Biological Evaluation

Pine Horse Valley Roadside Hazard Tree Removal

Upper Lake Ranger District

Mendocino National Forest

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Introduction

Purpose

The purpose of this Biological Evaluation (BE) is to analyze the proposed activities associated with the Pine Horse Valley Roadside Hazard Tree Removal Project (PHV) to determine effects on Threatened, Endangered, or Proposed species on the Federal Endangered Species List and Forest Service Sensitive Species. Management Indicator Species and migratory birds are discussed in separate reports.

Regulatory Framework

This BE was prepared in accordance with Forest Service Manual (FSM) direction 2620, 2630, 2670, 2672, 2672.42 and meets legal requirements set forth under Section 7 of the Endangered Species Act of 1973, as amended [19 U.S.C. 1536 (c, 50 CFR 402.12 (f) and 402.14 (c); the Bald and Golden Eagle Protection Act of 1940, as amended; Migratory Bird Treaty Act of 1918 (as amended); Executive Order 13186 (migratory birds); National Environmental Policy Act, 1969; National Forest Management Act, 1976 (as amended); Northwest Forest Plan; and Mendocino National Forest Land and Resource Management Plan, 1995, as amended.

Location

The Pine Horse Valley Roadside Hazard Tree Removal Project is located on the Upper Lake Ranger District on the Mendocino National Forest within the perimeter of the 2018 Ranch Fire on National Forest System lands (Figures 1 and 2).

Species Considered

Species	**Designation**	**Habitat**	**Habitat w/in analysis area**	**Carried forward in analysis**
Northern spotted owl (*Strix occidentalis caurina*)	ESA Threatened	Mature forests with dense canopies	Yes	Yes
Northern spotted owl critical habitat	2012 Critical habitat		Yes	Yes
Western snowy plover (*Charadrius nivosus nivosus*)	Threatened	Shorelines	No	No
Fisher (*Pekania pennant*)	Proposed Threatened & FS Sensitive	Complex vertical and horizontal structure characteristics of late-seral forests	Yes	Yes

Species	Designation	Habitat	Habitat w/in analysis area	Carried forward in analysis
California red-legged frog (*Rana draytonii*)	ESA Threatened	Pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds, and lagoons	No	No[1]
Northern goshawk (*Accipiter gentilis*)	FS Sensitive	Mature to old growth forest with large trees and high canopy closure	Yes	Yes
Willow flycatcher[2] (*Empidonax traillii*)	FS Sensitive	Standing or running water with willows or other shrubs	Yes	No
Bald eagle (*Haliaeetus leucocephalus*)	FS Sensitive	Forested areas adjacent to large bodies of water	Yes	Yes
Pallid bat (*Antrozous pallidus*)	FS Sensitive	Rocky outcrops in desert scrub	Yes	Yes
Townsend's big-eared bat (*Corynorhinus townsendii*)	FS Sensitive	Montane forests with caves, cliffs, and rock ledges, and may use abandoned mines and other manmade structures	Yes	Yes
North American wolverine (*Gulo gulo luscus*)	FS Sensitive	Boreal forests, tundra, and western mountains with arctic tundra, subarctic-alpine tundra, boreal forest, northeast mixed forest, redwood forest, and coniferous forest	No	No
Pacific marten (*Martes caurina*)	FS Sensitive	Montane forests with mature and old conifer forests	Yes	Yes
Fringed myotis (*Mytosi thysanodes*)	FS Sensitive	Caves, mine tunnels, rock crevices, and old buildings	Yes	Yes

[1] California red-legged frog (*Rana draytonii*) was not carried forward in analysis of this project because it is not currently present in any streams in Mendocino or Glenn Counties. Glenn County was a part of the frog's historic range. The California red-legged frog is found primarily in coastal drainages of central California from Marin County south to northern Baja California, Mexico (USFWS 2002).

[2] The project area is outside the breeding range of the willow flycatcher. The willow flycatcher is a locally uncommon, summer resident in wet meadow and montane riparian habitats in the Sierra Nevada and Cascade Range (CDFW 2005).

Species	Designation	Habitat	Habitat w/in analysis area	Carried forward in analysis
Foothill yellow-legged frog (*Rana boylii*)	FS Sensitive	Streams in valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral, and wet meadows with 20-90% shading	Yes	Yes
Western pond turtle (*Emys marmorata*)	FS Sensitive	Permanent and ephemeral aquatic habitats such as rivers, ponds, streams, lakes, wetland habitats, and altered habitats	Yes	Yes
Karin's checkerspot butterfly (*Euphydryas editha karinae*)	FS Sensitive	Monkey Rock & Hull Mountain	No	No

Methodology

Northern Spotted Owl

Yreka Fish & Wildlife Service office developed a post-fire habitat layer to analyze effects from projects on remaining Northern Spotted Owl habitat. To do this they acquired existing vegetation (EVEG) layers from the forest (they did this process for the Klamath and Six Rivers, too), being aware that the EVEG layer is not 100% accurate for these forests. The EVEG layers were overlaid with RAVG data for fires from 2008 until present. For the Mendocino National Forest that included Mill (2008), North Pass (2012), and Ranch (2018) Fires. The RAVG (Rapid Assessment of Vegetation Condition) program assesses post-fire vegetation condition for large wildfires on forested National Forest System (NFS) lands. For FWS's process the RAVG data was divided into gridcodes 1, 2, 3 & 4. Gridcode 1 described basal area lost at 0-25%, gridecode 2 is BA lost at 25-50%, gridecode 3 is 50-75%, and gridecode 4 is basal area lost at greater than 75 percent. The following table describes how gridcodes change habitat types for northern spotted owl (Table 1).

Table 1 - Post fire habitat based on basal area lost

	Basal Area Lost			
	0-25%	25-50%	50-75%	75-100%
Pre-Fire Habitat	**Post-Fire Habitat**			
Nest/Roost	Nest/Roost	Foraging	Post-fire foraging	Post-fire foraging
Foraging	Foraging	Foraging	Post-fire foraging	Post-fire foraging
Dispersal	Dispersal	Dispersal	X	X

The analysis area for terrestrial wildlife extends beyond the 200 foot roadside buffer for hazard tree abatement. Specific action areas depend on the home range and potential for disturbance for each species.

No Action Alternative

Under the No Action Alternative hazard trees within 200 feet of the roads would be left and there would also not be any fuels treatments along the roads.

Proposed Action

Project Description

In August of 2018 the Ranch Fire moved across approximately 240,000 acres of the Mendocino National Forest. Thus, large areas of fire killed trees, many of which are adjacent to forest roads, pose a hazard to our forest users and employees. In order to mitigate this risk and maintain our roads the forest is proposing to remove trees that pose as hazards along roads which access private inholdings and other areas the public and National Forest employees need immediate access.

Hazard tree abatement is a form of road maintenance required for safe travel by the public and for administrative uses. A 200' buffer on each side of the roads will be used in order to compensate for at least one and a half tree heights of standing dead trees that have a chance of striking the roads when they fall. The purpose of this project is to maintain our road system and promote safe travel and uncompromised ingress and egress on priority roads. Some of this work may be accomplished by salvage harvesting commercial trees that are hazards from fire-induced mortality that make them a threat to health and human safety (Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (Angwin 2012)). Hazard trees that are not able to be removed by commercial harvest will be either cut and left in place or cut and removed by other means.

Proposed Actions

The purpose and need in the Bartlett project is to remove current and potential future hazard trees where they exist along roadsides. Effective fuels reduction will also be a beneficial outcome from the proposed activities.

It is important to emphasize that in order to reduce exposure along roadsides, along with the importance of keeping our roads open, that the marking guides utilize the lower probability of mortality threshold since it is imperative that we prevent leaving additional trees that may die.

Direct action is guided by the Mendocino National Forest Land and Resource Management Plan (1995) for matrix lands and late successional reserves.

In non-commercial units mechanical treatment of hazard trees may include cut and yard; masticate and burn; thin, pile, and pile burn; jackpot burn; or understory burn. Hand treatment of hazard trees may include cute and pile, pile burn, jackpot burn, or understory burn.

Detailed proposed actions can be found in the Pine Horse Valley categorical exclusion NEPA document.

Project Design Features and Mitigation Measures

Wildlife

Dead or dying trees that are not identified within the 200 foot roadside hazard buffer to hit the target if it falls should be left for wildlife habitat, i.e. bats and woodpeckers.

There will be a limited operating period (LOP) from February 1 – July 31 to prevent direct or indirect take of northern spotted owls caused by noise or smoke. LOPs are detailed on Figures 3 & 4.

There will be a limited operating period from January 1 to July 31 around active bald eagle nests for a no effect determination.

Where slash and trees need to be left to meet ground cover and coarse woody debris (CWD) requirements, surface fuel loading may be retained and not to exceed CWD >20" = 5-10 tons/acre + 4-5 tons/acre of material < 3 inches.

Existing Environment

Species Accounts

Threatened & Endangered

Northern Spotted Owl

Northern spotted owls inhabit Douglas-fir, western hemlock, grand fir, white fir, ponderosa pine, Shasta red fir, mixed evergreen, mixed conifer hardwood, and redwood forest types. Spotted owls typically use older forest habitats that contain the structures and characteristics for nesting, roosting, and foraging. These characteristics include high canopy closure (60-90%), a multi-layered, multi-species canopy with large overstory trees (DBH > 30"), a high incidence of large trees with various deformities (large cavities, broken tops, mistletoe infections, and other evidence of decadence), large snags, large accumulations of fallen trees, and other woody debris on the ground, and sufficient open space below the canopy for flight. Foraging habitat will have similar characteristics as nesting and roosting but it may not always support a successfully nesting pairs of owls. Dispersal habitat usually consists of habitat of adequate tree size and canopy closure to provide protection from predators and minimal foraging opportunities (USFWS 2011).

The Private Timberland Guidelines prepared by FWS provide recommendations for the amount of nesting/roosting and foraging habitat needed for a home range and core area in a spotted owl territory. Within a home range (excluding the core area) it is recommended there be 935 acres of total foraging habitat. Within a core area it is recommended there be at least 250 acres of nesting/roosting habitat and at least 150 acres of foraging habitat.

The Pine Mountain Late Successional Reserve Habitat Protection and Enhancement project was surveyed in 2016 and 2017 with spot checks conducted in 2018 and 2019. There was one new breeding pair and a single resident owl detected. Both of those areas burned in the Ranch Fire.

Activity Center 4014 – Eel River (LAK0022)

Table 2 - Pre- and Post-fire habitat available in Activity Center 4014, core area only

Habitat type	Pre-Fire	Post-Fire
NR	56	70
F	92	45
D	108	133
Non (PFF)		8
Total	256	256

*Table 3 - Activity center status since its establishment (*indicates year established)*

Year	Status
1987*	Pair
1990	Single
1992	Single
1994	Single

Activity Center 4015

Table 4 - Pre- and Post-fire habitat within activity center 4015, core area only

Habitat type	Pre-Fire	Post-Fire
NR	284	157
F	80	116
D	55	46
Non (PFF)		59
Total	419	378

*Table 5 - Activity center status since its establishment (*indicates year established)*

Year	Status
1986*	Single
1987	Single
1988	Single
1989	Pair
1990	Single
1991	Single
2006	Pair
2008	1 Fledged

Activity Center 4016

Activity Center 4016, or LAK0042, Horse Mountain, was established in 1994 based on a detection during night surveys. There have been no other recorded visits to this activity center.

Table 6 - Pre- and Post-fire habitat within activity center 4016, core area only

Habitat type	Pre-Fire	Post-Fire
NR	17	15
F	2	3
D	13	11
Non (PFF)		3
Total	32	32

Activity Center 4017

Table 7 - Pre- and Post-fire habitat within activity center 4017, core area only

Habitat type	Pre-Fire	Post-Fire
NR	270	199
F	91	83
D	28	28
Non (PFF)		68
Total	389	378

*Table 8 - Activity center status since its establishment (*indicates year established)*

Year	Status
1974*	Pair
1981	Pair
1982	Pair
1983	Pair (possibly with young)
1985	Pair
1986	1 Fledged
1987	Single
1988	Pair
1989	Pair
1990	2 dead owlets
1991	Pair
1992	2 fledged

Year	Status
1994	Single
2005	Pair
2006	2 fledged
2008	Pair
2016	Single

Activity Center 4019

Table 9 - Pre- and post-fire habitat within the activity center 4019, core area only

Habitat type	Pre-Fire	Post-Fire
NR	90	61
F	47	60
D	71	67
Non (PFF)		14
Total	208	202

*Table 10 - Activity center status since its establishment (*indicates year established)*

Year	Status
1984*	Single
1990	Single
1991	Single
1994	Pair
2005	Single
2006	Fail reproduction
2008	Pair

Activity Center 4033

Table 11 - Pre- and post-fire habitat for activity center 4033, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	87	57
F	134	115
D	153	117
Non (PFF)		74
Total	374	363

*Table 12 - Activity center status since its establishment (*indicates year established)*

Year	Status
1990*	Single
1992	Single
1994	Single

Activity Center 4037

Activity center 4037 was established in 1986 on a single owl and a pair was recorded in 1992. There have been no other recorded visits since 1992.

Table 13 - Pre- and post-fore habitat within activity center 4033, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	0	0
F	0	0
D	0	0
Non (PFF)		0
Total	0	0

Activity Center 4039

Activity center 4039 was established on a single owl in 1994. There have been no other recorded visits.

Table 14 - Pre- and Post-fire habitat within activity center 4039, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	60	58
F	124	101
D	112	100
Non (PFF)		25
Total	296	284

Activity Center 4043

Activity center 4043 was established on a single spotted owl in 1991. There have been no other recorded visits to this site.

Table 15 - Pre- and post-fire habitat within Activity center 4043, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	153	130
F	9	31
D	53	44
Non (PFF)		9
Total	215	214

Activity Center 4047

Table 16 - Pre- and post-fire habitat within activity center 4047, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	95	134
F	310	160
D	57	91
Non (PFF)		43
Total	462	428

*Table 17 - Activity center status since its establishment (*indicates year established)*

Year	Status
1986*	Single
1987	Pair
1988	Single
1992	Pair
1994	Single

Activity Center 4053

This activity center was established in 1986 but there is no info in NRIS regarding observations of spotted owl on the site.

Table 18 - Pre- and post-fire habitat within activity center 4053, core area only

Habitat Type	Pre-Fire	Post-Fire
NR	59	23
F	22	42
D	15	8
Non (PFF)		22
Total	96	95

Prey for northern spotted owls in the California Coast Provinces is mainly the dusky-footed woodrat. Other important prey, depending on location, include deer mice, tree voles, red-backed voles, gophers, snowshoe hare, bushy-tailed woodrats, birds, and insects (USFWS 2011). Dusky-footed woodrats usually choose low laying areas near water sources, but may be found along hillsides. They avoid open areas with limited underbrush. On the Mendocino National Forest the best protection for a woodrat is live oak (Bonadio 2000).

Northern Spotted Owl Critical Habitat

Critical habitat is defined by USFWS as geological areas essential to the conservation of the species. Within the designated critical habitat for a species there are Primary Constituent Elements (PCEs) defined for the critical habitat. These PCEs are physical and biological features essential to the conservation of the species, for which special management may be required (77 Fed. Re. 71877, 71897). PCEs are defined as forest types that support the northern spotted owl itself (PCE 1), nesting and roosting habitat (PCE 2), foraging habitat (PCE 3), and dispersal habitat (PCE 4).

Norther spotted owl PCEs are described in the Federal Register (77 Fed. Re. 71877, 71897).

Forest Service Sensitive Species

Northern Goshawk

Northern goshawks nest in a variety of forest types, ages, structural conditions, and successional stages (Reynolds et al. 1992). Optimum habitat for the goshawks consists of conifer/hardwood, mixed conifer, red fir, or white fir composed of trees 24” DBH or greater and a canopy closure 40% or greater. Goshawks will also use trees 12-24” DBH with canopy cover as low as 20%. Nests are generally at the bottom of the northern slope where adults can perch above the nest to see into the nest. Nest are also close to water and openings suitable for foraging (>0.1 acre in size) (USFS 1995).

Prey for the northern goshawk are ground and tree squirrels, rabbits and hares, large passerines, woodpeckers, game birds, and corvids, occasionally reptiles and insects (Squires and Reynolds 1997). Their diet may vary seasonally due to differences in timing of migration, hibernation, or periods of inactivity among prey species, the cyclic nature of some prey species, or difference in food preferences among goshawks (Reynolds et al. 1992).

There are two northern goshawk nests recorded along Big Ridge between Rock and French Creeks. Both of these nests are within the Blue Slides Management area which has suitable nesting habitat for goshawks. One of the nests was established in 1982 but did have any supporting information or an associated goshawk sighting. The other nest was established in 1980 and did have associated sightings of goshawks. These nests were last observed in the early 1980’s.

Bald Eagle

Optimum breeding season habitat for eagles is conifer/hardwood, Douglas fir, mixed conifer, or ponderosa pine with greater than 20% crown closure. Nests are generally found in mature or old-growth trees such as dominant sugar and ponderosa pines with large limbs and open crowns, snags, cliffs, rock promontories, and rarely on the ground or on human-made structure such as power poles and communication towers (USFWS 2007).

Bald eagles require large bodies of water and/or free-flowing rivers with adjacent snags or other structures for perching. They are opportunistic feeders and fish comprise most of their diet but they also prey on waterfowl, shorebirds/colonial water birds, small mammals, turtles, and carrion. Ideal nest sites are no more than a mile from a foraging area (USFS 1995).

Bald eagle surveys as of May 10, 2019 showed no activity at the Graveyard Point nest, an adult in brooding posture on the Salt Springs Creek nest, one adult in brooding posture and one adult in a tree nearby at the Eel River nest, and one adult and at least one young about 2 weeks old on the Rice Fork nest. All nests are outside of treatments areas and LOPs should not be required unless a new nest is found.

Pallid Bat

Pallid bats are common in desert habitats but they may also be found in oak and pine forests or open farmland (Weber 2009) but in some areas in California they may be using mixed conifer and evergreen habitats. Bats in California use day or night roosts that may be live trees or snags, rock crevices or buildings with day and night roost sites alternating (Baker et al. 2008).

Pallid bats are gleaners and forage close to the ground (Baker et al. 2008). They prey on large flying and ground-dwelling insects, including beetles, crickets, katydids and grasshoppers, cicadas, moths, spiders, scorpions, and centipedes. Occasionally they will take small lizards and mice (Weber 2009).

There are several features within the project area that may be used by pallid bats.

Townsend's Big-eared Bat

Townsend's big-eared bats use a variety of habitats, mostly montane forests with pine, fir, and aspen trees surrounded by shrub and grasslands. These bats roost in caves, cliffs, rock ledges, abandoned mines, buildings, and in open attics. Roosting places are generally cooler with a lot of air movement and have open ceilings as Townsend's big-eared bats do not crawl well (Sullivan 2009). In California, this bat is known to use lava tubes, man-made structures, some limestone caves (Kunz and Martin 1982), and large trees (Piaggio 2005). They tend to have high fidelity towards maternity roosts often returning year after year to certain roosts, particularly caves (Fellers and Pierson 2002).

Townsend's big-eared bats in the west typically forage in dense foliage. Fellers and Pierson (2002) found that in coastal California, bats mainly forage in riparian woodlands. The bats would vacate their roost at night and follow densely vegetated gullies and then spent a majority of their time foraging in forested habitats, utilizing the forest edge but avoiding open areas. Their prey tends to be exclusively moths but they will also eat beetles, flies, and other small insects (Sullivan 2009).

Townsend's big-eared bats may be using suitable features within the project area.

Fringed myotis

The fringed myotis uses caves, crevices, mines, and buildings for roosting, hibernacula, and maternity colonies (Keinath 2005; CWHR 2008). They day and night roost under bark and in tree hollows, and in northern California they day roost in snags (Keinath 2005; Weller and Zabel 2001). There is increased likelihood of occurrence of this species as snags greater than 30 cm in diameter increases and percent canopy cover decreases. Large snags and low canopy cover, typical of mature, forest habitat types, offer warm roost sites. Decay classes were two to four in ponderosa pine, Douglas-fir, and sugar pine (Keinath

2005). In California, this species is found from 1300 to 2200 meters in elevation in pinyon-juniper, valley foothill hardwood and hardwood-conifers (CWHR 2008).

The fringed myotis consumes primarily beetles, and is supplemented by moths and fly larvae (Keinath 2005) captured in the air and on foliage (CWHR 2008).

Fringed myotis may be found within the project area.

Marten & Fisher

Marten and fisher inhabit mature and old growth forests on the Mendocino National Forest (USFS 2004, USFS 1995). They prefer areas with large trees, dense canopy cover, and areas with snags and coarse woody debris (USFS 1995, Beyer and Golightly 1996). Snags, live trees with deformities, and down wood are important features for den and rest sites, as well as protection from predators for martens (Bull et al. 2005, Lofroth et al. 2010, USFWS 2004).

There have been sightings of fisher and marten within the project area.

Foothill Yellow-legged Frog

The foothill yellow-legged frog occupies shallow portions of perennial streams and rivers with cobble-size substrate within open, sunny banks, in forests, chaparral, and woodland habitats (Californiaherps.com 2000, Jennings and Hayes 1994). Forest habitats include valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types (CWHR 2008). Gravel and cobble river bars along riffles and pools with at least 20% shading seems to be preferred by sub-adults and adults (Ashton et al. 1998). Breeding habitat is typically classified as a stream with riffles containing cobble-sized or larger rocks as substrate (Zeiner 1990). Frogs may also be found in moderately vegetated backwaters, isolated pools, and slow moving rivers with mud substrates (Ashton et al. 1998).

Foothill yellow-legged frogs have been seen on several creeks throughout the project area.

Western Pond Turtle

The pond turtle is a habitat generalist occurring in in permanent and ephemeral habitats below 2500 ft in elevation (USFS 1995). Turtles have been sighted in rivers, streams, lakes, ponds, permanent and ephemeral wetland habitats, and altered habitats including reservoirs, abandoned gravel pits, stock ponds, and sewage treatment plants. Holland (1994) found that observations made in the altered habitats tend to be turtles that have been displaced by the destruction of natural habitats.

Terrestrial habitats are less understood. In southern California animals spend only one to two months in terrestrial habitats while animals in the northern portions of the range can be terrestrial for up to eight months (Lovich and Meyer 2002). Turtles have been documented to overwinter under litter or buried in soil in areas with dense understories consisting of vegetation such as blackberry, poison oak and stinging nettle which reduces the likelihood of predation (Davis 1998).

Western pond turtles have been observed in the project area.

Effects of No Action

If there was no action taken within the Bartlett project area there would be no affect to ESA listed or Forest Service Sensitive Species. Dead and dying trees within the roadside buffer would be available to

wildlife as snags or coarse woody debris and downed logs. Over time the area may be become less desirable for wildlife as snags fall and new vegetative growth is hindered.

Effects of the Proposed Action

Northern Spotted Owl

Direct & Indirect Effects

Within the 200 foot buffer of roads to be treated commercially there is 353 acres of dispersal, 519 acres of foraging, 457 acres of nesting/roosting, and 317 acres of post-fire foraging habitat (Table 19). Removing roadside hazard trees will have no direct effects on northern spotted owl. Any green trees that would contribute to NSO nesting/roosting or foraging habitat will be retained. This project adheres to Recovery Action 12 in the Recovery Plan (2012) by retaining large trees and downed wood. Outside of the project area there will be plenty of snags available for use by spotted owls. A minimum of three recently downed logs per acre will be retained. This project does not remove or downgrade suitable habitat that remains post-fire.

Table 19 - Habitat types in commercial units, pre and post Ranch Fire. Post-fire habitat is described in the Methodology section of this report.

Habitat Type	Pre-fire	Post-Fire
NR	768	457
F	403	519
D	470	353
PFF	NA	312

Outside of commercial units there are priority roads designated for fuels treatments to reduce fuel hazards post fire. Within this 200 foot buffer there is 214 acres of dispersal, 179 acres of foraging, 130 acres of nesting/roosting, and 403 acres of post-fire foraging habitat (Table 20). These treatments will also focus on green tree retention with a goal of maintaining coarse woody debris.

Table 20 - Pre and post fire habitat acreages for non-commercial priority road treatments. Post-fire habitat calculations can be found in the Methodology section of this report.

Habitat Type	Pre-fire	Post-Fire
NR	229	130
F	258	179
D	439	214
PFF	NA	403

There will be a Limited Operating Period from February 1 – July 31 designated in areas of remaining nesting/roosting habitat and around known Activity Centers (Figures 3 & 4). Surveys were conducted to protocol for the Pine Mountain EIS in 2016 and 2017 with spot checks occurring in 2018 and 2019. There will not be other surveys conducted for this project. There will be no affect to northern spotted owls from the Pine Horse Valley Roadside Hazard Tree Removal Project due to use of LOPs and survey information.

Critical Habitat – Northern Spotted Owl

Direct & Indirect Effects

Within the 200 foot road buffer for commercial treatments there is 2,376 acres of designated critical habitat for northern spotted owl and 1,156 outside of commercial treatments (3,432 acres total). Proposed acres treated is about 1% of subunit ICC5 (34,055 acres).

The primary constituent elements (PCE) of the 2012 northern spotted owl critical habitat will not be modified by the proposed action. Any modification of forest types and other primary constituent elements was or will be caused by effects of the Ranch Fire. The proposed action does remove snags that are characteristic of PCE 2 but there are snags across the landscape and removal of snags along the road occurs within only 1% of the critical habitat subunit.

There are mitigation measures in place to ensure there is adequate logs and coarse woody debris that is characteristic of PCE 2 and 3.

There will be no effect to northern spotted owl critical habitat from actions in the Pine Horse Valley project area.

Northern Goshawk

Direct & Indirect Effects

There will be no direct effects to the northern goshawk due to actions taken in the project area. The two known nests are outside of the roadside hazard buffer and treatments will not affect the nest stand.

Removal of roadside hazard like snags may remove habitat for woodpeckers that are prey for the northern goshawk but there will be plenty of snags available outside of the project area.

Bald Eagle

Direct & Indirect Effects

There will be no direct effects to bald eagles as long a limited operating period is used around active nests near Lake Pillsbury that may have activities within a half mile. PG&E contracts bald eagle surveys each year and the Forest Service is provided with the survey results. These results will be used to update the LOPs.

Indirect effects may include the removal of snags used for perching and resting. There are plenty of snags available on the landscape that this project would not cause a trend listing.

Bats

Direct Effects

Bats may be affected by the removal of hazard trees that have sloughing bark that may be used as a roost. The proposed action would include removing all dead or dying trees within the roadside hazard tree removal units with no intent of retaining any snags that may be used by roosting bats. Steel et al. (2018) were not able to conclude that salvage logging negatively affected snag roosting bats because their acoustical surveys were better suited to detect foraging bats. Hayes and Loeb (2010) (as cited in Steel et al. 2018) concluded that removing snags would remove potential roost sites for bats.

Steel et al. (2018) suggest that for short-term benefits the retention of large trees and snags would help maintain roosting sites. All dead or dying trees that may strike a target if they fall will be removed but

any live trees will be retained and be available on the landscape for bats. There is also an expanse of dead or dying trees outside of the project are available for bats to use as roosting structures.

Indirect Effects

Buchalski et al. (2013) cited studies that suggest bats are resilient to landscape scale fire because the fire removes vegetation and litter that may hinder bats from foraging and that may disrupt echolocation. By removing snags, small diameter trees, and understory vegetation foraging opportunities may be further improved for bats (Hayes and Loeb 2010 in Steel et al. 2018, Steel et al. 2018).

Any rock outcrops that are identified within 300 feet of project activities and determined to have bat activity will have a limited operating period from May 15 – August 15 to protect roosting bats from disturbance by noise. This project may impact individual bats but will not cause a trend toward listing for Townsend's big-eared bat, pallid bat, or fringed myotis.

Marten & Fisher

Direct & Indirect Effects

There have been two sightings of martens within the project area: one from 1914 with 1 dead adult and 3 dead young, and another from 1982. Both of these sightings occur outside the 200 foot buffer of a nearby road. There has been one fisher sighting along Elk Mountain Road and one on Pine Mountain near 17N40. Both of these fisher sightings are as recent as 2015.

There are no known marten or fisher dens within the project area. Should a den be located during project activities then a limited operating period would be applied from February 1 to June 30 within a quarter miles of the den. Since there are no known dens there will be no direct effects to martens and fishers.

Indirect effects may include removal of snags and down wood that may have been used as a den or rest site by marten or fisher. There are several rock outcrops, snags, and other features that will be left on the landscape outside of project activities so this project will not cause a trend toward listing of the marten or fisher.

There will a minimum of three downed logs greater than 20 inches at the large end and greater than 10 feet in length per acre averaged over 40 acres retained within the roadside units.

Foothill Yellow-legged Frog

Direct & Indirect Effects

Frogs within any of the streams will be protected by the Streamside Management Zone (SMZ) buffer.

Western Pond Turtle

Direct & Indirect Effects

There will be no direct effects to the western pond turtle as all suitable habitat would be protected within the SMZs. Regrowth post-fire is important for turtles that may be using the dense brush for overwintering and care should be taken to not crush or destroy regrowth during activity within SMZs or riparian zones.

Determination

The Pine Horse Valley Roadside Hazard Tree Removal Project will have no effect on northern spotted owls or 2012 designated Critical Habitat.

It is my determination that the Pine Horse Valley Hazard Tree Removal Project will not affect northern goshawk, bald eagle, marten, fisher, foothill yellow-legged frog, or western pond turtle.

It is my determination that the Pine Horse Valley project may affect individuals but will not cause a trend toward listing for pallid bat, Townsend's big-eared bat, and fringed myotis.

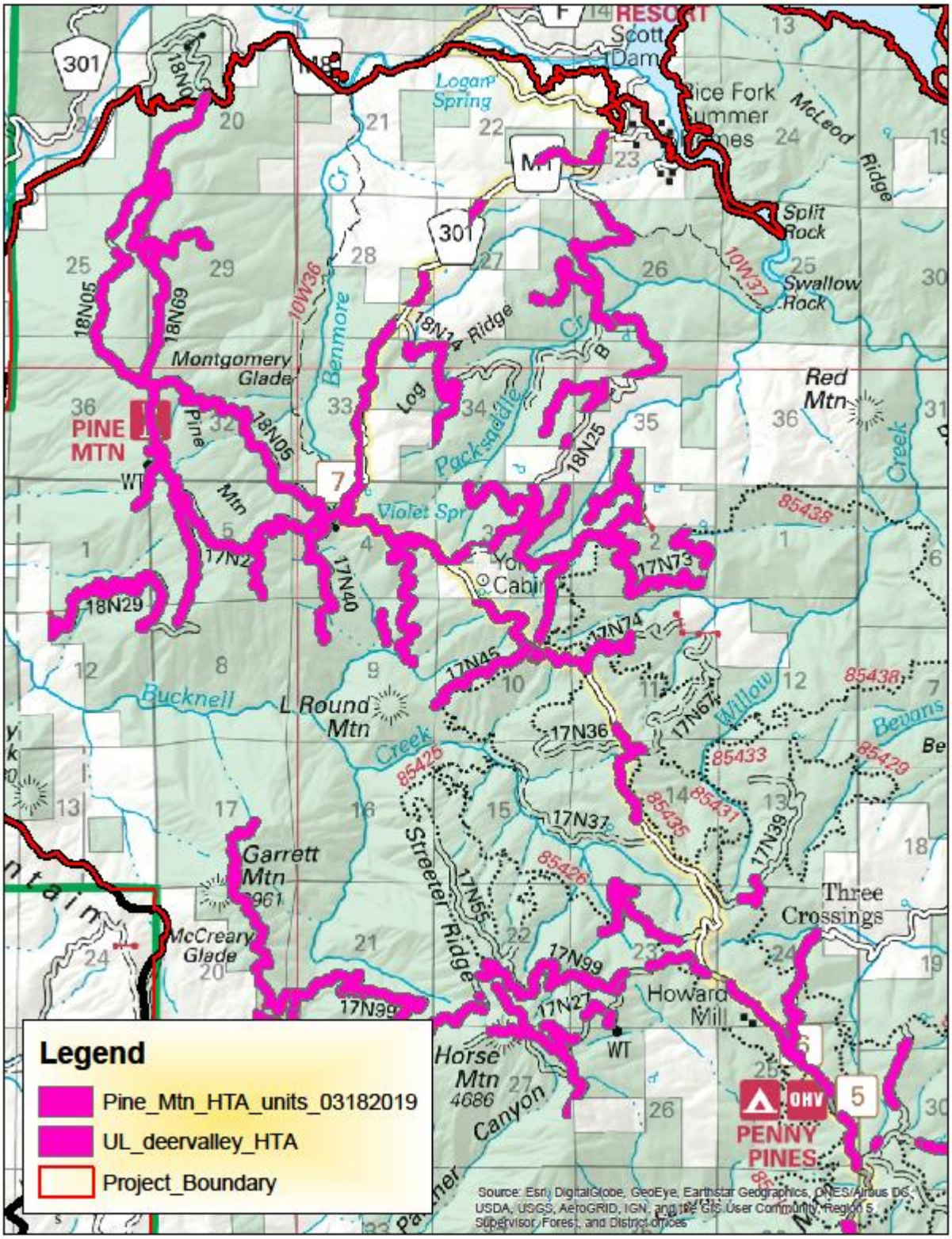

Figure 1 - Part 1 of Pine Horse Valley HTA maps, commercial units only

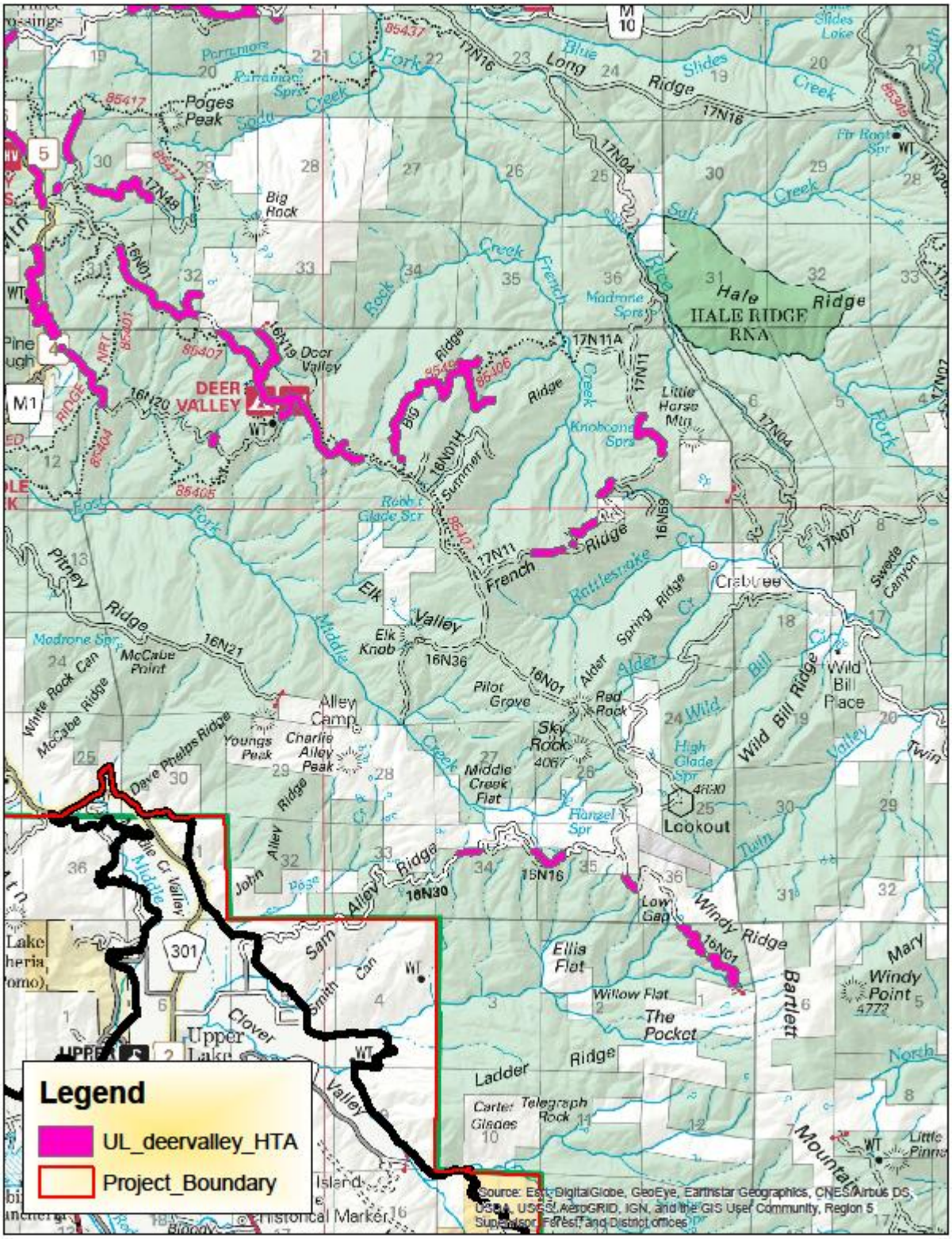

Figure 2 - Part 2 of Pine Horse Valley HTA maps, commercial units only

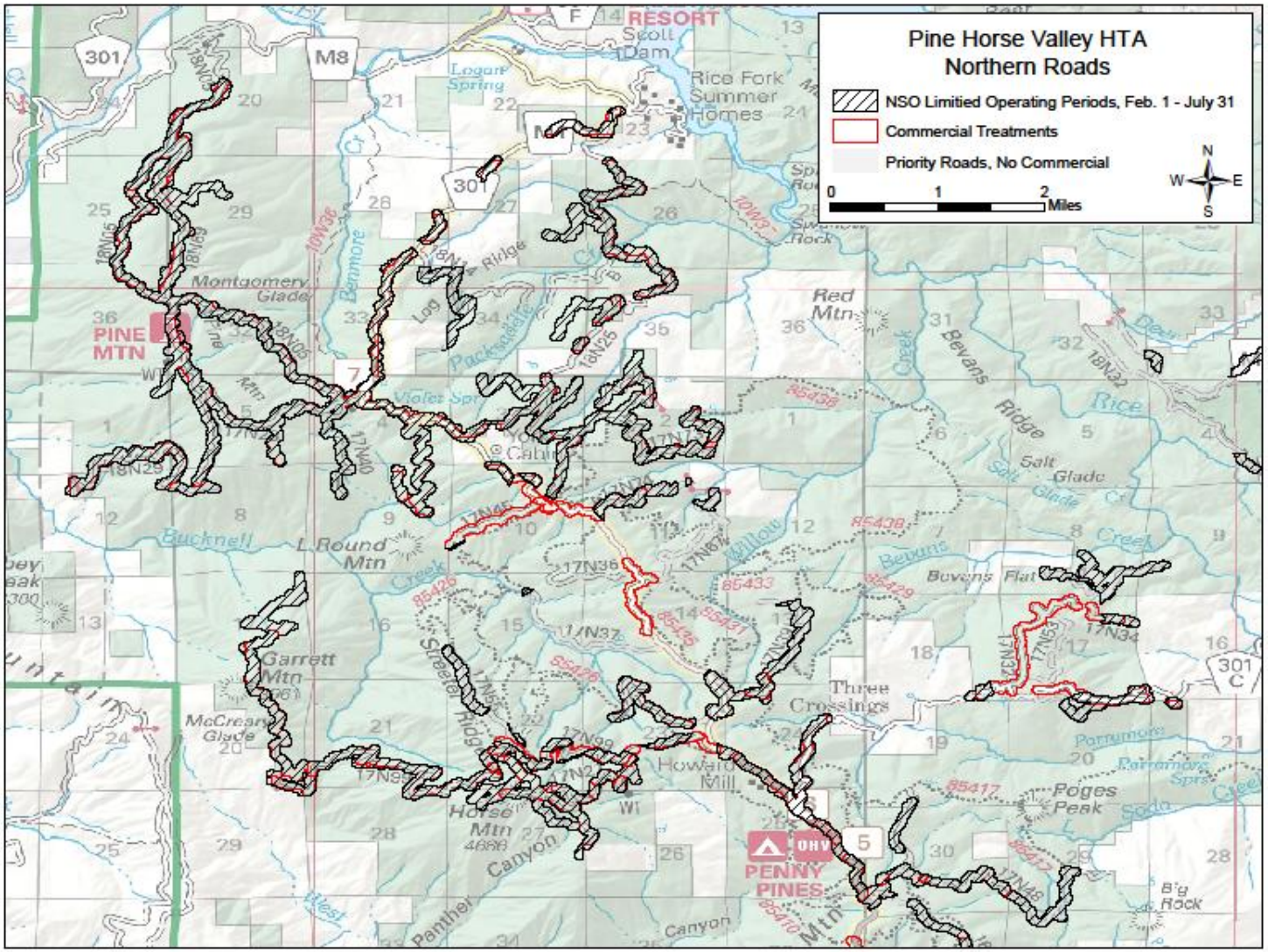

Figure 3 - Limited operating periods for northern spotted owl

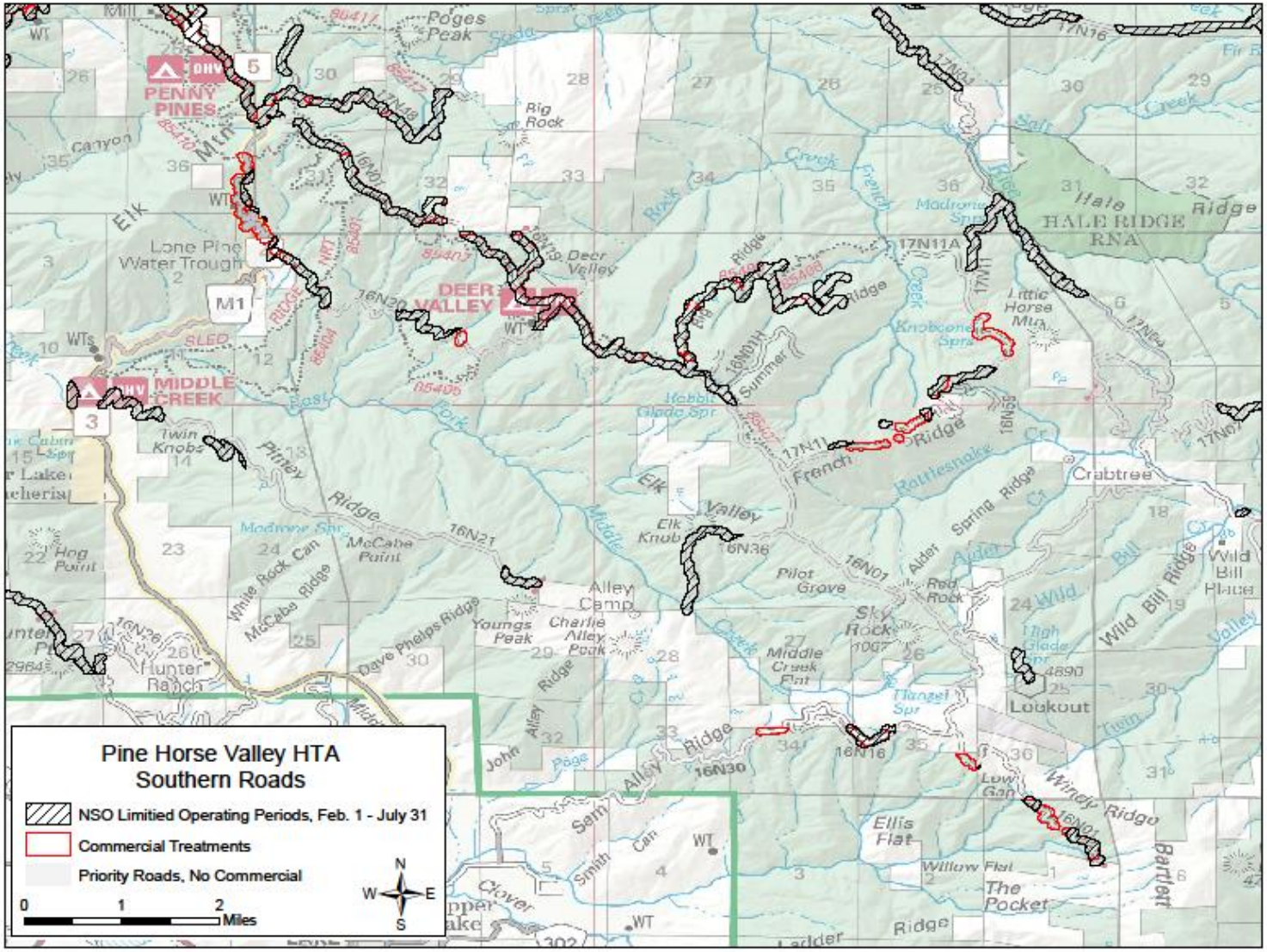

Figure 4 - Limited operating periods for northern spotted owl

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