



United States Department of the Interior

FISH AND WILDLIFE SERVICE

911 NE. 11th Avenue

Portland, Oregon 97232-4181

IN REPLY REFER TO:

Memorandum

FEB 14 1995

To: Deputy Regional Director, Region 1
Portland, Oregon

From: **Acting** Assistant Regional Director-North Pacific Coast Ecoregion
Portland, Oregon

Subject: Biological Opinion on the Proposed Issuance of an Incidental Take Permit (PRT-796822) to Weyerhaeuser Company for the Northern Spotted Owl on the Millicoma Tree Farm, Coos and Douglas Counties, Oregon

This biological opinion responds to your January 2, 1995, request for formal consultation pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act). At issue are the effects to the threatened northern spotted owl (Strix occidentalis caurina)(owl) and the threatened marbled murrelet (Brachyramphus marmoratus)(murrelet) that may occur under an incidental take permit proposed to be issued to the Weyerhaeuser Company by the U.S. Fish and Wildlife Service (Service) pursuant to section 10(a)(1)(B) of the Act.

This biological opinion is based on information provided in the following sources: the Habitat Conservation Plan (HCP)(Weyerhaeuser 1994), Implementation Agreement (IA)(Service and Weyerhaeuser 1995), and the Environmental Assessment (EA)(USDI 1994a) and the EA Addendum for the proposed action; A Conservation Strategy for the Northern Spotted Owl prepared by the Interagency Scientific Committee (ISC)(Thomas et al. 1990); the Final Draft Recovery Plan for the owl (USDI 1992a); the Forest Ecosystem Management Assessment Team report (FEMAT)(USDA et al. 1993); the biological opinion (Service 1994) for Alternative 9 of the Final Supplemental Environmental Impact Statement on management of habitat for late successional and old-growth forest-related species within the range of the owl (FSEIS)(USDA and USDI 1994a); the Record of Decision for amendments to Forest Service and Bureau of Land Management (BLM) planning documents within the range of the owl (ROD)(USDA and USDI 1994b); the final rules listing for the owl (USDI 1990a), designating owl critical habitat (USDI 1992b), and listing the murrelet (USDI 1992c); the proposed rule to designate critical habitat for the murrelet (USDI 1994b); and our files. This biological opinion was prepared by the Service's Oregon State Office.

The Service also evaluated the effects of the proposed action on the threatened northern bald eagle (Haliaeetus leucocephalus), threatened peregrine falcon (Falco peregrinus) and the endangered Columbian white-tailed deer (Odocoileus virginianus leucurus). The Service (1995) has determined that the proposed action is not likely to adversely affect these species for the following reasons: 1) bald eagle nests and foraging areas on the Millicoma Tree Farm will continue to receive adequate protection; 2) the availability of suitable foraging and nesting habitat for the peregrine falcon is not expected to be reduced by the proposed action; and 3) the proposed action is outside of the current range of the Columbian white-tailed deer.

DESCRIPTION OF THE PROPOSED ACTION

The Weyerhaeuser Company of Federal Way, Washington (Weyerhaeuser) has applied to the Service for a permit to authorize incidental take of the owl in accordance with section 10(a)(1)(B) of the Act. Weyerhaeuser proposes to manage 209,000 contiguous acres of their Millicoma Tree Farm (Tree Farm) in Coos and Douglas Counties, Oregon pursuant to a HCP (Weyerhaeuser 1994) that was developed in conjunction with their permit application. Since 1913 nearly 95 percent of the Tree Farm has been harvested and converted to forest plantations. Four percent (8,727 acres) of the Tree Farm remains in stands naturally regenerated after fires in the late 1800s and early 1900s. Another 2,727 acres of the Tree Farm are considered to be old-growth forest (stands at least 200 years old).

The proposed HCP permit area is bordered by two Late Successional Reserves (LSRs) which are currently managed in accordance with the Northwest Forest Plan (Plan)(USDA et al. 1993, USDA and USDI 1994a,b). These LSRs encompass about 56,000 and 63,000 acres, respectively. Nearly 50 percent of each LSR currently provides suitable habitat for the owl. The Oregon Department of Forestry has developed a management plan and is currently developing a habitat conservation plan for the Elliott State Forest which is located adjacent to the Tree Farm. A third LSR is located about 12 miles north of the Tree Farm.

The actions proposed under the HCP would complement Federal and State efforts to conserve the owl. The HCP incorporates recommendations presented in the Draft Recovery Plan for the owl (USDI 1992a) and the ISC report (Thomas et al. 1990), and complements owl conservation efforts currently being conducted under the Plan.

The permit, HCP, and IA describe the responsibilities of the Service and Weyerhaeuser in regard to the proposed action. Permit issuance would allow Weyerhaeuser to harvest timber in such a way as to provide for the conservation of the owl, and would authorize incidental take of some owls during the legal harvest of timber from the Tree Farm. The term of the permit and the associated mitigation commitment is at least 50 years with three possible 10-year extension periods if certain criteria are met. These criteria, which control the possible extension of mitigation commitments beyond 50 years, are set forth in the IA. For purposes of this analysis, the Service assumed that such term extensions would be implemented if certain the Service makes certain findings related to the status and conservation needs of the owl.

Surveys conducted since the 1980's indicate that there may be up to 79 owl site centers on or within 1.5 miles of the Tree Farm. Up to 35 resident owl pairs and singles are actually centered on the Tree Farm. The remaining 44 known owl sites are centered on adjacent private, State, and Federal lands within 1.5 miles of the Tree Farm. Of these 44 sites, 14 have substantial amounts of Weyerhaeuser-owned nesting, roosting, and foraging (NRF) habitat within their provincial home range. Ten owl pairs have reproduced on the Tree Farm since 1990. However, it is estimated that sufficient habitat remains to support only about seven breeding pairs of owls over the long-term if the permit were not issued, and take of owls was avoided (Weyerhaeuser 1994). This decline is anticipated because of the high degree of habitat fragmentation within the Tree Farm which reflects past timber harvest practices. The Service believes that under these conditions, the seven pairs may not persist because habitat conditions within their home ranges are not likely to improve.

In order to fully evaluate the greatest potential impact of the proposed action, the definition of suitable owl nesting, roosting, and foraging (NRF) habitat was expanded in the HCP to include younger and less diverse forest conditions that are occasionally used by the owl in western Oregon, and could potentially support owls on the Tree Farm. Weyerhaeuser (1994) estimates that 16,275 acres of suitable NRF habitat exist on the Tree Farm. Under the HCP, the harvest of

existing NRF habitat (except that retained for mitigation) could begin in 1995, and continue until most of the NRF habitat is converted to young forest. The Service estimates that all 35 owl pairs and singles centered on the Tree Farm and 14 owl pairs and singles centered off, but within 1.5 miles of the Tree Farm could be displaced as a result of the proposed timber harvest. The permit would authorize the incidental take of all owls associated with the Tree Farm in the course of otherwise lawful forest management and other incidental land use activities as described in the HCP.

The HCP contains several measures to avoid the direct death or injury of owls, and to minimize and mitigate the effects of owl habitat loss. The primary mitigation components of the HCP involve forest management to benefit dispersal by juvenile owls. Weyerhaeuser proposes to develop and maintain the landscape over the entire Tree Farm in a condition conducive to the dispersal of owls by managing the size, spacing, and structural characteristics of forested stands. By the year 2015, 40 percent of the forested area of the Tree Farm would be in stand conditions suitable for dispersal by owls. Gaps between such stands would be limited. This condition would be maintained, according to criteria specified in the HCP, during the remaining term of the permit which will expire in 2045, but which may be extended by up to three, 10-year increments until 2075, if certain findings are made. As additional mitigation, existing habitat would be retained around four owl sites centered on the Tree Farm (1592 acres) in two strategically placed blocks, and four owl sites on or near adjacent Bureau of Land Management (BLM) land (371 acres) for at least 20 years (until 2015). If the HCP dispersal habitat criteria are not met in 2015, this retained habitat will not be made available for harvest until the criteria are met. To minimize the effects of timber harvest on owls, 70 acres of the best NRF habitat will be retained around each active occupied owl site centered on the Tree Farm. Weyerhaeuser will also avoid harvest activities within 0.25 miles of any active nest on or near the Tree Farm between March 1 and September 30 each year, will prohibit road construction within .25 miles of known active owl nests during the breeding season, and will continue monitoring and banding of owls on the Tree Farm in conjunction with Federal and State programs.

Under the HCP, potential murrelet nesting habitat (determined on the basis of tree age and size) will be surveyed prior to any harvest or habitat alteration. If murrelet occupancy is determined through surveys or discovered incidental to other activities, Weyerhaeuser proposes to take the necessary management actions to comply with the regulatory requirements relating to murrelets (Weyerhaeuser 1994). Under the HCP, up to 6,707 acres of potentially suitable murrelet habitat would be harvested if, based on surveys, it was determined to be unoccupied.

The action area is defined at 50 CFR 402 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." While the proposed timber management activities are restricted to the Tree Farm, the effects of the proposed action to the owl and murrelet may extend beyond this area. For the purposes of this consultation, the Service has defined the action area to include the Tree Farm and all land occurring within the boundaries of three adjacent LSRs and the Elliott State Forest.

STATUS OF THE SPECIES/ENVIRONMENTAL BASELINE

A detailed account of the taxonomy, ecology, and reproductive characteristics of the owl is presented in Service status reviews (USDI 1987, 1989, 1990b); the ISC report (Thomas et al. 1990); and the final rule designating the owl as a threatened species (USDI 1990a).

A detailed account of the taxonomy, ecology, and reproductive characteristics of the murrelet is found in Marshall (1988), the final rule designating this species as threatened (USDI 1992c), the proposed rule to designate critical habitat for the murrelet (USDI 1994b), and the biological opinion for the FSEIS (Service 1994).

FEMAT, the FSEIS, and the ROD detail the impacts of Federal, State, and private actions on late successional forests and related species such as the owl and the murrelet. Such actions include, but are not limited to, previous timber harvests and other land management activities such as adoption of a late successional forest management strategy (through the ROD) known as the Northwest Forest Plan (Plan)(USDA and USDI 1994a,b).

The Plan was adopted to address the conservation of the owl and other species in response to past and present land management activities that have degraded habitat conditions in late successional and old-growth forest on Federal lands. The Plan builds upon the strategies presented in the ISC report (Thomas et al. 1990) and the Draft Recovery Plan for the owl (USDI 1992a) to address owl conservation by protecting large reproductively viable population clusters on Federal lands throughout its range.

A primary conservation strategy in the Plan is the protection of LSRs which currently support or are expected to support multiple pairs of the owl, murrelet and other late successional forest species. Adoption of the Plan introduces a conservation strategy into the environmental baseline, and provides the Service with a framework in which to evaluate effects of proposed actions occurring within the range of the owl and the murrelet.

Under the Plan, the range of the owl was partitioned into eight physiographic provinces. The site of the proposed action is located at the southern edge of the Oregon Coast Ranges Province (Province) which occurs west of the Willamette Valley and extends south from the Columbia River along the coast of the Pacific Ocean to about the Coquille River. The Province is generally characterized by mountainous terrain, high precipitation, and productive forests. The 5.8 million-acre Province encompasses about 1.4 million acres of Federal land, 690,000 acres of State land, 19,000 acres of Tribal land, and 3.7 million acres of private land.

The owl population in the Province is low and is declining. About 380 owl pairs or resident singles are known to occur in the Province. The majority of these owl sites occur in the southern portion of the Province south of Highway 38. Of the 380 known owl sites, 79 percent occur on Federal land. Few owl clusters (consisting of more than three pairs) exist in the Province north of Highway 126. In the northern two-thirds of the Province, individual owl sites are generally separated by 3 to more than 15 miles.

The quantity, quality, and distribution of owl habitat within the Province is generally considered to be poor. Of the 1.4 million acres of Federal land in the Province, only 35 percent currently provides suitable habitat for the owl. The amount of suitable murrelet habitat within the Province is not known. The amount of suitable habitat on private lands is unknown, but is generally unsuitable or of very poor quality due to previous timber harvest activities.

Although the Province is adjacent to three other provinces, provincial isolation is a severe threat due to large expanses of unsuitable or degraded habitat. Important habitat linkages to other provinces are limited to a few areas of Bureau of Land Management (BLM) and surrounding non-Federal lands.

The Tree Farm is largely surrounded by a checkerboard of Federal and private lands, and the Elliott State Forest. Federal lands on the northeast and southwest boundaries of the Tree Farm comprise two LSRs managed by the Roseburg and Coos Bay Districts of the BLM. These two LSRs currently support 69 pairs of owls and 2 resident, single owls. The Elliott State Forest, on the northwestern boundary of the Tree Farm, supports about 25 pairs of owls and several resident, single owls. A third LSR, adjacent to the State forest and managed by the BLM and the

Siuslaw National Forest, lies about 12 miles north of the Tree Farm and supports 13 pairs and 3 resident, single owls.

The Tree Farm is located south of the Umpqua River in the coastal mountains between Roseburg and North Bend, Oregon. It is a mosaic of coniferous forest stands comprised primarily of Douglas fir (*Pseudotsuga menziesii*) and western hemlock (*Tsuga heterophylla*) of varying age classes. The area is characterized by steep mountainous slopes ranging from 100 to 3,200 feet in elevation. Within the boundaries of the Tree Farm about 16,275 acres are considered to be potentially suitable NRF habitat for the owl, based on Weyerhaeuser forest inventory data.

Surveys conducted since the 1980s indicate there may be up to 79 owl sites centered on (35 sites) or within 1.5 miles (44 sites) of the Tree Farm. The owls associated with the latter sites may utilize forested stands on the Tree Farm during one or more phases of their life cycle. Although the Tree Farm currently supports a large number of owls, sufficient habitat remains to support only about seven breeding pairs in the long-term even if no incidental take of owls were authorized by the Service. The Service believes that under these conditions, the seven pairs may not persist because habitat conditions within their home ranges are not likely to improve. This decline is anticipated because of the high degree of habitat fragmentation within the Tree Farm which reflects past timber harvest practices.

In order to fully evaluate the greatest potential impact of the proposed action, the definition of suitable owl habitat was expanded in the HCP to include the younger and less diverse forest conditions occasionally utilized by the owl in western Oregon (Weyerhaeuser 1994).

The total amount of occupied murrelet habitat within the Province is unknown. However, the Province includes the majority of sites known to be occupied by the murrelet in Oregon. Based on data gathered from 1989 to 1993, about 591 sites are occupied by the murrelet in the Province (S. Holzman, U.S. Fish and Wildlife Service, pers. comm.). At-sea surveys indicate a relatively continuous distribution of murrelets from south of Coos Bay, Oregon north to Newport, Oregon (Strong et al. 1993). The Tree Farm occurs within this reach of the Oregon coastline.

EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

Owl population size is primarily a function of the amount and distribution of suitable owl habitat available throughout its range to support breeding pairs (USDI 1990b). This relationship exists for all species including the murrelet. As stated earlier, a primary conservation strategy in the Northwest Forest Plan is the protection of LSRs which currently support or are expected to support multiple pairs of the owl, murrelet, and other late successional forest species. For these reasons, the following analysis will primarily focus on the amount and location of suitable owl and murrelet habitat that will be affected by the proposed action in relation to the conservation strategy established under the Plan.

LSRs are expected to be capable of maintaining large clusters of reproductively viable owls, murrelets, and other late successional forest species across their respective ranges. The likelihood of maintaining reproductively viable owl clusters should increase and local extirpation should be prevented if adjacent clusters are sufficiently interconnected through the intervening matrix lands (Thomas et al. 1990). In assessing the effects of the proposed action, the Service analyzed the current condition of the LSRs bordering the Tree Farm to determine if they are functioning as intended and whether this action will impede or preclude an LSR or the intervening matrix lands from functioning as prescribed in the Plan.

The effects of timber harvest on suitable owl and murrelet habitat depend upon the silvicultural prescriptions used, and to a lesser degree, the condition of the habitat prior to harvest. Impacts to

the owl and the murrelet may vary from a complete loss of habitat (such as a clearcut), to a degradation of habitat (such as some types of selective harvest), to relatively minor impacts (such as certain salvage operations).

Northern Spotted Owl

This opinion will apply three criteria to determine the magnitude of effect on the owl by a particular action: 1) whether the action would remove the best available, most contiguous suitable owl habitat within a 70-acre core area surrounding the nest site or activity center of a resident single or pair; 2) whether it would remove suitable owl habitat so that less than 500 acres of habitat remain within 0.7 miles of the nest site or activity center of a resident single or pair; and 3) whether it would result in loss of suitable owl habitat around a pair or resident single activity center so that less than 40 percent of the area within a circle approximating the median provincial home range remains as suitable habitat. In this case, the provincial median home range size is 4,766 acres of which 40 percent is 1,906 acres, based on a circular home range with a radius of 1.5 miles. If one or more of these criteria apply, the Service believes the activity involves a risk of "take" of the owl as defined under the Act. In addition, timber harvest and related activities within 0.25 miles of active owl nest sites create a risk of disturbance to nesting pairs with adverse effects on reproductive success.

The proposed permit area is bordered by two LSRs (RO261 and RO263) which encompass about 56,000 and 63,000 acres, respectively. Nearly 50 percent of each LSR currently provides suitable habitat for the owl. Non-Federal land comprises only 5,700 acres within the boundaries of these adjacent LSRs and is expected to contain insignificant amounts of suitable habitat for the owl. Seventy-one owl sites are centered on these LSRs. LSR RO263 currently supports 8 pairs with at least 40 percent federally protected habitat within the provincial home range circles. LSR RO261 supports 5 pairs with at least 40 percent federally protected habitat. Research has indicated that owl pairs with suitable habitat below this level have reduced reproductive productivity and survival is likely to be impaired (Bart and Forsman 1992). The LSRs contain 10 and 9 owl sites, respectively, with between 30 and 40 percent federally protected suitable habitat within 1.5 miles of their nest sites. Although the owls occupying these sites are expected to be reproductively impaired, it is possible that many of these sites will continue to support owl pairs and produce young during favorable reproductive conditions.

Twenty-five owl sites are centered on the Elliott State Forest and have no federally owned habitat occurring within their estimated home range. While a few of these sites may have sufficient habitat occurring on State lands, many currently have less than 40 percent NRF habitat available. It is expected that some of these habitat deficient sites may remain viable and make significant contributions to the conservation of the local owl population.

The Tree Farm is currently occupied by 35 owl pairs and resident singles. However, the limited amount and fragmented nature of the habitat on the Tree Farm make it unlikely that this level of occupation will persist in the long term even in the absence of the permit. The Service expects that many of these sites would be abandoned in the future due to the effects of habitat fragmentation resulting from past timber harvest practices. The high number of activity centers occupied by single owls and the number of pairs that have not reproduced in recent years may be indicative of this condition. Only 10 pairs are known to have successfully reproduced since 1990. About seven breeding pairs may persist during the next 50 years.

Forty-four owl sites are centered off, but within 1.5 miles of, the Tree Farm: 1) seven of these contain at least 40 percent NRF habitat within LSRs; 2) 23 sites receive no substantial contribution of NRF habitat from Weyerhaeuser lands; and 3) 14 sites contain substantial amounts of Weyerhaeuser-owned NRF habitat within their home ranges. Harvest of habitat

within these 14 sites may reduce the viability of one or more of these pairs. Some of these owls are currently capable of contributing to the local population: nine pairs have successfully reproduced in the last five years.

If the proposed action were not to occur, it is likely that most of the habitat currently contained in owl home range circles would be harvested as these sites were abandoned by the owls, and the take prohibitions under section 9 of the Act were no longer applicable. It is also likely that harvest of younger forests would be accelerated to provide economic compensation for protection of NRF habitat prior to owl abandonment of these sites. Such harvest would likely eliminate all owl dispersal habitat except possibly suitable habitat which comprises up to 40 percent of occupied owl home ranges. This would also preclude future development of habitat. Whether or not the remaining occupied sites would provide sufficient demographic support and dispersal connections to the LSR populations would depend on several factors including site location and reproductive output.

Owl conservation strategies are based on the general premise that clusters of 20 or more breeding pairs are likely to remain viable. Neither of the two LSRs immediately adjacent to the Tree Farm currently support 20 breeding pairs, and habitat conditions within them are insufficient to support population clusters of that size for the foreseeable future. To compensate for low populations, the ISC stated that clusters of fewer than 20 pairs will be less likely to suffer local extirpation if the populations were connected by adequate dispersal habitat and were closer together. The LSRs adjacent to the Tree Farm are separated from each other by about 12 miles. It is likely that owl sites centered on Weyerhaeuser land and habitat on the Tree Farm enhance the viability of the owl population in this area by providing demographic support to the clusters within the LSRs and connectivity between them. Elimination of these sites could reduce direct reproductive input from the Millicoma Tree Farm to the LSR owl populations.

Although the LSRs to the west and east of the Tree Farm may not be fully functional at this time, the allowance of incidental take within the Tree Farm is not expected to preclude survival or recovery of the regional owl population. The establishment of LSRs was designed to provide not only a source population of owls, but more importantly, to provide for the development of suitable habitat in the future. This would augment the current population and serve to stabilize and distribute the population in a way likely to facilitate recovery of the population when the habitat regenerates (Barry Mulder, Fish and Wildlife Service, pers. comm.). The ISC fully recognized that LSRs established within the Province would not contain a full complement of owl pairs, but intended that the provision of dispersal habitat connecting the owl pair-deficient reserves would allow restocking from source populations in adjoining provinces once habitat conditions improved. Given the importance of connectivity between the Province (with a low population of owls) and the more moderately-stocked Cascade and Klamath Provinces, the Service believes that the recovery contribution of dispersal habitat in this critical provincial connector outweighs the recovery value of the owl sites expected to be lost as a result of the proposed action.

Therefore, issuance of the permit is not likely to result in greater adverse impacts to survival and recovery of the owl than maintenance of current regulatory conditions. The loss of seven owl pairs that may have been retained under a "no action" scenario is unlikely to cause the extirpation of the local owl population. Such loss may slightly increase the short-term rate of population decline likely to occur, and temporarily result in a smaller owl population following the decline. However, when the owl population increases, as expected, the enhanced connectivity between the LSRs provided by the Tree Farm will benefit the local owl population, and is more critical to achieving the long-term conservation and recovery contribution of the LSRs. In addition, demographic contributions to the LSRs from the owl population on the Elliott State Forest may be increased due to the proposed action. This would result from improved dispersal linkages

between State and Federal owl population clusters across the Tree Farm. Short-term retention of some NRF habitat and maintenance of landscape conditions conducive to owl dispersal is expected to mitigate against the loss of some of these sites and minimize the impacts.

In summary, although owl populations are low and habitat conditions are poor within the action area, the LSRs immediately northwest and southwest of the Tree Farm established by the Plan are likely to maintain a local population of owls until habitat conditions improve within their boundaries. The HCP for the proposed action is expected to facilitate dispersal of owls between the adjacent northwest and southwest LSRs thereby improving the stability of the local population. Further, dispersal habitat provided under the HCP will facilitate, in part, the growth of the Province owl population as a result of movement from the more abundant Cascade and Klamath Province populations, thus contributing to the species' recovery.

Marbled Murrelet

The proposed action occurs within a single location between two large reserves managed for late successional forest species. Under the HCP, there will be no loss of murrelet-occupied habitat or take of individual murrelets. Under the HCP, up to 6,707 acres of potentially suitable murrelet habitat could be harvested, if it is determined to be unoccupied. The loss of unoccupied suitable murrelet nesting habitat would have more serious ramifications in areas where suitable nesting habitat is limited and/or unprotected.

The loss of suitable habitat for the murrelet is of concern to the Service because of the loss of potential future nesting areas. However, implementation of this HCP should not result in the loss of any currently occupied sites on the Tree Farm. Therefore, occupied stands identified on the Tree Farm would remain as a potential source of murrelets for adjacent LSRs as they continue to develop into suitable habitat.

Forest stands currently-occupied by the murrelet will be protected to avoid incidental take, therefore, site specific effects of the proposed action are limited to the loss of future nesting sites within the Tree Farm. The loss of future nesting areas could occur on up to 6,707 acres of potential murrelet nesting habitat.

Considerable evidence links declining numbers of the murrelet to the declining amount of available suitable nesting habitat (Ralph et al. in press). However, because potential murrelet nesting habitat on the Tree Farm is highly fragmented and comprises only three percent of the Tree Farm, loss of unoccupied but potentially suitable murrelet habitat is not expected to significantly affect the conservation of the species given the presence of protected suitable habitat within adjacent Federal reserves.

Murrelets nesting within fragmented habitat are likely to have a higher susceptibility to predation. Predation by corvids such as the American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), and Steller's jay (*Cyanocitta stelleri*), and raptors such as the great horned owl (*Bubo virginianus*), sharp-shinned hawk (*Accipiter striatus*), and peregrine falcon (*Falco peregrinus*) are known causes of murrelet nest failure. From 1974 through 1993, 67 percent of all known murrelet nests in the Pacific Northwest failed due to predation (Nelson and Hamer, in press). Corvids are typically "edge species" that increase in number with increased forest fragmentation (Andren et al. 1985, Wilcove 1985, Small and Hunter 1988). They are intelligent predators that possess the ability to develop a highly refined search image for locating prey (Croze 1970 as cited by Kilham 1989, Goodwin 1976, Zach 1979, Kilham 1989). In murrelet nest stands, Steller's jays have been observed methodically proceeding from one potential nest branch to the next (S. Nelson, Oregon State University, pers. comm.; D. Suddjian, private consultant, pers. comm.). Corvid predation on the nests of small birds is known to increase with increased

forest fragmentation or decreased distance of nests from a forest edge (Gates and Gysel 1978, Andren et al. 1985, Small and Hunter 1988, Yahner and Scott 1988). Wilcove (1985) proposed that relatively small increases in nest predation may be responsible for extinctions of species of small song birds from small forest stands.

The murrelet's ability to successfully reproduce is to a great extent dependent on its ability to remain hidden. The highly fragmented condition of the Tree Farm is expected to support high numbers of predators and few potential nest sites for predators to search. Hence, the relative reproductive contribution of the 6,707 acres of small isolated parcels of potentially suitable murrelet habitat is not expected to be great.

It is likely but unknown if individual murrelets return to the same nest sites or forest stands in consecutive years. Most species of alcids exhibit high nest site fidelity (Tuck 1960, Nettleship and Birkhead 1985, Kress and Nettleship 1988, Gaston 1992) as do many other species of birds nesting under a variety of environmental conditions (Terres 1980). The prevalence of this trait in so many bird species strongly suggests that the behavior confers distinct survival advantages.

Occupation of traditional nesting sites over many generations is common in species that display strong nest site fidelity (Terres 1980, Ehrlich et al. 1988), and murrelet nesting sites appear to be traditionally used. Observations of nest sites have shown that murrelets nest in the same trees in consecutive years, and birds have been found occupying the same forest stands for 4 years in northern California (S. Miller, U.S. Forest Service, pers. comm.), 18 years in central California (S. Singer, Soil Conservation Service, pers. comm.), 8 years in Oregon (Nelson, pers. comm.), 3 years in Washington (T. Hamer, Washington Department of Wildlife, pers. comm.), and 3 years in Alaska (K. Kuletz, Fish and Wildlife Service, pers. comm.). Any loss of occupied habitat is likely to hamper efforts to stabilize the population and ultimately to recover the species (Ralph et al. in press).

Weyerhaeuser has not applied for an incidental take permit for the murrelet. Under the HCP, potential murrelet nesting habitat will be surveyed prior to any harvest or habitat alteration. If murrelet occupancy (i.e. nesting) is determined through surveys or discovered incidental to other activities, Weyerhaeuser will take the necessary management actions to comply with the regulatory requirements relating to murrelets (Weyerhaeuser 1994). For this reason, the HCP should not contribute to the loss of occupied stands and may increase the understanding of murrelet habitat use through Weyerhaeuser's proposed survey efforts.

Noise associated with timber harvest could disturb nesting murrelets in adjacent, occupied habitat. Although there is little detailed information concerning the murrelet's vulnerability to disturbance effects, research on a variety of other bird species suggest that such effects are possible and, in some cases, likely. These studies have shown that disturbance can affect productivity in a number of ways including: nest abandonment, egg and hatchling mortality due to exposure and predation, depressed feeding rates of adults and offspring, and avoidance of otherwise suitable habitat. The HCP proposes to avoid disturbance to nesting murrelets through restricting harvest activities and road use within .25 miles of occupied habitat during the breeding season.

In summary, while the loss of up to 6,707 acres of potentially suitable but unoccupied murrelet habitat may limit expansion of future nesting within the Tree Farm, it is unlikely that the proposed action will affect the conservation of the species within the action area. The suitable habitat on the Tree Farm is limited in quantity and the quality is relatively low due to the effects of fragmentation associated with previous timber harvest practices. The HCP avoids take of the murrelet. Therefore, current murrelet reproduction potential within the Tree Farm should be maintained. In addition, the Tree Farm is surrounded by two large LSRs which will provide support for the local murrelet population.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur within the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Before the owl was listed as a threatened species under the Act, Thomas et al. (1990) estimated that most privately owned owl habitat in Oregon (mature timber which typically includes murrelet habitat) would be eliminated within 10 years. The Federal listing of these species has slowed the rate of decline, but it is expected that the amount of suitable habitat for owls and murrelets on private lands will be reduced over time. The majority of private forest land in the action area is used for timber production, and very little owl and murrelet habitat remains on these lands other than in small isolated patches. For this reason, continued harvest on these lands is not expected to have a major effect on the local owl and murrelet populations. The best available information indicates that the viability of local owl clusters would not be significantly reduced due to the loss of all non-Weyerhaeuser private habitat within the provincial home ranges of the owl pairs affected by this proposed action. These small isolated parcels within the action area are not expected to provide substantial habitat values for the murrelet.

The cumulative effects of activities on State land could be more significant. The 93,000-acre Elliott State Forest (Elliott Forest) is adjacent to the Tree Farm. The Oregon Department of Forestry has developed a management plan and is in the process of developing a Habitat Conservation Plan that will guide management of the Elliott Forest in the future. Further review under section 7 of the Act would occur before the issuance of any incidental take permit in conjunction with this Elliott Forest Habitat Conservation Plan.

Currently, 47,000 acres have been classified as owl NRF habitat on the Forest. As proposed in the Elliott Forest Management Plan, this would decrease to 36,000 acres by the year 2033 and level off at 38,900 acres by 2053. At that time a greater quantity, and more contiguous blocks of high quality owl habitat would be available than currently exists. Most of this habitat would be in nine management basins where long rotation (160 to 240 years) forestry will be practiced. Additional habitat will be located in reserves of varying sizes in the remaining eight management basins. It is expected that all of the basins will be comprised of 13 to 66 percent NRF habitat for the owl. All basins will also meet dispersal standards.

There are currently 25 owl sites centered on the Elliott Forest. Implementation of the proposed Elliott Forest management plan could result in the incidental take of 49 owls some of which would not be expected to persist because of habitat conditions. This level of take may slightly increase the short-term rate of owl population decline in the Province. Over the long-term, under the proposed management plan the Elliott Forest may support 10 to 12 pairs of owls and several resident singles. Improved habitat conditions should enhance the fitness and viability of these pairs relative to most of those currently occupying the Forest.

Under the proposed management plan, the Elliott Forest in conjunction with the Tree Farm's dispersal landscape that would be created under the HCP should adequately provide for movement of owls from federally-managed LSRs north of the Forest to the LSRs to the south and east of the Tree Farm. Demographic support should also be provided through the maintenance of quality suitable NRF habitat and a small population cluster on the Elliott Forest.

There are 31 known sites occupied by the murrelet on the Elliott Forest. About 39,000 acres of the Elliott Forest are classified as potentially suitable murrelet habitat (stands at least 100 years old and having trees greater than 32 inches in diameter). Implementation of the proposed

management plan could result in the loss of 2,640 acres of potential habitat. However, in the long term, potential murrelet habitat would be expected to increase and exist in more contiguous blocks. Ten basins would be comprised of at least 40 percent habitat and an additional 6,961 acres of habitat would be retained in reserves scattered across the Forest.

The Coquille Tribe is proposing transfer of 59,000 acres of forest land currently managed by the Coos Bay District of the BLM. These lands would be held in trust by the Bureau of Indian Affairs for the Tribe. Details of the proposed land transfer are not available at this time, however, it is possible that review under section 7 of the Act may not occur as the Tribe is proposing to authorize the land transfer under legislation. Depending upon the language of the legislation, should it occur, the transfer and management of the 59,000 acres of forest land may not be a Federal action subject to section 7 consultation. Therefore, a brief review of the proposal will be addressed here based on the preliminary draft management strategy available to the Service at the present time.

Of the approximately 59,000 acres proposed for transfer from the BLM, 5,000 to 7,000 acres are expected to occur within an LSR. The Coquille Tribe is developing a forest management strategy (Strategy) by an Independent Scientific Advisory Team with the following objectives:

- 1) The Strategy will be consistent with the Northwest Forest Plan.
- 2) The Strategy will meet the Tribe's self-sufficiency and cultural goals to the fullest extent possible given consistency with the Northwest Forest Plan.

Given the above objectives, the Tribe is proposing that land currently managed as a LSR will continue to be managed accordingly with the remaining acreage to be managed similar to an Adaptive Management Area as described within the ROD (USDA and USDI 1994b). Based upon the Coquille Tribe's Plan to manage the land proposed for transfer in a manner not inconsistent with the Northwest Forest Plan, the Service does not believe the land transfer will increase the cumulative effects to the owl or the murrelet.

CONCLUSION

After reviewing the current status of the owl and the murrelet, the environmental baseline for the action area, the effects of the proposed timber harvest associated with the issuance of an incidental take permit and the cumulative effects, it is the Service's biological opinion that the issuance of an incidental take permit is not likely to jeopardize the continued existence of the owl and the murrelet. No critical habitat has been designated for the murrelet, therefore, none will be affected. Critical habitat for the owl has been designated, however, this action does not affect those areas and no destruction or adverse modification of that critical habitat is anticipated.

INCIDENTAL TAKE

Section 9 of the Act, and regulations issued pursuant to the Act, prohibit the taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of a listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including: breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to an agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The Service anticipates that about 35 owl pairs and singles centered on the Tree Farm, and 14 owl pairs and singles centered off, but within 1.5 miles of, the Tree Farm could be taken as a result of permit issuance. The permit would authorize the incidental take of all owls associated with the Millicoma Tree Farm in the course of otherwise lawful forest management and incidental land use activities as described in the HCP. The incidental take is expected to be in the form of harm or harassment. As analyzed above, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize take of the owl:

Any incidental take of the owl must comply with all of the terms and conditions of the incidental take permit proposed to be issued under section 10(a) of the Act and its supporting HCP and Implementing Agreement (IA).

In order to be exempt from the prohibitions of section 9 of the Act, the Fish and Wildlife Service must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are non-discretionary.

An incidental take permit, as evaluated in this biological opinion, must be issued by the Fish and Wildlife Service, and must include provisions for disposition of dead, injured, or sick owls.

The HCP and IA for the incidental take permit must be approved by the Service.

While the incidental take statement provided in this biological opinion satisfies the requirements of the Endangered Species Act, it does not constitute an exemption from the prohibitions of take of migratory birds under the Migratory Bird Treaty Act.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends that the following conservation measures be implemented:

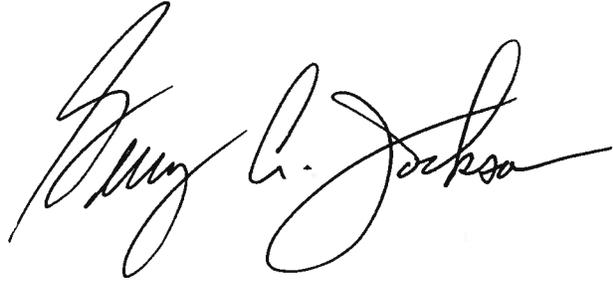
The Service should provide technical assistance to the applicant throughout the term of the permit. The Service should be prepared to provide technical advice on monitoring and other biological issues.

REINITIATION NOTICE

This concludes formal consultation on the proposed issuance of an incidental take permit to Weyerhaeuser. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not

considered in this biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions concerning this biological opinion, please contact the Field Supervisor of the Service's Oregon State Office at (503) 231-6179.

A handwritten signature in black ink, reading "Amy L. Jackson". The signature is written in a cursive style with a large, looping initial "A" and a long, sweeping underline.

LITERATURE CITED

- Andren, H., P. Angelstam, E. Lindstrom, and P. Widen. 1985. Differences in predation pressure in relation to habitat fragmentation: an experiment. *Oikos* 45:273-277.
- Bart, J., and E.D. Forsman. 1992. Dependence of northern spotted owls (*Strix occidentalis caurina*) on old-growth forests in the western USA. *Biological Conservation*, 1992, pp. 95-100.
- Croze, H.J. 1970. Searching images in carrion crows. *Z. Tierpsychol. Beiheft.* 85pp.
Cited in L. Kilham. 1989. *The American Crow and the Common Raven.* Texas A & M University Press. College Station.
- Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. *The Birder's Handbook.* Simon and Schuster, New York. 785 pages.
- Gaston, A.J. 1992. *The Ancient Murrelet: A Natural History in the Queen Charlotte Islands.* T & A D Poyser, London. 247pp.
- Gates, J.E. and L.W. Gysel. 1978. Avian nest dispersion and fledgling success in field-forest ecotones. *Ecology* 59(5):871-883.
- Goodwin, D. 1976. *Crows of the World.* Cornell University Press, Ithaca, New York. 354pp.
- Hamer, T.E. Personal communication. Washington Department of Wildlife, 615 State Street, Sedro Wooley, Washington 98284.
- Holzman, S. Personal communication. U.S. Fish and Wildlife Service, Portland, Oregon.
- Kilham, F. 1989. *The American Crow and the Common Raven.* Texas A & M University Press. College Station.
- Kress, S.W. and D.N. Nettleship. 1988. Re-establishment of Atlantic puffins (*Fraterecula artica*) at a former breeding site in the Gulf of Maine. *J. Field Ornithol.* 59(2):161-170.
- Kuletz, K. Personal communication. U.S. Fish and Wildlife Service, 1011 E. Tudor Rd., Anchorage, AK 99053.
- Marshall, D.B. 1988. Status of the Marbled Murrelet in North America: with special emphasis on populations in California, Oregon, and Washington. Audubon Society of Portland. 42 pp.
- Miller, S.L. Personal communication. U.S. Forest Service, Redwood Sciences Lab, 1700 Bayview Drive, Arcata, California 95521.
- Mulder, B. Personal communication. U.S. Fish and Wildlife Service, 2600 S.E. 98th Avenue, Portland, OR 97266.
- Nelson, S.K. 1992. Letter to Charlie Stone, Forest Practices Program Director, Oregon Department of Forestry. January 31, 1992.

- Nelson, S.K. Personal communication. Oregon State University Cooperative Unit, Department of Fish and Wildlife, 104 Nash Hall, Corvallis, Oregon 97331.
- Nelson, S.K., and T.E. Hamer. In press. Nest success and the effects of predation on Marbled Murrelets. In: Ralph, C.J., G. Hunt, J. Piatt, and M.G. Raphael, (eds.) Conservation Assessment for the Marbled Murrelet: an interagency scientific evaluation. U.S. Forest Service Gen. Tech. Rept.
- Nettleship, D.N. and T.R. Birkhead. 1985. The Atlantic Alcidae: the evolution, distribution and biology of the auks inhabiting the Atlantic ocean and adjacent water areas. ed. by D.N. Nettleship and T.R. Birkhead. Academic Press. London.
- Ralph, C.J., G.L. Hunt, Jr., M.G. Raphael, and J.F. Piatt. In press. Overview of the Ecology and Conservation of the Marbled Murrelet in North America. In: Ralph C.J., G.L. Hunt, J.F. Piatt, and M.G. Raphael (eds.). Conservation Assessment for the Marbled Murrelet: an interagency scientific evaluation. U.S. Forest Service Gen. Tech. Rept.
- Singer, S. Personal communication. U.S. Soil Conservation Service, 218 Nevada Street, Santa Cruz, California 95060. June, 1992.
- Small, M.F. and M.L. Hunter. 1988. Forest fragmentation and avian nest predation in forested landscapes. *Oecologia* 76:62-64.
- Strong, C.S., B.S. Keitt, W.R. McIver, C.J. Palmer, and I. Gaffney. 1994. Distribution and population estimates of marbled murrelets at sea in Oregon during the summers of 1992 and 1993. Final report, Contract no. 93-06-01, Oregon Dept. of Fish and Wildlife, Portland, OR 31pp.
- Suddjian, D. Personal communication. 1136 Callas Lane #1, Capitola CA 95010.
- Terres, J.K. 1980. Encyclopedia of North American Birds. Alfred A. Knopf, New York. 1109pp.
- Thomas, J.W., E.D. Forsman, J.B. Lint, E.C. Meslow, B.R. Noon, and J. Verner. 1990. A conservation strategy for the northern spotted owl. A Report by the Interagency Scientific Committee to address the conservation of the northern spotted owl. U.S. Department of Agriculture, Forest Service, and U.S. Department of Interior, Fish and Wildlife Service, Bureau of Land Management, and National Park Service. Portland, Oregon. 427pp.
- Tuck, L.M. 1960. The murre: their distribution, populations, and biology. Can. Wildl. Serv., Rept. Ser., No. 1. Ottawa.
- U.S. Department of Agriculture, U.S. Department of the Interior, U.S. Department of Commerce, and the Environmental Protection Agency. 1993. Forest Ecosystem Management: An Ecological, Economic, and Social Assessment. Report of the Forest Ecosystem Management Assessment Team. Forest Service, Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Bureau of Land Management, Environmental Protection Agency. Portland, Oregon.

- U.S. Department of Agriculture and U.S. Department of Interior. 1994a. Final Supplemental Environmental Impact Statement on Management of Habitat for Late Successional and Old-Growth Forests Related species within the Range of the Northern Spotted Owl. Forest Service, Bureau of Land Management. Portland, Oregon.
- U.S. Department of Agriculture and U.S. Department of Interior. 1994b. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl. Forest Service, Bureau of Land Management. Portland, Oregon.
- U.S. Department of the Interior. 1987. The northern spotted owl status review. Fish and Wildlife Service. Portland, Oregon. 47 pp.
- U.S. Department of the Interior. 1989. The northern spotted owl; a status review supplement. Fish and Wildlife Service. Portland, Oregon. 113 pp.
- U.S. Department of the Interior. 1990a. Endangered and threatened wildlife and plants; determination of threatened status for the northern spotted owl; final rule. 50 CFR Part 17, Federal Register, June 26, 1990. Pp. 26114-26194.
- U.S. Department of the Interior. 1990b. 1990 status review: northern spotted owl, *Strix occidentalis caurina*. Report to the Fish and Wildlife Service. Portland, Oregon. 95 pp.
- U.S. Department of Interior. 1992a. Recovery plan for the northern spotted owl. Final Draft. Portland, Oregon.
- U.S. Department of Interior. 1992b. Endangered and threatened wildlife and plants; determination of critical habitat for the northern spotted owl; final rule. 50 CFR Part 17, Federal Register, January 15, 1992. Pp. 26114-26194.
- U.S. Department of Interior. 1992c. Endangered and threatened wildlife and plants; determination of threatened status for the marbled murrelet; final rule. 50 CFR Part 17, Federal Register, October 1, 1992.
- U.S. Department of Interior. 1994b. Endangered and threatened wildlife and plants: proposed designation of critical habitat for the marbled murrelet; proposed rule. Federal Register, January 27, 1994: 3811-3823.
- U.S. Fish and Wildlife Service. 1994. Final biological opinion for the preferred alternative of the Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Portland, Oregon.
- U.S. Department of Interior. 1994a. Final environmental assessment for proposed issuance of a section 10(a) permit to allow incidental take of the northern spotted owl on the Millicoma Tree Farm in Coos and Douglas County, Oregon. Fish and Wildlife Service, Portland, Oregon. November 16, 1994.
- U.S. Fish and Wildlife Service. 1995. Intra-Service section 7 evaluation form: effects of issuing an incidental take permit to the Weyerhaeuser Company on the bald eagle, peregrine falcon, and Columbian white-tailed deer. Portland, Oregon.

- U.S. Fish and Wildlife Service and Weyerhaeuser Company. 1995. Implementation agreement for the habitat conservation plan for the northern spotted owl - Millicoma Tree Farm - Coos and Douglas County, Oregon.
- Weyerhaeuser Company. 1994. Habitat conservation plan for the northern spotted owl - Millicoma Tree Farm - Coos and Douglas County, Oregon. North Bend, Oregon. November 1994.
- Wilcove, D.S. 1985. Nest predation in forest tracts and the decline of migratory songbirds. *Ecology* 66(4):1211-1214.
- Yahner, R.H. and D.P. Scott. 1988. Effects of forest fragmentation on depredation of artificial nests. *J. Wildl. Mgt.* 52(1):158-161.
- Zach, R. 1979. Shell droppings: Decision-making and optimal foraging in northwestern crows. *Behaviour* 68:106-117.

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person: Joe Zisa Affiliation: Oregon State Office
Telephone Number: 503-231-6179
Date: 2-8-95

1. Region: 1
2. Service Activity: Issuance of an incidental take permit for northern spotted owls to Weyerhaeuser Company on their Millicoma Tree Farm, Coos and Douglas Counties, Oregon.
3. Pertinent Species and Habitat:

A. Listed Species and/or their critical habitat within action area:

Northern Bald Eagle (*Haliaeetus leucocephalus*)
Peregrine Falcon (*Falco peregrinus*)
Columbian white-tailed deer (*Odocoileus virginianus leucurus*)

4. Geographic Area and Proposed Action:

Issuance of Incidental Take Permit for Northern Spotted Owls by Weyerhaeuser Company on the Millicoma Tree Farm in Coos and Douglas Counties, Oregon.

5. Description of Proposed Action:

The Service proposes to issue a section 10(a)(1)(B) incidental take permit for spotted owls to Weyerhaeuser on its Millicoma Tree Farm (Tree Farm) in Coos and Douglas Counties, Oregon. Weyerhaeuser's Millicoma operations encompass 209,000 relatively contiguous acres of company-owned industrial timberlands, all of which lie within the geographic range of the spotted owl, in the Coast Ranges Physiographic Province of Oregon. Since 1913, nearly 95 percent of the Tree Farm (196,664 acres) has been harvested and converted to forest plantations. Four percent (8,727 acres) remains in stands naturally regenerated after fires in the late 1800s and early 1900s. Another 2,727 acres of the Tree Farm are described as old-growth forest (at least 200 years old).

Weyerhaeuser proposes to continue commercial timber operations on the Tree Farm, including the harvest of suitable habitat, which could result in some spotted owls having insufficient habitat to survive and reproduce. Such actions may result in the 'taking' of a listed species, as defined under section 9 of the Act. Issuance of a section 10 incidental take permit is conditional upon implementation of measures to mitigate and minimize the effects of such take on the species.

Weyerhaeuser proposes to develop and maintain the landscape of the Tree Farm in a condition conducive to the dispersal of spotted owls by managing the size and spacing of forested stands. By the year 2014, 40 percent of the forested area of the Tree Farm would be in stand conditions

suitable for dispersal by owls. Gaps between such stands would be minimized. This condition would be maintained during the term of the HCP which is due to expire in 2045 but which may be extended by 10-year increments until 2075 as necessary to meet the conservation objectives for the spotted owl. Some existing nesting, roosting and foraging habitat would be retained around 4 owl sites centered on Weyerhaeuser land and 4 owl sites on or near adjacent Bureau of Land Management (BLM) land. This habitat amounts to 1,970 acres and would be maintained for 20 years. Seventy acres of the best nesting, roosting, and foraging (NRF) habitat will also be retained around each occupied site centered on the Tree Farm. Weyerhaeuser will also avoid harvest activities within 0.25 miles of any active nest on or near the Tree Farm between March 1 and September 30 each year.

Weyerhaeuser will avoid the incidental take of Marbled Murrelets by protecting stands determined to be occupied by murrelets. Weyerhaeuser proposes to determine occupancy by conducting a two-year survey using the most current protocol developed by the Pacific Seabird Group. Weyerhaeuser has defined potentially suitable Marbled Murrelet nesting habitat as all forest stand greater than 100 years old containing one or more trees with a diameter equal to or greater than 32 inches at breast height (dbh).

6. Determination of Effects:

A. Effects of action on species and critical habitats and mitigation measures to be implemented:

Northern Bald Eagle-listed as threatened federally and by the State of Oregon. Nesting activity has been documented in and adjacent to the action area. Preferred nesting habitat includes mature and old-growth trees in proximity to a food source (rivers or lakes with abundant fish populations). Roosting habitat is mature forests up to 10 miles from available food sources. **The Service has determined that the proposed action is not likely to adversely affect the species** as all current and future active nests will receive protection in compliance with State and Federal standards. Surveys are conducted each year to monitor nesting status. In addition, 51 acres of mature and old-growth forest with potential nesting value have been put in reserve status.

Peregrine Falcon-listed both federally and by the State of Oregon as endangered. The peregrine falcon is a cliff dwelling species that preys primarily upon birds. There is documented occurrence of this species in the vicinity of the action area. Preferred nest sites are sheer cliffs 150 feet or more in height with a small cave or overhanging ledge. A broad range of cover types serves as suitable habitat around nest sites. **The Service has determined that the proposed action is not likely to adversely effect Peregrine Falcons** as the availability of nesting and foraging habitat is not likely to be reduced.

Columbian White-Tailed Deer-federally listed as an endangered species. This species has been sighted in the vicinity of the Millicoma Tree Farm but its range is not likely to actually extend into the area of the proposed action. **The Service has determined that the proposed action is not likely to affect the species.**

7. Effect determination and response requested:

A. Listed species/critical habitat:

no effect

(species: Columbian White-Tailed Deer) X Concurrence

not likely to adversely affect

(species: Peregrine Falcon, Northern Bald Eagle) X Concurrence

8. Reviewing Officials Evaluation:

INITIATING OFFICER

Carol Schuber DATE 2/8/95

CONCUR X (Mark One) DO NOT CONCUR _____

Actg FIELD SUPERVISOR

Carol Schuber DATE 2/8/95

CONCUR X (Mark One) DO NOT CONCUR _____

ARD NPCE

Carl Smith DATE 2/8/95

CONCUR X (Mark One) DO NOT CONCUR _____