areas in the Clear Creek and Beaver River Basin GA's.

Under the No Action Alternative, unrestricted travel could occur on 86% of potential sage nester habitat on the District. Unrestricted travel would increase the risk of motorized travel into sage nester habitat that is not identified in current road density estimates. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage nester species over time. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Cross-country travel during the nesting season could result in disturbance to the nest or even destruction. Implementation of the No Action Alternative would decrease habitat effectiveness in sage nester habitat over time.

Environmental Consequences Common to all Action Alternatives

Implementation of any Action Alternatives would incrementally reduce road density levels from 1.6 miles per square mile of habitat in the No Action Alternative, down to from 1.1 to 1.2 depending on the Alternative selected. These lower densities would improve habitat effectiveness for sage nesters by decreasing habitat fragmentation and increasing herbaceous production and cover. Because seasonal road closures for wintering big game would only occur between January and mid April, these temporary road closures would lower road densities only outside the nesting season.

Unrestricted travel would be reduced in potential sage nester habitat on the District from 86% under the No Action Alternative, to 10% in *Alternative 2*, or down to 5% in

Alternatives 3, 4, or 5. These reductions proposed in each action alternative would reduce the chance of expanded motorized travel into potential sage nester habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support sage nester populations. Implementation of any action alternative would improve habitat effectiveness. Because *Alternatives 3, 4 or 5* reduce potential unrestricted travel the most in potential habitat, implementation of one of these action alternatives would improve habitat effectiveness for sage nesters more than Alternative 2.

Cumulative Effects

No Action Alternative

Over time, implementation of the No Action Alternative would continue to allow the risk of habitat fragmentation and impacts to soils and vegetation that support sage nester species. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage nesters on the District.

All Action Alternatives

All action alternatives would decrease the miles of roads and motorized trails and the amount of unrestricted travel into potential sage nester habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support these species. Implementation of any action alternative in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage nesters on the District.

Determinations and Rationale

No Action Alternative

Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, and nest destruction. Implementation of the No Action Alternative would impact potential sage nester habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the populations.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for sage nesters by reducing the miles of roads and unrestricted motorized use in potential habitat. These changes would decrease impacts to soils and vegetation that support these species. Alternative 3, 4 and 5 would improve habitat effectiveness more than Alternative 2.

Richfield Ranger District – Sage Nesters:

Approximately 179,988 acres of potential sage nester habitat occurs on the Ranger District.

Environmental Consequences Specific to the No Action Alternative (1)

There are approximately 721 miles of roads and motorized trails that occur in potential sage nester habitat under the current travel plan. This translates to an overall road density of 2.6 miles of road per square mile of habitat at the District level. Higher road density levels occur in localized areas in the Fishlake/High Top, Gooseberry/Lost Creek and Monroe Mt. GA's.

Under the No Action Alternative, unrestricted travel could occur on 80% of potential sage nester habitat on the District. Unrestricted travel would increase the risk of motorized travel into sage nester habitat that is not identified in current road density estimates. Increased motorized use would further increase habitat fragmentation and reduce forage and hiding cover for sage nester species over time. Loss of herbaceous cover would increase the risk of predation and nest parasitism. Cross-country travel during the nesting season could result in disturbance to the nest or even destruction. Implementation of the No Action Alternative would decrease habitat effectiveness in sage nester habitat more than any other alternative.

Environmental Consequences Common to all Action Alternatives

Implementation of all Action Alternatives would incrementally reduce road density levels from 2.6 miles per square mile of habitat in the No Action Alternative, to 1.9 in Alternative 2 and 1.8 in Alternative 3, and down to 1.3 in Alternative 4, then back up to 1.9 in Alternative 5. These lower densities would improve habitat effectiveness for sage nesters by decreasing habitat fragmentation and increasing herbaceous production and cover. Because seasonal road closures for wintering big game would only occur between January and mid April, these temporary road closures would lower road densities only outside the nesting season.

Unrestricted travel would be reduced in potential sage nester habitat on the District from 80% under the No Action Alternative, to 17% in Alternative 2, to 9% in Alternative 3 and 6% in Alternative 4 and back up to 7% in Alternative 5. These reductions proposed in each action alternative would reduce the chance of expanded motorized travel into potential sage nester habitat. Consequently, there would be less risk of habitat fragmentation and impacts to soil and vegetation that support sage nester populations. Implementation of any action alternative would improve habitat effectiveness. Because *Alternative 3, 4, and 5* reduce potential unrestricted travel in the most in potential habitat, implementation of one of these action alternatives would improve habitat effectiveness for sage nesters more than Alternative 2.

Cumulative Effects

No Action Alternative

Over time, implementation of the No Action Alternative would continue to allow the risk of habitat fragmentation and impacts to soils and vegetation that support sage nester species. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for sage nesters on the District.

All Action Alternatives

All action alternatives would decrease the miles of roads and motorized trails and the amount of unrestricted travel into potential sage nester habitat. A reduction in this use would decrease the risk of habitat fragmentation and impacts to soil and vegetation that support these species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for sage nesters on the District.

Determinations and Rationale

No Action Alternative

Given the current road density and amount of potential unrestricted travel, the implementation of this alternative would decrease habitat effectiveness over time through risk associated with vegetation trampling, noise disturbance, habitat fragmentation, and nest destruction. Implementation of the No Action Alternative would impact potential sage nester habitat more than any other alternative, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

All Action Alternatives

Implementation of any of the action alternatives would improve habitat effectiveness for sage nesters by reducing the miles of roads and unrestricted motorized use in potential habitat. These changes would decrease impacts to soils and vegetation that support these species. Alternative 3, 4 and 5 would improve habitat effectiveness more than Alternative 2. Implementation of one of these Alternatives may therefore impact individuals or habitat, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Hairy Woodpecker, Western Bluebird, Mountain Bluebird

The hairy woodpecker, western bluebird and mountain bluebird were selected as Fishlake MIS to represent a group of species dependent on tree cavities for portions of their life cycle. Because these species use similar habitat, they will be analyzed together, but where important differences occur will be noted. Approximately 539,015 acres of potentially suitable habitat was identified on the Forest, based on forested vegetation types where tree cavities are likely to occur. Potentially suitable habitat occurs on all four Districts of the Forest.

The conservation status for the hairy woodpecker and mountain bluebird is considered secure, while the western bluebird is considered vulnerable in the state of Utah (Rodriguez, 2006). Both the hairy and mountain bluebird display an upward stable trend in Utah, while the western bluebird displays an upward trend. These data represent 35 years of breeding bird surveys between 1968 and 2003 and includes points observed on the Fishlake National Forest.

Table 39. Shown is a comparison of hairy woodpecker, western bluebird and mountain bluebird habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	0.4	0.3	0.3	0.3	0.3	60	1	0	0	0
Canyon Range	0.4	0.4	0.4	0.2	0.4	51	5	2	1	2
Clear Creek	1.6	1.5	1.5	1.3	1.0	90	14	7	6	5
East Pahvant	1.0	0.8	0.8	0.5	0.7	69	8	5	3	4
West Pahvant	0.5	0.5	0.5	0.3	0.5	64	6	3	2	3
Fillmore District Total:	**0.6**	**0.5**	**0.5**	**0.4**	**0.5**	**62**	**6**	**3**	**2**	**3**
Fish Lake Basin	1.2	1.1	1.1	1.1	1.2	22	1	0	0	0
Fish Lake Hightop	0.9	0.6	0.8	0.5	0.8	22	7	4	3	4
Gooseberry/Lost Creek	1.2	0.8	1.1	1.1	1.1	43	10	7	7	7
Last Chance/Geyser Peak	1.6	0.9	1.0	0.8	1.0	71	11	6	5	6
Mytoge /Tidwell Slopes	0.9	0.6	0.6	0.5	0.7	79	7	3	3	4
Old Woman Plateau	1.1	0.9	0.9	0.8	1.0	100	11	5	5	6
Thousand Lakes Mtn.	1.3	1.0	1.0	0.6	1.1	4	10	5	3	4
Loa District Total:	**1.0**	**0.8**	**0.8**	**0.6**	**0.9**	**44**	**8**	**4**	**3**	**4**
Beaver Foothills	0.9	0.8	0.8	0.6	0.9	86	9	4	3	4
Beaver River Basin	2.0	1.7	1.7	1.6	1.8	60	16	8	8	8
Clear Creek	2.3	1.6	1.7	1.5	1.8	71	15	8	7	9
Indian Creek/North Creek	0.3	0.1	0.1	0.1	0.1	28	2	1	1	1
Piute Front	0.9	0.7	0.7	0.7	0.7	57	7	4	3	4
Tushar Mtns	0.5	0.3	0.3	0.3	0.3	3	4	2	2	2
Beaver District Total:	**1.1**	**0.9**	**0.9**	**0.8**	**0.9**	**54**	**9**	**5**	**4**	**4**
Fish Lake Hightop	0.6	0.3	0.3	0.3	0.3	9	5	2	2	2
Gooseberry/Lost Creek	1.2	1.0	1.0	0.7	1.0	38	11	5	4	5
Monroe Mtn	1.3	1.1	1.0	0.7	1.0	71	13	6	4	5
Mytoge/Tidwell Slopes	0	0	0	0	0	0	6	0	0	0
Old Woman Plateau	2.0	1.3	1.2	1.0	1.3	82	13	6	5	6
Salina Creek	1.0	0.8	0.8	0.5	0.8	16	9	4	3	4
Richfield District Total:	**1.3**	**1.0**	**1.0**	**0.7**	**1.0**	**53**	**12**	**5**	**4**	**5**
Grand Total:	**1.0**	**0.8**	**0.8**	**0.6**	**0.8**	**55**	**9**	**4**	**3**	**4**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the existing travel plan, there are approximately 834 miles of designated roads and motorized trails on the Forest that occur in the 539,018 acres of potential cavity nester habitat. This use translates to an overall road density of about 1 mile of road per square mile of habitat. Higher or lower road densities may occur at the District level in localized areas.

Continuation of the current travel plan would allow unrestricted travel on approximately 294,658 acres, or 55% of potential cavity nester habitat on the Forest (Table 39). Unrestricted travel would increase the risk of motorized travel into habitat that is not accounted for in current road density models. These cavity nesting species utilize a variety of forest vegetation types, increased motorized routes would contribute to habitat

fragmentation and increase access for fuel wood gatherers and the loss of snags that provide breeding habitat for cavity nesting species. Implementation of the No Action Alternative would decrease habitat effectiveness over time for cavity nesters more than any other alternative.

Environmental Consequences Common to all Action Alternatives - Forest

Implementation of the Action Alternatives would reduce current designated roads and trails from 1.0 miles of road per square mile of habitat under the current plan to between 0.9-0.6 miles/square mile depending on the selected alternative. Alternative 4 would reduce road densities more than any Action Alternative (Table 39). The reductions proposed in all Action Alternatives would decrease

Unrestricted travel would be reduced forest-wide from 44% in suitable habitat, to between 3-8%, depending on the selected Alternative (Table 39). The proposed reductions in unrestricted motorized travel would decrease impacts to vegetation that support forage species and the risk of habitat fragmentation due to route expansion. Fewer snags that provide breeding and foraging habitat would be at the risk of loss to fuel wood gatherers. Affects of this action to these species may vary by district. For more details specific to the District level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Cavity Nesters:
Approximately 167,849 acres of potential cavity nester habitat occurs on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are 159 miles of roads and motorized trails on the District that occur within the 167,848 acres of potential cavity nester habitat. This equates to 0.6 miles of road in a square mile of habitat on the District. Road density averages higher in the Clear Creek and East Pahvant GA's in suitable Cavity Nester habitat.

Continuation of the current condition would allow unrestricted travel on approximately 62% of the District's potential cavity nester habitat. Unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species, reducing habitat effectiveness. Unrestricted travel would also increase the potential for access by fuel wood gatherers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Though somewhat mitigated due to the timbered structure of the habitat limiting unrestricted motorized access, implementation of the No Action Alternative would decrease habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

These alternatives would drop road density levels by 0.1-0.2 miles of roads per square mile in cavity nester habitat. *Alternative 2, 3 or 5* propose to lower the road density to 0.5 while *Alternative 4* proposes 0.4 miles of road per square mile. Road density levels

are relatively low, but the proposed incremental reductions would improve habitat effectiveness for cavity nester species.

Unrestricted travel would be reduced incrementally under each alternative from 62% of potential habitat under the No Action Alternative, to 6% in *Alternative 2,* to 3% in *Alternative 3 &5*, and down to 2% in *Alternative 4*. These proposed changes would improve overall habitat effectiveness for cavity nesters by reducing the potential risk of increased roads that fragment habitat and accelerate the loss of snags which provide breeding habitat for cavity dependent species. Implementation of *Alternative 3, 4 or 5* would improve habitat effectiveness for cavity nesters more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would allow continued risks of habitat fragmentation, impacts to soils and vegetation to forage and accelerate the loss of snags by allowing unrestricted travel into portions of potential habitat. Because unrestricted travel into cavity nesting timbered landscapes is typically difficult, affects of this alternative are expected to take place over time. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through cavity nester habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within cavity nester habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to soils and vegetation to support forage and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for cavity nesters across the District.

Determinations and Rationale

No Action Alternative

Unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports cavity nesters. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of the No Action alternative may affect cavity nester individuals and lower habitat effectiveness, but would not cause a loss of viability to the populations or species.

All Action Alternatives

The changes proposed for road density and unrestricted travel in all action alternatives would improve overall habitat effectiveness for cavity nesters by reducing habitat fragmentation, impacts to vegetation that support cavity nesters and the loss of snags which provide breeding habitat for cavity dependent species. Implementation of *Alternative 3, 4 or 5* would improve habitat effectiveness for cavity nesters more than Alternative 2.

Loa Ranger District – Hairy Woodpecker, Mountain Bluebird and Western Bluebird:

Because the hairy woodpecker, mountain bluebird and western bluebird all use nest cavities, often found in dead or diseased trees, it was considered appropriate to analyze them together for the purposes of this evaluation. Approximately 92,133 acres was identified as potential habitat for cavity dependent species on the Loa Ranger District based on forested and woodland vegetation models. Both the hairy woodpecker and mountain bluebird have displayed fluctuating but overall stable population trends from 1994 through 2003 based on a Breeding Bird Survey transect located on the District. These trends are similar to that for the state. Both the hairy woodpecker and mountain bluebird appear to be common on the District in suitable habitat where they have been encountered during District or project level surveys. No western bluebirds have been documented on the District during any bird survey to date and therefore likely do not occur.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are about 150 miles of roads and motorized trails on the District that occur within potential habitat on the District and on average there is about 1.0 mile of road that occurs in a square mile of habitat. The current transportation system occupies less than 1% of available habitat on the District. High road densities can increase disturbances and removal of snags by fuel wood gathers. Because the proportion of habitat impacted by motorized roads and trails is low and the average road density within this area is low while higher road densities are confined to isolated areas where adjacent habitat is available, impacts to potential habitat and/or populations would be considered low.

Unrestricted motorized access can increase the risk of fragmenting habitat and impacting vegetation that supports cavity nesting species. This use can also increase the potential for access by fuel wood gathers who remove snags which provide breeding habitat for these cavity dependent species. Continuation of the current condition would allow unrestricted travel on approximately 40,494 acres, or 44%, of potential habitat on the District. Although this use is typically limited in heavy forested conditions, the risk of unrestricted travel expansion into potential habitat over time would decrease habitat effectiveness for the hairy woodpecker and mountain bluebird.

Environmental Consequences Common to all Action Alternatives

Because some of the designated roads and trails are proposed to be closed, road density within potentially suitable habitat would be reduced by about a 20-40%, depending on the alternative selected (Table 39). Alternative Four would eliminate more roads and Alternative Five the fewest in potential habitat than the other Action Alternatives. Although there would be fewer roads proposed in the Action Alternatives than in the No Action Alternative, the transportation system would still occur on less than 1% of available habitat on the District. Even though these reductions would be minor, they would help decrease disturbances to the hairy woodpecker and mountain bluebird in local areas.

In addition to reducing the number of roads and trails, the Action Alternatives would also reduce cross-country or unrestricted travel by as much as 82-93%, depending on the selected alternative (Table 39). Although Alternative Four would decrease unrestricted travel more than any alternative, all Action Alternatives would help improve overall habitat effectiveness for the these cavity nesting species by reducing the potential risk of expanded travel ways that accelerate the loss of snags and other vegetation which support cavity dependent species. Because these stands are typically difficult to access via cross-country travel, the reductions in unrestricted travel would have a limited improvement on habitat effectiveness.

Cumulative Effects

No Action Alternative

There are approximately 92,133 acres of habitat that are available to cavity nesting species within the 267,251 acre CEA. Less than 1% of this habitat is physically occupied by motorized roads or trails under the current travel plan with road densities averaging about 1.0 mile/square mile. Because the proportion of potential habitat impacted by existing roads is low and road density levels are on average low, the contribution to cumulative effects would be low.

Unrestricted travel is currently permitted in 44% (40,494 acres) of potential habitat within the CEA. This action would increase the risk of expansion into portions of habitat resulting in possible loss of snags and impacts to soils and vegetation that support prey. Because unrestricted travel into forested landscapes is typically difficult to access, affects this alternative would be low. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through hairy woodpecker and mountain bluebird habitat would incrementally decrease habitat effectiveness for these species across the District.

All Action Alternatives

There are approximately 92,133 acres of habitat that are available for cavity nesting species within the 267,251 acre CEA. Similar to the No Action Alternative, less than 1% of this habitat would be physically occupied by roads or motorized trails as a result of implementing the Action Alternatives. Road densities however, would be reduced from 1.0 miles/square mile to between .6 and .9 miles/square mile, depending on the selected alternative, which translates to a 20-40% road density reduction in potential habitat. These reductions would help decrease motorized disturbances and loss of snags, thereby improving habitat effectiveness. Because the proportion of potential habitat impacted by existing roads would remain low, the contribution to cumulative effects would be low.

Unrestricted travel would be reduced from 44% of potential habitat down to between 3-8%, depending on the selected alternative, within the CEA. These actions would reduce the risk of impacts to habitat and loss of snags by fuel wood gatherers. Because cross-country travel into forested landscapes is typically difficult to access, affects of these alternatives would be low. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would incrementally improve habitat effectiveness for cavity nesters across the Loa Ranger District.

Determinations and Rationale

No Action Alternative

Because the proportion of potential habitat occupied by existing roads is <1% and road density levels are on average 1.0 mile/square mile, impacts from the use of these existing features would be low. Unrestricted motorized access under the No Action Alternative has the potential to accelerate the loss of snags by fuel wood gatherers and impact vegetation that supports cavity nesting species. Cross-country motorized travel into potential habitat is generally limited due to poor accessibility and current impacts are considered low. Implementation of this alternative may therefore impact the hairy woodpecker and mountain bluebird, but they would continue to persist in available habitat on the District.

All Action Alternatives

Implementation of the Action Alternatives would reduce road density by 20-40% and unrestricted travel by 82-93% within potential cavity nesting habitat. These proposed reductions would improve overall habitat effectiveness for cavity nesters by decreasing the risk of impacts to vegetation that support cavity nesters. Because road densities are already fairly low and unrestricted travel into potential habitat is typically difficult to access, these improvements would be low. The hairy woodpecker, mountain bluebird and western bluebird would continue to persist at or above current levels.

Beaver Ranger District – Cavity Nesters:

Approximately 140,842 acres of potential cavity nester habitat occurs on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are 245 miles of roads and motorized trails on the District that occur within the 140,842 acres of potential cavity nester habitat. This equates to 1.1 miles of road in a square mile of habitat on the District. Road density averages higher in the Clear Creek and Beaver River Basin GA's in suitable Cavity Nester habitat.

Continuation of the current condition would allow unrestricted travel on approximately 54% of the District's potential cavity nester habitat. Unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species, reducing habitat effectiveness. Unrestricted travel would also increase the potential for access by fuel wood gatherers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Though somewhat mitigated due to the timbered structure of the habitat limiting unrestricted motorized access, implementation of the No Action Alternative would decrease habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

These alternatives would drop road density levels by 0.2-0.3 miles of roads per square mile. *Alternatives 2, 3 and 5* propose to lower road density to 0.9 while *Alternative 4* proposes the lowest at 0.8 miles per square mile. Road density levels are relatively low,

but the proposed incremental reductions would improve habitat effectiveness for cavity nester species.

Unrestricted travel would be reduced incrementally under each alternative from 54% of potential habitat under the No Action Alternative, to 9% in *Alternative 2,* to 5% in *Alternative 3*, and down to 4% in *Alternatives 4 & 5*. These proposed changes would improve overall habitat effectiveness for cavity nesters by reducing the potential risk of increased roads that fragment habitat and accelerate the loss of snags which provide breeding habitat for cavity dependent species. Implementation of *Alternatives 3, 44 or 5* would improve habitat effectiveness for cavity nesters slightly more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would allow continued risks of habitat fragmentation, impacts to soils and vegetation to forage and accelerate the loss of snags by allowing unrestricted travel into portions of potential habitat. Because unrestricted travel into cavity nesting timbered landscapes is typically difficult, affects of this alternative are expected to take place over time. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through cavity nester habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within cavity nester habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to soils and vegetation that support forage and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for cavity nesters across the District.

Determinations and Rationale

No Action Alternative

Unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports cavity nesters. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of the No Action alternative may affect cavity nester individuals and lower habitat effectiveness, but would not cause a loss of viability to the populations or species.

All Action Alternatives

The changes proposed for road density and unrestricted travel in all action alternatives would improve overall habitat effectiveness for cavity nesters by reducing habitat fragmentation, impacts to vegetation that support cavity nesters and the loss of snags which provide breeding habitat for cavity dependent species. Implementation of *Alternative 3, 4 or 5* would improve habitat effectiveness for cavity nesters more than Alternative 2.

Richfield Ranger District – Cavity Nesters:

Approximately 138,192 acres of potential cavity nester habitat occurs on the District.

Environmental Consequences Specific to the No Action Alternative (1)

Under the current travel plan there are 278.7 miles of roads and motorized trails on the District that occur within the 138,192 acres of potential cavity nester habitat. This equates to 1.3 mile of road in a square mile of habitat on the District. Continuation of the current condition would allow unrestricted travel on approximately 53% of the District's potential cavity nester habitat. Unrestricted motorized access has the potential to fragment habitat, and impact vegetation that supports these species, reducing habitat effectiveness. Unrestricted travel would also increase the potential for access by fuel wood gatherers and increase the loss of snags that provide breeding habitat for these cavity dependent species. Though somewhat mitigated due to the timbered structure of the habitat limiting unrestricted motorized access, implementation of the No Action Alternative would decrease habitat effectiveness over time.

Environmental Consequences Common to all Action Alternatives

These alternatives would drop road density levels by .03 miles of roads per square mile. *Alternative 2, 5 and 4* propose the lower density at 1.0 and .07 respectively, while *Alternative 3* proposes the in between at 0.7 miles per square mile. Road density levels are relatively low, but the proposed incremental reductions would improve habitat effectiveness for cavity nester species.

Unrestricted travel would be reduced incrementally under each alternative from 53% of potential habitat under the No Action Alternative, to 12% in Alternative 2, to 5% in Alternative 3, and down to 4% in Alternative 4 and back to 5% in Alternative 5. These proposed changes would improve overall habitat effectiveness for cavity nesters by reducing the potential risk of increased roads that fragment habitat and the loss of snags which provide breeding habitat for cavity dependent species. Implementation of Alternative 4 would improve habitat effectiveness for cavity nesters more than Alternative 2, 3, and 5.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would allow continued risks of habitat fragmentation, impacts to soils and vegetation to forage and accelerate the loss of snags by allowing unrestricted travel into portions of potential habitat. Because unrestricted travel into cavity nesting timbered landscapes is typically difficult, affects of this alternative are expected to take place over time. Past, present and reasonably foreseeable future actions in combination with the continued use of unrestricted travel through cavity nester habitat would decrease habitat effectiveness for these species across the District.

All Action Alternatives

All action alternatives would decrease the amount of unrestricted travel within cavity nester habitat. A reduction in unrestricted travel would decrease the risk of habitat fragmentation, impacts to soils and vegetation to support forage and slow down the loss of nest trees by fuel wood gatherers. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for cavity nesters across the District.

Determinations and Rationale

No Action Alternative

Unrestricted motorized access under the No Action Alternative has the potential to fragment habitat, accelerate the loss of nest trees by fuel wood gatherers and impact vegetation that supports cavity nesters. Because cross-country motorized travel into potential habitat is generally limited due to poor accessibility, implementation of the No Action alternative may affect cavity nester individuals and habitat, but would not cause a loss of viability to the population or species.

All Action Alternatives

The changes proposed for road density and unrestricted travel in all action alternatives would improve overall habitat effectiveness for cavity nesters by reducing habitat fragmentation, impacts to vegetation that support cavity nesters and the loss of snags which provide breeding habitat for cavity dependent species. Implementation of *Alternative 3, 4, or 5* would improve habitat effectiveness for cavity nesters more than Alternative 2.

Lincoln's Sparrow, Song Sparrow, Yellow Warbler and MacGillivray's Warbler

The Lincoln's Sparrow, Song Sparrow, Yellow Warbler and MacGillivray's Warbler were selected as a Fishlake National Forest Management Indicator Species (MIS) to represent bird species dependent on riparian areas during their reproductive period. Because they use similar habitat, they will be analyzed collectively, where appropriate. Approximately 18,020 acres of riparian habitat was identified on the Forest as being potentially suitable to these riparian nesters. Potentially suitable habitat occurs on all four Districts of the Forest.

All four riparian dependent species display an upward or slightly upward trend in the state of Utah between 1968 and 2003, based on Breeding Bird Survey data. These data represent a 35 year trend and include points observed on the Fishlake National Forest. As would be expected, the conservation status in Utah for these species is apparently secure (Rodriguez, 2006).

Table 40. Shown is a comparison of Riparian Nester habitat on the Fishlake Forest by Ranger District and Geographic Area (GA) showing the relative road density and amount of "unrestricted" travel acres, where cross-country travel is allowed, between alternatives.

GA Name	Road density (miles/mile^2)					Unrestricted Travel (% of area)				
	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Beaver Foothills	2.0	0.8	0.8	0.8	2.0	100	37	13	13	20
Canyon Range	4.5	3.6	3.6	2.0	4.5	68	79	62	42	63
Clear Creek	3.5	3.4	3.5	2.7	2.8	95	25	17	13	13
East Pahvant	3.9	0.9	3.9	0.9	3.9	82	24	25	18	25
West Pahvant	7.9	8.0	8.4	6.3	8.4	76	57	40	30	39
Fillmore District Total:	**7.0**	**7.0**	**7.4**	**5.5**	**7.3**	**79**	**51**	**36**	**27**	**35**
Fish Lake Basin	2.1	1.9	1.9	1.7	1.8	19	3	1	0	1
Fish Lake Hightop	1.2	0.8	0.9	0.8	0.9	23	3	2	1	2
Gooseberry/Lost Creek	3.8	1.3	3.8	3.8	3.8	88	23	17	17	19
Last Chance/Geyser Peak	7.9	6.8	6.9	6.6	7.2	91	41	26	25	27
Mytoge /Tidwell Slopes	5.4	3.3	3.7	3.2	3.8	79	28	17	15	18
Old Woman Plateau	3.0	3.0	3.0	3.0	3.0	100	29	16	16	16
Thousand Lakes Mtn.	3.3	2.9	2.9	2.5	3.2	49	34	18	14	19
Loa District Total:	**3.9**	**2.9**	**3.0**	**2.7**	**3.1**	**54**	**19**	**11**	**10**	**12**
Beaver Foothills	7.7	7.4	7.9	6.8	8.1	92	45	32	28	32
Beaver River Basin	1.9	1.7	1.7	1.7	1.9	70	26	17	16	16
Clear Creek	10.6	10.2	9.5	9.2	9.6	95	36	21	20	22
Indian Creek/North Creek	5.5	4.1	4.1	4.1	4.5	49	31	21	21	23
Piute Front	6.1	5.1	5.2	4.8	5.4	84	42	26	24	27
Tushar Mtns	0.4	0.4	0.4	0.4	0.4	4	5	2	2	2
Beaver District Total:	**7.4**	**6.8**	**6.7**	**6.3**	**6.9**	**82**	**36**	**23**	**21**	**24**
Fish Lake Hightop	5.6	4.9	4.9	4.9	4.9	44	36	21	21	21
Gooseberry/Lost Creek	10.0	9.5	9.5	9.2	9.6	72	38	23	22	23
Monroe Mtn	5.9	5.1	5.1	3.4	5.1	85	33	23	16	23
Old Woman Plateau	8.0	6.9	7.0	6.6	7.1	71	37	25	23	25
Salina Creek	10.2	9.4	9.5	9.3	10.0	47	21	15	13	16
Richfield District Total:	**8.3**	**7.5**	**7.6**	**6.8**	**7.7**	**71**	**33**	**22**	**19**	**23**
Grand Total:	**6.8**	**6.1**	**6.2**	**5.5**	**6.3**	**69**	**33**	**22**	**18**	**22**

Environmental Consequences Specific to No Action Alternative (1) – Forest

Under the existing travel plan, there are 192 miles of roads and motorized trails on the Forest that occur in the 18,020 acres of potential riparian habitat. This use translates to an average road density of 6.8 miles of road per square mile of habitat (Table 40). This level of road density within riparian areas is considered relatively high. Roads often exist near streams because coincidentally many access routes on the Forest progress up canyon bottoms to avoid rougher terrain. Motorized travel into riparian areas can impact soils and vegetation that support riparian nesters and their forage. Noise and physical disturbances created by motorized travel can displace breeding birds and/or their nests.

Unrestricted travel would occur on 69% of potential habitat. Unrestricted travel would increase the risk of motorized travel into habitat that is not accounted for in current road density models. Motorized travel into riparian areas impacts soils and vegetation that support riparian nesters and their forage. Noise and physical disturbances created by motorized travel can displace breeding birds and/or destroy nests. Because road density and unrestricted travel are highest in the No Action Alternative, implementation of this alternative would impact riparian guild habitat effectiveness more than any other

alternative at the Forest level over time. Affects of this action to these species may vary slightly by District

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Environmental Consequences Common to all Action Alternatives – Forest

At the Forest level, road density would drop by 0.5-1.3 miles of roads per square mile of habitat under these alternatives and incrementally increase riparian habitat effectiveness. As much as 1.3 mile of road per square mile of habitat would be reduced as a result of implementing *Alternative 4* at the Forest level. These changes would improve habitat effectiveness for riparian nesters more than any other action alternative.

Unrestricted travel would be reduced forest-wide from 69% in suitable habitat, to between 18-33%, depending on the selected Alternative (Table 40). These proposed reductions in unrestricted motorized travel would decrease impacts to vegetation that support forage and reduce the risk of disturbance of breeding birds and/or nests. Because *Alternative 4* proposes lower road density and far less potential for unrestricted travel, implementation of this alternative would improve habitat effectiveness for riparian dependent species more than other action alternatives. Affects of this action to these species may vary slightly by District. For more details specific to the district level, see District headings below.

The following disclosure of effects will be displayed by Ranger District:

Fillmore Ranger District – Riparian Guild:

Riparian habitat suitable for riparian guild species is limited on the District to approximately 2,639 acres. Although riparian habitat is found in all Geographic Areas on the District, the majority of this habitat is located within the West Pahvant/Corn Creek GA.

Environmental Consequences Specific to the No Action Alternative (1)

Under the existing travel plan, there are 29 miles of roads and motorized trails on the District that occur within the 2,639 acres of riparian guild habitat. This equates to 7.0 miles of road per square mile of habitat. This density is the highest in the West Pahvant/Corn Creek GA with 7.9 miles of road per square mile of habitat. Because these riparian habitats are narrow strips across the Forest often with an adjacent road, these values appear much higher than neighboring upland habitats. Motorized travel into riparian areas impacts soils and vegetation that support riparian nesters and their forage. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests.

Implementation of the No Action Alternative would allow unrestricted travel in approximately 79% of potential riparian habitat at the District level. This travel would increase the risk of impacts to soils and vegetation that support riparian nesters and their forage. Increased habitat fragmentation can increase the risk of predation and nest parasitism. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests. Because current road density and unrestricted travel are

highest in the No Action Alternative, implementation of this alternative would decrease habitat effectiveness for riparian guild species over time.

Environmental Consequences Common to all Action Alternatives

At the District level, road density would stay at 7.0 miles of road per square mile of habitat as in the No Action Alternative for *Alternative 2*, raise to 7.4 or 7.3 in Alternative 3 or 5, respectively; or drop as low as 5.5 miles per sq. mile in *Alternative 4*. Although all action alternatives would improve habitat effectiveness for the riparian guild through reduction in cross-country travel, road densities proposed in *Alternative 4* would reduce disturbance in riparian habitat more than any other action alternative.

Unrestricted travel would be reduced in each alternative from 79% of potential habitat under the No Action Alternative, to 51% in *Alternative 2*, 36% in *Alternative 3*, 27% in *Alternative* 4, and down to 35% in *Alternative 5*. These proposed reductions in unrestricted motorized travel would decrease the risk of impacts to vegetation that support these species and their forage; as well as reduce the risk of displacing breeding birds and/or destroying nests. Because *Alternative 4 or 5* propose lower road density and less potential for unrestricted travel, implementation of one of these alternatives would improve habitat effectiveness for the riparian guild more than other action alternatives.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Past, present and reasonably foreseeable future actions in combination with the continued use of designated motorized routes and unrestricted travel in riparian habitat would decrease habitat effectiveness for riparian guild members across the District over time.

All Action Alternatives

All action alternatives would lower the potential for unrestricted travel within riparian habitat. A reduction in cross-country motorized travel would decrease the risks to habitat components that support these guild species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for riparian guild members across the District over time.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would result in the highest density of motorized routes and potential for unrestricted travel within riparian habitat than any other alternative. This use would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Therefore, this No Action Alternative would decrease habitat effectiveness over time.

All Action Alternatives

Any action alternatives would decrease the potential for unrestricted cross-country travel within riparian habitat. A reduction in this motorized travel would decrease the risks to habitat components that support these guild species. Because *Alternatives 3, 4 or 5* propose less potential for unrestricted travel within riparian areas, implementation of one of these action alternatives would improve habitat effectiveness for riparian members and habitat more than Alternative 2.

Loa Ranger District - Lincoln's Sparrow, Song Sparrow, Yellow Warbler, MacGillivray's Warbler

Because the Lincoln's sparrow, song sparrow, yellow warbler and MacGillivray's warbler all depend on riparian habitat during the breeding period, it was considered appropriate to analyze them together for the purposes of this evaluation. Based on mapping that singled out riparian habitat along streams, lakes, ponds lakes and wetlands, approximately 4,696 acres was identified as potential habitat for these riparian nesting species on the Loa Ranger District.

Although data is limited, all four riparian dependent species have displayed fluctuating but overall stable population trends from 1994 through 2003 based on a Breeding Bird Survey transect located on the District. Additionally, all four species have been encountered during breeding bird surveys at the District or project level and occur where potential habitat has been projected.

Environmental Consequences Specific to the No Action Alternative (1)

Under the existing travel plan, there are about 28 miles of designated roads and motorized trails on the District that occur within potential riparian habitat. Overall road density at the District level is currently 3.9 miles of road per square mile of habitat. Road density values may be lower or higher in localized areas at the GA scale (Table 40). Some of the motorized use may be attributed to roads that occur along the outer edge of riparian areas, such as the road along Sevenmile Creek or the Fremont River. Many of these roads have either been paved or engineered to reduce physical impacts to riparian areas. In these instances, physical impacts to riparian habitat have been and would continue to be minimized. Where protective measures have not been developed, motorized travel can impact soils and vegetation that support riparian nesters and their prey. Noise and physical disturbances created by motorized travel can displace riparian breeding birds to less disturbed areas.

Continuation of the current condition would allow unrestricted travel on approximately 2,539 acres, or 54%, of potential habitat on the District. Some Geographical Areas may have higher or lower unrestricted travel allowances (Table 40). Unrestricted motorized travel would increase the risk of impacts to soils and vegetation that support riparian nesters and their prey. Increased habitat fragmentation can increase the risk of predation and nest parasitism. Noise and physical disturbances created by motorized travel can displace breeding birds into limited riparian habitat. Because current road density and unrestricted travel are highest in the No Action Alternative, implementation of this alternative would have the potential to impact riparian nesting species and habitat more than any other alternative.

Environmental Consequences Common to all Action Alternatives

Implementation of the Action Alternatives would reduce the number of motorized roads and trails on the District. As a result, there would be a reduction in road density by about 20-30%. Alternative Four would eliminate more roads and Alternative Five would eliminate the fewest in potential habitat than the other action alternatives. Some geographical areas would continue to have high road densities even with the proposed reductions. One reason that few roads would be closed or obliterated is because many of these are paved or engineered system roads that occur on the edge of riparian areas. Even though the proposed road reductions would be low, they would help decrease the potential disturbances to the Lincoln's sparrow, song sparrow, yellow warbler and MacGillivray's warbler and improve habitat effectiveness.

Unrestricted motorized travel would decline in the Action Alternatives from 54%, to between 10-19% of potential habitat, depending on the selected alternative (Table 40). This means there would be a 65-81% reduction in unrestricted travel as a result of implementing the Action Alternatives. Although Alternative Four would decrease unrestricted travel more than any alternative, all Action Alternatives would improve overall habitat effectiveness by decreasing the risk of motorized expansion that would further fragment and disturb riparian nesting species

Cumulative Effects

No Action Alternative

There are approximately 4,696 acres of available riparian habitat within the 267,251 acre CEA. About 2.5% of this habitat is currently occupied by a motorized transportation system with the Action Alternatives. Road density within the CEA is on average about 3.9 miles/square mile. Many of these roads have been engineered and/or paved to accommodate traffic to reduce impacts to riparian habitat. High road densities coupled with the risk of motorized expansion into 54% of potential habitat would continue to increase the risk of habitat fragmentation and impacts soils and vegetation that support riparian nesting species. Past, present and reasonably foreseeable future actions in combination with the continued road density and unrestricted travel in potential habitat would decrease habitat effectiveness for these species on the Loa Ranger District.

All Action Alternatives

There are approximately 4,696 acres of available riparian habitat within the 267,251 acre CEA. About 2% or less of this habitat would continue to be occupied by a motorized transportation system with the Action Alternatives. Many of these roads have been engineered and/or paved to accommodate traffic to reduce impacts to riparian habitat. Because road reductions are proposed in each of the Action Alternatives, road densities would be decreased by about 20-30%. Cross-country or unrestricted travel would also be reduced in potential riparian nesting habitat by about 65-81%, depending on the selected alternative (Table 40). All Action Alternatives would reduce the number of designated motorized roads and trails and the amount of unrestricted travel into potential habitat. These reductions would improve overall habitat effectiveness by decreasing the risk of motorized expansion that would further fragment and disturb riparian nesting species.

Implementation of any of the Action Alternatives in combination with past, present and reasonably foreseeable future actions would therefore improve habitat effectiveness for riparian nesting species across the District.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would have the highest designated motorized routes and unrestricted travel within riparian habitat than any other alternative. This use would increase the risks of habitat fragmentation, impacts to soils and vegetation that support these species on the District. Because the trend for these species is stable on the District under the current plan, and populations show an upward to slightly upward trend in the state where they are considered apparently secure, the Lincoln's sparrow, song sparrow, yellow warbler and MacGillivray's warbler populations would continue to persist on the District as a result of implementing the No Action Alternative.

All Action Alternatives

All Action Alternatives would decrease the amount of designated roads and unrestricted travel within potential riparian habitat. A reduction in overall motorized travel would decrease the risks of impacts to soils and vegetation to support riparian nesters and prey, reduce predation and nest parasitism and reduce the risk of displacing breeding birds to limited riparian areas. Implementation of any of the Action Alternatives would improve habitat effectiveness for riparian nesters and their habitat, where populations would continue to persist on the District.

Beaver Ranger District – Riparian Guild:

Riparian habitat suitable for riparian guild species is limited on the District to approximately 2,884 acres. Although riparian habitat is found in all Geographic Areas (GA) on the District, the majority of this habitat is located within the Clear Creek GA.

Environmental Consequences Specific to the No Action Alternative (1)

Under the existing travel plan, there are 33 miles of roads and motorized trails on the District that occur within the 2,884 acres of riparian guild habitat. This equates to 7.3 miles of road per square mile of habitat. This density is the highest in the Clear Creek GA with 10.5 miles of road per square mile of habitat. Because these riparian habitats are narrow strips across the Forest often with an adjacent road, these values appear much higher than neighboring upland habitats. Motorized travel into riparian areas impacts soils and vegetation that support riparian nesters and their forage. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests.

Implementation of the No Action Alternative would allow unrestricted travel in approximately 82% of potential riparian habitat at the District level. Within the Clear Creek GA, 95% of the 1,071 acres of habitat are open to unrestricted motorized travel. This travel would increase the risk of impacts to soils and vegetation that support riparian nesters and their forage. Increased habitat fragmentation can increase the risk of predation and nest parasitism. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests. Because current road density and

unrestricted travel are highest in the No Action Alternative, implementation of this alternative would decrease habitat effectiveness for riparian guild species more than any other alternative over time.

Environmental Consequences Common to all Action Alternatives

At the District level, road density would drop from 7.3 miles of road per square mile of habitat in the No Action Alternative, to 6.8 in *Alternative 2*, 6.7 in *Alternative 3*, and down to 6.3 miles per square mile in *Alternative 4*. Although all action alternatives would improve habitat effectiveness for the riparian guild, road densities proposed in *Alternative 4* would reduce disturbance in riparian habitat more than any other action alternative.

Unrestricted travel would be reduced in each alternative from 82% of potential habitat under the No Action Alternative, to 48% in *Alternative 2*, 33% in *Alternative 3*, and down to 31% in *Alternative 4*. These proposed reductions in unrestricted motorized travel would decrease the risk of impacts to vegetation that support these species and their forage; as well as reduce the risk of displacing breeding birds and/or destroying nests. Because *Alternative 3 and 4* propose lower road density and less potential for unrestricted travel, implementation of one of these alternatives would improve habitat effectiveness for the riparian guild more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Past, present and reasonably foreseeable future actions in combination with the continued use of designated motorized routes and unrestricted travel in riparian habitat would decrease habitat effectiveness for riparian guild members across the District.

All Action Alternatives

All action alternatives would decrease the miles of roads and lower the potential for unrestricted travel within riparian habitat. A reduction in motorized travel would decrease the risks to habitat components that support these guild species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for riparian guild members across the District.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would result in the highest density of motorized routes and potential for unrestricted travel within riparian habitat than any other alternative. This use would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Therefore, this No Action Alternative would decrease habitat effectiveness more than any of the action alternatives.

All Action Alternatives

All action alternatives would decrease the miles of road and lower the potential for unrestricted travel within riparian habitat. A reduction in motorized travel would decrease the risks to habitat components that support these guild species. Because *Alternative 3 and 4* propose lower road density and less potential for unrestricted travel within riparian areas, implementation of one of these action alternatives would improve habitat effectiveness for riparian members and habitat more than Alternative 2.

Richfield Ranger District – Riparian Guild:

Riparian habitat suitable for riparian guild species is limited on the District to approximately 7,801 acres. Although riparian habitat is found in all Geographic Areas on the District, riparian areas are somewhat distributed evenly throughout the GA's with the exception of the Fishlake/High Top GA with only 106 acres.

Environmental Consequences Specific to the No Action Alternative (1)

Under the existing travel plan, there are 101.2 miles of roads and motorized trails on the District that occur within the 7,801 acres of riparian guild habitat. This equates to 7.7 miles of road per square mile of habitat. This density is the highest in the Gooseberry/ Lost Creek GA with 10.0 miles of road per square mile of habitat. Because these riparian habitats are narrow strips across the Forest often with an adjacent road, these values appear much higher than neighboring upland habitats. Motorized travel into riparian areas impacts soils and vegetation that support riparian nesters and their forage. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests.

Implementation of the No Action Alternative would allow unrestricted travel in approximately 71% of potential riparian habitat at the District level. This travel would increase the risk of impacts to soils and vegetation that support riparian nesters and their forage. Increased habitat fragmentation can increase the risk of predation and nest parasitism. Noise and physical disturbances created by motorized travel can displace breeding birds and disturb nests. Because current road density and unrestricted travel are highest in the No Action Alternative, implementation of this alternative would decrease habitat effectiveness for riparian guild species more than any other alternative over time.

Environmental Consequences Common to all Action Alternatives

At the District level, road density would drop from 8.3 miles of road per square mile of habitat in the No Action Alternative, to 7.5 in Alternative 2, 7.6 in Alternative 3, and down to 6.8 miles per square mile in Alternative 4 and back to 7.7 in Alternative 5. Although all action alternatives would improve habitat effectiveness for the riparian guild, road densities proposed in Alternative 4 would reduce disturbance in riparian habitat more than any other action alternative.

Unrestricted travel would be reduced in each alternative from 71% of potential habitat under the No Action Alternative, to 33% in Alternative 2, 22% in Alternative 3, and

down to 19% in Alternative 4 and back up to 23% in Alternative 5. These proposed reductions in unrestricted motorized travel would decrease the risk of impacts to vegetation that support these species and their forage; as well as reduce the risk of displacing breeding birds and/or destroying nests. Because Alternative 3, 4, and 5 propose lower road density and less potential for unrestricted travel, implementation of one of these alternatives would improve habitat effectiveness for the riparian guild more than Alternative 2.

Cumulative Effects

No Action Alternative

Implementation of the No Action Alternative would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Past, present and reasonably foreseeable future actions in combination with the continued use of designated motorized routes and unrestricted travel in riparian habitat would decrease habitat effectiveness for riparian guild members across the District.

All Action Alternatives

All action alternatives would decrease the miles of roads and lower the potential for unrestricted travel within riparian habitat. A reduction in motorized travel would decrease the risks to habitat components that support these guild species. Implementation of all action alternatives in combination with past, present and reasonably foreseeable future actions would improve habitat effectiveness for riparian guild members across the District.

Determinations and Rationale

No Action Alternative

Implementation of the No Action Alternative would result in the highest density of motorized routes and potential for unrestricted travel within riparian habitat than any other alternative. This use would continue risks of habitat fragmentation, disturbance to soils and vegetation, and the potential for displacement of birds or disturbance to nests over time. Therefore, this No Action Alternative would decrease habitat effectiveness more than any of the action alternatives.

All Action Alternatives

All action alternatives would decrease the miles of road and lower the potential for unrestricted travel within riparian habitat. A reduction in motorized travel would decrease the risks to habitat components that support these guild species. Because *Alternative 3, 4*, and 5 propose lower road density and less potential for unrestricted travel within riparian areas, implementation of one of these action alternatives would improve habitat effectiveness for riparian members and habitat more than Alternative 2.

Utah Partners in Flight (PIF), Fish and Wildlife Service (FWS), and Birds of Conservation Concern (BCC) Species that may occur on the Fishlake National Forest

Black Rosy-Finch
Mexican Spotted Owl
Virginia's Warbler
Gray Vireo
Ferruginous Hawk
Black-throated Gray Warbler
Gray Flycatcher
Lewis's Woodpecker
Sage Grouse
Sharp-tailed Grouse
Brewer's Sparrow
Sage Sparrow
Three-toed Woodpecker
Cordilleran Flycatcher
American White Pelican
Bobolink
American Avocet
Black-necked Stilt

Other Wildlife Species of Concern

Additional species for analysis were identified as part of the scoping process and review of the project area by Fishlake National Forest wildlife biologists. Migratory birds and candidates for Federal listing were identified as additional species of concern in the Fishlake OHV Route Designation project, public comment process. The Migratory Bird Treaty Act prohibits taking of migratory birds, their parts, nests, eggs, and nestlings. Deliberate take and the need for a State permit can be avoided by minimizing disturbance and habitat alteration during the breeding and nesting season.

Based upon the vegetation within the project area, several migratory bird species which use mixed conifer, sub-alpine, and mountain riparian were selected for review. The Utah Partners in Flight Conservation Strategy (UPFCS) (UDWR 2002) was thoroughly reviewed for applicability to species. Accounts of these species are described in the 2002 strategy and are incorporated here by reference (ibid).

Other Species of Concern: (*Migratory birds*)

EXECUTIVE ORDER 13186 OF JANUARY 10, 2001 outlines the responsibilities of Federal Agencies to protect migratory birds and directs these agencies to take certain actions to further implement the Migratory Bird Treaty Act. The order also provides broad guidelines on migratory bird conservation responsibilities.

The Forest Service and the U.S. Fish and Wildlife Service developed an interagency Memorandum of Understanding (MOU) for the Conservation of Migratory Birds. The

MOU identifies specific activities that will contribute to conserving and managing migratory birds and their habitats.

Priority migratory bird species that have been assessed in this document because they are threatened, endangered, sensitive, candidate, experimental nonessential, or MIS species include: bald eagle, Mexican spotted owl, yellow-billed cuckoo, California condor, peregrine falcon, greater sage-grouse, northern goshawk, flammulated owl, three-toed woodpecker, and northern flicker. The "Utah Partners in Flight Avian Conservation Strategy, Version 2.0" provides a list of their priority species (Parrish et al. 2002; p. 52). For the Sub-Alpine Conifer habitat, which includes habitat found within the project area, the three-toed woodpecker is the only species on the final list for this habitat type. The three-toed woodpecker was assessed in this document.

In addition to the sub-alpine habitat, the project area is also comprised of mixed conifer and mountain riparian habitat. Priority bird species and recommendations for these species can also be found in the "Utah Partners in Flight Avian Conservation Strategy, Version 2.0", and is also incorporated for these species (Parrish et al. 2002; p. 255-256). Priority bird species for these habitats are: Lewis's woodpecker, and black swift for mixed conifer habitat, and broad-tailed humming bird and virginia's warbler for mountain riparian habitat. Conservation recommendations for these species have been taken into consideration and based upon Project Design Criteria for wildlife, and those found in the Vegetation, Fire, and Hydrologic specialist reports, these conservation recommendations have been included.

As a result of the analysis of priority migratory birds and species of concern, implementation of the OHV Route Designation will not have a measurable adverse effect on migratory bird populations. All of the alternatives are in compliance with Executive Order 13186 and the MOU for the Conservation of Migratory Birds.

Based upon the action alternatives that reduce road densities and halt cross country overland travel, all action alternative will result in a increase of habitat effectiveness across all vegetation cover types on the forests. Due to the increase of habitat effectiveness across the landscape of the Fishlake National Forest, the cumulative effects of this project will enhance habitat for the species addressed in this document across the entire CEA.

Other Species of Concern – Migratory Birds

CUMULATIVE EFFECTS AREA FOR MIGRATORY BIRDS

The cumulative effects area for migratory birds is the same area used for all other species in the analysis area. This area represents a broad range of habitat types that provide a wide range of seasonal habitat for these migratory bird species. Due to the migratory nature of these birds they may not use habitat within the CEA year round. Cumulative effects to these birds would only impact habitats that they use within the CEA. The impacts to species from past, present and reasonably foreseeable actions in combination

with any of the action alternative would not have adverse effects on these species, as the action alternative would enhance habitat effectiveness for all the species addressed. Other more broad-scale cumulative impacts could affect species persistence in alternate habitats where there is no management or control by this agency. Within the CEA impacts to migratory birds would also occur from private landowners and other government agencies that can impact habitat.

CUMULATIVE EFFECTS OF THE NO ACTION – Migratory birds

Implementation of the No Action alternative would result in eventual increases in open road densities and the continuation of random overland cross country travel. These effects have had and continue to have an unknown effect on species across the landscape of the Fishlake National Forest. These effects are unknown as the cross country travel is random, and varies from year to year. In addition, the number of migratory bird species that may occur on the Forest in a given year may vary dramatically due to events of conditions on the migratory winter grounds. Therefore, the effects of leaving the Fishlake National Forest open to random cross country travel would result in a decrease in overall habitat effectiveness for the species addressed in this document. This is supported by the increased use of the Forest by OHV users and the development of unauthorized trails annually. In summary, implementation of the No Action alternative would result in continued cross country travel and the unauthorized creation of new trails across the Forest. This would result in a decrease in habitat effectiveness across the Forest over time. Therefore, the cumulative effects of the No Action may impact individuals or habitat, but is not likely to contribute towards a trend to Federal listing or affect the continued persistence of these migratory species at the Forest Level.

CUMULATIVE EFFECTS OF ALL ACTION ALTERNATIVES – Migratory birds

All action alternatives would reduce open road density across the Forest, and halt cross country travel. This would result in increased habitat effectiveness for all the species addressed in this document. This combined with past, present and reasonably foreseeable future action enhance overall habitat in all cover types and areas where disturbance from OHV's occurs. Therefore, the cumulative effects of all Action Alternatives may increase habitat effectiveness for the species addressed in this analysis.

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