CLOAK ENVIRONMENTAL ASSESSMENT
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 4, 2004

Clackamas River Ranger District
Mt. Hood National Forest

Written by: /s/ Sharon Hernandez **Date:** May 4, 2004
Sharon Hernandez, District Wildlife Biologist

EXECUTIVE SUMMARY

The 4-step Biological Evaluation process for those TESP (threatened, Endangered, Sensitive, Proposed) animal species that are documented or suspected to occur within the Mt Hood National Forest and considered in the Cloak EA (Environmental Assessment) is summarized below.

Species (T,E,S,P)	**Step #1 Pre-field**	**Step #2 Field Recon.**	**Step #3 Risk Assessment (habitat only) by Alternative**					**Step #4 Biological Investigation or Consultation**	**Preferred Alt. Effects / Impacts Call**
	Suitable habitat present?	**Potential of Species Presence**	**A**	**B**	**C**	**D**	**E**		
Northern Spotted Owl (threatened)	*Yes*	*Moderate*	*N*	*H*	*H*	*L*	*H*	*Consultation Required*	*MA-LAA*
Northern Bald Eagle (threatened)	*Yes*	*Low*	*N*	*L*	*L*	*N*	*L*	*Consultation Required*	*MA-NLAA*
Canada Lynx (threatened)	*No*								
Oregon Slender Salamander (sensitive)	*Yes*	*Low*	*N*	*M*	*M*	*N*	*M*	*None Required*	*MII-NLFL*
Larch Mountain Salamander (sensitive)	*No*							*None Required*	
Cope's Giant Salamander (sensitive)	*Yes*	*Low*	*N*	*N*	*N*	*N*	*N*	*None Required*	*NI*
Casacade Torrent Salamander (sensitive)	*Yes*	*Low*	*N*	*N*	*N*	*N*	*N*	*None Required*	*NI*
Oregon Spotted Frog (sensitive)	*Yes*	*Low*	*N*	*N*	*N*	*N*	*N*	*None Required*	*NI*
Painted Turtle (sensitive)	*No*								
Northwestern Pond Turtle (sensitive)	*No*								
Horned Grebe (sensitive)	*No*								
Bufflehead (sensitive)	*No*								
Harlequin Duck (sensitive)	*Yes*	*Low*	*N*	*N*	*N*	*N*	*N*	*None Required*	*NI*
American Peregrine Falcon (sensitive)	*No*								
Gray Flycatcher (sensitive)	*No*								
Baird's Shrew (sensitive)	*Yes*	*Low*	*N*	*M*	*M*	*N*	*M*	*None Required*	*MII-NLFL*

Pacific Fringe-tailed Bat (sensitive)	*Yes*	*Low*	*N*	*N*	*N*	*N*	*N*	*None Required*	*NI*
California Wolverine (sensitive)	*No*								
Pacific Fisher (sensitive)	*Yes*	*Low*	*N*	*L*	*L*	*N*	*L*	*None Required*	*MII-NLFL*

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 / CLOAKACT 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
"MA-NLAA" denotes a May Affect, Not Likely to Adversely Affect
"MA-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 that 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** for 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 effect 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
Level A: 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 within the Clackamas River Ranger District of the Mt. Hood National Forest. The stands occur within three watersheds: Oak Grove, Upper Clackamas and Lower Clackamas watersheds. The proposed action (Alternative B) is to thin and harvest wood fiber from approximately 1332 acres of matrix land and approximately 217 acres of riparian reserves.

On areas proposed for thinning in the matrix, the prescription would be adjusted on approximately 545 acres to increase forage for deer and elk. This would involve wider tree spacing and/or the inclusion of small forage enhancement areas of up to 3 acres on 10-15% of the acreage to get increased sunlight to the forest floor. A total of approximately 70 acres of scattered forage enhancement areas would be created. These areas would retain approximately 10-30 trees per acre: the lower range would be left in the smaller forage enhancement areas and the higher range would be left in larger forage enhancement areas. Shrub planting, grass seeding and nutritional supplementation may also occur in these areas where funding is available.

On areas proposed for thinning in the matrix, approximately 1049 acres would be fertilized aerially with 200 pounds of nitrogen per acre.

The harvesting operation would generally remove the smaller trees; the average cut tree size would be approximately 10-15 inches in diameter. Legacy trees would be retained. (Legacy trees are scattered large mature trees that have survived a stand initiating wildfire or that have been retained in a plantation).

Approximately 1.8 miles of new temporary roads are needed to access the landings. These roads would be obliterated and revegetated after completion of the project. Some existing decommissioned or overgrown roads also need to be reopened (3.4 miles) to access the landings. Other roads have berms or driveable waterbars that would also be temporary removed. Upon project completion, the roads would be returned to their original condition.

Mechanical felling equipment would be allowed in many units depending on slope. These machines have several advantages in terms of safety, minimal ground disturbance, reduced damage to leave trees, and increased yarding efficiency.

The following gives a brief description of the alternatives:

ALTERNATIVE 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.

ALTERNATIVE B: The proposed action as described above.

ALTERNATIVE C: This alternative is similar to Alternative B except it would not construct any new temporary roads, would not thin riparian reserves, would not apply fertilizer and would not create forage enhancement areas. Units that are inaccessible from existing roads would be helicopter logged (240 acres). Gaps in the stands, if any, would be less than 0.1 acre in size. This alternative would thin and harvest wood fiber from approximately 1332 acres of matrix lands. Some existing decommissioned or overgrown roads would still need to be reopened (3.2 miles) to access landings for many of the units. Other roads have berms or driveable waterbars that would also be temporarily removed. Upon project completion, the roads would be returned to their original condition.

ALTERNATIVE D: This alternative is similar to Alternative C but would also eliminate the thinning of older second-growth stands. Consequently, this alternative would thin and harvest wood fiber from approximately 1068 acres of matrix lands and would reopen 3.1 miles of closed roads.

ALTERNATIVE E: This alternative is similar to Alternative B but would have larger forage enhancement areas. This alternative would thin and harvest wood fiber from the same units as in Alternative B but would have forage enhancement areas of 3 to 5 acres in size. Leave trees would be retained at a rate of 20 to 40 trees per acre. The total quantity of forage enhancement areas would be the same as Alternative B (70 acres).

SPECIES SPECIFIC DISCUSSIONS

Northern Spotted Owl
(*Strix occidentalis caurina* – threatened)

A. HABITAT:

Old growth coniferous forest is the preferred nesting, roosting and foraging habitat of spotted owls in Oregon. Old growth 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.

B. PRE-FIELD REVIEW:

Habitat available within the project area

Yes. Five of the harvest units within this commercial thinning timber sale (86 acres) contain the habitat components that comprise nesting/roosting/foraging (N/R/F) habitat for the spotted owl. The remainder of the sale contains dispersal habitat for this species (1,463 acres).

C. FIELD RECONNAISSANCE:

A level A survey was conducted within the project area for this timber sale. There is a moderate potential for species presence. The last time level B surveys were conducted on the District was from 1979 to approximately 1994; 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). 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).

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No action)

No short-term effects to the owl would be predicted with this alternative. The units would continue to function as spotted owl suitable or dispersal habitat for the short term. Considering long-term effects, there is the potential that some of the stands that are currently dispersal habitat would obtain some late-seral characteristics and become suitable habitat for the spotted owl. It is also likely that many others, due to the density and composition of tree species within the stands, would take much longer to become suitable habitat, or might never become suitable before a catastrophic event occurred. The predicted long-term effects to the currently suitable stands would be that they would remain suitable habitat for a long time.

Alternative B (Proposed Action) & E

General Areas of Concern:

The proposed action will not occur within an LSR. However, several of the units occur within the Roaring River/Upper Clackamas General Area of Concern that is noted within the North Willamette LSR Assessment (USDA 1998). The reason that this Area of Concern has been delineated 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 and Upper Clackamas watersheds and has been identified as an important connectivity area for these two LSR's, to provide some habitat redundancy, and to compensate for the road.

The Roaring River/Upper Clackamas General Area of Concern overlaps with the following landscape area design (LAD) cells: interim connectivity, aggregated, large perforations, promote and retain late-seral, and managed late-seral. . The LAD is a process that was used within the Upper Clackamas and Oak Grove Watershed Analyses 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 and large perforations design cells are 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 (USDA 1998).

Some of the commercial thinning units occur within this General Area of Concern that overlap with the connectivity design cells. However, all of these units consist of young managed plantations that currently are not serving as mature forest connectivity habitat. Implementation of this project will have no impact to the functional 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 Programmatic Biological Opinion for Projects with the Potential to Modify the Habitats of Northern Spotted Owls and/or Bald Eagles or Modify Critical Habitat of the Northern Spotted Owl (USDI 2003) associated with this project included a term and condition that stated for activities within a ¼-mile radius of any current or historic spotted owl activity center, a seasonal restriction would be in place between March 1 and July 15th (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.

There are five units (519, 511, 470, 475, and 426) within the Cloak Environmental Assessment that are within ¼ mile of a known spotted owl activity center. All timber harvest activities, including post-sale activities associated with these units will have the seasonal restriction in place for any operation that would have the potential to disturb the northern spotted owl.

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. Five of the proposed units within the Cloak Environmental Assessment 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 remainder of the harvest units are considered dispersal-only habitat. Dispersal habitat described below is a combination of NRF and dispersal-only habitat.

The Cloak Environmental Assessment occurs within the Oak Grove, Upper and Lower Clackamas Watersheds and contains dispersal habitat (11/40 rule - average 11 inch DBH with an average canopy cover of 40%) within approximately 53% (42,452 acres), 48% (45,633 acres), and 60% (24,334 acres), respectively, of its area. The proposed action will degrade approximately 690 (.9%), 731 (.7%), and 128 (.3%) acres of dispersal habitat, respectively, from the three watersheds. Although the dispersal habitat characteristics of the units will be reduced in quality, they will still function as dispersal habitat for the owl. No loss of dispersal habitat will occur. This reduction in quality in dispersal habitat is considered minimal at the watershed scale. The resultant effects to spotted owls and the population within the watershed is predicted to be negligible.

NRF habitat is considered to be the limiting factor for spotted owls. Approximately 43% (40,382 acres) of the Upper Clackamas Watershed, 46% (18,689) of the Lower Clackamas Watershed, and 37% (29,853) of the Oak Grove Watershed contain NRF habitat. The proposed action will downgrade 32(<.1%), 0, and 54 (.1%) acres, respectively, of spotted owl NRF (nesting, roosting, and foraging) habitat within these watersheds to dispersal habitat. In effect, this timber sale will reduce the percentage of NRF habitat within these watersheds by no more than 0.1% in the Oak Grove watershed and less than .1% in the Upper Clackamas watershed - minimal change at the watershed scales.

Many of the harvest units occur within Critical Habitat Units OR-10 and OR-11. Currently the percentage of NRF and dispersal habitat in CHU OR-10 is 44% (39,015 acres) and 63% (55,938 acres), respectively. The percentage of NRF and dispersal habitat in CHU OR-11 is 42% (21,180 acres) and 50% (25,045 acres), respectively. The proposed action would downgrade to dispersal-only habitat a total of 54 acres of NRF habitat from OR-10 and 32 acres within OR-11. The proposed action would also degrade a total of 564 and 541 acres of dispersal-only habitat from OR-10 and OR-11, respectively. This loss of suitable habitat and degradation of dispersal habitat at the CHU scale would be negligible at the watershed scale.

Although there are no known spotted owl nests within the Cloak commercial thinning units, five of the units are considered suitable habitat for the spotted owl. The removal of 86 acres of this habitat from the watersheds 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 Cloak commercial thinning project as well as many other projects within the document titled "Willamette Province Fiscal Year 2003-2004 Habitat Modification Biological Opinion for Listed Species." The conclusion they reached is the following: "After reviewing the current status of the bald eagle and spotted owl, including critical habitat, the environmental baseline for both species, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the FY 2003-2004 Habitat Modification Projects in the Willamette Province are not likely to jeopardize the continued existence of the bald eagle or spotted owl and is not likely to destroy or adversely modify designated critical habitat for the spotted owl" (USDI 2003). At that time the Cloak project was listed as two separate projects called Upper Clackamas Timber Sale and Oak Grove Timber Sale.

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 Project Documents within the Range of the Northern Spotted Owl 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 1994). The Cloak Environmental Assessment 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 Oak Grove, Upper and Lower Clackamas watersheds take 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: Gum, Bazooka, Bear, Cub, Tarzan, Jane, Slinky, Imp, Lightning Flats, Bars, Barstool, Borg, Solo, Batwings and the Road 46 Reconstruction Project.

The landscape pattern of vegetation has also been affected by historic 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, Oak Grove, Upper and Lower Clackamas watersheds are very fragmented watersheds within a highly fragmented sub-basin (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 this watershed.

The Cloak commercial thinning project adds to the effects of the above by downgrading 86 acres of suitable habitat and turning them into dispersal habitat. However, these stands affected are still relatively young stands, the oldest stand age being 96 years. Although they have just begun to have the structural characteristics required for classification as suitable habitat, they are still considered mid-successional stands. Thus the current proposal will not further add to the fragmentation of late-seral stands within these watersheds. Currently, there are no foreseeable future actions other than the projects previously mentioned on Forest Service lands within the watersheds that are predicted to adversely impact spotted owl habitat. There will continue to be management activity within these watersheds that have the potential to adversely impact spotted owl individuals due to disturbance. These types of projects will continue to be consulted on with the United States Fish and Wildlife Service.

Alternative C
Effects same as in alternative B except that it would only downgrade 73 acres of suitable habitat and degrade 1,257 acres of dispersal-only habitat. Although the amount of suitable habitat downgraded is somewhat less in this alternative than in the proposed action (86 acres), there would still be adverse affects to the spotted owl or and/or its habitat with this alternative.

Alternative D
This alternative would not include the downgrade of any suitable habitat. A total of 1068 acres of dispersal-only habitat would be degraded but would still function as dispersal habitat. No suitable habitat for the spotted owl would be affected by this alternative, although dispersal habitat would still be degraded. For this reason, in the context of the local and watershed scales, this alternative is determined to have a may effect, not likely to adversely effect on the spotted owl and its habitat.

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

Risk Assessment
Risk to Habitat – High under alt. B, C, and E. Low under alt. D and none under the no action alternative.
Risk to Individuals – High under alt. B, C, and E. Low under alt. D and none under the no action alternative
Risk to Population – None under all alternatives

Conflict Determination
For alternatives B, C and E, the Cloak Timber Sale "may effect, and is likely to adversely effect," the spotted owl or its habitat. For alternative D, the Cloak Timber Sale "may effect, but is not likely to adversely effect," the spotted owl or its habitat.

F. MITIGATION MEASURES:

The Programmatic Biological Opinion for Projects with the Potential to Modify the Habitats of Northern Spotted Owls and/or Bald Eagles or Modify Critical Habitat of the Northern Spotted Owl (USDI 2003) associated with this project included a term and condition that stated for activities within a ¼-mile radius of any current or historic spotted owl activity center, a seasonal restriction would be in place between March 1 and July 15th (or later if deemed necessary by an agency wildlife biologist) for all activities associated with habitat modification that have the potential to disturb nesting spotted owls and/or their habitat.

There are five units (519, 511, 470, 475, and 426) within the Cloak commercial thinning timber sale that are within ¼ mile of a known spotted owl activity center. All timber harvest activities, including post-sale activities associated with these units will have the seasonal restriction in place for any operation that would have the potential to disturb the northern spotted owl.

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 June 22, 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 effect 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 Cloak project in December of 2002 through the document titled "The Willamette Province Fiscal Year 2003-2004 Habitat Modification Biological Assessment for Listed Species." The Fish and Wildlife Service issued the Biological Opinion in February 2003. The conclusion reached in this Biological Opinion for the Cloak project as well as all others included in the document is a follows: "After reviewing the current status of the bald eagle and spotted owl, including critical habitat, the environmental baseline for both species, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the FY 2003-2004 Habitat Modification Projects in the Willamette Province are not likely to jeopardize the continued existence of the bald eagle or spotted owl and is not likely to destroy or adversely modify designated critical habitat for the spotted owl" (USDI, 2003).

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 old-growth components, and are near water bodies that support an adequate food supply. Nests, which usually consist of a bulky platform of sticks, are usually located in the super-canopy of trees, or even on a cliff. Nest sites are usually within ¼ mile of water in the Cascades.

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. Communal roosts are invariably near a rich food source and in forest stands that are multi-storied and have at least a remnant old growth component.

B. PRE-FIELD REVIEW

Habitat available within the project area

Yes, but marginal. One unit (18 acres) has the potential to be utilized as nesting, roosting, or perching habitat for the bald eagle.

C. FIELD RECONNAISSANCE

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

D. ANALYSIS OF EFFECTS /CUMULATIVE EFFECTS:

Alternative A (No Action)

No effect to the bald eagle or its habitat would occur with implementation of this alternative. The one unit within this project area would continue to provide poor quality habitat for the species.

Alternative B (Proposed Action), C & E

Effects to Habitat

Bald eagles usually nest within ¼ mile of a water body in the Cascades. There is one Cloak harvest unit with a multi-storied canopy and an old growth component that is within 700 feet of the Oak Grove Fork of the Clackamas River. This stand could conceivably serve as nesting trees for bald eagles. The rest of the units within the Cloak Timber Sale are either beyond ¼ mile of a water body or do not have the structural characteristics to serve as potential nesting/roosting/perching habitat for the bald eagle.

However, the likelihood is low that this unit would be utilized as nesting/roosting/perching habitat for the following reasons: 1) The area between the stand and the river is bisected by road 5700, a paved a well-used road. 2) This adjacent section of the Oak Grove Fork of the Upper Clackamas River represents 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 or roost along any portion of this river.

The Cloak timber sale will result in a degradation of 18 acres of poor quality potential bald eagle habitat. Although degraded, this habitat will still remain as poor quality bald eagle habitat after project implementation.

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 this unit 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 minor effects to habitat occurring with project implementation.

Cumulative Effects
None predicted. There are no other projects (except for the occasional hazard tree removal) within the Oak Grove watershed that have the potential to affect potential nest/roost/perch trees.

Alternative D
There would be no effects with this alternative since the potential bald eagle habitat is an older second-growth stand and would not be harvested with this alternative.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment
Risk to Habitat – Low under alt. B, C, and E. None under alt. D and the no action alternative.
Risk to Individuals – Low under alt. B, C, and E. None under alt. D and the no action alternative.
Risk to Population – None under all alternatives

Conflict Determination
Alternatives B, C, and E of the Cloak Timber Sale will have a "may effect, not likely to adversely effect" on the bald eagle or its habitat. Alternative D will have a "no effect."

E. 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 June 22, 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 effect 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 Cloak project in December of 2002 through the document titled "The Willamette Province Fiscal Year 2003-2004 Habitat Modification Biological Assessment for Listed Species." The Fish and Wildlife Service issued the Biological Opinion in February of 2003. The conclusion reached in this Biological Opinion for the Cloak 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. They are found primarily above 1220m (4000 ft.) in Washington. 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. Intermediate successional stages are used mainly for travel and landscape connectivity but may also provide foraging opportunities.

B. PRE-FIELD REVIEW

Habitat available within the project area
No. In a letter dated August 2 of 2001 (USDA 2001) and updated on December 3 of 2003 (USDA 2003), 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. This letter follows the Canada lynx conservation agreement and is consistent with the Lynx Conservation Assessment and Strategy (Ruediger 2000).

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.

No further analysis needed due to lack of habitat.

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. This salamander 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 the project area
No. The Cloak timber sale occurs outside of the identified Larch Mountain salamander distribution range as defined in the Northwest Forest Plan. The timber sale units also do not occur within or directly adjacent to talus slopes.

No further analysis needed due to lack of habitat

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. 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. Sites are generally scarce, occurring in scattered and often widely separated colonies, but sometimes locally common. It is known to occur at only a few dozen localities.

The Oregon Slender salamander is found in moist woods consisting of Douglas fir, maple, hemlock, and red cedar. It is most common in mature Douglas-fir forests and appears to be dependent on mature and old growth stands. 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. They are also found in rotting logs, in holes and crevices in the ground, and in termite burrows. Nests that have been located were found under bark and in rotten logs.

B. PRE-FIELD REVIEW

Habitat available within the project area

Yes. All the older second-growth stands (307 acres) have potential Oregon Slender salamander habitat.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the project 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. The older second-growth stands would continue to function as potential Oregon Slender salamander habitat for the short term. Considering long-term effects, there is the potential that some of the units that are currently young managed plantations would eventually grow into a mature structural stage and become potential habitat for the Oregon Slender salamander. It is also likely that many others, due to the density and composition of tree species within the stands, would take much longer to become suitable habitat, or might never become suitable before a catastrophic event occurred. The predicted long-term effects to the stands currently providing potential habitat for the Oregon Slender Salamander would be that they would remain suitable habitat for a long time.

Alternative B (Proposed Action) & E

Effects to Habitat

Approximately 307 acres of these older second growth stands are proposed for commercial thinning. The Oregon slender salamander prefers moist environments and tends to avoid recently clear-cut areas. This alternative will leave 80-140 trees per acre and would retain existing logs that are currently in these stands. It is likely there would also be additional down woody debris generated by the timber sale. The microclimate will likely change within the harvest units as a result of the timber harvest, but probably not to the degree that would make the units unsuitable for the

Oregon Slender salamander. Thus, this proposed action would degrade but not remove approximately 307 acres of potential Oregon Slender salamander habitat from the area.

Effects to Individuals
Although no surveys for this species have been completed in the Cloak project area, there appears to be potential habitat for the Oregon Slender salamander within the older second-growth stands. For this reason, species presence is assumed in these areas. Several of these stands with potential habitat are adjacent to more suitable habitat that individuals could migrate into after project implementation. There is also the potential that any individuals currently residing in these units would be able to survive and reproduce in the units after project implementation. The proposed timber harvest has the potential to extirpate individuals that are present in the units. The loss of individuals would likely occur indirectly through the degradation of the 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 2003). 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, Congressional Reserves, Late-Successional Reserves and National Scenic Area lands.

Cumulative Effects
The current condition of the habitat for the Oregon slender salamander within the Oak Grove, Upper and Lower Clackamas watersheds take into consideration recently harvested or soon to be harvested timber sales or projects that will remove or have removed suitable habitat from the area. These projects include the following: Gum, Bazooka, Bear, Cub, Tarzan, Jane, Slinky, Imp, Lightning Flats, Bars, Barstool, Borg, Solo, Batwings, and Lemiti timber sales, and the Road 46 Reconstruction Project. The loss of mature moist forested stands has substantially reduced the amount of suitable habitat for the Oregon slender salamander currently present within these watersheds.

The Cloak timber sale adds to the effects of the above by degrading an additional 307 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 in alternative B except that it would only degrade 264 acres of potential habitat for the Oregon Slender Salamander. Since the amount of potential habitat downgraded is somewhat less in this alternative than in the proposed action (307 acres), the effects would be proportionally less.

Alternative D
Since none of the older second-growth stands would be harvested in this alternative, there would no effects to the Oregon Slender salamander with implementation of this alternative.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment
Risk to Habitat – Moderate under alt. B, C, and E. None under alt. D and the no action alternative
Risk to Individuals – Low under alt. B, C, and E. None under alt. D and the no action alternative.
Risk to Population – None under all alternatives

Conflict Determination
Alternatives B, C, and E of the Cloak 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. Alternative D would have a "no impact" on the individuals or habitat of the Oregon Slender salamander.

Cope's Giant Salamander (*Dicamptodon copei* - Sensitive) **& Oregon Spotted Frog** (*Rana pretiosa* – Sensitive)

A. HABITAT

Cope's Giant Salamander: 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.

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 over-wintering habitat that may result in local extinctions.

Oregon Spotted Frog: 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.

The Oregon Spotted Frog is a highly aquatic species that is rarely found far from permanent water. 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. Individuals may disperse into adjacent non-aquatic areas during wet weather.

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.

B. PRE-FIELD REVIEW

Habitat available within the project area
Yes. 44 of the units within the Cloak thinning sale include perennial or intermittent streams, wet areas, or seeps.

Cope's Giant Salamander: This species' 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: The Cope's Giant Salamander 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.

Oregon Spotted Frog: This species is highly aquatic and needs a permanent water source to survive. Potential habitat for this species does exist within the Clackamas River drainage. A portion of the planning area appears to have all the habitat characteristics essential to the species.

C. FIELD RECONNAISSANCE

A level A survey was conducted based on a low 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 or Oregon Spotted frog would occur with implementation of this alternative. The streams and wet areas within the stands would continue to provide potential habitat for the species for possibly far into the future.

Alternative B (Proposed Action), D & E

Effects to Habitat and Individuals

There are several streams and wet areas occurring within or adjacent to the Cloak timber sale units. There are 44 units that have a total of 217 acres of riparian reserves. Most of the riparian reserves will have active management occurring within them except for the no-cut buffers described below. A minimum of a 50-foot no-harvest buffer will be established along the active channel of all perennial streams. Larger buffer widths may be needed on a site-specific basis to prevent any increase in sediment delivery rates or a decrease in stream shading. Generally a 30-foot no-harvest buffer will also be established along the channels of all intermittent streams. Smaller buffer widths would be allowed if it is determined on a site specific basis that there would be no increase in sediment delivery rates or decrease in stream shading. No cut areas along seeps, springs, and wet areas would extent to the outer limits of riparian vegetation and would include the first row of coniferous trees.

These buffers described above would be in place during the length of the timber sale and post-sale activities, including road construction. It is likely that the potential habitat for the Cope's Giant Salamander and Oregon Spotted frog would be present within these buffers. These no-cut areas should prevent any un-intentional extirpation or injuring of individuals that may be present near the water sources during on-the-ground activities.

The potential for increased sedimentation to these water sources would be minimized because the vegetative buffer created by the no-harvest buffers should act as an effective barrier to any sediment being transported by surface erosion or runoff. In addition, these no-harvest buffers 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. Although there is the potential that small micro-climate changes would occur with implementation of this project, the change is not predicted to be substantial enough to affect habitation of the areas by Cope's Giant Salamander and Oregon Spotted frog.

Cumulative Effects

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

Alternative C

Effects same as alternative B. Measures are being taken within alternative B to minimize any detrimental effects from the new temporary road construction and thinning in riparian reserves. Thus this alternative that includes no road building and management in riparian reserves should have similar effects.

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 Cloak Timber Sale will have "no impact" on the Cope's Giant salamander and Oregon Spotted frog or their habitat.

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.

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. Individuals from this species require microclimatic and microhabitat conditions generally found only in older forests.

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. 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.

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.

B. PRE-FIELD REVIEW

Habitat available within the project area

Yes. Eight of the older second-growth units have riparian sites within the outer boundaries of the units. Potential habitat for this species does exist within the Clackamas River drainage. A portion of the planning area appears to have all the habitat characteristics essential to the species.

C. FIELD RECONNAISSANCE

A level A survey was conducted. There is a low potential for this species to inhabit the project 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 streams and wet areas within the stands would continue to provide potential habitat for the species for possibly far into the future.

Alternative B (Proposed Action), D & E

Effects to Habitat and Individuals

There are several streams and wet areas occurring directly adjacent to the natural second-growth Cloak timber sale units. There are eight units that have a total of 43 acres of riparian reserves. These riparian reserves will have active management occurring within them except for the no-cut buffers described below. A minimum of a 50-foot no-harvest buffer will be established along the active channel of all perennial streams. Larger buffer widths may be needed on a site-specific basis to prevent any increase in sediment delivery rates or a decrease in stream shading. Generally a 30-foot no-harvest buffer will also be established along the channels of all intermittent streams. Smaller buffer widths

would be allowed if it is determined on a site specific basis that there would be no increase in sediment delivery rates or decrease in stream shading. No cut areas along seeps, springs, and wet areas would extent to the outer limits of riparian vegetation and would include the first row of coniferous trees.

These buffers described above would be in place during the length of the timber sale and post-sale activities, including road construction. It is likely that all of the potential habitat for the Cascade Torrent Salamander would be present within these buffers. These no-cut areas should prevent any un-intentional extirpation or injuring of individuals that may be present near the water sources during on-the-ground activities.

The potential for increased sedimentation to these water sources would be minimized because the vegetative buffer created by the no-harvest buffers should act as an effective barrier to any sediment being transported by surface erosion or runoff. In addition, these no-harvest buffers 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. Although there is the potential that small micro-climate changes would occur with implementation of this project, the change is not predicted to be substantial enough to affect habitation of the areas by Cascade Torrent Salamander.

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

Alternative C
Effects same as alternative B. Measures are being taken within alternative B to minimize any detrimental effects from the new temporary road construction and thinning in riparian reserves. Thus this alternative that includes no road building and management in riparian reserves should have similar effects.

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 Cloak Timber Sale will have a “no impact” on the Cascade Torrent salamander or its habitat.

American Peregrine Falcon (Falco peregrinus anatum – Sensitive) & **Gray Flycatcher** (Empidonax wrightii – Sensitive)

A. HABITAT

Peregrine Falcon: The most critical habitat components for Peregrine Falcons are suitable nest sites, usually cliffs, and 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 water birds are plentiful.

Gray Flycatcher: 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.

B. PRE-FIELD REVIEW

Habitat available within the project area

Peregrine Falcon: None. There are no suitable cliffs within or adjacent to the project area.

Gray Flycatcher: None. There is no habitat for this species on the Clackamas River Ranger District

No further analysis needed due to lack of habitat.

Northern Painted Turtle (*Chrysemys picta* -Sensitive**), Western Pond Turtle (***Clemmys marmorata marmorata*- Sensitive*)*, **Horned Grebe** (*Podiceps auritus* – Sensitive), & **Bufflehead** *(Bucephala albeola* – 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.

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.

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.

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.

B. PRE-FIELD REVIEW

Habitat available within the project area

Painted turtle and Western Pond turtle: No. All of the units are situated within dense forested environments. Although many of the units contain riparian areas, they do not consist of relatively large open sites for sunning and abundant riparian and aquatic vegetation that is usually associated with the habitat for the species. There are no known sightings of these species on the Clackamas River Ranger District. The Region 6 Regional Forester's Sensitive Species list only has them as suspected to occur on the Mt. Hood National Forest.

Horned Grebe and Bufflehead: No. There are no lakes or ponds within the project area of the required size to provide habitat for these species.

No further analysis needed due to lack of habitat.

Harlequin Duck
(Histrionicus histrionicus)
(Sensitive)

A. HABITAT

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.

B. PRE-FIELD REVIEW

Habitat available within the project area
Yes. 44 of the units within the Cloak thinning sale include streams, wet areas, or seeps. A portion of these units contains perennial mountain streams within a forested area.

This species is highly aquatic and needs a permanent water source to survive. Potential habitat for this species does exist within the Clackamas River drainage and within some of the potential harvest units. Harlequin ducks are occasionally sighted within Clackamas River Ranger District.

C. FIELD RECONNAISSANCE
A level A survey was conducted. There is a low potential for this species to inhabit the project area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No Action)
No effects to the Harlequin duck would occur with implementation of this alternative. The perennial streams within the stands would continue to provide potential habitat for the species for possibly far into the future.

Alternative B (Proposed Action), D & E

Effects to Habitat and Individuals
There are several perennial streams occurring within or directly adjacent to the Cloak thinning units. These riparian reserves will have active management occurring within them except for the no-cut buffer described below. A minimum of a 50-foot no-harvest buffer will be established along the active channel of all perennial streams. Larger buffer widths may be needed on a site-specific basis to prevent any increase in sediment delivery rates or a decrease in stream shading.

This buffer described above would be in place during the length of the timber sale and post-sale activities, including road construction. It is likely that all of the potential habitat for the Harlequin duck would be present within these buffers. These no-cut areas should prevent any destruction or adverse modification of any harlequin duck habitat that is currently present in the units. If harlequin's happened to be present within any of the units during project implementation, they would have the ability to quickly disperse from the area. The no-cut area and the ability of the ducks to quickly disperse would prevent any un-intentional extirpation or injuring of individuals that may be present.

The potential for increased sedimentation to these water sources would be minimized because the vegetative buffer created by the no-harvest buffers should act as an effective barrier to any sediment being transported by surface erosion

or runoff. In addition, these no-harvest buffers 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. Although there is the potential that small micro-climate changes would occur with implementation of this project, the change is not predicted to be substantial enough to affect habitation of the areas by Harlequin ducks.

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

Alternative C
Effects same as alternative B. Measures are being taken within alternative B to minimize any detrimental effects from the new temporary road construction and thinning in riparian reserves. Thus this alternative that includes no road building and management in riparian reserves should have similar effects.

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 Cloak Timber Sale will have a "no impact on the Harlequin duck and its habitat."

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. They are usually associated with wilderness, chiefly because they are so vulnerable to the activities of humans.

B. PRE-FIELD REVIEW

Habitat available within the project area:
No. Elevation within the project area ranges from approximately 1700 to 4400 feet in elevation. Just over 2 air miles north of the project area, within the Mt. Mitchell / High Rock vicinities, lays some marginal but potential wolverine habitat on the district. However, most of the proposed harvest units occur below 4000 feet in elevation and all of them are located within areas that lack solitude and seclusion qualities due to the open road densities, management activities, and recreational opportunities in the area. It is unlikely that a wolverine would be present in the project area.

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.

No further analysis needed due to lack of habitat

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.

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. The habitat of the Baird's shrew can be described as moist coniferous forests with a shrubby understory. Individuals of the species tend to forage near logs and rocks.

B. PRE-FIELD REVIEW

Habitat available within the project area
Yes. As stated above little is known about this species. The location and habitat characteristics of the older second-growth units of the Cloak Timber Sale does seem to fit with what little is known about the species.

C. FIELD RECONNAISSANCE
A level A survey was conducted. There is a low potential for this species to inhabit the project 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. The older second-growth stands would continue to function as potential Baird's shrew habitat for the short term. Considering long-term effects, there is the potential that most of the units that are currently young managed plantations would eventually acquire enough of down wood component to become potential habitat for the Baird's shrew. The predicted long-term effects to the currently suitable stands would be that they would remain suitable habitat for a long time.

Alternative B (Proposed Action) & E

Effects to Habitat
Approximately 307 acres of these older second growth stands are proposed for commercial thinning. This alternative will leave 80-140 trees per acre and would retain existing logs that are currently in these stands. It is likely there would also be additional down woody debris generated by the timber sale. The microclimate will possibly change within the harvest units. Enough is not known about the species to determine whether this microclimate change and alteration of tree density will impact the habitation of the unit by the species. It is predicted that this proposed action would degrade but not remove approximately 307 acres of potential Baird shrew habitat from the area.

Effects to Individuals
Although no surveys for this species have been completed in the Cloak project area, there appears to be potential habitat for the Baird shrew within the older second-growth stands. For this reason, species presence is assumed in these areas. Several of these stands with potential habitat are adjacent to more suitable habitat that individuals could

migrate into after project implementation. There is also the potential that any individuals currently residing in these units would be able to survive and reproduce in the units after project implementation. The proposed timber harvest also has the potential to extirpate individuals that are present in the units. The loss of individuals would likely occur indirectly through the degradation of the 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. In addition, 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, Congressional Reserves, Late-Successional Reserves and National Scenic Area lands.

Cumulative Effects
The current condition of the habitat for the Baird's shrew within the Oak Grove, Upper and Lower Clackamas watersheds take into consideration recently harvested or soon to be harvested timber sales or projects that will remove or have removed suitable habitat from the area. These projects include the following: Gum, Bazooka, Bear, Cub, Tarzan, Jane, Slinky, Imp, Lightning Flats, Bars, Barstool, Borg, Solo, Batwings, and Lemiti timber sales, and the Road 46 Reconstruction Project. The loss of these moist forested stands has substantially reduced the amount of suitable habitat for the Baird's shrew currently present within these watersheds.

The Cloak timber sale adds to the effects of the above by degrading an additional 307 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 Baird's shrew or its habitat.

Alternative C
Effects same as in alternative B except that it would only degrade 264 acres of potential habitat for the Baird's shrew. Since the amount of potential habitat downgraded is somewhat less in this alternative than in the proposed action (307 acres), the effects would be proportionally less.

Alternative D
Since none of the older second-growth stands would be harvested in this alternative, there would no effects to the Baird's shrew with implementation of this alternative.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

Risk Assessment
Risk to Habitat – Moderate under alternatives B, C & E. None under alternative D and no action alternative.
Risk to Individuals – Moderate under alt. B, C. and E. None under alternative D and no action alternative
Risk to Population – None under all alternatives

Conflict Determination
The action alternatives of the Cloak 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.

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. 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. Its nursery colonies and roost sites are established in caves, mines, and buildings. The species is thought to forage by picking up food items from shrubs or the ground. It consumes beetles, moths, harvestmen, crickets, craneflies, and spiders.

B. PRE-FIELD REVIEW

Habitat available within the project area
Yes. No breeding or roosting sites available within the project area. There is the potential for the project area to contain foraging habitat, although foraging usually occurs near the species' breeding and roosting sites. Species would only occur in area during dispersal or possibly foraging.

C. FIELD RECONNAISSANCE
A level A survey was conducted. There is a low potential for this species to inhabit the project area.

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS
No effects in any alternative due to lack of nesting or roosting habitat. In the event that individuals were dispersing or foraging through the area, they would likely be able to quickly disperse from the area during project implementation. Foraging habitat is not limiting and if individuals happened to be displaced, they could easily find other areas to forage within nearby. In addition, it is likely that the thinned units would still provide foraging habitat after project implementation.

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 Cloak Timber Sale will have a "no impact" to the Pacific Fringe-tailed bat or its habitat.

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. The fisher is a moderate- to wide-ranging species and is considered rare in Oregon. 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. The species tends to frequent riparian corridors. They are known to occasionally use cut-over areas, but this is not their optimal habitat.

Research has shown that the habitat for fishers would be enhanced by minimizing forest fragmentation, both in the remaining old-growth 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.

B. PRE-FIELD REVIEW

Habitat available within project area
Yes. The older second-growth stands (307 acres) have the structural characteristics of fisher habitat. Although these watersheds have been fragmented through past management, there remains enough un-fragmented stands of old-growth and second-growth forests, including some of the stands proposed for treatment, that potential low quality habitat exists for the fisher.

C. FIELD RECONNAISSANCE

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

D. ANALYSIS OF EFFECTS / CUMULATIVE EFFECTS

Alternative A (No action)
No short-term effects to the fisher would be predicted with this alternative. The older second-growth stands would continue to function as potential low quality fisher habitat for the short-term. Considering long-term effects, there is the potential that most of the units that are currently young managed plantations and the stands surrounding them would eventually acquire enough of the structural characteristics to become potential habitat for this species. The predicted long-term effects to the currently suitable stands would be that they would remain suitable habitat for a long time.

Alternative B (Proposed Action) & E

Effects to Habitat
Approximately 307 acres of older second-growth stands are proposed for commercial thinning. This alternative will leave 80-140 trees per acre and would retain existing logs that are currently in these stands. It is likely there would also be additional down woody debris generated by the timber sale. The microclimate will change within the harvest

units, but possibly not to the degree that would make the units unsuitable for the fisher. Thus, this proposed action would degrade but not remove approximately 307 acres of potential low quality fisher habitat from the area. It is not expected that treatment in these stands would increase fragmentation of suitable habitat for the species.

Effects to Individuals
Although no surveys for this species have been completed in the Cloak project area, there appears to be potential low quality habitat for the fisher within the older second-growth stands. For this reason, species presence is assumed in these areas. There is the slight possibility that a fisher traveling through the area could be impacted by the disturbance associated with implementation of this project. This includes the disturbance created by the 5.2 miles of new temporary road construction and the reopening of currently overgrown or decommissioned roads, as well as the time in which the roads would be open for use. However, these stands with potential habitat are adjacent to more suitable habitat that individuals could easily migrate into during project implementation. The proposed timber harvest does not have the potential to extirpate individuals that are present in or adjacent to the units. Any fishers currently utilizing the watershed could easily change their travel habitat to avoid the management activity.

Effects to Population
Effects are not expected to the population since there will be no adverse effects to any individuals.

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 the majority of these watersheds are providing low quality habitat for the fisher. Continued commercial thinning could further reduce habitat quality for the fisher within these areas. However, fragmentation is not expected to increase with future thinning projects. 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 except for the following. Since there will be no new road building in this alternative, there will be no potential disturbance to fishers 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
Since none of the older second-growth stands would be harvested in this alternative, there would no effects to the fisher with implementation of this alternative.

E. RISK ASSESSMENT / CONFLICT DETERMINATION

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

Conflict Determination
The action alternatives of the Cloak 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.

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