

**SLINKY TIMBER SALE
BIOLOGICAL EVALUATION**

**FOR THOSE WILDLIFE SPECIES LISTED AS THREATENED, ENDANGERED, OR PROPOSED UNDER
SECTION 4 OF THE ENDANGERED SPECIES ACT & SENSITIVE SPECIES UNDER THE REGIONAL
FORESTER'S LIST**

DATE: May 08, 2003

**Clackamas River Ranger District
Mt. Hood National Forest**

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EXECUTIVE SUMMARY

The 4-step Biological Evaluation process for those TES animal species that are documented or suspected to occur within the Mt Hood National Forest and considered in the Slinky analysis is summarized.

Species	Step #1 Pre-field	Step #2 Field Recon.	Step #3 Risk Assessment (habitat only) by Alternative				Step #4 Biological Investigation or Consultation	Impact for Action Alternatives
			A	B	C	D		
	Suitable habitat present?	Potential of Species Presence						
Northern Spotted Owl (threatened)	<i>Yes</i>	<i>High</i>	<i>L</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>Consultation Complete</i>	<i>LAA</i>
Northern Bald Eagle (threatened)	<i>Yes</i>	<i>Low</i>	<i>N</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>Consultation Complete</i>	<i>NLAA</i>
Canada Lynx (threatened)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NE</i>
Oregon Slender Salamander (sensitive)	<i>Yes</i>	<i>Mod-high</i>	<i>L</i>	<i>H</i>	<i>H</i>	<i>H</i>	<i>None Required</i>	<i>MII-NLFL</i>
Larch Mountain Salamander (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Cope's Giant Salamander (sensitive)	<i>Yes</i>	<i>Moderate</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Cascade Torrent Salamander (sensitive)	<i>Yes</i>	<i>Low</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Oregon Spotted Frog (sensitive)	<i>Yes</i>	<i>Low</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Painted Turtle (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Northwestern Pond Turtle (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Horned Grebe (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Bufflehead (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Harlequin Duck (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
American Peregrine Falcon (sensitive)	<i>No</i>	<i>Flyovers only</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Gray Flycatcher (sensitive)	<i>No</i>	<i>No</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
Baird's Shrew (sensitive)	<i>Yes</i>	<i>Low-High</i>	<i>L</i>	<i>H</i>	<i>H</i>	<i>M</i>	<i>None Required</i>	<i>MII-NLFL</i>
Pacific Fringe-tailed Bat (sensitive)	<i>Yes</i>	<i>Dispersal Only</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>None Required</i>	<i>NI</i>
California Wolverine (sensitive)	<i>Yes</i>	<i>Low-Moderate</i>	<i>N</i>	<i>L</i>	<i>L</i>	<i>L</i>	<i>None Required</i>	<i>MII-NLFL</i>
Pacific Fisher (sensitive)	<i>Yes</i>	<i>Moderate</i>	<i>L</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>None Required</i>	<i>MII-NLFL</i>

RISK ASSESSMENT:

“N” denotes No Risk to species or habitat

“L” denotes a Low Risk to species or habitat

“M” denotes a Moderate Risk to species or habitat

“H” denotes a High Risk to species or habitat

EFFECTS / IMPACT CALL:

“NI” denotes a No Impact

“MII-NLFL” denotes a May Impact Individuals but not likely to cause a trend to federal listing or loss of viability

“NE” denotes a No Effect

“NLAA” denotes a May Affect, Not Likely to Adversely Affect

“LAA” denotes a May Affect, Likely to Adversely Affect

BIOLOGICAL EVALUATION PROCESS

A. Purpose

Forest management activities that may alter the habitat for Threatened, Endangered, Sensitive or Proposed (T,E,S&P) species are required to undergo review in a Biological Evaluation (FSM 2671.44 and FSM 2670.32) as part of the National Environmental Policy Act process. The Biological Evaluation process (FSM 2672.43) is intended to document whether proposed management actions will not jeopardize the continued existence or cause adverse modification of habitat for listed or proposed species, or (for sensitive species) lead towards the likelihood of Federal listing.

B. Process

The Biological Evaluation is a 4-step process as follows:

Step 1) **Pre-field review** to determine if habitat for the species is present

Step 2) **Field reconnaissance** to determine if the species is present

Step 3) **Risk assessment** to species by alternative. Risk assessment is based on evaluation of impacts to habitat (even if the habitat is not known to be occupied), individuals (risk from disturbance, actual physical harm to an individual or direct loss of habitat in known occupied territories), and population (based on available regional information).

Step 4) A **biological investigation** if the risk assessment reveals a trend towards federal listing (sensitive species only) or **consultation** with the USFWS if a may affect call is made for T, E, or P species under the preferred alternative.

Each TESP species associated with the proposed project area is evaluated based on these steps. Evaluation of impacts on a given species may be complete at the end of Step #1 (e.g. if no habitat is present, the risk is automatically determined to be none) or may extend through Step #4. If field reconnaissance is not undertaken and habitat is available, species occurrence is assumed.

The USFWS may modify a project based upon consultation. In addition, the Forest Service provides for modification to any timber sale based on a contract provision that is included in all timber sale contracts. This provision provides for the protection of any threatened or endangered species and their habitat, located after a sale has been sold.

The following chart describes the differing levels of field reconnaissance and presence potentials required under Step #2:

Level of Survey	Intensity of Survey	Survey Description
<i>Level A:</i> Aerial photo interpretation and review of existing site records. Determination of the potential for a listed species to occur within the proposed project area. No field surveys are done.	Low Potential	Less than 40% potential for a listed species inhabiting the proposed project area.
	Moderate Potential	40-60% potential for a listed species inhabiting the proposed project area.
	High Potential	Greater than 60% potential for a listed species inhabiting the proposed project area.
Level B: Single-entry survey of probable habitats. Areas are identified by photos and existing field knowledge. Field surveys are conducted during the season most favorable for species identification.	Low Intensity	Selected habitat surveys (approx. 5-10% of area) are conducted with a single entry for listed species inhabiting the proposed project area.
	Moderate Intensity	Selected habitat surveys (approx. 10-40% of area) are conducted with a single entry for listed species inhabiting the proposed project area.
	High Intensity	Selected habitat surveys (approx. 40-60% of area) are conducted with a single entry for listed species inhabiting the proposed project area.
Level C: Multiple-entry surveys are conducted for listed species likely to inhabit the project area.	Low Intensity	Selected habitat surveys (approx. 5-10% of the area) are conducted with repeated entries for listed species inhabiting the proposed project area.
	Moderate Intensity	Selected habitat surveys (approx. 10-60% of the area) are conducted with repeated entries for listed species inhabiting the proposed project area.
	High Intensity	Selected habitat surveys (approx. 60-80% of area) are conducted with repeated entries for listed species inhabiting the proposed project area.

PROJECT BACKGROUND AND ALTERNATIVE SUMMARY

This timber sale is located in the Oak Grove Fork watershed and the Upper Clackamas watershed and is within the Clackamas River Ranger District of the Mt. Hood National Forest. The action proposed by the Forest Service is to harvest trees from approximately 184 acres using the reserve shelterwood regeneration method. Approximately 10% of the harvest area would be retained in patches and scattered large trees would be retained at the rate of 10 to 12 per acre. The scattered leave trees would primarily be selected from the largest component of trees present in the unit except where smaller trees are retained for spacing and species diversity. Snags and large logs would also be retained. The harvesting operation would generally remove most of the smaller trees as well as some of the larger ones.

Several temporary roads would be constructed to access landings totaling approximately 0.4 miles. Of this distance, 650 feet would be new construction and 1400 feet would be built on existing skidtrails. These temporary roads would be obliterated and revegetated after completion of the project. Several miles of road reconstruction along haul roads would also occur.

Logging methods used would include ground-based tractor and loader skidding and skyline yarding. Fuels reduction and site preparation would be accomplished through manual and machine piling and burning of logging slash prior to planting. A mix of conifer species that are adapted to the site conditions would be used.

The following gives a brief description of the alternatives:

ALT A: Under the no-action alternative, current management plans would continue to guide management of the project area. No timber harvest would be accomplished under this proposal.

ALT B: The proposed action as described above.

ALT C: This alternative is similar to alt. B except it would not construct any new temporary roads. Portions of the proposed harvest units that are not accessed by existing roads would be harvested by helicopter or (on the flatter ground) longer skidding distances would be used to transport logs from the harvest units to the log landings on existing roads. Unit 31 and part of unit 5 would be helicopter logged for a total 40 acres. Unit 2 would be tractor logged but with longer skidding distances.

ALT. D: This alternative is the same as alternative C but instead of leaving 10-12 leave trees per acre; it would leave approximately 30 of the largest and oldest trees per acre. Stands harvested using this alternative would retain more of the older forest stand components needed for certain animal and plant species. The units would still be considered regeneration harvests and would include site preparation and planting. As with alternative C, portions of the proposed harvest units that are not accessed by existing roads would be harvested by helicopter or using logger skidding distances.

SPECIES SPECIFIC DISCUSSIONS

Northern Spotted Owl (*Strix occidentalis caurina*) (Threatened)

A. HABITAT:

Late-seral coniferous forest is the preferred nesting, roosting and foraging habitat of spotted owls in Oregon. Late-seral habitat components that are typical for spotted owls are: Multilayered canopies, closed canopies, large diameter trees, abundance of dead or defective standing trees, and abundance of dead and down woody material (Forsman, 1980 & 1982, Forsman et al., 1984, USDI, 1989).

B. PRE-FIELD REVIEW:

Habitat available within planning area

Yes. The entire timber sale consists of late-seral stands and is considered nesting/roosting/foraging (N/R/F) habitat for the spotted owl.

Potential to occur within planning area

High. This area has High potential for species occurrence.

Additional Information: Surveys for spotted owls had been conducted on the District from 1979 to approximately 1994. During that time period there had been documented sightings of adults and young produced on the District. (Historic records are on file at the District office).

C. FIELD RECONNAISSANCE:

A level A survey was conducted within the project area for this timber sale. The last time a level B survey was accomplished for this area was in the early 1990's; in which the Regional protocol per Regional Forester's direction of March, 1993 was followed (Survey routes and field notes are on file at the District).

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No action)

No short-term effects to the owl would be predicted with this alternative. Units would continue to function as spotted owl suitable nesting habitat well into the future. Considering long-term effects, these stands are currently 200-300 years old and would likely start to become increasingly more susceptible to damaging agents within the next 100 years. Future small scale disturbances such as insects, disease, and wind would create gaps and openings, eventually changing the stand structure. This would create a more open structure than what is currently present. The stands would become increasingly more open in canopy closure to the point in which they would no longer be considered nesting/roosting/foraging habitat for spotted owls (i.e. a canopy closure less than 60% is considered too open to meet nesting requirements for spotted owls).

Another scenario is that a stand replacement fire could occur in the area, also effectively removing the suitable habitat from the landscape. (i.e. the units fall within Fire Group 8, the “warm moist western hemlock and Pacific silver fir” group. This group is a stand replacement fire type, with a fire frequency of 50-300+ years (USDA 1996).

Alternative B

General Areas of Concern:

The proposed action will not occur within an LSR. Yet, units 1 and 2 occur within the Roaring River/Upper Clackamas General Area of Concern that is noted within the North Willamette LSR Assessment. The reason that this area has been delineated as such is as follows. The Clackamas River corridor provides connectivity between these two LSR's. The corridor, however, is very narrow in places and is bisected by a busy highway. The Roaring River/Upper Clackamas General Area of Concern is located within the Oak Grove watershed and has been identified as an important connectivity area to provide some habitat redundancy and to compensate for the road.

The Roaring River/Upper Clackamas General Area of Concern overlaps primarily with the Landscape Area Design (LAD) interim connectivity and aggregated design cells. The LAD is a process that was used within the Oak Grove Watershed Analysis to synthesis current management direction from the Northwest Forest Plan and the Mt. Hood National Forest Plan with the recommendations from the watershed analysis. From these results a spatial plan was made up of design cells of vegetation patterns and forest structure. The objective of the aggregated design cells is for timber production whereas the objective of the interim connectivity cells is to retain connected mature forest dispersal habitat until Late-Successional Reserves and Riparian Reserves function as planned. It is assumed that enough areas occur within the interim connectivity design cells that connectivity objectives should be met within this General Area of Concern (LSR Assessment, 1998).

Although, these units (1 & 2) are within this General Area of Concern, they occur within the aggregated design cells and not the connectivity design cells. Implementation of this project will have no impact to the interim connectivity cells. No degradation of the existing connectivity network within this General Area of Concern is expected to occur.

Historic Owl Activity Centers:

The spotted owl habitat modification biological opinion associated with this project included a term and condition that stated for activities within a ¼-mile radius of any known spotted owl activity center, a seasonal restriction would be in place between March 1 and June 30th (or later if deemed necessary by an agency wildlife biologist) for all activities associated with habitat modification that disturb nesting spotted owls and/or their habitat. If the seasonal restriction needed to be in effect it would be from March 1st to July 15th instead of to June 30th as previously stated within the biological opinion for this project. This is because the USFWS has recently altered the critical breeding period for the Willamette Province from March 1st to July 15th.

There are no units or associated activities within the Slinky timber sale that are within ¼ mile of a known spotted owl activity center. Thus no seasonal restriction is required.

Effects to NRF and Dispersal Habitat on a Local and Watershed Scale

The proposed action will have an effect on dispersal habitat as well as NRF (nesting, roosting, and foraging) habitat. All of the proposed units within the Slinky T.S are considered both NRF habitat and dispersal habitat (i.e. All NRF habitat meets the requirements of dispersal habitat, but not all dispersal habitat meets the requirements of NRF habitat).

The Slinky T.S. occurs within two watersheds, Oak Grove and Upper Clackamas, both of which contain dispersal habitat within approximately 70% of its area (11/40 - average 11 inch DBH with an average canopy cover of 40%). Although, the proposed action will remove dispersal habitat for the northern spotted owl, the change will be minimal.

NRF habitat is considered to be the limiting factor for spotted owls. Approximately 38.4% (34,257 acres) and 40.1% (40,757 acres) of the Oak Grove and Upper Clackamas Watersheds, respectively, contain NRF habitat. The proposed action will remove 184 acres of spotted owl NRF (nesting, roosting, and foraging) habitat. 156 acres of loss will occur in the Oak Grove Watershed and 28 acres will occur in the Upper Clackamas Watershed. In effect, the timber sale will reduce the percentage of NRF habitat in the Oak Grove Watershed from 38.4% (34,257 acres) to 38.2% (34,101 acres). Within the Upper Clackamas Watershed, the percentage of NRF habitat will be reduced from 40.1% (40,757 acres) to 40.1% (40,729 acres - essentially no change at the watershed scale).

Harvest units 1, 2, 15, 17, 151 and a portion of 5 and 31 occur in Critical Habitat Unit OR-10. The proposed action would remove a total of 108 acres of both dispersal and NRF habitat from this CHU. This will reduce the percentage of NRF habitat within the CHU from 44.2% (39,123 acres) to 44.0% (39,015 acres).

As is demonstrated above, the loss of suitable habitat from both a watershed and CHU scale will be relatively minor, with approximately a .2% loss in both the Oak Grove Watershed and CHU OR-10. In addition, these patches of NRF habitat are isolated late-seral patches surrounded almost entirely by relatively young plantations. In effect, the Slinky harvest units have little to no interior habitat but lots of edge habitat. The spotted owl's preferred habitat occurs in mature/late-seral stands of a more unfragmented nature (i.e. tracts of forest land with more interior habitat and less edge).

However, it is not unknown for spotted owls to nest in fragmented pieces of suitable habitat. Especially considering the current condition of spotted owl habitat on a regional scale and the loss of habitat and increase in fragmentation that has occurred in its habitat within the last half century. This has resulted in the owl being found more often in fragmented habitat even though that is not considered its preferred habitat.

Although there are no known spotted owl nests within the Slinky timber sale units, the area is considered suitable habitat for owls. The removal of this habitat from the landscape could cause detrimental effects to owl(s) currently residing in the unit(s) and would remove habitat from the landscape that has the potential to be occupied by owls. Therefore, in the context of the local and watershed scale, the proposed action is determined to have an adverse effect on the spotted owl and its habitat.

Effects to spotted owl on a province scale (Willamette Province)

The USFWS issued an opinion on the effects of the Slinky timber sale as well as many other projects within the document titled "Willamette Province Fiscal Year 1999 Habitat Modification Biological Opinion for Listed Species." The conclusion they reached is the following: "After reviewing the current status of the spotted owl, the environmental baseline for the action area, the effects of the proposed actions and the cumulative effects, it is the Service's biological opinion that the FY 1999 Habitat Modification Projects in the Willamette Province are not likely to jeopardize the continued existence of the spotted owl or result in the destruction or adverse modification of spotted owl critical habitat (USDI, 1998).

Effects to spotted owl on the entire range of the species (Washington, Oregon, and California)

The Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl (USDA FS et. al. 1994) established a system of land allocations and a rate of timber harvest (probable sale quantity) that is considered to be consistent with maintaining viability for the northern spotted owl across its range (USDA FS et. al. 1994). The Slinky timber sale meets all the Standards and Guidelines set forth within this decision document. It was stated on page 31 of this document that implementation of the Record of Decision would adequately provide for the continued viability of the northern spotted owl on Federal Lands.

Cumulative Effects

The current condition of the habitat for spotted owls within the two watersheds takes into consideration recently harvested or soon to be harvested timber sales that will remove or have removed suitable habitat from the area. These timber sales include the following: Batwings (138 acres), Bars (50 acres), Barstool (21 acres), Borg (58 acres), Imp (102 acres), lighting flats (80 acres), Solo (210 acres), Bazooka (263 acres), Bear (101 acres), Cub (85 acres), Jane (87 acres), and Tarzan (160 acres). Combined these timber sales have removed 1,355 acres of suitable habitat from the

landscape. In addition, timber harvest prior to sales mentioned above in the past several decades have removed additional thousands of acres of suitable habitat from the landscape.

The landscape pattern of vegetation has also been affected by past and recent timber harvest activities and fire suppression, thus substantially impacting the habitat for spotted owls. Some ecologically important features of landscape pattern are: amount of edge habitat, degree of fragmentation of late-successional forest, and amount of interior forest. As fragmentation of a landscape pattern increases, the amount of interior forest habitat decreases and the amount of edge habitat increases. As fragmentation increases, the amount of interior forest habitat decreases, impacting organisms that prefer large patches of interior habitat, such as the spotted owl (USDA 1996). Mostly because of past management, the Oak Grove and Upper Clackamas watersheds are very fragmented watersheds within a highly fragmented subbasin (USDA 1996, USDA 1995).

A combination of the loss of suitable habitat and increase in fragmentation has substantially reduced the amount of suitable habitat for spotted owls currently present within these watersheds.

The slinky timber sale adds to the effects of the above by removing an additional 184 acres of suitable habitat. However, the stands removed are small, isolated pockets of mature timber that are already part of the fragmented landscape. Thus the current proposal will not further add to the fragmentation of later-seral stands within the watersheds. Currently, there are no foreseeable future actions other than the timber sales previously mentioned on Forest Service lands within the watersheds that are predicted to impact spotted owls or their habitat.

Alternative C

Effects same as in alternative B.

Alternative D

Effects same as alternative B

E. RISK ASSESSMENT / CONFLICT DETERMINATION (all alternatives):

Risk Assessment

Risk to Habitat – High under all action alternatives. Low under the no action alternative
Risk to Individuals – High under all action alternatives. Low under the no action alternative
Risk to Population – None under all alternatives

Conflict Determination

For all action alternatives, the Slinky Timber Sale “may affect, is likely to adversely affect,” the spotted owl and its habitat.

F. MITIGATION MEASURES:

None required

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE:

The northern spotted owl is listed as threatened throughout its range under the endangered species act (55 CFR 26114) on 22 June, 1990. Any action that would result in a beneficial effect or could result in an adverse impact to the spotted owl would result in a may affect determination and would require consultation with the U.S. Fish and Wildlife Service.

Consultation with the U.S. Fish and Wildlife Service was initiated on the Slinky project in August of 1998 through the document titled “The Willamette Province Fiscal Year 1999 Habitat Modification Biological Assessment for Listed Species.” The Fish and Wildlife Service issued the Biological Opinion in September, 1999. The conclusion reached in this Biological Opinion for the Slinky project as well as all others included in the document is as follows: “After reviewing the current status of the spotted owl, the environmental baseline for the action area, the effects of the proposed actions and the cumulative effects, it is the Service’s biological opinion that the FY 1999 Habitat Modification Projects in the Willamette Province are not likely to jeopardize the continued existence of the spotted owl or result in the destruction or adverse modification of spotted owl critical habitat (USDI, 1998).

Northern Bald Eagle
(Haliaeetus leucocephalus)
(Threatened)

A. HABITAT

The bald eagle is a permanent resident in Oregon. Their nests are usually located in multi-storied stands with late-seral components, and are near water bodies that support an adequate food supply (USFWS 1986). Nests, which usually consist of a bulky platform of sticks, are usually located in the super-canopy of trees, or even on a cliff (National Geographic Society 1983, Peterson 1961). Nest sites are usually within ¼ mile of water in the Cascades (PBERP 1986).

Adequate forage sources are possibly the most critical component of bald eagle breeding and wintering habitat. Fish, waterfowl, rabbits, and various types of carrion comprise the most common food sources for eagles in the Pacific Recovery Plan area. Wintering bald eagles perch on a variety of substrates, proximity to a food source being the most important factor influencing perch selection. Eagles tend to use the highest perch sites available that provides a good view of the surrounding area (USFWS 1986). Communal roosts area invariably near a rich food source and in forest stands that are multi-storied and have at least a remnant late-seral component (USFWS 1986).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes, but marginal. Likely used only for very occasional foraging and travel habitat.

Potential to occur within planning area

Low.

Additional Notes: Birds are observed occasionally on the District, especially in late summer through late winter. Due to low numbers and sporadic use, no communal roost areas are known for the District. There has been consistent use by adults in two areas of the Clackamas River Ranger District.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area. An incidental sighting in the 1990's include on adult bald eagle in a stand to the southwest of the area.

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No Action)

No effect to the bald eagle would occur with implementation of this alternative. The planning area would continue to provide poor quality habitat for the species.

Alternative B

Effects to Habitat

The Slinky timber sale units are comprised of trees that could conceivably serve as nesting trees for bald eagles, though the potential is quite low for two reasons: 1) Bald eagles usually nest within ¼ mile of a water body in the Cascades (PBERP 1986). Just a little over ¾ mile is the closest a Slinky harvest unit gets to the Oak Grove Fork of the Clackamas River. All other units are at least 1 mile from either the Oak Grove Fork or the Clackamas River. 2) Most portions of this section of the Oak Grove Fork and Clackamas River represent marginal nesting and foraging habitat at best. Limiting factors include the topography and physical features of the river (a narrow strip of open water and low flows) and represent significant obstacles to successful foraging by eagles. No eagles have been known to nest along these portions of the two rivers.

It is also conceivable but unlikely that the Slinky timber sale units would be used as a roosting site due to the lack of a nearby abundant food source.

The Slinky timber sale will result in the loss of 184 acres of poor quality potential bald eagle habitat.

Effects to Individuals

It is unlikely that individuals of a bald eagle population would be affected by the proposed action. In the rare instance that a bald eagle would be present in the stand during project implementation, they would have the ability to quickly move to adjacent acceptable habitat.

Effects to Population

None expected since no effects to individuals and slight effects to habitat occurring with project implementation.

Cumulative Effects

None predicted

Alternative C

Effects same as alternative B.

Alternative D

Effects same as in alternative B.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – Low under all alternatives. None under the no action alternative.

Risk to Individuals – None under all alternatives

Risk to Population – None under all alternatives

Conflict Determination

All action alternative of the Slinky Timber Sale will have “may affect not likely to adversely effect” on the bald eagle or its habitat.

F. MITIGATION MEASURES

None.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

The northern bald eagle is listed as threatened throughout its range under the endangered species act (55 CFR 26114) on 22 June, 1990. Any action that would result in a beneficial effect or could result in an adverse impact to the bald eagle would result in a may affect determination and would require consultation with the U.S. Fish and Wildlife Service.

Consultation with the U.S. Fish and Wildlife Service was initiated on the Slinky project in August of 1998 through the document titled “The Willamette Province Fiscal Year 1999 Habitat Modification Biological Assessment for Listed Species.” The Fish and Wildlife Service issued the Biological Opinion in September 1999. The conclusion reached in this Biological Opinion for the Slinky project as well as all others included in the document is that the proposed projects within the Biological assessment may affect, but are not likely to adversely affect the bald eagle.

Canada Lynx
(Lynx canadensis)
(Threatened)

A. HABITAT

In the Pacific Northwest, lynx are associated with high elevation, boreal forests that typify northern latitudes (Koehler and Brittell, 1990). They are found primarily above 1220m (4000 ft.) in Washington (WDW, 1993). Although scarce in Oregon, lynx range and habitat in Oregon and Washington is unclear. High quality lynx habitat is comprised of a mosaic of early successional forests with high prey densities (especially snowshoe hare) for foraging and of late-successional forests with an accumulation of down logs used for denning, thermal and security cover (Koehler and Brittell, 1990). Intermediate successional stages are used mainly for travel and landscape connectivity but may also provide foraging opportunities.

B. PRE-FIELD REVIEW

Habitat available within planning area

No.

Potential to occur within planning area

None. In a letter dated August 2 of 2001, the Mt. Hood National Forest has made a determination, based on the best available scientific and commercial data, that the Canada lynx and its habitat are currently not present on the Forest.

C. FIELD RECONNAISSANCE

A level A survey was conducted based on a low potential for species occurrence. Forest-wide winter tracking surveys have been conducted during the winters of 1994-1995, 1995-1996, 2000-2001, and 2001-2002. No lynx were detected during these surveys.

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

No effects are expected from any of the alternatives due to lack of the species and its habitat on the forest

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

All action alternatives of the Slinky Timber Sale will have “no impact” on the lynx or its habitat.

F. MITIGATION MEASURES

None.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

None required because of the no effect determination.

Oregon Slender Salamander
(Batrachoseps wrighti)
(Sensitive)

A. HABITAT

The only amphibian endemic to Oregon, this species is found predominantly on the west slope of the Cascade Range from the Columbia River south to southern Lane County (Csuti et. al. 1997). Sites have been found in Lane, Linn, Clackamas, and Multnomah counties as well as a few sites on the eastern slopes of the Cascades in Hood River and Wasco counties (NatureServe Explorer, 2002). Sites are generally scarce, occurring in scattered and often widely separated colonies, but sometimes locally common (Stebbins 1985). It is known to occur at only a few dozen localities (Csuti et. al. 1997).

The Oregon Slender salamander is found in moist woods consisting of Douglas fir, maple, hemlock, and red cedar (Stebbins 1985). It is most common in mature Douglas-fir forests (Nussbaum et. al. 1983) and appears to be dependent on mature and late-seral stands (NatureServe Explorer, 2002). Individuals are found under rocks, wood, or bark and wood chips at the base of stumps as well as under the bark and moss of logs (Stebbins 1985). They are also found in rotting logs, in holes and crevices in the ground, and in termite burrows (NatureServe Explorer 2002). Nests that have been located were found under bark and in rotten logs (Nussbaum et. al. 1983).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes.

Potential to occur within planning area

Moderate-High.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a moderate to high potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No Action)

No short-term effects to the Oregon Slender Salamander would be predicted with this alternative. Units would continue to function as suitable habitat for the species well into the future. Considering long-term effects, these stands are currently 200-300 years old and would likely start to become increasingly more susceptible to damaging agents within the next 100 years. Future small scale disturbances such as insects, disease, and wind would create gaps and openings, eventually changing the stand structure. This would create a more open structure than what is currently present. The stands would become increasingly more open in canopy closure to the point in which they would no longer be considered suitable habitat for the Oregon Slender Salamander (i.e. a canopy closure that is very open might not provide the microclimate necessary for the species to persist, although the down wood component, a necessary component of the species' habitat, would certainly continue to exist in the units).

Another scenario is that a stand replacement fire could occur in the area, also effectively removing the suitable habitat from the landscape. (i.e. the units fall within Fire Group 8, the "warm moist western hemlock and Pacific silver fir" group. This group is a stand replacement fire type, with a fire frequency of 50-300+ years (USDA 1996).

Alternative B

Effects to Habitat

Approximately 184 acres of late-seral stands that are 200-300 years old are proposed for harvest using the reserve shelterwood regeneration method. The Oregon slender salamander prefers moist environments and tends to avoid recently clear-cut areas (Nussbaum et. al. 1983). Although this alternative will leave 10-12 trees per acre and 240 linear feet of down wood in the stand, the microclimate will likely change to the degree that will make the units unsuitable for the Oregon slender salamander. Thus, this proposed action would remove 184 acres of potential Oregon Slender salamander habitat from the area.

Effects to Individuals

Although no surveys for this species have been completed in the Slinky project area, habitat in the proposed timber sale units appears to be ideal for habitation by the Oregon Slender Salamander. For this reason, species presence is assumed in the area. Since there is no suitable habitat for this species surrounding these units for them to migrate into, the proposed timber harvest will likely extirpate any individuals that are present in the units. The loss of individuals would likely occur indirectly through the destruction of habitat but could also occur directly by the presence of man and machine in the units.

Effects to Population

Although detrimental effects could occur to individuals of the population, adverse effects are not expected to the population as a whole. The Hood River and Barlow Ranger Districts on the Mt. Hood National Forest have recently found approximately 300 individuals of this species while conducting surveys for the Larch Mountain Salamander (Dyck, pers. comm.). In addition, although the range of the species is small, there is abundant potential habitat for the species in protected lands on the Mt. Hood and Willamette National Forest as well as the Columbia Gorge National Scenic Area. Predominantly these protected lands are Wilderness areas and Late-Successional Reserves and National Scenic Area lands.

Cumulative Effects

The current condition of the habitat for the Oregon slender salamander within the two watersheds takes into consideration recently harvested or soon to be harvested timber sales that will remove or have removed suitable Oregon slender salamander habitat from the area. These timber sales include the following: Batwings (138 acres), Bars (50 acres), Barstool (21 acres), Borg (58 acres), Imp (102 acres), lighting flats (80 acres), Solo (210 acres), Bazooka (263 acres), Bear (101 acres), Cub (85 acres), Jane (87 acres), and Tarzan (160 acres). Combined these timber sales have removed 1,355 acres of potentially suitable habitat for the Oregon slender salamander from the landscape. In addition, timber harvest prior to sales mentioned above in the past several decades have removed additional thousands of acres of suitable habitat from the landscape.

This loss of mature moist forested stands described above has substantially reduced the amount of suitable habitat for the Oregon slender salamander currently present within these watersheds.

The slinky timber sale adds to the effects of the above by removing an additional 184 acres of suitable habitat. Currently, there are no foreseeable future actions other than the timber sales previously mentioned on Forest Service lands within the watersheds that are predicted to impact the Oregon slender salamander or its habitat.

Alternative C

Effects same as alternative B

Alternative D

Effects same as alternative B

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – High under all action alternatives. Low under the no action alternative

Risk to Individuals – Moderate-High under all action alternatives. Low under the no action alternative.

Risk to Population – None under all alternatives

Conflict Determination

All action alternatives of the Slinky Timber Sale will have a “may impact individuals but not likely to cause a trend to federal listing or loss of viability” to the Oregon slender salamander.

F. MITIGATION MEASURES

None.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Larch Mountain Salamander *(Plethodon larseli)* (Sensitive)

A. HABITAT

Habitat is mainly restricted to the talus slopes of the Columbia River Gorge, although the species is now known to occur at several locations in the Cascade Mountains of Washington (Csuti et. al 1997) It can be found near the surface under rocks during wet weather, but it retreats to considerable depths in the talus during cold and dry weather. Individuals can occur far from streams and seepages and seem to be less common in perpetually wet talus than in talus that varies from wet to dry with seasonal rainfall.

B. PRE-FIELD REVIEW

Habitat available within planning area

No.

Potential to occur within planning area

None. There have been no documented sightings recorded on the Clackamas River Ranger District at this time. The Slinky timber sale occurs outside of the identified Larch Mt. salamander distribution range.

C. FIELD RECONNAISSANCE:

A level A survey was conducted based on a low potential for species occurrence. No surveys were conducted.

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS

No effects are expected from any alternative due to the lack of habitat within the planning area.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

All action alternatives of the Slinky Timber Sale will have “no impact” on the Larch Mountain salamander or its habitat.

F. MITIGATION MEASURES

None.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Cope’s Giant Salamander (*Dicamptodon copei*) (Sensitive)

A. HABITAT

Cope’s Giant salamander prefers streams and seepages in moist coniferous forests. They limit their occurrence to waters with temperatures in the 8 to 14 degrees Celsius range. They will also inhabit cold clear mountain lakes and ponds. They occur in suitable areas from sea level up to 1,350 meters elevation. The Cope's salamander breed and rear its young within the cracks and crevices of the rocky substrates within the stream course. They sometimes leave streams on wet rainy nights but remain on wet rocks and vegetation near the stream. This salamander is most frequently found on pieces of wood in streams, under logs, bark, rocks or other objects near streams (Stebbins, 1985).

Cope's giant salamander has the potential to be negatively affected by increased sedimentation resulting from timber sale activities adjacent to or intersecting streams and water sources. Sediment deposition within the substrate could impair preferred habitat characteristics. Also, sedimentation of streams can lead to asphyxiation of embryos and larvae as well as a degradation of overwintering habitat that may result in local extinctions (Mc Allister, 1992).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes. There is a seasonal high-water table and overland water flow occurring under a moist coniferous timbered stand within the Riparian Reserve designated near unit 8.

Potential to occur within planning area

Moderate. This species’s range is predominantly west of the Cascade Range. Potential habitat for this species does exist within the Clackamas River drainage. Although the species is not known to exist in the watershed, a portion of the planning area appears to have all the habitat characteristics essential to the species.

Additional Comments: This species is difficult to identify and can be easily confused with the Pacific Giant Salamander (*Dicamptadon tenebrosus*). Although numerous sightings have been reported from streams on the Clackamas River Ranger District, none have been positively confirmed.

C. FIELD RECONNAISSANCE

A level A survey was conducted based on a medium potential for species occurrence. Field surveys have not been accomplished.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No Action)

No effects to the Cope's Giant Salamander would occur with implementation of this alternative. The seasonal high-water table and overland water flow within the Riparian Reserve designated near unit 8 would continue to provide potential, although low quality habitat for the species for possibly far into the future.

Alternative B

Effects to Habitat and Individuals

There are no perennial or intermittent streams occurring within or directly adjacent to the Slinky timber sale units. There is only one wet area known within the planning area and that occurs within the Riparian Reserve near unit 8. There is a seasonal high-water table and overland flow that occurs within the Riparian Reserve of this unit. The wettest part occurs within the far northeast corner where there is little evidence of aquatic plants but abundant cedar is present. It appears much of this water dries up in the summertime, but a small portion within the far northeast corner might stay wet year-round. This area appears to be the beginning of the headwaters of an unnamed creek that eventually flows into Kelley Creek.

The Riparian Reserve near unit 8 is the only known area within the timber sale that has potential habitat for the Cope's Giant Salamander. This riparian reserve width of one site potential tree height, or 160 feet, was put in place around this area. This buffer should prevent any unintentional extirpation or injuring of individuals that may be present in the area during on-the-ground activities.

The potential for increased sedimentation to the water source found within the Riparian Reserve near unit 8 would be minimized because the vegetative buffer created by the riparian reserve should act as an effective barrier to any sediment being transported by surface erosion or runoff. In addition, this riparian reserve would allow soil infiltration between the areas of activity and any water source. Even if some movement occurred, the vegetated buffer strips along the water source would act as an effective barrier. And as stated above, the buffer should also prevent any unintentional extirpation or injuring of individuals that may be present near this water source during on-the-ground activities.

Cumulative Effects

None since no present effects are predicted to occur with the proposed action.

Alternative C

Effects same as alternative B. Since measures are being taken to minimize any detrimental effects to the .4 miles of temporary road building that would occur in alternative B, this alternative that includes no road building should have similar effects.

Alternative D

Effects same as alternative B. Since the areas in which harvest will occur do not provide any habitat for the Cope's Giant Salamander, leaving 30 trees per acre versus 10-12 per acre would not make a difference in the effects to the species.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have “no impact” on the Cope’s Giant salamander or its habitat.

F. MITIGATION MEASURES

The riparian reserve near unit 8 should be satisfactory for the protection of the species. No mitigation measures needed.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Cascade Torrent Salamander *(Rhyacotriton cascadae)* (Sensitive)

A. HABITAT

The range of this species is from the coastal mountains on the Olympic Peninsula in Washington south to Mendocino County, California. It also has a known population in the Cascade Mountains of southern Washington and northern Oregon, with a local disjunct population in the southern Oregon Cascades (Csuti et. al. 1997).

The torrent salamander is most abundant in rocks bathed in a constant flow of cold water, but also occurs in cool rocky streams, lakes, and seeps (Csuti et. al. 1997). Individuals from this species require microclimatic and microhabitat conditions generally found only in older forests (Natureserve Explorer 2003).

The diet of this salamander consists of aquatic and semi-aquatic invertebrates, including amphipods, springtails, fly larvae, worms, snails, and spiders. They search for prey under rocks and other objects in streams (Csuti et. al. 1997). Adults occasionally are found under surface objects a few meters from water after heavy rains, but they are the most aquatic of our metamorphosed salamanders and should be expected only in saturated stream-side talus and in streams. Experiments have shown that this species are among the most sensitive of all terrestrial northwestern salamanders to loss of body water and will die quickly in a desiccating environment (Nussbaum et. al. 1983).

The Cascade Torrent salamander has the potential to be negatively affected by increased sedimentation resulting from timber sale activities adjacent to or intersecting streams and water sources. Sediment deposition within the substrate could impair preferred habitat characteristics. Also, sedimentation of streams can lead to asphyxiation of embryos and larvae as well as a degradation of overwintering habitat that may result in local extinctions (Mc Allister, 1992).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes. There is a seasonal high water table and overland water flow occurring under a moist coniferous timbered stand within the Riparian Reserve near unit 8.

Potential to occur within planning area

Low. Although this species have been found within spring seepages, it is not there preferred habitat. In addition, most of the standing water in this unit dries up during a portion of the year. Only a very small part of the seepage potentially stays wet throughout the year.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No Action)

No effects to the Cascade torrent salamander would occur with implementation of this alternative. The seasonal high water table and overland water flow within the Riparian Reserve near unit 8 would continue to provide potential, although low quality habitat for the species for possibly far into the future.

Alternative B

Effects to Habitat and Individuals

There are no perennial or intermittent streams occurring within or directly adjacent to the timber sale units. There is only one wet area known within the planning area and that occurs within the Riparian Reserve near unit 8. There is seasonal high-water table and overland water flow that occurs within this Riparian Reserve. The wettest part occurs within the far northeast corner where there is little evidence of aquatic plants but abundant cedar is present. It appears much of this water dries up in the summertime, but a small portion within the far northeast corner might stay wet year-round. This area appears to be the beginning of the headwaters of an unnamed creek that eventually flows into Kelley Creek.

The Riparian Reserve near unit 8 is the only known area within the timber sale that has potential habitat for the Cascade Torrent Salamander. This riparian reserve width of one site potential tree height, or 160 feet, was put in place around this area. This buffer should prevent any un-intentional extirpation or injuring of individuals that may be present in the area during on-the-ground activities.

The potential for increased sedimentation to the water source found within this Riparian Reserve near unit 8 would be minimized because the vegetative buffer created by the riparian reserve should act as an effective barrier to any sediment being transported by surface erosion or runoff. This riparian reserve would allow soil infiltration between the areas of activity and any water source. Even if some movement occurred, the vegetated buffer strips along the water source would act as an effective barrier. And as stated above, the buffer should also prevent any un-intentional extirpation or injuring of individuals that may be present near this water source during on-the-ground activities.

Effects to Population

No effects are predicted to occur to populations since no impacts are predicted to individuals.

Cumulative Effects

None since no present effects are predicted to occur with the proposed action.

Alternative C

Effects same as alternative B. Since measures are being taken to minimize any detrimental effects to the .4 miles of temporary road building that would occur in alternative B, this alternative that includes no road building should have similar effects.

Alternative D

Effects same as alternative B. Since the areas in which harvest will occur do not provide any habitat for the Cascade torrent salamander, leaving 30 trees per acre versus 10-12 per acre would not make a difference in the effects to the species.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of Slinky Timber Sale will have a “no impact” on the Cascade Torrent salamander or its habitat.

F. MITIGATION MEASURES

The establishment of the riparian reserve widths as a design criteria for the Slinky Timber Sale should be satisfactory for the protection of the species. No mitigation measures needed.

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Oregon Spotted Frog (*Rana pretiosa*) (Sensitive)

A. HABITAT

The range of this species is from Northern British Columbia and coastal southern Alaska south to the Rocky Mountains of Idaho, Montana, and Utah. Populations are also present in both the interior and coastal mountains of the Pacific Northwest (Csuti et. al. 1997).

The Oregon Spotted Frog is a highly aquatic species that is rarely found far from permanent water (NatureServe Explorer 2002). This species frequents waters and associated vegetated shorelines of ponds, springs, marshes, and slow-flowing streams and appears to prefer waters with a bottom layer of dead and decaying vegetation. They are found in aquatic sites in a variety of vegetation types, from grasslands to forests (Csuti et. al. 1997). Individuals may disperse into adjacent non-aquatic areas during wet weather (NatureServe Explorer 2002).

The Oregon Spotted frog has the potential to be negatively affected by increased sedimentation resulting from timber sale activities adjacent to or intersecting streams and water sources. Sediment deposition within the substrate could impair preferred habitat characteristics. Also, sedimentation of streams can lead to asphyxiation of embryos and larvae as well as a degradation of overwintering habitat that may result in local extinctions (Mc Allister, 1992).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes. There is a seasonal high water table and overland water flow occurring under a moist coniferous timbered stand in the designated Riparian Reserve located near unit 8 of the Slinky timber sale.

Potential to occur within planning area

Low. This species is highly aquatic and needs a permanent water source to survive. Within the outer boundaries of unit 8, most of the seepage in this area dries up during a portion of the year. Only a very small part of the seepage stays wet throughout the year.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No Action)

No effects to the Oregon spotted frog would occur with implementation of this alternative. The seasonal high water table and overland water flow within the Riparian Reserve near unit 8 would continue to provide potential, although low quality habitat for the species for possibly far into the future.

Alternative B

Effects to Habitat and Individuals

There are no perennial or intermittent streams occurring within or directly adjacent to the timber sale units. There is only one wet area known within the planning area and that occurs within the designated Riparian Reserve near unit 8. There is a seasonal high water table and overland water flow occurring within this unit. The wettest part occurs within the far northeast corner where there is little evidence of aquatic plants but abundant cedar is present. It appears much of this water dries up in the summertime, but a small portion within the far northeast corner might stay wet year-round. This area appears to be the beginning of the headwaters of an unnamed creek that eventually flows into Kelley Creek.

The designated Riparian Reserve near unit 8 is the only known area within the timber sale that has potential habitat for the Oregon Spotted frog. This riparian reserve width of one site potential tree height, or 160 feet, was put in place around this area during the length of the timber sale and post-sale activities, including construction of the temporary roads. This buffer should prevent any un-intentional extirpation or injuring of individuals that may be present in the area during on-the-ground activities.

The potential for increased sedimentation to the water source found within the Riparian Reserve near unit 8 would be minimized because the vegetative buffer created by the riparian reserve should act as an effective barrier to any sediment being transported by surface erosion or runoff. This riparian reserve would allow soil infiltration between the areas of activity and any water source. Even if some movement occurred, the vegetated buffer strips along the water source would act as an effective barrier. And as stated above, the buffer should also prevent any un-intentional extirpation or injuring of individuals that may be present near this water source during on-the-ground activities.

Effects to Population

No effects are predicted to occur to populations since no impacts are predicted to individuals.

Cumulative Effects

None since no present effects are predicted to occur with the proposed action.

Alternative C

Effects same as alternative B. Since measures are being taken to minimize any detrimental effects to the .4 miles of temporary road building that would occur in alternative B, this alternative that includes no road building should have similar effects.

Alternative D

Effects same as alternative B. Since the areas in which harvest will occur do not provide any habitat for the Oregon spotted frog, leaving 30 trees per acre versus 10-12 per acre would not make a difference in the effects to the species.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact on the Oregon Spotted Frog and its habitat.”

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Painted Turtle
(Chrysemys picta)
(Sensitive)
&
Western Pond Turtle
Clemmys marmorata marmorata
(Sensitive)

A. HABITAT

Painted Turtle: An aquatic turtle that frequents ponds, marshes, small lakes, ditches and streams where the water is quiet or sluggish and the bottom is sandy or muddy, and there is considerable vegetation. Mudbanks, logs, partially submerged branches and rocks are preferred for sunning (Nussbaum 1983, Stebbins 1985).

Western Pond Turtle: The western pond turtle inhabits ponds, marshes, and the slow-moving portions of creeks and rivers that have rocky or muddy bottoms. Partially submerged logs, vegetation mats, mudbanks, rocks and tree branches provide areas for sunning. Western pond turtles have been found to occur from sea level up to around 2000 feet. During the winter months these turtles usually hibernate in bottom mud (Nussbaum 1983, Stebbins 1985, USDA FS PNW Region 1985).

B. PRE-FIELD REVIEW

Habitat available within planning area

None

Potential to occur within planning area

None

C. FIELD RECONNAISSANCE

None required due to lack of habitat

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

No effects anticipated for any alternative due to lack of habitat in planning area.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact on the Painted turtle or the Northwestern Pond Turtle and their habitat.”

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Horned Grebe
(*Podiceps auritus*)
(Sensitive)
&
Bufflehead
(*Bucephala albeola*)
(Sensitive)
&
Harlequin Duck
(*Histrionicus histrionicus*)
(Sensitive)

A. HABITAT

Horned Grebe: The Horned Grebe breeds throughout most of Alaska and Canada and, locally, just south of the Canadian border. It also breeds in northern Eurasia. Its habitat consists of areas with much open water surrounded with emergent vegetation (Csuti et. al. 1997).

Bufflehead: The Bufflehead is a northern species that breeds from Alaska across Canada, and south to Oregon, northern California, and Wisconsin. This species nests near mountain lakes surrounded by open woodlands containing snags. In many areas, the preferred nest trees are aspen, but it will also nest in ponderosa pine or Douglas-fir (Csuti et. al. 1997).

Harlequin Duck: This species occurs from Iceland and Greenland west to eastern Canada. It is absent from the central part of North America, and the “western” population ranges from eastern Siberia east through Alaska and south to the Sierra Nevada of California and the mountains of southwestern Colorado. In the Northwestern United States, the Harlequin duck breeds along relatively low-gradient, slower-flowing reaches of mountain streams in forested areas (Csuti et. al. 1997).

B. PRE-FIELD REVIEW

Habitat available within planning area

None

Potential to occur within planning area

None

C. FIELD RECONNAISSANCE

None required due to lack of habitat

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

No effects anticipated for any alternative due to lack of habitat in planning area.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact on the Horned Grebe, Bufflehead or Harlequin duck and their habitat.”

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

American Peregrine Falcon
(Falco peregrinus anatum)
(Sensitive)

A. HABITAT

The most critical habitat components for Peregrine Falcons are suitable nest sites, usually cliffs, overlooking fairly open areas with an ample food supply. They nest along seacoasts, near marshes, and even in cities, but are not well suited to life in interior forests. They usually nest or roost near a marsh, lake, or coast where waterbirds are plentiful (Csuti et. al. 1997).

B. PRE-FIELD REVIEW

Habitat available within planning area

None. The nearest potential site is 7-8 miles away at Mt. Mitchell, which has a medium potential to support a peregrine eyrie (Avian Field Services 1994).

Potential to occur within planning area

Only through flyovers.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

No effects due to lack of habitat within planning area.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact on the American Peregrine Falcon and its habitat.”

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Gray Flycatcher
(Empidonax wrightii)
(Sensitive)

A. HABITAT

The Gray Flycatcher is a bird of the arid interior West. It prefers relatively treeless areas with tall sagebrush, bitterbrush, or mountain mahogany communities. It will also occupy these communities within open forests of ponderosa or lodgepole pine. It also lives in juniper woodland with a sagebrush understory (Csuti et. al. 1997).

B. PRE-FIELD REVIEW

Habitat available within planning area

None.

Potential to occur within planning area

None.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

No effects due to lack of habitat within planning area.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact on the Gray Flycatcher and its habitat.”

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Baird's Shrew
(*Sorex bairdii permiliensis*)
(Sensitive)

A. HABITAT

This species is endemic to Oregon. Its range is from northwestern Oregon from the Pacific coast east to the Cascades, and from the Columbia River south to Benton and Lane Counties (NatureServe Explorer 2002).

Little published information exists that assigns with certainty habitat characteristics to the Baird's Shrew. In 1986 two specimens were collected in an open Douglas-fir forested area with numerous rotting logs in Polk County (Verts and Carraway 1998). NatureServe Explorer 2002, describes their habitat as moist coniferous forests with a shrubby understory. This source also comments that individuals forage near logs and rocks.

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes. As stated above little is known about this species. The location and habitat characteristics of the Slinky Timber Sale does seem to fit with what is known about the species.

Potential to occur within planning area

Low-High. A wide-range is given here since it is hard to predict the potential for a species to occur in a particular area when so little is known about the species.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low-high potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No Action)

No short-term effects to the Baird's shrew would be predicted with this alternative. Units would continue to function as suitable habitat for the species well into the future. Considering long-term effects, these stands are currently 200-300 years old and would likely start to become increasingly more susceptible to damaging agents within the next 100 years. Future small scale disturbances such as insects, disease, and wind would create gaps and openings, eventually changing the stand structure. This would create a more open structure than what is currently present. The stands would become increasingly more open in canopy closure. However, since the stands would likely have abundant down wood and open forested stands appear to be acceptable habitat for this species, it is unknown whether the stand could collapse to the point in which it would no longer function as habitat for the species.

Another scenario is that a stand replacement fire could occur in the area, effectively removing the suitable habitat from the landscape. (i.e. the units fall within Fire Group 8, the "warm moist western hemlock and Pacific silver fir" group. This group is a stand replacement fire type, with a fire frequency of 50-300+ years (USDA 1996).

Alternative B

Effects to Habitat

Approximately 184 acres of moist, coniferous, late-seral stands that are 200-300 years old are proposed for harvest using the reserve shelterwood regeneration method. As stated above, this species prefers moist coniferous environments. Although this alternative will leave 10-12 trees per acre and 240 linear feet of down wood in the stand, the microclimate and habitat components of the units will likely change to the degree that could make the units unsuitable for the Baird's Shrew. Thus, this proposed action would remove 184 acres of potential Baird's shrew habitat from the area.

Effects to Individuals

Although no surveys for this species have been completed in the Slinky project area, there appears to be potential habitat for the Baird's shrew in the proposed timber sale. For this reason, species presence is assumed in the area. It is unknown whether there is suitable habitat for this species surrounding these units for them to migrate into. Although the units surrounding the Slinky timber sale are considered relatively moist coniferous stands, they are young in age and are somewhat lacking in down woody debris.

The proposed timber harvest and post-sale activities have the potential to extirpate any individuals from this species that are present in the units. The loss of individuals would likely occur indirectly through the destruction of habitat but could also occur directly by the presence of man and machine in the units.

Effects to Population

Although detrimental effects could occur to individuals of the population, adverse effects are not expected to the population as a whole. Although the range of the species is small, there is abundant potential habitat for the species in protected lands on the Mt. Hood and Willamette National Forest as well as the Columbia Gorge National Scenic Area. Predominantly these protected lands are Wilderness areas, Late-Successional Reserves and National Scenic Area lands.

Cumulative Effects

The current condition of the habitat for the Baird's shrew within the two watersheds takes into consideration recently harvested or soon to be harvested timber sales that will remove or have removed potentially suitable Baird's shrew habitat from the area. These timber sales include the following: Batwings (138 acres), Bars (50 acres), Barstool (21 acres), Borg (58 acres), Imp (102 acres), lighting flats (80 acres), Solo (210 acres), Bazooka (263 acres), Bear (101 acres), Cub (85 acres), Jane (87 acres), and Tarzan (160 acres). Combined these timber sales have removed 1,355 acres of potentially suitable habitat for the Baird's shrew from the landscape. In addition, timber harvest prior to sales mentioned above in the past several decades have removed additional thousands of acres of suitable habitat from the landscape.

This loss of mature moist forested stands described above has substantially reduced the amount of suitable habitat for the Baird's shrew currently present within these watersheds.

The slinky timber sale adds to the effects of the above by removing an additional 184 acres of suitable habitat. Currently, there are no foreseeable future actions on Forest Service lands other than the timber sales listed above within the watersheds that are predicted to impact the Baird's shrew or its habitat.

Alternative C

Effects same as alternative B

Alternative D

Effects same as alternative B except for the following. Leaving 30 trees per acre versus 10-12 per acre might maintain the suitability of the units for the Baird's shrew. Since the species has been found in open forested stands, 30 trees per acre in the overstory and 240 linear feet of down wood per acre left on the forest floor might maintain enough of the habitat characteristics necessary for the Baird's shrew to persist in the units.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – High under alternatives B & C. Moderate under alternative D. Low under the no action alternative.

Risk to Individuals – Moderate-High under alternative B & C. Low-Moderate under alternative D. Low under the no action alternative.

Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “may impact individuals but not likely to cause a trend to federal listing or loss of viability” to the Baird’s shrew.

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Pacific Fringe-tailed Bat (*Myotis thysanodes vespertinus*) (Sensitive)

A. HABITAT

Little to nothing is known about this subspecies of the Fringed Myotis (*Myotis thysanodes*). There appears to be only one source of information for the Pacific Fringe-tailed bat and it is located in Manning and Jones 1988. The distribution of this species is in California, Oregon, and Washington. No habitat data could be found on the Pacific Fringe-tailed bat so habitat information and the following analysis are based on what is known for the Fringed Myotis.

Although the Fringed Myotis is found in a wide variety of habitats throughout its range, it seems to prefer forested or riparian areas. Most Oregon records are west of the Cascade Mountains (Csuti et. al. 1997). Its nursery colonies and roost sites are established in caves, mines, and buildings (Verts and Carraway 1998). The species is thought to forage by picking up food items from shrubs or the ground. It consumes beetles, moths, harvestmen, crickets, crane flies, and spiders (Csuti et. al. 1997).

B. PRE-FIELD REVIEW

Habitat available within planning area

No breeding or roosting sites available in planning area. Foraging usually occurs near these sites so it is likely no foraging habitat either.

Potential to occur within planning area

Low. Species would only occur in area during dispersal.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

No effects in any alternative due to lack of habitat. In the unlikely event that individuals were dispersing through the area, they would be likely not be impacted by the project activities.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – None under all alternatives
Risk to Individuals – None under all alternatives
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “no impact” to the Pacific Fringe-tailed bat or its habitat.

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Wolverine (*Gulo lyscus*) (Sensitive)

A. HABITAT

Populations in the Cascade Mountains are small and scattered. Wolverines are usually found in high temperate coniferous forests, from mid-elevation (around 4000 feet) to moderately high elevation (above timberline), depending on the season. Common tree species are subalpine fir and lodgepole pine. They prefer to feed along rivers and streams and in wet meadows. The den is usually in a rock crevice, cave, or beneath a talus slope. Territories may encompass 10 to 80 square miles. Wolverines are believed to prefer areas of minimal people presence and high levels of solitude and seclusion (Burt and Grossenheider, 1976; Ingles, 1965; USDA Forest Service, 1985). They are usually associated with wilderness, chiefly because they are so vulnerable to the activities of humans (Butts, 1992).

B. PRE-FIELD REVIEW

Habitat available within the planning area:

Yes. Elevation within the planning area ranges from approximately 3200 to just over 4000 feet. About 5 air miles north of the planning area in the Mt. Mitchell / High Rock vicinities lies some of the better potential wolverine habitat on the district.

Potential to occur within planning area:

Low – Moderate. The wolverine is a wide-ranging species whose presence may occasionally occur within the watershed.

Additional Comments: No wolverine dens or actual presence of a wolverine population is known on the Forest. Incidental sightings are various. Wolverines have been sighted in the vicinity of Mt. Jefferson to the south and Mt. Hood to the north in the last decade. A two year-old male was killed on Highway 84 just north of the Mt. Hood National Forest in January, 1990. Also, confirmed wolverine tracks were located on the Zigzag Ranger District in May of 1990. Two sightings by knowledgeable members of the public were recorded during the winter of 1996-1997 – one on the Zigzag Ranger District and one on the Clackamas River Ranger District south of Timothy Lake.

C. FIELD RECONNAISSANCE

A level A survey was conducted based on a Low-Moderate potential for species occurrence. Recent field surveys have not been accomplished. The last time broad based surveys were conducted over the watershed was during the winter of 1993-1994 and 1994-1995. No sightings of wolverine or sign of presence.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No action)

No effects to the wolverine would be predicted with this alternative. The units would maintain their mature forested state for possibly a couple hundred years in the future and continue to function as potential travel/dispersal habitat for the species. However, the Oak Grove and Upper Clackamas watersheds in which the units exist would likely continue in their highly fragmented state with a moderate human presence, thus continuing to provide low quality habitat for the wolverine

Alternative B (Proposed Action)

Habitat Effects

This alternative removes 184 acres of cover in a highly fragmented landscape. Minor effects to wolverine habitat would result from this loss of cover in the planning area. Although wolverines appear not to be as related to stand structure as to the availability of large areas with a low human presence, cover does help to diminish potential visibility from humans and noise disturbance if a wolverine were present within the area.

No potential denning sites have been noted or are expected to occur within the planning area. Thus no effects to potential denning sites are expected to occur with project implementation.

Disturbance Effects

This area gets a moderate level of human use. There is a slight increase in the potential that a wolverine would be more visible to humans and be more likely to be disturbed by man-made noise with the loss of cover that would occur with implementation of the project. In addition, there is the slight possibility that a wolverine traveling through the area could be impacted by the disturbance associated with the implementation of this project. This includes the disturbance created by the .4 miles of new temporary road construction proposed and the time in which the roads would be open for use (roads would be obliterated and re-vegetated after project completion).

Cumulative Effects

Increased human access since the 1950's have decreased the habitat quality for wolverines in the Oak Grove and Upper Clackamas Watersheds. The increased use of these watersheds by people has limited the wolverine use within these watersheds. Past activities such as timber harvest and especially road building within the affected watersheds has reduced essential habitat characteristics associated with the wolverine.

Currently this area is providing low quality habitat for the wolverine. Twelve regeneration timber sales that are soon to be implemented or are in the process of implementation, have removed or will remove approximately 1,355 acres of forested habitat from the landscape. In addition, there are several thinning timber sales that are soon to be implemented that may for the short-term open up an additional 1,969 acres of forested habitat within these watersheds. These projects involve some temporary road construction. In the short term, road building and timber sale logging will further reduce habitat characteristics for wolverines by increasing the potential for visibility from humans as well as noise disturbance created from the activity. There is a long-term trend of less logging activity and less road building compared to previous decades, resulting in less disturbance and increased cover.

However, in the recent past there has been effort to close or obliterate many miles of roads within the Oak Grove and Upper Clackamas watersheds as well as throughout the Forest. Specifically, a foreseeable future action is the closure of 19 miles of roads within the Oak Grove watershed. The closure of these roads and the potential reduction in human access could begin to contribute to the accessibility of these areas to the wolverine.

Alternative C

Effects same as in alternative B except for the following. Since there will be no new road building in this alternative, there will be no potential disturbance to wolverines created by new road construction or by the use of the new roads. However, the reduction of this type of disturbance will likely be offset by the disturbance created by use of a helicopter for logging that would be needed in lieu of the new roads.

Alternative D

Effects same as in alternative C. Leaving 30 trees per acre versus 10-12 per acre should not make a difference in terms of habitat or disturbance effects to the wolverine.

E. RISK ASSESSMENT / CONFLICT DETERMINATION:

Risk Assessment

Risk to Habitat – Low under all action alternatives. None under the no action alternative
Risk to Individuals – Low under all action alternatives. None under the no action alternative
Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale “may impact individuals but are not likely to cause a trend to federal listing or loss of viability.

F. MITIGATION MEASURES:

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE:

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

Fisher (*Martes pennanti*) (Sensitive)

Note: The species analyzed here is the Fisher (*Martes pennanti*) and not the Pacific fisher (*Martes Pennanti pacifica*). It is assumed that the species meant to be on the Region 6 Regional Forester’s Sensitive Species List is *Martes Pennanti* since the USFWS (Federal Register 1, March 1996) concluded that it is unlikely that there are any valid subspecies of *M. pennanti*.

A. HABITAT

In the northwest part of its range, the fisher occupies a “wide variety of densely forested habitats at low to mid-elevations. West of the Cascade Range, all records for the species were for sites at elevations of 100-1,800 meters (328 – 5906 feet) and were located in the Subalpine fire, western hemlock, and Sitka spruce zones (Verts and Carraway 1998). The species tends to frequent riparian corridors. They are known to occasionally use cut-over areas, but this is not their optimal habitat (Csuti et. al. 1997).

Research has shown that the habitat for fishers would be enhanced by minimizing forest fragmentation, both in the remaining late-seral and in second-growth forests; maintaining a high degree of forest-floor structural diversity in intensively managed plantations; preserving large snags and live trees with dead tops; maintaining continuous canopies in riparian zones; and protecting wetland habitat (Verts and Carraway 1998).

B. PRE-FIELD REVIEW

Habitat available within planning area

Yes. Although watershed has been fragmented through past management, there remains enough unfragmented stands of late-seral and second-growth forests that potential habitat exists for the fisher.

Potential to occur within planning area

Moderate. The fisher is a moderate- to wide-ranging species and is considered rare in Oregon (NatureServe Explorer 2002). Although there is habitat present in the project area, it is not high quality habitat.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a moderate potential for this species to inhabit the planning area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No action)

No effects to the fisher would be predicted with this alternative. The units would maintain their mature forested state for possibly a couple hundred years in the future and continue to function as potential habitat for the species. However, the Oak Grove and Upper Clackamas watersheds in which the units exist would likely continue in their highly fragmented state, thus continuing to provide low quality habitat for the fisher.

Alternative B (Proposed Action)

Habitat Effects

This alternative removes 184 acres of cover in a fragmented landscape. Some detrimental effects to potential fisher habitat would result from this loss of cover and small increase in fragmentation of second-growth forests connected by fragmented patches of late-seral stands within the planning area and surrounding landscape.

Individual / Disturbance Effects

This area gets a moderate level of human use. There is a slight increase in the potential that a fisher would be more visible to humans and be more likely to be disturbed by man-made noise with the loss of cover that would occur with implementation of the project. In addition, there is the slight possibility that a fisher traveling through the area could be impacted by the disturbance associated with the implementation of this project.

Population Effects

Although there is the slight possibility that detrimental effects could occur to individuals of the population, adverse effects are not expected to the population as a whole.

Cumulative Effects

Past activities such as timber harvest has to a substantial extent caused the fragmentation of habitat within the affected watersheds as well as the forest. This has reduced essential habitat characteristics associated with the fisher.

Currently this area is providing low quality habitat for the fisher. Twelve regeneration timber sales that are soon to be implemented or are in the process of implementation, have removed or will remove approximately 1,355 acres of forested habitat from the landscape. In addition, there are several timber sales that are soon to be implemented that open up approximately 1,969 acres of forested habitat within these watersheds. Continued timber sale logging will further reduce habitat characteristics for the fisher by further fragmenting second-growth stands within the forest. However, the extent to which fragmentation will occur in the future will be substantially reduced from what it has been historically. Current management direction within the Northwest Forest Plan is to reduce fragmentation as much as possible.

Alternative C

Effects same as in Alternative B

Alternative D

Effects same as in alternative C. Leaving 30 trees per acre versus 10-12 per acre should not make a difference in terms of habitat or disturbance effects to the fisher.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment

Risk to Habitat – Moderate under all action alternatives. Low under the no action alternative

Risk to Individuals – Low under all alternatives

Risk to Population – None under all alternatives

Conflict Determination

The action alternatives of the Slinky Timber Sale will have a “may impact individuals but not likely to cause a trend to federal listing or loss of viability” to the fisher.

F. MITIGATION MEASURES

None

G. COMMUNICATION WITH U.S. FISH AND WILDLIFE SERVICE

Species is a Regional Forester’s Sensitive Species and not a listed species, so none required.

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