

**BIOLOGICAL EVALUATION  
FOR  
SENSITIVE PLANTS AND ANIMALS**

***PAHVANT INTERAGENCY FUELS  
REDUCTION PROJECT***

**FILLMORE RANGER DISTRICT**

**FISHLAKE NATIONAL FOREST**

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Date: 4-10-03

# I. INTRODUCTION

This Biological Evaluation (BE) analyzes the potential impacts of the Pahvant Interagency Fuels Reduction Project on the sensitive plant and animal species which occur or have habitat within the analysis area. The analysis area is located on the Fillmore Ranger District, Fishlake National Forest. The Biological Evaluation process is intended to document and evaluate activities necessary to ensure proposed actions will not cause adverse modification of habitat for species listed as sensitive by the USDA Forest Service (FS), Intermountain Region. Species classified as sensitive for the Fishlake National Forest are listed in Tables 1 and 2. Suitable habitat is present in the analysis area for spotted bat, peregrine falcon, western big-eared bat, northern goshawk, flammulated owl, and three-toed woodpecker. Suitable habitat for sensitive plant species does not exist within the treatment units. This Biological Evaluation will analyze and evaluate the potential impacts of the proposed action on these species only.

Table 1. Suitability of Habitat for Intermountain Region Sensitive Animal Species found on the Fishlake National forest.

SPECIES	SUITABILITY OF HABITAT FOR SENSITIVE ANIMAL SPECIES	
	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
Spotted Bat <i>Euderma maculatum</i>	X	
Peregrine Falcon <i>Falco peregrinus</i>	X	
Western Big-eared Bat <i>Plecotus townsendii</i>	X	
Northern Goshawk <i>Accipiter gentilis</i>	X	
Flammulated Owl <i>Otus flammeolus</i>	X	

Three-toed Woodpecker <i>Picoides tridactylus</i>	X	
Colorado Cutthroat Trout <i>Oncorhynchus clarki pleuriticus</i>		No population is known to occur in this drainage. Outside of historic range.
Bonneville Cutthroat Trout <i>Oncorhynchus clarki utah</i>		No population is known to occur in the analysis area. Populations are known in Sam Stowe Creek and a suspected population in Pole Creek, these streams are on the Pahvant Mtn. Range but outside of the analysis area.

Table 2. Suitability of Habitat for Intermountain Region Sensitive Plant Species found on the Fishlake National Forest.

SPECIES	SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES	
	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
Barneby Woody Aster <i>Aster kingii</i> var. <i>barnebyana</i>		Plant species known to occur on Canyon Mtn. Range northwest of project area in mountain mahogany-oak communities on rock outcrops composed of precambian quartzite above 7300 feet elevation. These conditions are not present in the analysis area.
Bicknell Milkvetch <i>Astragalus consobrinus</i>		This species is found only on volcanic gravel, gravelly or sandy knolls, barren stony hillsides, cobblestone bluffs, and outwash fans on sandstone and volcanic debris. It appears in desert shrub, pinyon-juniper and sagebrush communities at 5200-8500 foot elevation. Found east of the analysis area, all known occurrences on the Fishlake NF have been found on the Loa Ranger District; out of known range.
	<b>SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES</b>	

SPECIES	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
<p>Tushar Paintbrush <i>Castilleja parvula</i> var. <i>parvula</i></p>		<p>This subspecies is distributed almost exclusively through the alpine meadows and igneous rockbeds of the Tushar Mountains between 10,000 and 12,000 feet. It is known to occur only on the Beaver Ranger District. Out of known range.</p>
<p>Creeping Draba <i>Draba sobolifera</i></p>		<p>The creeping draba grows mostly on igneous gravels and talus as a member of alpine tundra or spruce-fir communities between 7500 and 12,000 feet on the Markagunt Plateau north of Panguitch Lake and the Tushar Mountains south of Marysvale. These conditions are not present in the analysis area.</p> <p>It is known to occur in 8 population locations on the Beaver and Loa Ranger Districts of the Fishlake National Forest. Out of known range.</p>
<p>Nevada willowherb <i>Epilobium nevadense</i></p>		<p>This plant ranges from 2985-9000 feet elevation in creosote and pinyon-juniper and mountain brush communities on limestone cliffs and gravels at the base of cliffs. The plant has been found north of the analysis area on the Canyon Mountain Range. These conditions are not present in the analysis area.</p>
<p>Elsinore Buckwheat <i>Erigonum batemanii</i> var. <i>ostlundii</i></p>		<p>This plant species prefers igneous outcrops and gravels in shadescale, sagebrush, ponderosa pine, mixed desert shrub, and pinyon-juniper communities between 5,495 and 6,512 feet in elevation. These conditions are not present in the analysis area.</p> <p>This sensitive plant is endemic to Piute, Sevier, and Wayne counties in central Utah. Out of known range.</p>
<p><b>SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES</b></p>		

SPECIES	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING
<p>Wonderland Alice-flower <u><i>Gilia caespitosa</i></u></p>		<p>This species is associated with cliffs, ledges and exposed outcrops, representing eroded or detrital Navajo and Wingate Sandstones. Plants occur in full sun or in shady canyons, on exposed sandstones, cliff walls, to less commonly sandy wash bottoms between 5,100-9,000 feet elevation. This <i>Gilia</i> occurs in association with open pinyon-juniper woodlands which are often mixed with some elements of mountain brush, sagebrush steppe or ponderosa pine forests. These conditions are not present in the analysis area.</p> <p>The plant is restricted to scattered occurrences from the northern Waterpocket Fold to Thousand Lakes Mountain and Rabbit Valley in Wayne County, Utah. This species is a narrow endemic, known only from unstable and faulting soils. Out of known range.</p>
<p>Fish Lake Naiad <u><i>Najas caespitosa</i></u></p>		<p>This naiad prefers habitats in shallow water of 9 inches or less with sand or gravel bottoms, 8800 feet elevation. In addition this species is endemic to Pelican Point, Fishlake, in Sevier County, Utah. These conditions are not present in the analysis area.</p> <p>The only known population of this species is located on the Loa Ranger District of the Fishlake National Forest. Out of known range.</p>
<b>SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES</b>		
SPECIES	SUITABLE	HABITAT UNSUITABLE BASED ON THE FOLLOWING

<p>Little Penstemon <i>Penstemon parvus</i></p>		<p>Little penstemon grows in sagebrush-grass, pinyon-juniper, and spruce communities on tertiary volcanic gravels in sandy, gravelly loam at elevations between 8200 and 11,500 feet. It is endemic to Utah in Piute, Garfield, and Wayne counties. These conditions are not present in the analysis area.</p> <p>There is 1 known population of this species on the Loa Ranger District of the Fishlake National Forest. Out of known range.</p>
<p>Ward's Beardtongue <i>Penstemon wardii</i></p>		<p>Species habitat limited to plant communities associated with Bald Knoll and Arapien shale formations. These conditions are not present in the analysis area.</p> <p>This species can be found in Sanpete and Sevier counties, Utah. Presently, this species is known to occur on the Fillmore, Loa, Beaver, and Richfield Districts of the Fishlake National Forest. Specific surveys were done for this plant with no populations being found in the analysis area.</p>
<p><b>SPECIES</b></p>	<p><b>SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES</b></p>	
	<p><b>SUITABLE</b></p>	<p><b>HABITAT UNSUITABLE BASED ON THE FOLLOWING</b></p>

<p>Arizona Willow <u>Salix arizonica</u></p>		<p>Arizona willow occurs at elevations above 8500 feet in wet meadows, streamsides, seeps and springs on volcanic soils. In Utah, Arizona willow has also been found as low as 8300 feet on calcareous soils. Most plants have been found adjacent to perennial water and less commonly in meadows adjacent to forest edges or meadows with sparse stands of spruce. Species associated with the Arizona willow include: Geyer willow, serviceberry, Bebb willow, blue and Engelmann spruce, shrubby cinquefoil, monkeyflower, tufted hairgrass, sheep fescue and Carex species. These conditions are not present in the analysis area.</p> <p>Only known to occur on the Loa and Richfield Ranger Districts. Out of known range.</p>
<p>Beaver Mountain Groundsel <u>Senecio castoreus</u></p>		<p>Beaver Mountain groundsel is endemic to Piute County, Utah. It is often found on windswept ridges or less commonly downward to the spruce-fir community ranging in elevation from 10000 to 12000 feet in elevation. These conditions are not present in the analysis area. This species occurs on the Beaver Ranger District of the Fishlake National Forest. Out of known range.</p>
<p><b>SPECIES</b></p>	<p><b>SUITABILITY OF HABITAT FOR SENSITIVE PLANT SPECIES</b></p>	
	<p><b>SUITABLE</b></p>	<p><b>HABITAT UNSUITABLE BASED ON THE FOLLOWING</b></p>

<p>Maguire Campion <u><i>Silene petersonii</i></u></p>		<p>No suitable habitat in the analysis area. Species Maguire campion occurs between 7,000 and 11,200 feet elevation on open calcareous limestone and igneous gravels. Preferred sites are near snowdrift areas in ponderosa pine, aspen, and spruce-fir communities. These conditions are not present in the analysis area. There are presently no known populations of Maguire campion on the Fishlake National Forest.</p>
<p>Bicknell Thelesperma <u><i>Thelesperma subnudum</i></u> var. <u><i>alpinum</i></u></p>		<p>The Bicknell thelesperma, a Wayne County endemic, is restricted to the Navajo Sandstone and Carmel limestone on peculiar vari-colored phase in pinyon-juniper, mountain brush, and bristlecone pine communities between 7380-9000 feet elevation. These conditions are not present in the analysis area. There is presently 1 known population on the Loa district of the Fishlake National Forest. Out of known range.</p>
<p>Sevier Townsendia <u><i>Townsendia jonesii</i></u> var. <u><i>lutea</i></u></p>		<p>This species prefers habitats in the salt desert shrub and juniper communities at 5500 to 6000 feet elevation. Occurs in the Arapien shale and Arapien clays in volcanic rubble and flowers from May-June. These conditions are not present in the analysis area. Out of known range.</p>

## II. DESCRIPTION OF THE PAHVANT INTERAGENCY FUELS REDUCTION PROJECT

The Fillmore Ranger District is proposing to treat hazardous fuel accumulations along the western slope of the Pahvant Mountain Range. There are 5 treatment units with approximately 7,270 acres proposed for treatment throughout the analysis area, as a connected action an additional 7000 acres and 2 units proposed on BLM Lands within the analysis area. Treatment methods would include hand thinning of pinyon and juniper trees and prescribed burning (see Table 2), the proposed action is to treat 40-80% of the acres within the units (see Table 3).

The analysis area is located between Cove Fort on the south and Scipio on the north, and east of Interstate 15 on National Forest System and BLM Lands (See vicinity and treatment unit map). The treatment units are scattered from Meadow Canyon to Scipio.

Measures have been formulated to mitigate the possible adverse impacts that may occur from implementing the proposed action alternative. Project Specific Mitigation include:

Prior to any ignition, a prescribed fire burn plan would be prepared and approved by the appropriate Forest Service or BLM officials. The prescribed burn plan would describe methods and conditions under which prescribed burning would occur in order to accomplish project objectives. Close adherence to the prescribed fire burn plan is required to accomplish project objectives and insure the safety of those implementing the project.

Grazing pastures within treatment units would be rested from livestock grazing for a minimum of two grazing seasons following a prescribed burn in that unit. Pastures would be rested for an additional season(s), where necessary to allow grasses to rejuvenate. The Fillmore Ranger District staff would outline the grazing procedures that would be implemented during this time period on FS System Lands.

Where necessary, hand or "black" lines would be constructed along the perimeters of treatment units in order to contain prescribed fire within the treatment units. Hand lines and black lines are created by removing vegetation along a line by hand tools or hand burning, respectively. These lines would be constructed prior to the implementation of treatments that involve the use of prescribed burning.

Low-to-moderate intensity prescribed fire would be used in order to promote the creation of a mosaic burn pattern of burned and unburned vegetation, and to protect soil resources.

No fire lines would be constructed through known significant heritage sites. A minimum 100-foot buffer of untreated vegetation would be left around significant heritage sites. Vegetation may be cleared along the perimeter of the 100-foot buffer to exclude fire or reduce fire intensity. Prior to ignition, an archeologist would assist fire personnel to identify any other appropriate protection measures.

Any tree cavities that are observed during the thinning of pinyon and juniper trees will be retained for cavity nesting bird species.

Where necessary, treated areas may be seeded to promote recovery of ground cover to protect soil resources. Seed mixes may be comprised of grass, forbs, and shrubs. A priority will be given to native plant species. Only noxious weed free seed mixes would be used.

**Table 2. Vegetation types affected by the proposed action, percentage and acres treated compared to the analysis area.**

Vegetation Types	Number of Acres in Treatment Units	40-80% of Acres Treated	Total Number of Acres in Analysis Area	Percentage of Acres Treated Compared to Analysis Area
Aspen	0	0	10,948	0.0%
Communities	0	0	1768	0.0%
Cropland	0	0	23,400	0.0%
Gambel's Oak	4547	1819-3638	72,413	2.5-5.0%
Mountain Mahogany	0	0	19,102	0.0%
Mountain Shrub	0	0	555	0.0%
Pinyon/Juniper	6604	2642-5283	56,733	4.7-9.3%
Riparian	32	*0	2066	0.0%
Sagebrush/Grass/Forb	3144	1258-2515	70,573	1.8-3.6%
Semi-desert Shrubs	0	0	14	0.0%
Spruce/Fir	0	0	29,903	0.0%
<b>Total</b>	<b>14,329</b>	<b>5719-11,436</b>	<b>287,475</b>	

\*No acres in the riparian type will be treated

**Table 3. Treatment Unit Name, Acreage, Vegetation, and Treatment Method.**

Unit Name	Legal Location	Unit Size (acres)	FS Acreage	BLM Acreage	Vegetation Types	Primary Treatment Methods
Grabalt	Sec 31-32, T.18 S., R.2 W.; Sec 25-26, 35-36, T.18 S., R.3 W.; Sec 1-4, T.19 S., R.3 W.	2,352	914	1,438	78% pinyon-juniper 20% Gambel oak 2% sagebrush/grass/forb	Cutting & burning by hand
Wild Goose	Sec 22-27, 35-36, T.19 S., R.3 W.	1,578	1,578	N/A	58 % pinyon-juniper 42% Gambel oak	Burning by hand or aerial ignition device
Holden Springs	Sec 6-9, 17-18, T.20 S., R.3 W.; Sec 12, T.20 S., R.4 W.	1,943	N/A	1,943	68% pinyon-juniper 32% sagebrush/grass/forb	Cutting* & burning by hand
Pioneer	Sec 31-33, T.20 S., R.3 W.; Sec 4-6, 8-9, T.21 S., R.3W.	1,603	1,149	454	38% pinyon-juniper 33% Gambel oak 29% sagebrush/grass/forb	Cutting* by hand, burning by hand or aerial ignition device
Frampton Heights	Sec 1, 12, T.21 S., R.4 W.,	490	N/A	490	65% pinyon-juniper 35% sagebrush/grass/forb	Cutting and piling*, pile burning by hand
Horse Hollow	Sec 35-36, T.21 S., R.4 W.; Sec 1-2, T.22 S., R.4 W.	1,434	1,434	N/A	51% pinyon-juniper	Burning by hand or aerial ignition device
Meadow	Sec 7-8, 18-20, 29-32, T.22 S., R.4 W.; Sec 3-4, T.23 S., R.4.5 W.; Sec 13, 24-26, T.22 S., R.5 W.	4,929	2,195	2,734	43% Gambel oak 35% sagebrush/grass/forb 22% pinyon-juniper	Cutting* by hand, burning by hand or aerial ignition device

\* Cutting on BLM portions of these units was analyzed in 1999 by the BLM in the Holden, Frampton, and Meadow Environment Assessments.

### **III. MANAGEMENT DIRECTION**

Forest Service Manual (FSM) 2670 provides management direction for Threatened, Endangered, and Sensitive Plants and Animals (FSM 2670). Forest Service policies for designated sensitive species (FSM 2670.32) states:

1. Assist States in achieving their goals for conservation of endemic species.
2. As part of the National Environmental Policy Act process, review programs and activities, through a biological evaluation, to determine their potential effect on sensitive species.
3. Avoid or minimize impacts to species whose viability has been identified as a concern.
4. If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impacts, but the decision must not result in loss of species viability or create significant trends toward Federal listing.)
5. Establish management objectives in cooperation with the States when projects on National Forest System lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the FWS or NMFS and the States.

A goal documented in the Fishlake National Forest Land and Resource Management Plan (USDA Forest Service 1986) is to "identify and improve habitat for Sensitive, Threatened and Endangered species including participation in recovery efforts for both plants and animals". General Direction in this Plan states, "Maintain habitat for viable populations of existing vertebrate species. Habitat for each species on the forest will be maintained by protecting at least 40 percent of the ecosystems for existing species. Proper juxtaposition of ecosystems must be considered. Do not allow activities that would negatively impact Endangered, Threatened, or Sensitive plant or animal species." The areas identified as potential burn areas fall within the following Forest Plan management areas:

Management Area 6B: Management emphasis is on intensive grazing management systems are favored over extensive systems. Conflicts between livestock and wildlife are resolved in favor of livestock.

The project proposal to do mechanical treatments and prescribe burn in this management area is compatible with the direction found in the Forest Plan.

### **IV. CONSULTATION and FIELD REVIEW TO DATE**

Field surveys were completed for the analysis area to analyze habitat for wildlife species specific to this project in 2002 (survey results and forms can be found in the project file). As a result of these visits and from consultation with state agencies and Forest Service personnel; the spotted bat, peregrine falcon, western big-eared bat, northern goshawk, flammulated owl, and three-toed woodpecker are the only sensitive species considered to have suitable habitat and are analyzed in this document.

David Tait, botanist for the Fishlake NF, was contacted about impacts to any sensitive plant species. He prepared a specialist report for this project, there should be no impact to any sensitive plant species (Tait, 2003).

## **V. SPECIES OR HABITAT PRESENT IN THE AREA**

For a detailed description of the life history and habitat requirements for the sensitive species considered in this document, refer to *Life History and Analysis of Endangered, Threatened, Candidate, Sensitive and Management Indicator Species of the Fishlake National Forest* (Rodriguez 2002) in the project record.

## **VI. IMPACTS OF THE PROPOSED ACTION**

### **Direct and Indirect Effects**

#### **Spotted Bat**

This species roosts alone in rock crevices high up on steep cliff faces, these types of areas exist within the analysis area but not within the treatment units, so there will be no direct effects to roosting habitat. Spotted bats have been found in pinyon-juniper communities, removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in insect populations from a loss of vegetation, this would be a short term impact (2-5 years). This impact would lessen as the area begins to revegetate, the insects populations would gradually increase to pre-treatment levels.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

#### **Peregrine Falcon**

Peregrine falcons primarily utilize cliff areas for nesting sites, these areas exist within the analysis area but not within the treatment units, so there will be no direct effects on this species. These falcons generally forage for prey along watercourses, these types of areas are present but limited within the analysis area and treatment units specifically. The riparian areas will not be impacted (see Table 3), so there would be minor if any indirect impacts to foraging habitat. Peregrines are known to also forage in croplands and meadows these types of habitats will not be affected by the proposed action. Prescribed burns and mechanical treatments could cause an indirect effect from a decrease in

prey populations from a loss of vegetation. Treatments would decrease populations of some prey species (especially small mammals) as woody debris is removed/burned, and increase populations of other species (such as jays and woodpeckers) as snags are created by the prescribed burns. Therefore it is likely that impacts to prey species would not make much difference in the overall availability of prey. This would be a short term impact (2-5 years) until vegetation begins to re-establish. Fire will create patches or a mosaic of early serial species which will benefit the goshawk and many prey species. The creation of early serial species will help create size, age, and species diversity important in maintaining functioning ecosystem.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

### **Townsend's Big-eared Bat**

Townsend's big-eared bats roost in rocky outcrops, mine shafts, buildings, and caves, these types of areas exist within the analysis area but not within the treatment units, so there will be no direct effects to roosting habitat. This species have been found in pinyon-juniper and shrub/steppe grassland communities, removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in insect populations from a loss of vegetation, this would be a short term impact (2-5 years). This impact would lessen as the area begins to revegetate, the insects populations would gradually increase to pre-treatment levels.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

### **Northern Goshawk**

Goshawks utilize aspen or mixed conifer for nesting sites, these communities exist within the analysis area but not within the treatment units, so there will be no direct effects on this species. Goshawks are known to winter in a variety of habitats including pinyon-juniper communities, removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in prey populations from a loss of vegetation. Goshawks are known to prey largely on rabbits, squirrels, chipmunks, flickers, and jays. Treatments would decrease populations of some prey species (especially small mammals) as woody debris is removed/burned, and increase populations of other species (such as jays and woodpeckers) as snags are created by the prescribed burns. Therefore it is likely that impacts to prey species would not make much difference in the overall availability of prey. This would be a short term impact (2-5 years) until vegetation begins to re-establish. Fire will create patches or a mosaic of early serial species which will benefit the goshawk and many prey species. The creation of early serial species will help create size, age, and species diversity important in maintaining functioning ecosystem.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would

occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

### **Flammulated Owl**

Flammulated owls are associated with mature pine and mixed conifer habitat communities, these vegetation types are found within the analysis area but not within the treatment units, so there would be no direct impacts to this species. Flammulated owls generally forage in the mature conifer community or on the edge habitat between conifer and grasslands. These grasslands typically have relatively higher numbers of insects which is the primary prey for these owls. These edge habitats are present within the treatment units so there may be some indirect impact to any flammulated owls present. Removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in insect populations from a loss of vegetation, this would be a short term impact (2-5 years). This impact would lessen as the area begins to revegetate, the insects populations would gradually increase to pre-treatment levels.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

### **Three-toed Woodpecker**

Three-toed woodpeckers are found in northern conifer and mixed forest types, these areas exist within the analysis area but not within the treatment units so there would be no direct impact on this species. These woodpeckers also forage within these communities, especially on mature conifer that have been killed by insects such as the spruce bark beetle. These foraging areas and prey are not found within the treatment units, there should be no indirect effects to this species.

As a potential unknown effect the area would remain susceptible to a large destructive wildfire where the lighting sequence and area burned could not be managed and more of an impact would occur. If a high-intensity wildfire were to occur, foraging habitat would be moderately altered depending on when, where, and how a wildfire occurred. Revegetation time would be longer due to potential hydrophobic sterilization of the soil.

## **Cumulative Effects**

The cumulative effects analysis area (CEA) consists of the Pahvant Mtn. Range (approximately 400,000 acres). This area was identified based on the species being evaluated in this document and also on their expected use. The CEA includes known or predicted spring, summer, and/or fall use by the sensitive species analyzed for potential or known habitat or occurrence within the analysis area.

The cumulative effects being described include past, present, and reasonably foreseeable future actions. These effects would include:

- Vegetation treatment projects
- Cattle grazing
- Recreational activities
- Wildfires
- Various special uses

Vegetation treatment projects would include: chaining of pinyon and juniper trees, noxious weed control, pinyon and juniper thinnings, prescribed burns, Mormon Cricket control, and BLM proposed projects.

Chaining projects were completed on numerous acreages (7000 to 10,000 acres) of public lands mostly in the 1970's or before. These projects were done by dragging a heavy anchor chain between two large bulldozers to uproot mature pinyon and juniper trees. Following the chaining most of these areas were reseeded with a variety of native and non-native plant species. These projects were done primarily across the foothills of the Pahvant Mountain Range on areas with gentle slopes. The projects were primarily done to increase the amount and quality of forage for livestock but also had beneficial effects for many wildlife species, including these sensitive species.

Noxious weed control has been implemented and is ongoing within the analysis area when needed to control these undesirable species. This is a requirement of the State of Utah to control these plants. Certified applicators apply chemicals or biological control agents to site specific locations. These spot treatments have minimal effects on these sensitive wildlife species.

Thinning projects have been completed in recent years (<10 years), these projects are designed to remove the small pinyon and juniper trees that are re-establishing within the previously chained areas. Initially many of the chaining projects had too large of openings than preferred by big game, these thinning projects are designed to leave some pockets of trees to allow travel corridors and hiding/thermal cover for wildlife. These projects are beneficial to most wildlife species in general by keeping the areas productive by providing forage for many wildlife species, and not becoming closed canopy pinyon-juniper with few understory plants.

Prescribed burns have been accomplished within the analysis area in recent years (<10 years). Most of these burns have been small in size (<250 acres), many of these burned areas have been seeded following the burns. These smaller burns have opened up decadent areas dominated by seral pinyon and juniper trees to provide foraging areas for wildlife. The effects of these projects on the sensitive species would be similar to those described in the action alternative.

Mormon Cricket control has been implemented (for the past 2-3 years) and is ongoing on public and private lands within the analysis area. Specific environmental assessments have been prepared by the Forest Service and BLM prior to baiting crickets. The impacts to wildlife are minimal when the bait is applied as specified. The affects to wildlife has been analyzed in the Environmental Impact Statement produced by Animal Plant Health Inspection Service (APHIS) entitled *Rangeland Grasshopper and Mormon Cricket Suppression Program* (see pages 27-31 of this document). Control of crickets can increase the amount of forage and cover available to wildlife that would be eaten by crickets if untreated. The actual amount of acreage treated within the analysis area has been very small, mainly near the mouth of Kanosh Canyon and just east of Holden.

Associated with the project is a proposal by the Fillmore BLM Field Office to treat 5 units within the same analysis area, some of these units are adjacent to the Forest Service units. These treatments would thin pinyon and juniper trees and prescribe burn approximately 7000 acres. These projects would treat 40-100% of the treatment units (see table of proposed actions). The effects of these actions would be similar as described in this document.

Cattle grazing has occurred for over 100 years within the analysis area and treatment units. Standards and guidelines for livestock grazing have been established in specific plans and are administered by rangeland specialists. Generally these plans permit moderate grazing utilization levels and incorporate a deferred or rest rotation system to allow for improved plant vigor and residual biomass. Livestock grazing has also provided water sources across allotments from water troughs, pipelines, and stock ponds. These additional water sources have expanded wildlife habitats into areas that were limited by watering places historically. Moderate grazing pressures would probably have a negligible effect on the sensitive wildlife species considered.

Recreational activities occur across the analysis area such as: camping, hunting, fishing, day use activities, and All-Terrain Vehicles (ATV's) riding.

Camping is a on ongoing activity primarily in summer and early fall months, there are five picnic grounds and one campground on Forest Service System lands within the analysis area. These sites have removed small parcels of land from use by some wildlife species. Activities associated with campers may have short-duration disturbance impacts on wildlife in general causing these species to temporarily avoid these area while human are present.

Hunting is permitted across the analysis area during specific hunting seasons, hunting is managed by the Utah Division of Wildlife Resources (UDWR). Activities associated with hunting may have short-duration disturbance impacts on sensitive wildlife species. Most hunting seasons are in fall months when many of the sensitive wildlife species have migrated from the analysis area.

Fishing occurs on perennial stream within the analysis area. The fishing limits are regulated by the UDWR. Activities associated with fishing may have short-duration disturbance impacts on sensitive wildlife species.

Many day use activities occur throughout the analysis area such as picnicking, sight-seeing, shed antler hunting, horseback riding, etc. These activities are short duration by definition and the impacts of such to sensitive wildlife are minimal causing these species to temporarily avoid these area while human are present.

ATV riding is a popular activity by many local residents and others that come from all over the United States to experience trails open to ATV's. A national ATV jamboree occurs in June each year attracting 250-400 ATV riders (a separate Environmental Assessment for this event has been prepared). The impacts to wildlife are usually short-duration from this activity causing these species to temporarily avoid these area while human are present.

Many wildfires have occurred throughout the analysis area. The Pahvant Mountain Range is a fire adapted ecosystem, and there have been numerous wildfires historically. In the past 10 years there

have been a few large fires within the analysis area: Adelaide Fire in Kanosh Canyon burned over 16,000 acres, Dog Valley Fire east of Cove Fort burned 2,000 acres, Meadow Bench Fire east of Meadow burned 300 acres, Swains Fire east of Holden burned 10,000 acres, Shingle Mill Fire and Black Cedar Fires east of Fillmore burned about 1000 acres each. Many of these fires destroyed large tracts of important wildlife habitat because they burned in summer months when they could not be controlled. Many of these burned areas were seeded following the fires and now provide quality forage for many wildlife species and potential prey species for goshawk, flammulated owl, and peregrine falcon.

Special uses occur throughout the analysis area such as: firewood and post cutting, municipal water developments, small mining claims, irrigation diversions, outfitter and guide operations, etc. Special uses such as these are authorized by Special Use Permits; usually these permits require a separate environmental assessment which disclose the impacts from these activities. Most of these uses have been authorized for many years and the impacts to wildlife have already occurred.

The effects of the activities listed above, in combination with the proposed project are not expected to cause measurable changes to the species discussed in this document. The action alternative would not adversely affect population numbers or viability of these sensitive wildlife species. The activities listed above are not expected to increase as a result of this action. Some activities such as grazing, and recreational uses are likely to decrease after a burn. This decrease in use would likely be short in duration (2-5 years) until re-vegetation occurs.

## VII. DETERMINATION and RATIONALE

As a result of this evaluation it is my determination that implementation of the proposed Pahvant Interagency Fuels Reduction Project may impact individual species or habitat, but will not likely contribute to a trend toward Federal listing or cause a loss of viability to the populations or species considered in this document.

SPECIES	DETERMINATION
Spotted bat	MIIH
Peregrine Falcon	MIIH
Townsend's Big-eared bat	MIIH
Northern Goshawk	MIIH
Flammulated Owl	MIIH
Three-toed Woodpecker	MIIH

- NI = No Impact
- MIIH = May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species.
- WIFV = Will Impact Individuals Or Habitat With A Consequence That The Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species.
- BI = Beneficial Impact

**Spotted Bat (*Euderma maculatum*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for spotted bat for the following reason:

1. Spotted bats have been found in a variety of habitats including the pinyon-juniper community which will be affected by the proposed action. Spotted bats are thought to feed mainly on moths, a prescribed burn may remove vegetation that these moths utilize, this reduction in vegetation would be an indirect effect which would be short term (2-5 years) until the area starts to revegetate, once vegetation starts insect populations will increase.

No loss of viability to the population or species is anticipated for the following reasons:

1. These bats are known to roost alone in rock crevices high up on steep cliff faces, these types of areas do not exist within the treatment units area so there will be no impact on potential roosting sites.
2. Other communities such as: open ponderosa pine, desert scrub, open pastures, and hay fields are also utilized by this species, they are not dependent on the pinyon-juniper or Gambel oak communities.
3. A prescribed burn will be done in a mosaic burn pattern where 40-80% of approximately 14,329 acres (FS and BLM treatments combined) would be treated (~5719 to 11,436 acres) from an 287,475-acre analysis area. This will leave approximately 275,000 acres of the analysis area untreated and available to be utilized by this species.
4. The treatment units are widely scattered within the 287,475-acre analysis area, leaving many areas untreated and available for habitat needs. In addition to these acres there are many thousands of acres available to this species outside of the analysis area.
5. There are no adverse cumulative effects of this project on this species.

**Peregrine Falcon (*Falco peregrinus*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for peregrine falcon for the following reasons:

1. Peregrines are known to forage in a variety of habitats including meadows and croplands and along riparian areas, removal of vegetation from a prescribed burn could cause an indirect effect from a decrease in prey populations from a loss of vegetation from a prescribed burn, this would be a short term impact (2-5 years) until re-vegetation occurs.

No loss of viability to the population or species is anticipated for the following reasons:

1. Peregrines utilize steep cliffs for nesting sites, these types of areas will not be impacted from the proposed treatments, so there will be no direct effects on this species to nesting/breeding habitats. No peregrines were observed during extensive wildlife surveys done for this project.
2. A prescribed burn will be done in a mosaic burn pattern where 40-80% of approximately 14,329 acres (FS and BLM treatments combined) would be treated (~5719 to 11,436 acres) from an 287,475-acre analysis area. This will leave approximately 275,000 acres of the analysis area untreated and available to be utilized by this species.
3. The treatment units are widely scattered within the 287,475-acre analysis area, leaving many areas untreated and available for habitat needs. In addition to these acres there are many thousands of acres available to this species outside of the analysis area.
4. Fire will create patches or a mosaic of early seral species which will benefit many prey species for the peregrine. The creation of early seral species will help create size, age, and species diversity important in maintaining functioning ecosystems.
5. Riparian areas, which are important foraging areas for peregrines, will not be treated. A 100-foot no treatment buffer is mandated for riparian areas, most treatment areas are more than 500 feet from a perennial stream.
6. There are no adverse cumulative effects of this project on this species.

#### **Townsend's Big-eared Bat (*Corynorhilus townsendii*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for Townsend's big-eared bat for the following reason:

1. Townsend's big-eared bats use a variety of habitats including the pinyon-juniper community which will be affected by the proposed action. These bats are insectivores, eating mainly moths, a prescribed burn may remove vegetation that these insects and moths utilize, this reduction in vegetation would be an indirect effect which would be short term (2-5 years) until the area starts to revegetate, once vegetation starts insect populations will increase.

No loss of viability to the population or species is anticipated for the following reasons:

1. These bats are known to roost in rocky outcrops, mine shafts, buildings, and caves, these types of areas do not exist within the project area so there will be no effect on potential roosting sites.
2. Other communities such as: shrub/steppe grasslands, deciduous forests, and mixed conifer forests at elevations between sea level and 10000 feet elevation are also utilized by this species, they are not dependent on the pinyon-juniper or Gambel oak communities.
3. A prescribed burn will be done in a mosaic burn pattern where 40-80% of approximately 14,329 acres (FS and BLM treatments combined) would be treated (~5719 to 11,436 acres) from an 287,475-acre analysis area. This will leave approximately 275,000 acres of the analysis area untreated and available to be utilized by this species.
4. The treatment units are widely scattered within the 287,475-acre analysis area, leaving many areas untreated and available for habitat needs. In addition to these acres there are many thousands of acres available to this species outside of the analysis area.
5. There are no adverse cumulative effects of this project on this species.

### **Northern Goshawk (*Accipiter gentilis*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for northern goshawk for the following reasons:

1. Goshawks are known to winter in a variety of habitats including pinyon-juniper communities, removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in prey populations from a loss of vegetation from the proposed action, this would be a short term impact (2-5 years) until re-vegetation occurs.

No loss of viability to the population or species is anticipated for the following reasons:

1. Goshawks utilize aspen or mixed conifer for nesting sites, these communities will not be affected by the proposed action, so there will be no direct effects on this species to nesting/breeding habitats; there is 40,851 acres of potential nesting habitat (aspen and spruce/fir vegetation types) within the analysis area.
2. A prescribed burn will be done in a mosaic burn pattern where 40-80% of approximately 14,329 acres (FS and BLM treatments combined) would be treated (~5,719 to 11,436 acres) from an 287,475-acre analysis area. This will leave approximately 275,000 acres of the analysis area untreated and available to be utilized by this species. Additionally, there are many more thousands of acres available to this species outside of the analysis area. Local radiotelemetry studies have shown that goshawks will migrate and winter more than 400 miles from the nesting area.
3. The treatment units are widely scattered within the 287,475-acre analysis area, leaving many areas untreated and available for habitat needs. In addition to these acres there are many thousands of acres available to this species outside of the analysis area.
4. Fire will create patches or a mosaic of early seral species which will benefit many prey species for the goshawk. The creation of early seral species will help create size, age, and species diversity important in maintaining functioning ecosystems.
5. Riparian areas, which are important foraging areas for goshawks, will not be treated. A 100-foot no treatment buffer is mandated for riparian areas.
6. Northern goshawks are not known to occur within the treatment units, site specific surveys were completed within the analysis area, no direct effects are expected. An active goshawk nest is located within the cumulative effects area but the proposed action will not have an adverse impact on this goshawk.
7. An estimated 2.0-4.0% of the potential foraging habitat, within many different vegetation types, will be treated when compared to the analysis area.
8. There are no adverse cumulative effects of this project on this species.

### **Flammulated Owl (*Otus flammeolus*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for flammulated owl for the following reasons:

1. Flammulated owls are known to forage for insects along the edge habitat between conifer and grasslands, removal of vegetation from a prescribed burn or mechanical treatments could cause an indirect effect from a decrease in prey populations from a loss of vegetation from a

prescribed burn, this would be a short term impact (2-5 years) until re-vegetation occurs and insect populations increase.

No loss of viability to the population or species is anticipated for the following reasons:

1. Flammulated owls utilize mature pine or mixed conifer for nesting sites, these communities will not be affected by the proposed action, so there will be no direct effects on this species to nesting/breeding habitats.
2. A prescribed burn will be done in a mosaic burn pattern where 40-80% of approximately 14,329 acres (FS and BLM treatments combined) would be treated (~5719 to 11,436 acres) from an 287,475-acre analysis area. This will leave approximately 275,000 acres of the analysis area untreated and available to be utilized by this species.
3. The treatment units are widely scattered within the 287,475-acre analysis area, leaving many areas untreated and available for habitat needs. In addition to these acres there are many thousands of acres available to this species outside of the analysis area.
4. Fire will create patches or a mosaic of early serial species which will benefit many prey species for the flammulated owls. The creation of early serial species will help create size, age, and species diversity important in maintaining functioning ecosystems.
5. There have been no confirmed sightings of flammulated owls on the Fishlake National Forest. No flammulated owls were observed during extensive wildlife surveys conducted for this project.
6. There are no adverse cumulative effects of this project on this species.

#### **Three-toed Woodpecker (*Picooides tridactylus*)**

A determination of **May Impact Individuals Or Habitat, But Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species** is made for three-toed woodpecker for the following reasons:

1. Three-toed woodpeckers were observed during wildlife surveys specific to this project but at much higher elevations than will be thinned or burned. Because this species is found within the analysis area and was observed in wildlife surveys in 2002 the potential exists to impact individual species of three-toed woodpeckers.

No loss of viability to the population or species is anticipated for the following reasons:

1. Three-toed woodpeckers are found in northern conifer and mixed forest types, these area exist within the analysis area but not the treatment units (see Table 3) so there would be no direct impact on this species.
2. These woodpeckers also forage within these communities, especially on mature conifer that have been killed by insects such as the spruce bark beetle. These foraging areas and prey are not found within the treatment units, there should be no indirect effects to this species.
3. There are no adverse cumulative effects of this project on this species.

## **VIII. MANAGEMENT RECOMMENDATIONS**

The following management recommendations are made:

1. A mosaic burn pattern should be designed and implemented by the burn boss and ignition specialists. This pattern will provide islands and patches of vegetation, leave hiding cover, foraging areas, and create an edge effect that will be beneficial to certain wildlife species.
2. As a general suggestion for most wildlife species, late summer and fall burns are preferred over spring burns so that nesting and birthing periods aren't disrupted.
3. Trees containing cavities will be avoided when observed by personnel doing the mechanical thinning projects.

## IX. LITERATURE CITED

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# MAPS