Appendix N
Wildlife

Northern Spotted Owl

Management Chronology and Monitoring History in Elk Creek LSR 224

1972 – Middle Creek (within the burn area) was the first owl site identified on Medford District by graduate student Eric Forsman, who expressed concern for the loss of old growth habitat.

January 1975 – The Oregon Wildlife Commission adopted a list of Threatened and Endangered wildlife for Oregon that included the spotted owl as Threatened.

January 1978 – The Interagency Spotted Owl Management Plan was completed. It was designed to protect 400 pairs statewide; 90 were assigned to Oregon BLM and 14 to the Medford District. The Timbered Rock site was one Spotted Owl Management Areas (SOMA) designated to maintain a 1200-acre management area with at least 300 acres in old growth. BLM monitored this site and several others opportunistically.

August 1982 – US Fish and Wildlife Service Region 1 completed a status review and included the owl on a Sensitive Species list.

1985 - Responding to a recommendation by Oregon Department of Fish and Wildlife (ODFW), the BLM added 55 owl sites statewide for protection. BLM personnel complete the first general survey of the watershed and identified several "new" sites. Master's student Kathy Nickell monitored an adult owl at the Miller Mountain site via radiotelemetry (Nickell 1986). Impetus for the study was owls here seemed to be nesting in other than stands of unentered old-growth. There were many partial-cut stands (of various densities) in older seral timber supported owl reproduction.

1986 – The Oregon State University (OSU) Co-operative Wildlife Research Unit (Frank Wagner) began a density study/ demographic study (Miller Mountain Study) utilizing radiotelemetry that includes the Timbered Rock Fire area. The study continued through 1990. The last major timber sales in the watershed (Flat Bottom, Oliver Springs) were sold in 1986 (logging contracts continued to 1990).

January 1987 – US Fish and Wildlife Service (USFWS) was first petitioned to list the species as endangered.

August 1987 – The lightning-caused Burnt Peak Fire burned east of Elk Creek. Burned volume was sold later that fall in the Hot Tatouche sale. No known owl activity centers were located in that fire area.

December 1987 – USFWS announced the decision that listing was not warranted.

June 1988 – The Ninth Circuit Court granted an injunction against sales in or near owl habitats.

November 1988 – The judge remanded the suit to USFWS, saying the decision not to list was "arbitrary and capricious."

December 1988 – USFWS reopened the status review for the species.

March 1989 – The District judge granted a preliminary injunction halting old growth timber sales.

March 1989 – USFWS published a Federal Register Proposed Rule 54(120) (pg 26666-77) to federally list the northern spotted owl as Threatened. The BLM added 12 more SOMAs statewide (to the previous 110) for protection.

May 1990 – The Interagency Scientific Committee issued its report (the ISC report), "A conservation strategy for the northern spotted owl" (Thomas, et al. 1990, 3), that protected 1,000 acres within a 2.1-mile radius of selected sites and coins the term "Habitat Conservation Area." Habitat Conservation Areas (HCA) proposed maintaining large blocks of habitat versus the previous strategy of protecting scattered individual sites. The burn area and Elk Creek Watershed are within a proposed HCA.

July 26, 1990 – USFWS published the Final Rule to list the northern spotted owl as a Threatened species (*Federal Register* Vol. 55, No. 123, 26114-26194). OSU began an expanded demographic study, which included the entire Elk Creek

Watershed. Repeated protocol surveys were run each year to locate and color band all owls in a density study area. Intensive fieldwork continued through 1996. The BLM hired crews of wildlife technicians to survey for owls across the Medford District.

January 15, 1992 – The Federal Register published the Final Rule to establish Critical Habitat for the owl (Federal Register Vol. 57, No. 10, 1796-1838).

April 1992 – USFWS released a Draft Recovery Plan for the Northern Spotted Owl, which recommended establishing 196 Designated Conservation Areas (DCA) across the range of the spotted owl. The burn area and Elk Creek Watershed are within a DCA, ". . . designed to support a population of 20 or more pairs of owls in habitat conditions that allow successful breeding and rearing of young." (pg IX).

April 1994 – The Northwest Forest Plan Record of Decision (NFP) was issued with Standards and Guides for management of owls. The plan established a network of Late-Successional Reserves (LSR) and 100-acre cores for owl sites in Matrix lands that had been identified by January 1, 1994.

NFP Introduction page A-3 refers to Critical Habitat " . . . the combination of, and standards and guidelines for, Late-Successional Reserves, Managed Late-Successional Areas, Riparian Reserves, and matrix, should allow critical habitat to perform the biological function for which it was designated. Any site-specific considerations of critical habitat in the matrix are considered minimal, and will be evaluated through watershed analysis and addressed in area-specific plans, as appropriate." "Late-Successional Reserves are identified with an objective to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species including the northern spotted owl. Limited stand management is permitted, subject to review by the Regional Ecosystem Office" (pg A-4).

June 1995 – The Medford District Record of Decision and Resource Management Plan was published. Management for spotted owls is referenced on pages 4, 32, 33, 55, 57, and 195.

1997 – Boise Corporation personnel began monitoring many of the known owl sites in the watershed. BLM biologists covered the remaining sites. Due to budget constraints, some sites were monitored opportunistically versus a more rigid protocol. Collection of demographic data, and color banding of adults and young continued through the 2002 nesting season.

1999 – A meta-analysis of range-wide status of the owls was published, which included data from a Cascades Study Area just east of the Elk Creek area (Franklin, et al. 1999).

2001 – In response to lawsuits, USFWS reanalyzed the spotted owl baseline and reiterated the role of LSRs in lieu of a Recovery Plan. The report discussed the decreased importance of designated critical habitat areas outside of LSRs.

April to July 2002 – Boise and BLM personnel continued to monitor known sites in the BLM watershed (LSR 224). This was the 17th year of banding owls and gathering demographic performance data such as site fidelity (adult turnover), adult movements between sites, and production of young.

July to September 2002 – The Timbered Rock Fire burned 27,000 acres within the Elk Creek Watershed.

2003 – BLM and Boise conducted a complete resurvey of the burn area in April-May-June to determine the survival and location of the pre-fire owls.

Northern Spotted Owl Life History

Background

This section is intended to provide supplemental information on spotted owl life history to aid in the decision making process.

Preferred Prey within Elk Creek

Eight regurgitated pellets from three spotted owl sites within the Elk Creek Watershed collected from 1987 to 1992 contained bones and skulls from woodrat, flying squirrel, gopher, mole, deer mouse (Matt Broyles, pers com. 2003). Pellets were collected at the Middle Creek site from 1973-1978 that contained 22 woodrat, 10 mole, 8 flying squirrel, 8 vole (Eric

Forsman, pers com. 2002).

Foraging

"The most important stand structures in influencing habitat use were the amount of woody debris and, less consistently, the number of large snags at foraging sites and large-diameter trees at nest sites. The direct connection of standing and downed dead trees to owl biology probably occurs through the relationship between dead wood and the owl's prey" (northern flying squirrel) (Irwin, et al. 2000, 183). Many other small forest mammal prey of spotted owls also are associated with coarse woody debris on the forest floor, such as woodrats, deer mouse, Townsend's chipmunk, and western red-backed vole.

In northwestern California, owls selected the dusky-footed woodrat over other prey species. In general, foraging sites were near the ecotone between late and early seral mixed-conifer forests (Ward, et al. 1998, 88).

"As predicted, owls preferentially used units of young forest near their core areas when dusky-footed woodrats were present but only used young forests from time to time when flying squirrels were their primary prey" (Carey and Peeler 1995, 237).

"Simply, some young stands have more old-growth legacies than other stands, some develop faster than others and some are colonized by potential prey faster than others… Here, we found the owls were capable of selecting from among the young stands and using some of them consistently and intensively. This conclusion offers support for habitat restoration efforts as part of a strategy for the recovery of the spotted owl" (Ibid, 237).

"[S]ome level of timber harvest may benefit spotted owls because dusky-footed woodrats reach their highest abundance in sapling/brushy poletimber stands." "…when regenerating clearcuts are treated to remove competing vegetation, retention of hardwood brush and patches (>5-10 m wide) that do not significantly suppress conifer growth could provide suitable habitat for woodrats. In young sawtimber stands, implementing specific silvicultural treatments, such as precommercial thinning operations to maintain small patches or strips of brushy vegetation, may support small woodrat populations in a seral stage in which they are normally rare" (Sakai and Noon 1993, 380).

"Owls do not forage in these habitats [brush-stage clearcuts], presumably because the abundant prey are unavailable to them. To create brushy poletimber stands that do benefit owls, some demographic rate of owls, such as reproduction, must be limited by prey availability; woodrats within brushy poletimber stands must travel from source areas into older stands; and the brushy poletimber stands must be adjacent to stand types used for foraging by spotted owls" (Ibid, 380).

Home Range Size

In the 1986-1989 telemetry study in Elk Creek (the Timbered Rock fire area) the mean cumulative home range for 21 individual owls at seven sites was 4,060 acres. Home ranges expanded in winter. Home range overlap between seven neighboring pairs ranged from 34 to 78% (Wagner and Meslow 1989, 5-6).

Breeding season home ranges (minimum convex polygon) for 9 radiotagged adult owls near Roseburg ranged from 1,240 acres to 1,660 acres. Nonbreeding season ranges were larger, averaging 3,400 acres. Individual owls' home ranges were 25-75% old-growth. Owls foraged and roosted in old-growth significantly more than expected based on availability (Carey et al. 1990, 14).

Summer home ranges for 8 owls in northern California ranged from 450 to 1,630 acres, smaller than most other studies. On average, adjacent pairs shared 52 % of their home ranges, higher than estimates for other studies, probably due to patchy distribution of suitable habitat (Solis and Gutierrez 1990, 746).

Nest Site Selection

Hershey, et al. compared 105 nest sites with 105 random sites in western Oregon and on the Olympic Peninsula. There are conflicting results on the importance of large volumes of down woody debris, but owls appeared to be selecting nest sites with large basal area of broken-top trees. "In this study, we found the density and basal area of broken-top trees was lowest in the Klamath province, and most nest sites (67%) in the Klamath showed either evidence of mistletoe infestation or logging in which large trees were removed. In the absence of large broken-top trees or large trees with side cavities, and particularly where mistletoe infestation was prevalent, platform nests appeared to provide a suitable nesting structure" (Hershey, et al. 1998, 1404).

"This study suggested older forests associated with spotted owl nest sites possessed particular structures such as high tree densities in various DBH and height classes and high basal area of large broken-top trees that may not be present in all patches of older forest. Retention or development of these structures should be promoted if the objective is to manage for nesting habitat for spotted owls" (Ibid, 1408).

From a study on the Willamette National Forest, "Our analyses suggest spotted owl nests were associated with clumped distributions of old forest and indicated the influence of old forest on nest-site selection was greatest near the nest [within 200 yds]" (Swindle et al. 1999, 1219).

"The trend of increased association of old forest with decreased distance from the nest is biologically intuitive, from an energetics standpoint, for central-place foraging species like spotted owls. Additionally, use of large areas of old-forest habitat is understandable for a species that tends to specialize on medium-sized prey items that occur at low densities…, especially on a landscape that primarily consists of either unmanaged older forests or young plantations" (Ibid, 1219).

"The common assumptions that a core area is important for spotted owls, and sensitivity to habitat loss is greater closer to the nest site, are supported by this study. On our study area, the landscape scales of most pertinence to spotted owl nest-site location when considering the proportion of old forest seem to be (in descending order) (1) the surrounding 10-15 ha (appprox 200 m radius) …, (2) the surrounding 30-115 ha (approx 300-600 m radius) …, (3) the surrounding 200 ha (800 m radius) …" (Swindle, et al. 1999, 1220). These circles correspond to approximately 25 to 35 acres, 75 to 275 acres, and ½ mile radius. "These results do not indicate that old-forest habitat beyond 800 m from a nest site is unimportant to spotted owls."

From another study on the Willamette NF, owls nested in trees as young as 41 years, although 65% of nest trees were older than 120 years. "Suitable nesting habitat might best be facilitated via retaining legacy trees" (Irwin, et al. 2000, 175).

LaHaye and Gutierrez 1999 found the majority of their spotted owl nests in northwestern California on the lower portions of slopes. "Spotted Owls in this study selected nesting habitats with a large-diameter conifer overstory which contained a significant component of deformed trees and was subtended by an understory of large hardwoods. These results, coupled with high variation in tree diameters in nesting areas, demonstrate that the owls are using more complexly structured forest of older age than was available in the landscape" (Ibid, 329).

Suitable Habitat Rating

To enable mapping of where owl habitat was pre-fire, Operations Inventory polygons were given an owl habitat suitability rating (sometimes referred to as a McKelvey Rating) from 1 to 6. As detailed in the Elk Creek Watershed Analysis Data Element Appendix page 27:

"Class 1 – Meets all life requirements (optimal). Nesting, foraging, roosting and dispersal. Canopy closure greater than 60 percent. Canopy structure usually multi-layered and diverse and includes snags, mixed species and large 'wolf trees.'"

"Class 2 – Meets foraging, dispersal, and roosting. Canopy closure greater than 60 percent. Open enough below canopy to permit flight. Canopies can be single layered."

Class 1 & 2 (Habitat 1&2) together are considered "suitable owl habitat" nesting, roosting foraging (NRF).

"Class 3 – Meets no known requirements for spotted owls. Doesn't provide nesting, foraging, roosting, or dispersal. Canopy closure 40 percent or less. Doesn't meet requirements due to some kind of disturbance but has the biological potential to develop into class 1 or 2." This class includes clearcuts, plantations, thinned timber that could grow into suitable habitat given enough time.

"Class 4 – Meets no known requirements for spotted owls. Doesn't provide nesting, foraging, roosting or dispersal. Canopy closure 40 percent or less. Doesn't meet requirements due to site limitations and would not likely have the potential to develop into class 1 or 2. Examples could include oak woodlands, serpentine areas, etc." Other examples include roads, rockpits, brushfields – non forest, or very low stocking.

To enable quantification and display of dispersal habitat, Class 5 was created as a subset of Class 3, and Class 6 was created as a subset of Class 4. These stands feature scattered clumps of cover that could offer short-term roosting cover to owls as

they disperse across the landscape.

"Class 5 – Provides for spotted owl dispersal habitat only. Canopy closure between 40 and 60 percent. Needs to be open enough below canopy to allow for flight and avoidance of predators. Has the biological potential to develop into nesting, foraging or roosting habitat."

"Class 6 – Provides for spotted owl dispersal habitat only. Canopy closure between 40 and 60 percent. Needs to be open enough below canopy to allow for flight and avoidance of predators. Not currently meeting nesting, roosting or foraging requirements due to site limitations and would not likely have the potential to develop into class 1 or 2. Examples could include low site lands, woodlands, serpentine areas, etc."

For the Timbered Rock post-fire analysis, two new classes were created to depict habitat where most of the timber remains, but underburning degraded habitat for the prey base, estimated to recover in 2-5 years. Class 7 – is a subset of class 1. Class 8 – is a subset of class 2.

Role of Edge versus Core Habitat

"Spotted owl sites within the BLM checkerboard patterned lands in western Oregon were characterized in general by a larger proportion of old growth and by larger average and maximum sizes of old-growth patches than occurred at random on the forested landscape. Thus, site selection primarily was determined by the amount of old forest and the size of old-growth patches" (Meyer, et al. 1998, 46).

The view through the 1990s emphasized that spotted owls mainly used blocks of older forests. "…spotted owls are rare, and have low productivity, in 50-80 –year-old forests or areas with only the small amounts of older forest left after timber harvest activities. Owls were virtually absent in 50-80-year-old forests" (Bart and Forsman 1992, 99).

By the late 1990s, some researchers found that edge could be an important component of owl habitat use.

"…(S)urvival is maximized by maintaining relatively large core areas of habitat with some edge… In contrast, fecundity was maximized by minimizing core area of spotted owl habitat, maximizing the amount of edge between spotted owl and other habitats, and either minimizing or maximizing the number of discrete patches of spotted owl habitat…" (Franklin, et al. 2000, 573).

That observation is in contrast to the findings of Anthony, et al. (2002, 47) "… the amount of edge was not important to owl survival in our study." "Apparent survival of spotted owls was best explained by the percent of all old forest habitat at the core scale (positive effect) and the proportion of unsuitable habitat at the ring scale (negative effect)" (Ibid, 46).

Forest Thinning

Referring to commercial thinning in the Sierras, "We would not be surprised to find that a brief period (probably less than 5 years) elapses after logging operations before the owls resume foraging in selected timber stands" (Verner et al. 1992, 25).

Again in the Sierras, "Overly dense stands are subject to extensive mortality from drought and insects, including loss of the most desirable large, old trees." "Without substantial increases in funding for prescribed burning, the likelihood of losing large acreages of owl habitat to severe wildfires will increase over time" (Weatherspoon et al, 1992, 253).

In a radio-telemetry study on one owl near Eugene, "After commercial thinning, the nonbreeding season home range size was more than twice the size of that during preharvest and became less concentrated … as the owl visited areas further … than had been previously recorded" (Anthony 2001, 11). "When two years of data were combined, core use areas during the breeding seasons after harvest did not expand in size, but shifted north, excluding much of the thinned stand" (Ibid, 12).

"Although thinning treatments may eventually encourage forest development suitable for spotted owl use, the overall proportion of locations recorded in the thin for two years after harvest (3.8%) was approximately the same as that of clearcut/sapling stands (i.e. unsuitable owl habitat) in the area (4.2%) during the same period. Therefore, heavy thinning of conifers may have a negative short-term effect on spotted owl use of such stands" (Ibid, 15)

A study compared truffle abundance and species diversity between legacy stands versus thinned stands relative to use by flying squirrels and Townsends chipmunks (spotted owl prey). Some truffle species were found more in the thinned stands,

but most of the truffle species were more diverse in the legacy forests, implying that the unthinned stands would be better for those species of owl prey (Carey et al, 2002, 148).

"One factor that may also affect an owl's home range and habitat use over time is the home range and habitat use of other owls on adjacent breeding territories. Specifically, occupancy, movements and turnover on adjacent territories may contribute to change in size and location of a spotted owl's home range and habitat use over time" (Ibid, 13).

Dispersal

From a telemetry study of juvenile dispersal in west central and southwest Oregon, "Only 2 habitat parameters significantly affected the probability of mortality during dispersal; an increased use of open sapling stands during transience decreased the probability of mortality …, whereas an increased use of clearcuts during colonization increased the probability of mortality" (Miller, et al. 1997, 145). The mean straight line daily transient dispersal distance was one mile (Ibid, 147). Owls selected closed-canopy forests over open-canopy forests during transience, and more so for the colonization phase of dispersal. "Dispersing juvenile owls selected equally between less fragmented forests and more fragmented forests" (Ibid, 147).

Prey availability probably is a critical factor during dispersal, because many dispersing spotted owls die from starvation. A possible explanation for the decreased mortality associated with open sapling stands is that they could provide a relatively high source of prey (dusky-footed woodrat) compared to other habitats. Woodrats disperse from open sapling stands into older forest stands, so the sapling stands are beneficial to owls if prey availability is limiting (Miller et al, 1997, 147).

In a study of dispersal behavior of over 1400 spotted owls utilizing color banding and radio-telemetry, most juveniles in Oregon began to disperse from 17-21 September. Siblings dispersed independently, with a series of rapid movements away from the natal area in the first few weeks. The median dispersal distance for males was 9 miles, and 15 miles for females. Approximately 8 percent of young dispersed over 30 miles. "Forested landscapes traversed by dispersing owls typically included a fragmented mosaic of roads, clear-cuts, non-forest areas, and a variety of forest age classes ranging from young forests on cutover areas, to old-growth forests > 250 years old" (Forsman, et al. 2002, 2).

Productivity

Production of young (fecundity) can vary greatly from year to year. It is theorized that regional weather conditions influence owl nesting success.

"…[S]potted owls may employ a life history strategy similar to 'bet hedging' by which selection favors adult survival at the expense of present fecundity when the recruitment of offspring is unpredictable from year to year…" (Franklin, et al. 2000, 576).

Some owl populations may experience declines for several years of low productivity, then undergo an "apparent breeding pulse" every 3 to 5 years that sustains the population (Seamans et al. 2001, 429).

"…[T]he period when life history traits for Northern Spotted Owls are generally affected by climate is during the spring rather than the winter." "A plausible mechanism during this energetically stressful period [nesting] is that precipitation may decrease hunting efficiency, prey activity, and prey populations…" "Owl populations may experience periods of decline caused solely by climatic variation … even if habitat conditions remain unchanged" (Franklin et al. 2000, 576-577).

Owls and Fire

"The Forest Plan acknowledges the potential for the loss of owls and habitat from catastrophic events such as wildfire … and established S&Gs to address these concerns through appropriate management such as prescribed fire and other fuel treatments to reduce risks. Although these types of treatments in and around LSRs are typically designed to protect owl habitat over the long term by reducing the likelihood of catastrophic effects, in the short term prescribed fire can adversely affect nesting owls directly or indirectly by affecting their prey" (USDI, USFWS 2001, 11).

"…[M]any of the spotted owl habitats that developed as a result of fire exclusion and many others are at high risk of catastrophic fire unless treated" (Irwin and Thomas 2002, 4).

"Excessively dense understories may impede foraging and, to the extent that diversity of tree species – to include pines and oaks – is important, continued exclusion of fire may be degrading habitat quality." "Nevertheless, it is possible that fire exclusion in Sierran mixed-conifer forests has led to a net improvement in spotted owl habitat there." "If owl habitat has

improved as a result of fire suppression, such improvement may well be illusory and short-lived. Fire is inevitable in these forests, and the probability of catastrophic fire – certainly one of the greatest threats to owl habitat – increases as surface fuels and ladder fuels continue to accumulate" (Weatherspoon, et al. 1992, 253).

In a case study near Yakima WA, radiotagged spotted owls were monitored before and after two 1994 wildfires. At one site, "20% of post-fire locations fell within areas affected by low and medium intensity fires, suggesting that the habitat retained some degree of suitability." At another site, "the male's habitat use shifted dramatically away from the burned area…, which burned with low to high intensity all around and through the former nest grove." Following the fire, he "shifted his activity center to areas of predominantly suboptimal owl habitat outside of the burned area." "He continued to make occasional forays into the burned area, particularly the lightly burned portions" (King et al. 1998).

"Our observations indicate that smoke alone will not necessarily drive spotted owls off their territories. Even fire in close proximity, and very high levels of disturbance associated with fire-fighting, did not force the Bullgrouse female to abandon her young." "Habitat quality may decrease following low intensity fire, but is not necessarily destroyed. However, high intensity fire appears to be incompatible with maintenance of spotted owl habitat." "It is possible that habitat quality will continue to decline within the next few years, particularly in providing spotted owls with cover from avian predators, but the long-term trend should then be towards habitat improvement" (King et al. 1998). At the Bullgrouse site, a new pair moved in the year after the fire, and nested in 1996 and 1997 within 100 m. of the previous pairs nest.

"Controlled burning under conditions chosen by managers should be more successful in maintaining spotted owl habitat, while still carrying some risk of displacing owls and/or unacceptably degrading habitat quality. Close to active site centers, these risks are probably unacceptably high" (King, et al. 1998).

Barred Owls

The first barred owls were documented in Oregon in 1974 (Taylor and Forsman 1976). In portions of Washington, barred owls now outnumber spotted owls. Barred owls have a more diverse prey base, including more mammal species (snowshoe hare), more birds (grouse), and more diurnal prey. They also utilize riparian prey such as frogs and minnows. Although both species hunt in the forest, the barred owl is more of a generalist, making greater use of meadows and riparian areas, as well as forested areas (Hamer, et al. 2001, 225).

Barred owls weigh more than spotted owls. Barred owls have smaller home ranges. Barred owls rigorously defend their home range throughout the year. "The extremely large home range of the spotted owl may make an active and regular defense of home range impossible" (Hamer 1988, 59).

In a comparison of 62 spotted owl and 33 barred owl site centers (½ mile radius) in the western Cascades of Washington (Herter and Hicks 2000, 283-284), spotted owl sites contained more old forest closer to the site center. Barred owl sites persisted in areas of less old forest.

Dark, et al. (1998, 55) describe an instance where a spotted owl was apparently killed by a barred owl.

The potential for barred owl impacts on spotted owl viability in SW Oregon was addressed by USFWS in the BO (USDI, USFWS 2003, 23).

West Nile Virus

As of October 2003, West Nile Virus has not been detected in Oregon, but it has been detected in the neighboring states. Great horned owls and barred owls have succumbed to the disease (USDI, USFWS 2003, 25). The virus is a potential threat to spotted owl populations.

Population Trend

Based on a meta-analysis of data from 1985-1998 of 15 study areas that cover 23% of the range of the species, it is estimated that spotted owl populations have been declining approximately 4% per year (Forsman and Anthony 1999).

"Fitness in owls is a multistage process: (1) survival to reproductive age, (2) formation and maintenance of pair bonds and home ranges, (3) survival and maintenance of pair bonds and ranges in nonbreeding years, and (4) occasional successful reproduction that results in some young fledging, dispersing, maturing, and breeding" (Carey and Peeler 1995, 236).

Clarification on Critical Habitat Designation

The following are quotes from the Federal Register notice (43 pages) of the designation of Critical Habitat Units for the northern spotted owl. This information is the only guidance statement available from US Fish and Wildlife Service on how these lands should be managed and precedes the NW Forest Plan by two years (*Federal Register*, 50 CFR Part 17, Vol. 57 No. 10, Wed., January 15, 1992, pages 1796 – 1838).

Page 1796. "Critical habitat is defined ... as the specific areas ... on which are found those physical and biological features (i) essential to the conservation of the species, and (ii) that may require special management considerations or protection."

"... critical habitat serves to preserve options for a species eventual recovery. Critical habitat helps focus conservation activities by identifying areas that contain essential habitat features (primary constituent elements) regardless of whether or not they are currently occupied by the listed species ..." "Aside from the added protection provided under Section 7, the Act does not provide other forms of protection to lands designated as critical habitat."

Page 1797. "Specific management recommendations for critical habitat are more appropriately addressed in recovery plans, management plans, and through section 7 consultation." Primary Constituent Elements: "Such physical and biological features ... include, but are not limited to, the following: - Space for individual and population growth, and for normal behavior; - Food, water, or other nutritional or physiological requirements: - Cover or shelter; - Sites for breeding, reproduction, rearing of offspring; and - Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species."

Page 1803. "The Service's primary objective in designating critical habitat was to identify existing spotted owl habitat and to highlight specific areas where management considerations should be given highest priority to manage habitat." "... the Service relied upon the following principles: - Develop and maintain large contiguous blocks of habitat to support multiple reproducing pairs of owls; - Minimize fragmentation and edge effect to improve habitat quality. - Minimize distance to facilitate dispersal among blocks of breeding habitat; and - Maintain range-wide distribution of habitat to facilitate recovery."

"The definition of 'suitable habitat' was generally equivalent to the structure of Douglas-fir stands 80 or more years of age (with adjustments for local variation or condition)." "Critical habitat units minimize distance between adjacent units, thereby facilitating dispersal and linkage."

Page 1804. "Since critical habitat designation is not a management plan, there was not a limitation on the size of the area added to any HCA ... Primary consideration was given to existing suitable habitat and known pairs of spotted owls, particularly where the Service felt that additional protection should be considered and would enhance the existing HCA."

Page 1805. "Although the designation of critical habitat emphasizes the importance of maintaining suitable habitat for all four constituent habitat elements, nesting and roosting habitat should be emphasized to improve opportunities for successful linkage." "Not all suitable nesting and roosting habitat was included in critical habitat."

Page 1806. "The emphasis for future management will be on maintaining or developing habitat that has the characteristics of suitable nesting and roosting habitat and to avoid or reduce the adverse effects of current management practices." "The Service analyzed the economic effects of the ... proposal to designate critical habitat."

Page 1809. "The revised proposed rule for the designation of critical habitat ... published on August 13 1991 ... encompassed a total of approximately 8.2 million acres." "As a result of the exclusion process, the Service is designating approximately 1.4 million acres less ..." "The final rule ... encompassing a total of nearly 6.9 million acres ... 62 percent of the total originally identified in the May 6 proposal." 1.2 million acres of Bureau land.

Page 1801. "State, private, tribal, and other non-Federal lands are not designated as critical habitat even if they are physically situated within the boundaries of critical habitat units."

Page 1822. "Section 7 prohibitions against the destruction or adverse modification of critical habitat apply to actions that would impair survival and recovery of the listed species, thus providing a regulatory means of ensuring that Federal actions within critical habitat are considered in relation to the goals and recommendations of a recovery plan. As a result of the link between critical habitat and recovery, the prohibition against destruction or adverse modification of the critical habitat should provide for the protection of the critical habitat's ability to contribute fully to the species' recovery."

Table N-1. Site Monitoring History for Spotted Owl Sites – 5 Year Occupancy and Productivity

Master Site #	Site Name	1998	1999	2000	2001	2002	Adult color confirmed in 2002
Active sites with center of activity on BLM within the burn							
2001	Alco Creek	M	NR	P, –, NB	P, –, NB	P, L, 0	M -
2012	Alco Rock	P, L, 0	P, L, 1	P, L, 2	P, –, NB	P, L, 1	M F
2275	Alco Rock West	M	P, U	P, U	P, –, NB	P, L, 2	M F
1833	Elkhorn	P, L, 2	M	P, L, 0	P, L, 0	M	- -
2011	Flat Creek	P, –, 0	P, L, 2	P, L, 0	P, L, 0	P, L, 0	- F
0885	Gobblers Knob	NR	P, U	P, L, 0	P, –, NB	P, U, 0	M F
1950	Lower Timber Creek	P, L, 0	P, –, NB	P, L, 0	P, L, 0	P, L, 0	M F
0898	Miller Mountain	M	M	P, L, 0	P, L, 0	P, L, 0	M -
0884	Shell Rock	NR	M	NR	P, L, 0	P, L, 2	M F
0954	Timbered Rock	P, U	P, U	NR	P, –, 1	P, –, NB	M F
2057	Upper Timber Creek	P, U	P, –, NB	P, L, 1	P, –, 2	P, NB	M F
2002	West Branch Elk	P, L, 1	M	P, L, 2	P, U	P, L, 1	M F
Active site with center on USFS and BLM							**Last year active**
1828	Hawk Creek	NR	NC	NC	P, L, 2	NC	M F 2001
Young on BLM within burn		3	3	5	5	6	Ave. 4.4 young
Inactive historic sites on BLM within the burn							**Last year active**
4029	Alco Ridge	NR	NR	NC	NC	NC	1994
2252	Flat Creek Divide	NR	NR	NC	NC	NC	1993
1829	Gobblers East	NC	NC	NC	NC	NC	1989
0056	Middle Creek	NR	NR	NR	NC	NC	1992
1825	Ragsdale	NR	NR	NR	NC	NR	1995
Inactive historic site on private timberland within the burn							**Last year active**
1954	East Jones Creek	NC	NC	NR	NC	NC	1991
Active site on BLM within watershed (LSR 224) but outside burn							
0879	Lost Creek	P, L, 1	P, –, NB	P, –, NB	P, U	P, U	M -
4028	Lower Morine Creek	P, L, 0	P, –, NB	P, L, 2	P, –, NB	P, L, 2	M F
1824	Morine Creek	P, L, 0	P, L, 2	P, –, NB	P, L, 2	P, L, 1	M F
1304	Oliver Springs	P, –, NB	P, –, NB	P, –, NB	P, –, NB	P, –, NB	M F
1959	Spot Creek	P, L, 1	P, –, NB	P, –, NB	NR P barred	NR P barred	- -
Young within BLM watershed		5	5	7	7	9	Ave. 6.6 young
Inactive historic site on BLM within watershed (LSR) but outside burn							**Last year active**
2218	Louis Creek	NR	NR	NC	NC	NR	Last in 1991
2006	South Boundary	NR	NR	NR	NR	NR	Last in 1995
Historic sites within watershed (LSR 224), outside burn, not on BLM							
3616	Hibbard Point (FS)	M, –, NB	P, –, NB	P, –, NB	M, –, NB	M, –, NB	M
0013	Alder Girl (FS)	P L 1	P –NB	P L 2	P L 1	P L 2	M F
3617	Button Creek	P L 0	P –NB	P L 1	P –NB	P L 0	M F
4468	Button Alder	NC	NC	NC	NC	NC	Last in 1993
4467	Bailey Butte	NC	NC	NC	NC	NC	Last in 1993

Legend

Adult Occupancy
- M Male only
- F Female only
- P Pair of adults
- NR No response
- NC Not checked

Breeding Status
- NB Not breeding
- U Unknown if breeding
- L Nest tree located
- 0 No young, failed
- 1 1 young observed
- 2 2 young observed

Table N-2. Acres of Suitable Spotted Owl Habitat by Active Site, Pre- and Post-fire, within a ¼-mile radius center of activity (125 acres) and a ½-mile radius (502 acres)

Master site #	Site Name	Pre-fire acres		Post-fire acres and % Reduction in Suitable				Probability of Reoccupancy (Subjective)
		¼-mile	½-mile	¼-mile		½-mile		
Active sites with center of activity on BLM								
2001	Alco Creek	18	27	0	-100%	0	-100%	0
2012	Alco Rock	103	282	63	-39%	142	-50%	60*
2275	Alco Rock West	90	278	79	-12%	232	-17%	60*
1833	Elkhorn	111	300	91	-18%	216	-28%	80*
2011	Flat Creek	102	216	101	-1%	204	-6%	80*
0885	Gobblers Knob	60	149	51	-15%	118	-21%	60*
1950	Lower Timber Creek	99	275	30	-70%	121	-66%	10*
0898	Miller Mountain	48	132	22	-54%	29	-78%	10
0884	Shell Rock	65	159	0	-100%	0	-100%	0
0954	Timbered Rock	125	489	19	-85%	212	-57%	60*
2057	Upper Timber Creek	99	288	67	-32%	174	-40%	80*
2002	West Branch Elk	110	256	92	-16	174	-12%	80*
Active site with center on USFS and BLM								
1828	Hawk Creek	125	490	75	-42%	290	-40%	80*
Inactive sites with center on BLM								
4029	Alco Ridge	40	40	40	-0%	40	-0%	0
2252	Flat Creek Divide	91	250	72	-21%	160	-36%	20
1829	Gobblers East	44	99	40	-9%	52	-47%	0
0056	Middle Creek	66	115	49	-26%	49	-57%	10
1825	Ragsdale	121	365	69	-43%	170	-53%	20
Inactive historic site on private timberland within the burn								
1954	East Jones Creek	10	90	0	-100%	0	-100%	0
Active site on BLM within watershed (LSR) but outside burn								
0879	Lost Creek	125	371		-0%		-0%	100
4028	Lower Morine Creek	125	480		-0%		-0%	100
1824	Morine	125	480		-0%		-0%	100
1304	Oliver Springs	92	213		-0%		-0%	90
1959	Spot Creek	120	480		-0%		-0%	60
Inactive site within watershed (LSR) but outside burn								
2218	Louis Creek	67	77		-0%		-0%	20
2006	South Boundary	69	183		-0%		-0%	20

NOTE: "Suitable" acres includes nesting, roosting, foraging (habitat 1 and 2) plus underburned (habitat 7 and 8) that will recover in 2 to 5 years. The far right column lists the subjective estimate of whether owls will continue to be present at the pre-fire center of activity, based on the amount of remaining suitable habitat, as well as previous occupancy and reproduction.
*Sites predicted to remain active post-fire.

Table N-3. 2003 Spotted Owl Survey Results

Master Site #	Site Name	#Day/ Night Visits	Pair Status	Presence, Color Banding		Breeding Status, Comments
				Male	Female	
Active sites pre and post burn with center of activity on BLM within the burn						
2001	Alco Creek	1/5	Pair	UB-new	CB-old	not breeding
2012	Alco Rock	5/2	Pair	CB-new	CB-new	nest tree, one young fledged
2275	Alco Rock West	1/3	Pair	CB-old	UN-unk	not breeding
1833	Elkhorn	2/6	Single	UB-unk	NR	unknown if breeding
2011	Flat Creek	6/1	Pair	CB-old	CB-old	not breeding
0885	Gobblers Knob	3/2	Pair	UB-new	CB-old	not breeding
0898	Miller Mountain	1/2	Pair	CB-old	CB-old	not breeding
0954	Timbered Rock	1/5	Single	CB-old	NR	unknown if breeding
2057	Upper Timber Creek	5/0	Pair	CB-old	CB-old	nest tree, one young died
2002	West Branch Elk	3/0	Pair	CB-old	CB-old	not breeding
Active site with center on USFS and BLM						
1828	Hawk Creek	4/0	Pair	Un-unk	CB-old	nest tree, fate undetermined
Sites active pre burn, but vacant post burn, on BLM						
1950	Lower Timber Creek	1/6	Vacant	NR	NR	old core burned hot
0884	Shell Rock	0/6	Vacant	NR	NR	old core burned hot
Inactive historic sites on BLM within the burn						
4029	Alco Ridge	0/6	Vacant	NR	NR	last active in 1994
2252	Flat Creek Divide	2/4	Vacant	NR	NR	last active in 1995
1829	Gobblers East	0/6	Vacant	NR	NR	last active in 1989
0056	Middle Creek	0/6	Vacant	NR	NR	last active in 1995
1825	Ragsdale	0/6	Vacant	NR	NR	last active in 1997
Inactive historic site on private timberland within the burn						
1954	East Jones Creek	0/6	Vacant	NR	NR	last active in 1991, logged in 2003
Active historic site on BLM within the watershed (LSR) but outside the burn						
0899	Lost Creek	3/0	Pair	CB-old	CB-old	not breeding
4028	Lower Morine Creek	2/0	Pair	CB-old	CB-old	not breeding
1824	Morine	3/1	Pair	CB-old	UB-new	not breeding
1304	Oliver Springs	2/0	Pair	CB-old	CB-old	not breeding
1959	Spot Creek	3/0	Vacant	NR	NR	barred owl pair present since 2001
Other sites on BLM within the watershed (LSR) but outside the burn						
2218	Louis Creek	4/2	Pair	CB-new	UB-new	nested, failed. last active in 1993
2006	South Boundary	1/5	Vacant	NR	NR	no response
4618	Hungry Elk	3/1	Pair	CB-new	CB-new	unknown if nesting, new site in 03

Legend: Male/Female: CB = Color Banded, UB = uUnbanded, Un = Unknown if banded, NR = no response.
Old = Bird was documented present in a previous year. New = New individual this year. Unk = Not seen to determine if the individual is color banded or if it is a new replacement bird.

Table N-4. Acres of Proposed Area Salvage by Alternative within ¼ and ½ mile of an Owl Activity Center

Site #	Site Name	Alternative											
		A and B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Post-fire active site within the fire on BLM													
2001	Alco Creek	0	0	0	0	0	0	5	5	0	5	0	6
2012	Alco Rock	0	0	0	0	0	2	40	110	0	7	0	34
2275	Alco Rock West	0	0	0	24	0	24	52	186	0	0	0	11
1833	Elkhorn	0	0	0	17	0	10	5	35	0	0	0	10
2011	Flat Creek	0	0	0	30	0	15	5	41	0	5	0	34
0885	Gobblers Knob	0	0	0	8	0	5	13	51	0	3	0	5
0898	Miller Mountain	0	0	0	19	0	19	4	26	0	6	0	21
0954	Timbered Rock	0	0	48	74	0	0	72	234	0	9	0	7
2057	Upper Timber Creek	0	0	0	9	0	6	8	90	0	14	0	32
2002	West Branch Elk	0	0	0	21	0	21	18	40	0	0	0	9
Active site with center on USFS and BLM													
1828	Hawk Creek	0	0	0	28	0	28	6	39	0	0	0	0
Pre-fire active site now vacant in 2003													
1950	Lower Timber Creek	0	0	42	49	39	40	63	130	4	6	17	42
0884	Shell Rock	0	0	0	102	49	103	49	103	0	0	0	2
Inactive historic sites on BLM within the fire													
4029	Alco Ridge	0	0	0	0	0	15	2	2	0	0	0	0
2252	Flat Creek Divide	0	0	1	20	15	41	47	125	2	7	15	41
1829	Gobblers East	0	0	0	0	0	21	0	24	0	9	0	23
0056	Middle Creek	0	0	0	8	0	9	10	57	10	16	3	35
1825	Ragsdale	0	0	18	23	22	37	54	162	0	14	31	56
Inactive historic site on private timber and within the fire													
1954	East Jones Creek	0	0	0	0	0	29	6	38	0	4	6	33
Acres at 11 active sites		0	0	0	211	0	130	222	857	0	49	0	169
Number of active sites within units		0	0	0	8	0	9	11	11	2	7	0	10
Acres at 8 vacant sites		0	0	110	202	125	205	231	641	26	56	72	232
Number of inactive sites within units		0	0	4	5	4	8	8	8	3	6	5	7
Acres outside ½-mile radii		0		822		485		1,771		108		278	
Area salvage acres		0		1,235 x.2		820		3,269		213		679	
Number of salvage units		0		179		125		584		134		83	

NOTE: Only Alternative G acres have been updated from the DEIS.

Table N-5. Acres of Proposed Roadside Hazard Removal by Alternative within ¼ and ½ mile of an Owl Activity Center

Site #	Site Name	Alternative											
		A and B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Post-fire active site within the fire on BLM													
2001	Alco Creek	0	0	0	1	0	1	0	1	5	1	0	15
2012	Alco Rock	0	0	0	63	0	63	0	0	0	59	0	64
2275	Alco Rock West	0	0	0	45	0	45	30	75	0	45	0	41
1833	Elkhorn	0	0	0	23	0	23	11	34	0	29	0	26
2011	Flat Creek	0	0	0	22	0	29	29	51	0	33	0	20
0885	Gobblers Knob	0	0	3	29	0	28	3	29	0	29	0	35
0898	Miller Mountain	0	0	11	40	11	40	11	39	11	41	0	28
0954	Timbered Rock	0	0	0	0	0	0	0	0	0	0	0	0
2057	Upper Timber Creek	0	0	0	42	0	43	16	58	0	40	0	51
2002	West Branch Elk	0	0	0	21	0	21	0	0	0	0	0	0
Active site with center on USFS & BLM													
1828	Hawk Creek	0	0	0	28	0	0	0	0	0	0	0	10
Pre-fire active site now vacant in 2003													
1950	Lower Timber Creek	0	0	5	45	5	40	5	45	6	47	2	26
0884	Shell Rock	0	0	0	2	0	2	0	6	11	37	0	6
Inactive historic sites on BLM within the fire													
4029	Alco Ridge	0	0	15	15	15	15	15	15	15	15	15	15
2252	Flat Creek Divide	0	0	4	19	0	9	4	19	4	23	0	14
1829	Gobblers East	0	0	5	30	5	25	5	30	5	30	5	27
0056	Middle Creek	0	0	3	9	3	9	3	12	3	10	7	10
1825	Ragsdale	0	0	10	25	9	22	10	25	10	22	4	12
Inactive historic site on private timberland within the fire													
1954	East Jones Creek	0	0	0	1	0	0	0	1	0	1	0	0
Acres at 11 active sites		0	0	14	314	11	293	100	287	16	277	0	290
Number of active sites within units		0	0	2	10	1	9	6	7	2	8	0	9
Acres at 8 vacant sites		0	0	42	146	37	122	42	153	54	185	33	110
Number of inactive sites within units		0	0	6	8	5	7	6	8	7	8	5	7
Hazard acres outside ½ mile		0		618		763		96		720		788	
Total Road Hazard Acres		**0**		**1,078**		**1,088**		**536**		**1,182**		**1,188**	
NOTE: Only Alternative G acres have been updated from the DEIS.													

Table N-6. Acres in Ridgeline FMZs by Alternative within ¼ and ½ mile of an Owl Activity Center

Master Site #	Site Name	Alternative											
		B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Post-fire active sites with center of activity on BLM within the fire													
2012 *	Alco Rock	0	25	0	25	0	25	0	25	0	25	0	25
0885 *	Gobblers Knob	0	17	0	17	0	17	0	17	0	17	0	17
0954 *	Timbered Rock	4	42	4	42	4	42	4	42	4	42	4	42
2057 *	Upper Timber Creek	0	27	0	27	0	27	0	27	0	27	0	27
Historically active site, but vacant post-fire, on BLM within the fire													
1950	Lower Timber Creek	0	29	0	29	0	29	0	29	0	29	8	29
Inactive historic sites on BLM within the fire													
1829	Gobblers East	0	55	0	55	0	55	0	55	0	55	0	55
0056	Middle Creek	8	17	8	17	8	17	8	17	8	17	8	17
1825	Ragsdale	0	3	0	3	0	3	0	3	0	3	0	3
Historic sites within watershed but outside the fire													
1959 *	Spot Creek	6	22	6	22	6	22	6	22	6	22	6	22
2006	South Boundary	6	67	6	67	6	67	6	67	6	67	6	67
Historic sites outside the watershed, adjacent to FMZ													
2625 *	Toothacher	0	30	0	30	0	30	0	30	0	0	0	27
1823	Trailhead	0	18	0	18	0	18	0	18	0	0	0	18
Acres at 6 active sites		10	163	10	163	10	163	10	163	10	133	10	160
Acres at 6 vacant sites		14	189	14	189	14	189	14	189	14	171	14	189
FMZ acres outside ½ mile radii		948		948		948		948		246		951	
Total FMZ Acres		**1,300**		**1,300**		**1,300**		**1,300**		**550**		**1,300**	

NOTE: *Active sites in 2003, post-burn.
Only the acres for Alternative G have been updated since the DEIS.

Table N-7. Acres of Proposed Young Stand (10-30 years) Thinning by Alternative within ¼ and ½ mile of an Owl Activity Center

Master Site #	Site Name	Alternative											
		B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Active sites with center of activity on BLM within the fire													
2275 *	Alco Rock West	0	4	0	4	0	4	0	4	0	0	0	7
0885 *	Gobblers Knob											0	4
2011 *	Flat Creek											0	1
Sites vacant in 2003 with center of activity on BLM within the fire													
1950	Lower Timber Creek	0	5	0	0	0	0	0	5	0	0	0	2
1829	Gobblers East											3	3
Sites within the watershed but outside the fire													
4618 *	Hungry Elk											0	9
1304 *	Oliver Springs	8	50	4	28	4	28	8	50	0	0	8	28
2218 *	Louis Creek	29	61	19	48	19	48	29	61	0	0	29	48
4028 *	Lower Morine											0	3
2006	South Boundary	9	72	9	72	9	72	9	72	0	0	9	72
1823	Trailhead											0	9
Thin acres at 7 active sites		37	115	23	80	23	80	37	115	0	0	37	100
Thin acres at 4 vacant sites		9	77	9	72	9	72	9	77	0	0	12	86
Thin acres outside ½ mile radii		752		635		635		752		0		676	
Total Young Thin Acres		**1,028**		**862**		**862**		**1,028**		**0**		**862**	

NOTE: *Active sites post-fire.
Only the acres for Alternative G have been updated since the DEIS.

Table N-8. Acres of Proposed Old Stand (30-80 years) Thinning by Alternative within ¼ and ½ mile of an Owl Activity Center

Master Site #	Site Name	Alternative											
		B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Post-fire active sites with center of activity on BLM within the fire													
2275 *	Alco Rock West	0	0	8	21	8	21	11	32	0	0	8	21
1833 *	Elkhorn	0	0	0	0	0	0	0	7	0	0	0	7
2011 *	Flat Creek	0	0	0	1	0	1	0	1	0	0	0	1
0885 *	Gobblers Knob	0	0	3	5	3	5	3	21	0	0	0	20
2057 *	Upper Timber Creek	0	0	0	0	0	0	0	2	0	0	0	1
Inactive sites on BLM within the fire													
2252	Flat Creek Divide	0	0	2	22	2	22	2	22	0	0	2	18
1829	Gobblers East	0	0	5	5	5	5	5	11	0	0	0	5
1950	Lower Timber	0	0	5	25	5	25	5	27	0	0	2	21
Historic sites within the watershed but outside the fire													
4618 *	Hungry Elk											0	13
4028 *	Lower Morine	0	0	0	11	0	11	0	11	0	0	0	7
1304 *	Oliver Springs	0	0	0	9	0	9	0	16	0	0	0	7
1959 *	Spot Creek	0	0	0	13	0	13	0	14	0	0	0	14
2006	South Boundary	0	0	0	10	0	10	0	10	0	0	0	11
Thin acres at 9 active sites		0	0	11	60	11	60	14	104	0	0	8	91
Thin acres at 4 vacant sites		0	0	12	62	12	62	12	70	0	0	4	55
Thin acres outside ½ mile radii		0		542		542		964		0		320	
Total Old Thin Acres		**0**		**466**		**466**		**820**		**0**		**466**	

NOTE: *Active sites post-fire.
Only the Alternative G acres have been updated since the DEIS.

Table N-9. Acres of Proposed Riparian Thinning by Alternative within ¼ and ½ mile of an Owl Activity Center

Master Site #	Site Name	Alternative											
		B		C		D		E		F		G	
		¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile	¼ mile	½ mile
Active sites with center of activity on BLM within the fire													
2275 *	Alco Rock West	0	2	11	23	0	2	11	24	0	0	11	23
1833 *	Elkhorn	0	0	0	0	0	0	0	3	0	0	0	0
0885 *	Gobblers Knob	0	0	0	0	0	0	5	18	0	0	0	0
2057 *	Upper Timber Creek	0	0	0	0	0	0	0	8	0	0	0	0
Inactive sites on BLM within the fire													
2252	Flat Creek Divide	0	0	0	0	0	0	0	9	0	0	0	0
1829	Gobblers East	0	0	0	0	0	0	0	15	0	0	8	8
1950	Lower Timber	0	0	9	51	0	0	12	62	0	0	9	51
Sites within the watershed but outside the fire													
4618 *	Hungry Elk											0	9
4028 *	Lower Morine	0	0	0	6	0	0	0	6	0	0	0	4
1304 *	Oliver Springs	0	0	0	0	0	0	0	20	0	0	0	0
2218 *	Louis Creek	0	3	0	3	0	3	8	19	0	0	0	12
2006	South Boundary	1	19	1	19	1	19	11	69	0	0	1	18
Thin acres at active sites		0	5	11	32	0	5	24	170	0	0	11	48
Thin acres at inactive sites		1	19	10	70	1	19	23	155	0	0	18	77
Thin acres outside ½ mile radii		93		245		323		725		0		234	
Total Riparian Thin Acres		**309**		**359**		**359**		**939**		**0**		**359**	

NOTE: *Active sites post-fire.
Only Alternative G acres have been updated since the DEIS.

Table N-10. Acres of Research Units within ¼ and ½ mile of an Owl Activity Center

Site #	Site Name	Moderate Salvage		Heavy Salvage	
		¼ mile	½ mile	¼ mile	½ mile
Sites active post-fire					
2012	Alco Rock			22	32
2275	Alco Rock West	6	37		
1828	Hawk Creek				27
0954	Timbered Rock	21	42		
Sites vacant post-fire					
1950	Lower Timber Creek	46	53		
0884	Shell Rock	19	53	35	56
Total Acres		**92**	**185**	**57**	**115**
Acres of units outside ½ mile		**6**		**32**	

NOTE: Not all acres of designated units will be harvested.

Table N-11. Timbered Rock 2003 Special Status Species Review Special Status Species in the Butte Falls Resource Area

Species	Status	Range	Presence	Comments
Bald eagle	FT	Yes	Present	Forage in watershed. No known nest site. Two active nests in adjacent watersheds.
Black-backed woodpecker	BS	Yes	Absent	No record of presence in watershed. No known sightings in area. Habitat is primarily lodgepole, ponderosa, and mixed conifer forests. Could be attracted to burned timber.
Cascades frog	BS	Yes	Present	Records of presence in one pond. Surveys in 2003 were negative. Pond was dug out for fire, may not be suitable.
Common kingsnake	BA	Yes	Present	No record of presence in watershed. Habitat is present along Elk Creek.
Crater Lake tightcoil	BS, SM	Unknown	Uncertain	No record of presence in watershed. Only record in southern Oregon is in high elevation spring at Crater Lake.
Fisher	BS	Yes	Present	Located in Bitter Lick Creek drainage on USFS lands. Likely present on BLM.
Foothill yellow-legged frog	BA	Yes	Present	Present in Elk Creek
Fringed myotis	BA	Yes	Uncertain	No records of presence in watershed. One pond mist net survey was done in 2003.
Gray wolf	FE Extirpated	No	Absent	Unconfirmed sightings have occurred in southern Oregon. None have been determined to be wild wolf. Wolf are considered extirpated in Oregon
Great gray owl	SM	Yes	Present	Presence confirmed in Morine Creek. Suitable habitat in watershed. Surveys in 2003 were negative.
Lewis' woodpecker	BS	No	Uncertain	At edge of range. No record of presence in watershed. Could be present in lower elevations.
Mardon skipper butterfly	FC	U	Uncertain	No record of presence in watershed. Wet mountain meadow habitat. Nearest known site is near Greensprings. Low probability of presence.
Northern goshawk	BS	Yes	Present	Incidental sighting in watershed. Present in adjacent watershed. Likely present.
Northern spotted owl	FT	Yes	Present	Nests in watershed.
Oregon megomphix (snail)	SM	Yes	Uncertain	No surveys. Not found in surveys in adjacent watersheds to east and west.
Oregon shoulderband (snail)	BS	Yes	Suspected	No surveys. Habitat is present. Found in adjacent watershed around Lost Creek in grasslands and oak woodlands/mixed conifer adjacent to woodlands.
Peregrine falcon	BS	Yes	Present	One known nest in watershed. Suitable cliffs are present. Nest cliffs in fire boundary were surveyed with negative results in 2003.
Red tree vole	SM	Yes	Present	Surveys in 2003 confirmed active nests in the watershed in green stands.
Tailed frog	BA	Yes	Uncertain	No record of presence in watershed. Usually present in cold, headwater streams.
Three-toed woodpecker	BS	No	Absent	Outside range, but could be drawn to fire-killed snags.
Townsend's big-eared bat	BS	Yes	Present	Present in cave near mouth of Elk Creek. Limited surveys of caves in watershed.
Tricolored blackbird	BA	No	Absent	Outside range. Found near Medford at Denman Wildlife Refuge ponds.

Table N-11. Timbered Rock 2003 Special Status Species Review Special Status Species in the Butte Falls Resource Area

Species	Status	Range	Presence	Comments
Vernal pool fairy shrimp	FT	No	Absent	No suitable vernal pools in Elk Creek Watershed.
Western pond turtle	BS	Yes	Present	Present in one pond on private land. No turtles observed in BLM ponds. Ponds surveyed in 2002 and 2003.
White-headed woodpecker	BS	No	Absent	Occasional visitor to Dead Indian Plateau. May be drawn to dead trees.
Wolverine	ST	No	Absent	Reported sightings in upper elevation USFS lands in wilderness areas. Snow track surveys by BLM and USFS were negative.

Status:
FE - USFW Endangered: in danger of extinction throughout a significant portion of its range
FT - USFW Threatened: likely to become endangered species within the foreseeable future
FC - USFW Candidate: proposed and being reviewed for listing as threatened or endangered
ST - State Threatened: listed as likely to become endangered by the state of Oregon
SM - Survey & Manage: NFP ROD directs protection of known sites and/or survey for new sites
BS - Bureau Sensitive (BLM): eligible for addition to Federal Notice of Review, and known in advance of official publication. Generally these species are restricted in range and have natural or human-caused threats to their survival.
BA - Bureau Assessment Species (BLM): not presently eligible for official federal or state status, but of concern. May at a minimum need protection or mitigation in BLM activities.

Special Status Wildlife Species-2003 Habitat and Occurrence in the Butte Falls Resource Area

Bald eagle (*Haliaeetus leucocephalus*)

Five nesting pairs are known within the BFRA; two nests are on BLM lands and three are on private lands. In Oregon, the majority of nests (84%) are located within one mile of lakes, reservoirs, large rivers, and coast estuaries. Nest trees are larger, dominant or co-dominant trees in the stand and are usually components of old growth or older second growth forests. Prey is fish, waterfowl, small mammals (rabbits, etc.), and carrion.

Black-backed woodpecker (*Picoides arcticus*)

Presence is undetermined in the BFRA. Has been documented in Cascade Mountains in Jackson County and in the Siskiyou Mountains in Josephine County. In Oregon, the black-backed woodpecker tends to occur in lower elevation forests of lodgepole pine, ponderosa pine, or mixed pine/conifer forests. Dead trees used for foraging have generally been dead three years or less.

Cascades frog (*Rana cascade*)

Found in the Cascade Mountains, above 2600', on the east side of the District. They are most commonly found in small pools adjacent to streams flowing through meadows. They are also found in small lakes, bogs, and marshy areas that remain damp thorough the summer.

Common kingsnake (*Lampropeltis getulus*)

In Oregon, they are found only in Douglas, Jackson, and Josephine counties in the more mesic river valleys. Common kingsnake inhabit oak/pine woodlands, open brushy areas, and river valleys, often along streams and in thick vegetation. They may also be found in farmlands, especially near water areas. Have been observed in Sam's Valley.

Crater Lake tightcoil (*Pristiloma arcticum crateris*)

Species is known from south of Crater Lake, Klamath County, and an occurrence in Jefferson County. Species may be found in moist conifer forests and among mosses and other vegetation near wet lands, springs, seeps, and riparian areas above 2000' elevation.

Fisher (*Martes pennanti pacifica*)

Habitat is mature and old growth forests. They appear to be closely associated with riparian areas in these forests. They seem to prefer 40-70% canopy cover. They mainly use large living trees, snags and fallen logs for denning. USFS study near Prospect was completed in 2002. Fisher have been detected in Bitter Lick Creek drainage on USFS and in the Red Rock Canyon and Titanic Creek areas on BLM land. Little information is available as to distribution and density.

Foothill yellow-legged frog (*Rana boylii*)
Habitat is permanent streams with rocky, gravelly bottoms. Distribution is west of the Cascade crest from sea level to 1800'. These frogs are closely associated with water.

Fringed myotis bat (*Myotis thysanodes*)
Fringed myotis is a crevice dweller which may be found in caves, mines, buildings, rock crevices, and large old growth trees. They have been captured in openings and in mid-seral stage forest habitats. Food consists of beetles, butterflies, and moths.

Great gray owl (*Strix nebulosa*)
Habitat preference is open forest or forest with adjoining deep-soil meadows. Nest in broken top trees, abandoned raptor nests, mistletoe clumps, and other platforms created by whorls of branches. Majority of nests in one study were in over-mature or remnant stands of Douglas fir and grand fir forest types on north facing slopes. Probably found in low densities across the district.

Lewis' woodpecker (*Melanerpes lewis*)
These woodpeckers breed sparingly in the foothill areas of the Rogue and Umpqua river valleys in Douglas, Jackson, and Josephine counties. Habitat preference is hardwood oak stands with scattered pine near grassland shrub communities. Breeding areas in the Rogue valley are uncertain. In some locales, the woodpeckers breed in riparian areas having large cottonwoods and in oak conifer woodlands. They usually do not excavate nest cavities, but most often use cavities excavated by other woodpecker species. They winter in low elevation oak woodlands.

Mardon skipper butterfly (*Polites mardon*)
Only known in four localities, two in Washington state, one in Del Norte County coastal mountains, and the fourth in high mountain meadows along the summit of the Cascade Mountains in Jackson and Klamath Counties. They are found in wet mountain meadow habitats.

Northern goshawk (*Accipiter gentilis*)
Goshawks are found in a variety of mature forest types, including both deciduous and conifer types. Dense overhead foliage or high canopy cover is typical of nesting goshawk habitat. Perches where they pluck their prey, known as plucking posts, are provided by stumps, rocks, or large horizontal limbs below the canopy.

Northern spotted owl (*Strix occidentalis caurina*)
Old growth coniferous forest is preferred nesting, roosting, and foraging habitat, or areas with some old growth characteristics with multi-layered, closed canopies with large diameter trees with an abundance of dead and down woody material. Northern spotted owls commonly nest in cavities 50' or more above the ground in large decadent old growth trees. Other nest sites include large mistletoe clumps, abandoned raptor nests, and platforms formed by whorls of large branches. Over 200 northern spotted owl "core areas", 100 acres of the best habitat around activity centers for known sites (as of 1/1/94) have been designated and mapped as Late-Successional Reserves. Prey is primarily small arboreal mammals, such as flying squirrels, woodrats, voles, etc. and occasionally small birds.

Oregon Megomphix (*Megomphix hemphilli*)
Expected to occur in moist conifer/hardwood forests up to 3000'. Found in hardwood leaf litter and decaying non-coniferous plant matter under bigleaf maple trees, especially if there are any rotten logs or stumps nearby. A bigleaf maple component in the tree canopy and an abundance of sword fern on forested slopes and terraces seems characteristic of the sites.

Oregon shoulderband (*Helminthoglypta hertleini*)
This species is known from rocky areas including talus deposits, but not necessarily restricted to these areas. Suspected to be found within its range wherever permanent ground cover and/or moisture is available. This may include rock fissures or large woody debris sites. Somewhat adapted to fairly xeric conditions during a part of the year.

Peregrine falcon (*Falco peregrinus*)
Primary habitat is tall cliffs. Three confirmed sites occur in the BFRA. Occasional sightings are made during the winter months, but these are thought to be migrating individuals. Forest lands provide habitat for prey species for peregrine falcons. Prey is mostly birds, especially doves and pigeons. Peregrines also prey on shorebirds, waterfowl, and passerine birds.

Red tree vole (*Arborimus longicadus*)
An arboreal vole which lives in Douglas fir, spruce, and hemlock forests. Food consists entirely of needles of the tree in which they are living. They build a bulky nest, up to a half bushel, in the branches usually near the trunk, 15-100' above the ground. The nest becomes larger with age, and may be occupied by many generations.

Tailed frog (*Ascaphus truei*)

Habitat is cold, fast flowing permanent streams in forested areas. Temperature tolerance range is low, 41-61° Fahrenheit. Tailed frog are closely tied to water.

Three-toed woodpecker (*Picoides tridactylus*)

Presence is undetermined in the Medford BLM District. Range is along the crest of the Cascade Range and eastward. Generally found in higher elevation forests, above 4000'. In eastern Oregon, three-toed woodpeckers nest and forage in lodgepole pine forests. They are occasionally found roosting in hemlock and Engelmann spruce trees in mature and over mature mixed conifer forests. Bark beetle larvae are primary food source.

Townsend's big-eared bat (*Corynorhinus townsendii*)

Roost in mines, caves, cavities in trees, and attics of buildings. They have low tolerance to changes in temperature and humidity and removal of trees around these sites may change airflow patterns to make the area less desirable as a hibernaculum, maternity, or roosting site. Food consists primarily of moths, and other arthropods.

Tricolored blackbird (*Agelaius tricolor*)

Tricolored blackbirds are found in the interior valleys of southern Oregon, near freshwater marshes and crop lands. Individuals have been reported near Roxy Ann Peak, in Sams Valley, and near Table Rock.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Habitat is vernal pools. They have only been found in Agate Desert and Table Rock areas.

Western pond turtle (*Clemmys marmorata marmorata*)

Live in most types of freshwater environments with abundant aquatic vegetation, basking spots, and terrestrial surroundings for nesting and over-wintering. Some northwestern pond turtles leave water in late October to mid-November to overwinter on land. They may travel up to ¼ mile from water, bury themselves in duff and remain dormant throughout winter. Turtles have been found to generally stay in one place in areas with heavy snow pack, but may move up to 5-6 times in a winter in areas with little or no snow. General habitat characteristics of over wintering areas appear to be broad. There may be specific microhabitat requirements, which are poorly understood at this time.

In many areas, predation on the hatchlings and competition from bullfrogs, bass, and other exotic species is limiting population levels. Adult turtles are relatively long lived, but as the adults age, recruitment is not occurring at levels which can maintain future healthy populations.

White-headed woodpecker (*Picoides albolarvatus*)

Presence in the BLM Medford District is undetermined. White-headed woodpeckers occur in ponderosa pine and mixed ponderosa forests. They forage mainly on trunks of living conifers for insects. Nest cavities are within 15 feet of ground in dead trees which have heart rot. Standing and leaning snags and stumps are used. Area is in periphery of known range.

Table N-12. Primary Cavity Excavators in Elk Creek

Chestnut-backed chickadee
Downy woodpecker
Hairy woodpecker
Northern flicker
Pileated woodpecker
Red-breasted nuthatch
Red-breasted sapsucker
Black bear

Table N-13. Bird Survey Synopsis: Buck Rock Bird Route

Species	1995 Survey Presence	1996 Survey Presence	1997 Survey Presence	2003 Survey Presence
American robin (AMRO)	X	X	X	X
Band-tailed pigeon (BTPI)				X
Black-capped chickadee (BCCH)				X
Black throated gray warbler (BTGW)		X		X
Black-headed grosbeak (BHGR)	X	X	X	X
Brown creeper (BRCR)				X
Brown-headed cowbird (BHCO)				X
Bushtit (BUSH)		X	X	
Canada goose (CAGO)	X			X
Cassin's vireo (CAVI) (SOVI-old)	X	X	X	X
Chestnut-backed chickadee (CBCH)	X	X	X	X
Common raven (CORA)		X		X
Dark-eyed junco (DEJU)	X	X	X	X
Downy woodpecker (DOWO)			X	
Gold-crowned kinglet (GCKI)	X	X		X
Hairy woodpecker (HAWO)		X	X	X
Hermit thrush (HETH)	X	X	X	X
Hermit warbler (HEWA)	X	X	X	X
House Wren (HOWR)	X	X	X	X
Huttons vireo (HUVI)				X
Lazuli bunting (LEBU)	X	X	X	X
Lesser goldfinch (LEGO)				X
McGillavry's warbler (MGWA)	X	X	X	X
Mountain quail (MOQU)	X	X	X	X
Mourning dove (MODO)				X
Nashville warbler (NAWA)	X	X	X	X
Northern Flicker (NOFL)		X	X	X
Olive-sided flycatcher (OSFL)	X		X	X
Orange-crowned warbler (OCWA)	X	X	X	X
Pacific-slope flycatcher (PSFL)		X	X	X
Pileated woodpecker (PIWO)	X	X	X	X
Pine siskin (PISI)	X	X		X
Purple finch (PUFI)	X	X	X	X
Red-breasted nuthatch (RBNU)	X	X	X	X
Red-breasted sapsucker (RBSA)		X		X
Red Crossbill (RECR)			X?	X
Red-tailed hawk (RTHA)	X	X		X
Ruby-crowned kinglet (RCKI)				X
Ruffed grouse (RUGR)				X
Rufous hummingbird (RUHU)	X	X	X	X
Spotted towhee (SPTO)	X	X	X	X
Stellars Jay (STJA)	X	X	X	X
Townsend's solitaire (TOSO)	X			X
Townsend's warbler (TOWA)/(HETA)	X	X	X	X

Table N-13. Bird Survey Synopsis: Buck Rock Bird Route

Species	1995 Survey Presence	1996 Survey Presence	1997 Survey Presence	2003 Survey Presence
Turkey vulture (TUVU)				X
UNK hummingbird (HUMM)	X	X	X	X
UNK woodpecker (WOOD)		X		
Warbling vireo (WAVI)		X		X
Western Flycatcher (WEFL)	X			
Western tanager (WETA)	X	X	X	X
Western wood peewee (WWPE)	X		X	X
White-crowned sparrow (WCSP)				X
Wild turkey				X
Wilson's warbler (WIWA)	X	X	X	X
Yellow-rumped warbler (YRWA)	X	X	X	X

Table N-14. 2003 Goshawk Surveys in Elk Creek Watershed

Location	Date	Response	Date	Response
T32S-R1W-01	07-15-03	No Response	07-31-03	No Response
T32S-R1W-31	07-10-03	Sharp-shinned response*		
T32S-R1W-25	07-10-03	No Response	07-28-03	No Response
T32S-R1E-05	07-14-03	No Response	07-28-03	No Response
T32S-R1E-17	07-14-03	No Response		
T32S-R1E-10	07-17-03	No Response	07-28-03	No Response

NOTE: *Located on private land adjacent to BLM

Table N-15. 2003 Great Gray Owl Surveys in Elk Creek Watershed

Location	Date	Response	Date	Response	Date	Response
T32S-R1E-11	03-26-03	No Response	05-06-03	No Response	05-27-03	No Response
T32S-R1E-23	03-31-03	No Response	05-27-03	No Response	06-24-03	No Response
T33S-R1E-09	03-31-03	No Response	05-27-03	No Response	06-24-03	No Response
T32S-R2E-32	04-29-03	No Response	05-21-02	*	06-04-03	No Response
T32S-R2E-32	03-27-03	No Response	04-30-03	No Response	05-13-03	No Response
T33S-R2E-05	03-27-03	No Response	04-30-03**	No Response	05-21-03	No Response
T33S-R1E-03	03-26-03	No Response	05-21-03	No Response		

NOTE: *Visual unknown owl; nothing located on follow-up.
**Great horned owl

Table N-16. Bat Species detected within the Elk Creek Watershed Alco Rock Pond Survey (10/01/03)

Long-eared myotis	1 male
Long-legged myotis	1 male
Silver haired bat	3 male 1 female

Table N-17. Elk Creek Pump Chance Survey - Post-Fire (2002 & 2003)

Pond	Date Checked	Animals Observed
Buck Rock (Private)	28 Sept 2002	No herps. Water level low, about 1/3 full
Ragged Rock	28 Sept 2002	No herps. Water clear. Gravel is deposited on uphill side. Needs cleaned out.
	18 July 2003	No herps. Water clear. Pool is full.
Alco Rock #1 (west)	11 Oct 2002	No herps seen. Helipond is nearly dry. No herps seen. Water muddy, newly cleared out for fire suppression activities
	03 May 2003	Checked for eggs/none observed.
	22 May 2003	2 rough skinned newts.
	18 July 2003	No herps seen. Visibility poor, water muddy.
Alco Rock #2 (east)	11 Oct 2002	No herps seen. Was cleaned out for fire suppression. Water is covered with duckweed. Outlet needs work, high water will flow around culvert.
	03 May 2002	No herps seen.
	22 May 2002	No herps seen. No eggs. Lot in insect larvae & water striders.
	18 July 2003	No herps seen.
Alco Rock #3	11 Oct 2002	No herps seen. Surface is covered with duckweed. Pond is surrounded by trees. Visibility poor. Deer sign. Pine squirrel in tree by water.
	18 July 2003	No herps seen. Visibility poor, pond covered with duckweed.
Wild lily	11 Oct 2002	No herps seen. Mostly filled with rock from high water.
	18 July 2003	No herps. Observed 6” trout. Good visibility
Timbered Rock	16 Oct 2002	No herps seen. Some brushing had occurred around pool for use as water source for fire.
	18 July 2003	No herps. Lot of water striders.
Morine Creek	28 Sept 2002	Could not find.
Alco Pond (private)	11 Oct 2002	Two adult western pond turtles basking on bank. Cattle had grazed around pond. Timbered Rock Fire had burned through area. Pond in good condition.
	18 July 2002	Logging activities closed roads. No access.

ROGUE RIVER/SOUTH COAST

BIOLOGICAL ASSESSMENT

FY 04 – 08
for
Activities that may affect listed species in the Rogue River/South Coast Province

for
MEDFORD DISTRICT,
Bureau of Land Management,
ROGUE RIVER and
SISKIYOU
National Forests

11 July 2003

BIOLOGICAL OPINION
(FWS)
1-14-03-F-511
20 October 2003

(Terms and Conditions [PDCs] – Appendix A)

United States Department of Agriculture, Forest Service	Siskiyou National Forest Rogue River National Forest	United States Department of Interior Bureau of Land Management Medford District

Reply To: 2670 (FS), 6840 (BLM) Date: July 14, 2003

Subject: Biological Assessment for FY04-08 Programmatic Consultation (Med BLM, ROR & SIS NFs)

To: Craig Tuss
Attn: David Clayton
USDI Fish and Wildlife Service
Roseburg Field Office
2900 NW Stewart Parkway
Roseburg, Oregon 97470

This letter and the enclosed Biological Assessment (BA) constitute a request for formal consultation with the USDI Fish and Wildlife Service (FWS) and meets our responsibilities on interagency cooperation (50 CFR 402) under Section 7 of the Endangered Species Act of 1973 (as amended) (Act). The enclosed Biological Assessment analyzes the effects to endangered and threatened species from activities by the Rogue River and Siskiyou National Forests, and the Medford District of the Bureau of Land Management, during Fiscal Years (FY) 04-08.

Species and habitats addressed include the threatened bald eagle (*Haliaeetus leucocephalus*), northern spotted owl (*Strix occidentalis caurina*), marbled murrelet (*Brachyramphus marmoratus*), vernal pool fairy shrimp (*Branchinecta lynchi*), and the endangered Cook's lomatium (*Lomatium cookii*), Gentner's fritillary (*Fritillaria gentneri*), large-flowered woolly meadowfoam *(Limnanthes floccosa* ssp. *grandiflora*), and McDonald's rockcress (*Arabis mcdonaldiana*), as well as effects to designated critical habitat for the spotted owl and marbled murrelet, and proposed critical habitat for the fairy shrimp. Listed and proposed anadromous fish species are not included in this BA. Programmatic consultation regarding these species occurs separately with the NOAA Fisheries.

We anticipate likely affects to listed species, related to both habitat modification and disturbance. Effects determinations are shown in Table 1. Effects of the FY04-08 projects on listed species vary; some projects are **MAY AFFECT LIKELY TO ADVERSELY AFFECT (LAA)** spotted owls, spotted owl critical habitat, and marbled murrelets, while other projects are **MAY AFFECT NOT LIKELY TO ADVERSELY AFFECT (NLAA)** for bald eagle, spotted owls, spotted owl critical habitat, marbled murrelets, marbled murrelet critical habitat, Cook's lomatium, and Gentner's fritillary and proposed critical habitat for fairy shrimp.

Table 1. Species Determinations by Activity Type. Where LAA is shown, No Effect, Not Likely to Adversely Affect, and Beneficial Effect determinations are also implied. MA = May Affect; CHU=Critical Habitat Unit; PCHU=Proposed Critical Habitat Unit

Activity Type	Spotted Owl	Spotted Owl CHU	Marbled Murrelet	Marbled Murrelet CHU	Bald Eagle	Fairy Shrimp	Fairy Shrimp PCHU	Cook's Lomatium	Gentner's Fritillary	Large-flowered Woolly Meadowfoam	McDonald's Rockcress
Tree Harvest	LAA	MA	LAA	MA	NLAA	NE	NE	NE	NLAA	NE	NE
Vegetation Management	LAA	MA	LAA	MA	NLAA	NE	NE	NLAA	NLAA	NE	NE
Watershed Restoration	LAA	MA	LAA	MA	NLAA	NLAA	MA	NLAA	NLAA	NLAA	NLAA
Recreation	LAA	MA	LAA	MA	NLAA	LAA	MA	NLAA	NLAA	NLAA	NLAA
Fuels Management	NLAA	MA	NLAA	MA	NLAA	NE	NE	NLAA	NLAA	NE	NLAA
Grazing	NE	NE	NE	NE	NE	NLAA	MA	NE	NLAA	NE	NE
Special Forest Products	NLAA	MA	NLAA	NE	NE	NE	NE	NE	NLAA	NE	NE
Road Maintenance /Construction	LAA	MA	LAA	MA	NLAA	NE	NE	NLAA	NLAA	NLAA	NLAA
Road Use Permits	LAA	MA	LAA	MA	NLAA	NE	NE	NE	NE	NE	NE
Other Special Use Permits	NLAA	MA	NLAA	MA	NLAA	NE	NE	NLAA	NLAA	NLAA	NLAA
Mining And Quarry Operation	LAA	MA	LAA	MA	NLAA	NE	NE	NLAA	NLAA	NE	NLAA
Cultural	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weed Control	NE	NE	NE	NE	NE	NE	NE	NLAA	NLAA	NLAA	NLAA

We request formal consultation on **Likely to Adversely Effect** determinations and concurrence on **Not Likely to Adversely Effect** determinations. All determinations of effects are made with mandatory Project Design Criterion (PDCs) (conservation measures), fully implemented as noted in the BA.

If you have any questions, please call Lee Webb (541-471-6536) or Carole Jorgensen (541-618-2320) for wildlife issues and Mark Mousseaux (541-618-2232) or Maria Ulloa (541-471-6528) for plant issues. We appreciate the work and comments of David Clayton and Sam Friedman during this consultation. As always, we look forward to further work with you to conserve endangered and threatened species and the habitats upon which they depend.

/s/ *Scott D. Conroy* /s/ *Mary Smelcer*

SCOTT D. CONROY
Forest Supervisor
Rogue River and Siskiyou National Forests

MARY SMELCER
Acting District Manager, Medford Dist.
Bureau of Land Management

cc: Resource Area Managers, Medford District BLM
Rogue River Siskiyou NFs District Rangers

Attachment: FY 2004-2008 Programmatic Biological Assessment

Excerpts from USFWS Biological Opinion, #1-14-03-F-511, dated 20 October 2003.

This appendix section records quotes from the recently released BA/BO consultation package involving BLM, USFS, and USFWS in compliance with the ESA. The consultation covers proposed federal projects for the FY 2004 through 2008 period for federally managed lands in southwest Oregon. Discussions relating to spotted owls include wildfire impacts, Critical Habitat, and Incidental Take.

The full text of the Biological Opinion is available on the internet at www.or.blm.gov/medford/planning/planningdocs.htm

The intent of this appendix section is to provide ready access to sections of the BO that relate to BLM's responses to public comments on the Timbered Rock DEIS regarding spotted owls. NRF refers to nesting, roosting, foraging habitat (suitable habitat for owls). CHU is critical habitat unit, as designated by USFWS in 1992.

From Table 1 Proposed Action
Page 6. A: Tree harvest in nesting, roosting, foraging habitat.

"Up to 3,000 acres of salvage may occur in the Timbered Rock Fire area, all in LSR. None of these salvage acres would be habitat for listed species."

Page 6. B: Vegetation Management:

"Precommercial thinning/ brushing/ site preparation: BLM 12,700 acres/year. FS 4,000 acres/year. Up to 20 percent within LSRs."

Page 7. E: Fuels Management.

"BLM 15,000 acres of mechanical or hand fuels reduction/yr."

Page 11. E. Fuels Management:

"Natural and created fuel breaks across the landscape may be developed to help with the suppression of large-scale wildfires. In this case, treatment of fuels along a ridge or topographic break would occur to reduce the fuels and facilitate suppression activities."

Federal Contribution to Recovery

Page 27:

"The NWFP is the current conservation strategy for the spotted owl on federal lands."

"The range-wide system of LSRs set up under the NWFP captures the variety of ecological conditions within the 12 different physiographic provinces to which spotted owls are adapted. This design reduces the potential for loss of the entire population due to large catastrophic events in a single province. Multiple, large LSRs in each province reduce the potential that spotted owls will be lost in any individual province and reduce the potential that large wildfires or other events will eliminate all habitat within an LSR. In addition, LSRs are generally arranged and spaced so that spotted owls may disperse to two or more adjacent LSRs."

Conservation Strategy and Objectives

Page 32:

"CHUs were intended to identify a network of habitats that provided the functions considered important to maintaining a stable, self-sustaining, and interconnected population over the spotted owl range, with each CHU having a local, provincial, and a range-wide role in spotted owl conservation."

"The Service's approach to designated critical habitat was based on the expectation that a long-term plan would be developed to provide for conservation of the spotted owl." "The final rule designating critical habitat stated that … 'designation of critical habitat does not offer specific direction for managing owl habitat'."

"The NWFP, which adopts coordinated management direction for federal lands within the range of the spotted owl, represents the only existing management plan that addresses conservation of the spotted owl on federal lands."

Page 33:

"Despite the fact that there is extensive overlap [70%] between CHU and LSRs, CHUs are more evenly distributed across the landscape. Thus, connectivity may be the most important ongoing function of critical habitat. This would be

particularly true in areas where the risk of habitat loss from wildfire is high."

Current Condition

Page 34:

"Although habitat quality within these CHUs [including OR-34 Elk Creek] has been reduced to some degree, due to the amount and distribution of remaining suitable habitat, the dispersed nature of effects, and the retention of dispersal habitat within CHUs …OR-34 …it is anticipated that these CHUs are still functioning in their originally intended capacity…"

"Notwithstanding that many of the CHUs in the Oregon Klamath Mountain and Western Oregon Cascades Provinces have been impacted to some degree and the majority of consulted-on effects have occurred in these provinces, total consulted-on effects in these provinces represents only 3.28 and 2.21 percent of their suitable critical habitat extant in 1994, respectively." "The Service believes that these effects to connectivity are generally offset because of contributions to connectivity provided by other NWFP LUAs and Standard and Guidelines (i.e. the 15 percent LS/OG standard and guideline, survey and manage set-aside guidelines, and riparian reserves)."

Page 35:

"The impact of natural events also needs to be considered when evaluating the current condition of spotted owl critical habitat. Since its designation in 1992, numerous fires of different scale and intensity have occurred within CHUs. Critical habitat units were identified to provide large blocks of suitable habitat spatially distributed to provide for the survival and recovery of the spotted owl and to facilitate dispersal. The distribution framework of CHUs was intended to protect individual CHUs from isolation due to catastrophic natural events."

Page 36:

"…effects since 1994 have impaired, to varying degrees, the ability of individual CHUs to fulfill their intended functions. However, these effects have not precluded the CHU network from providing for NSO conservation across the species range." "…notwithstanding that natural disturbances have resulted in the removal and degradation of large blocks of suitable habitat and reduced the resilience of the CHU network to future effects, they have not precluded the CHU network from functioning within any province…"

Spotted Owl Critical Habitat – environmental baseline

Page 61:

"Two other CHUs suffered significant losses of habitat due to fires. OR-34 is located on the Medford District BLM and Rogue River NF. Seventy-four percent of the unit is within the Elk Creek and Lookout Mt/Black Butte LSRs. This unit was designated to maintain the essential nesting, roosting, foraging, and dispersal habitats found in this region of high fragmentation, due primarily because of land ownership patterns…" "This CHU provides north-south and east-west linkage from the Klamath/Siskiyou to the Western Cascades Provinces. The 2002 Timber Rock Fire occurred in this CHU." "This remaining NRF should continue to provide for essential spotted owl habitat within the CHU." "… there is available dispersal habitat within most federal sections of at least 60 percent or better along both the northern and western portion of the CHU which should continue to provide dispersal opportunities in a northeast southwest direction across this CHU and along the Rogue/Umpqua divide." The other CHU referenced is the Quartz fire.

Page 63:

"Therefore, even with the loss of eleven percent of the available NRF from CHUs in the action area from both fires and timber harvest since 1996, the critical habitat network in the Rogue and South Coast basins are currently functioning as intended. The amount and distribution of dispersal habitat currently existing within these CHUs should allow for movement of spotted owls through and between these CHUs and important inter- and intra-provincial links provided by these CHUs should still be functioning."

Effects of the Action

Pages 66 and 67:

"In addition, there may be significant amount of salvage that will occur in both the Biscuit and Timbered Rock fires. This salvage is generally limited to completely burned stands larger than ten acres and is not considered to be NRF post-fire. The salvage of this non habitat should have little effect on spotted owls as there is little to no canopy closure, no live trees, and likely a much reduced prey population, at least in the short term. However, it is largely unknown how spotted owls respond to fire and there may be some potential for adverse impacts to spotted owls due to disturbance or effects to spotted owls potentially using these burned areas or areas immediately adjacent to the burned areas. Specifically, there is

a research project proposed within the Timbered Rock Fire perimeter that will study the role of standing and down large wood levels on neotropical migratory bird populations and up to 100 acres of the proposed treatment units may occur within or adjacent to historic spotted nest sites that were burned in the fire. The Service believes that while these acres are completely burned and not currently considered habitat, there is some potential for owls to be associated with or near to these research plots and this research project will may affect and is likely to adversely affect the spotted owl. This adverse affect could result in the potential loss of forage and/or nesting habitat if the owls that had been using this habitat before the fire return [to] these sites and this loss could result in the injury or death of those spotted owls."

Page 69:

"Also, with the human and fire induced reductions of spotted owl habitat over time, spotted owls may have been forced to find nest sites closer to other spotted owls than historically occurred."

Pages 69 and 70:

"Projects that degrade NRF in LSRs are also generally designed to open up stands that, while they may meet the minimum size standard for spotted owl habitat, but are generally single-storied and monotypic. In such cases, timber harvest is an effort to introduce complexity into the landscape and bring these stands forward sooner into higher quality late-successional condition than would occur naturally. These projects may have a short-term, negative impact on the quality of the spotted owl habitat in LSRs, but are designed to produce higher quality NRF more quickly than would be reached without treatment, given existing conditions. These projects must be consistent with REO direction including the tree thinning in LSRs memoranda…" "…any project that removes, degrades or slows the development of spotted owl habitat within an LSR is reviewed, and approved, by the Level One team for consistency with this Opinion (and , therefore, with the NWFP)…"

Dispersal Habitat

Page 70:

"In addition to the removal of spotted owl NRF, 2,545 and 705 acres of spotted owl dispersal habitat may be degraded and removed in LSRs, respectively. These impacts are also designed to speed the development of spotted owl habitat, to reduce the potential for catastrophic fire or to reduce encroachment within meadow habitat …"

"Since the service anticipates that the 2,048 acres of degraded dispersal habitat will still function as dispersal habitat post-harvest, we do not anticipate that the impact to the spotted owl from the degradation of these acres will adversely impact the local spotted owl population."

Connectivity (the watershed containing Timbered Rock)

Pages 74 and 75:

"The Rogue Upper watershed may, under the proposed action, experience the removal of 771 acres of NRF and the removal of 889 acres of dispersal habitat, which is 0.5 percent of the watersheds extant dispersal or better habitat…" "This watershed includes CHU … OR-34...; timber harvest would remove 190 acres of spotted owl habitat from CHU OR-34. Dispersal analyses by the agencies show that the watershed is currently at 70 percent dispersal habitat on federal lands and the proposed action may only reduce dispersal habitat by 1 percent. In addition, the dispersal map also shows sufficient dispersal habitat at this time to facilitate dispersal along the south Cascades and west into the Galesville I-5 area of concern … and this watershed will not be reduced to below 50 percent dispersal habitat by the proposed action." "The proposed action is not expected to preclude spotted owl dispersal from the Cascades to the Siskiyous and the Coast ranges in this area."

Spotted Owl Critical Habitat

Page 77:

The 0.8 percent of the extant NRF (190 acres) that is proposed to be removed from OR-34 affects a CHU that was impacted by the Timbered Rock Fire." "This CHU should continue to provide north-south and east-west linkage from the Klamath Siskiyou to the Western Cascades Provinces." "The remaining 20,832 acres of NRF remaining in this CHU should provide sufficient NRF for the known spotted owls within the CHU and also continue to provide dispersal habitat for spotted owls in both N-S and E-W directions. While there will be adverse effects to this CHU in the form of NRF loss or downgrading, the Service does not believe that the proposed action will preclude the ability of this CHU to function as intended."

Incidental Take Statement for Owls

Page 105:

> "Tthe Service anticipates that the proposed action could result in incidental take of all spotted owls associated with the removal and downgrading of 31,261 acres of suitable spotted owl habitat from tree harvest and other activities …" "In southwest Oregon and the Klamath range in particular, the extant habitat is naturally fragmented and it is therefore likely that any available habitat is being used by spotted owls."

> "The Service also anticipates the take of any owls associated with up to 100 acres of proposed research units that may occur within or adjacent to historic and potentially extant spotted [owl] nest sites within the Timbered Rock Fire. The Service believes that while these acres are completely burned and not currently considered habitat, it is largely unknown how owls respond to fire, there is some potential for owls to be associated with or near to these research lots and this research project has the potential to take one or more of these birds."