COLLAWASH 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 26, 2005

Clackamas River Ranger District
Mt. Hood National Forest

Written by: /S/ *Sharon Hernandez* **Date:** May 26, 2005

Sharon Hernandez, Supervisory Wildlife Biologist

EXECUTIVE SUMMARY

Forest management activities that may alter the habitat for threatened, endangered, sensitive or proposed 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.

The attached Executive Summary serves as documentation to display the effects of the 2005 Collawash Thin on threatened, endangered, and Forest Service Regional Forester's sensitive species that are documented or suspected to occur within the Mt. Hood National Forest. A more detailed analysis of project effects to species can be found in the body of this biological evaluation. (Note: No wildlife proposed or endangered species exists on the Mt. Hood National Forest.)

Table 1: Executive Summary: 2005 Collawash Thin

Listed or Regional Forester's Sensitive Species	**Field Review – Presence of Suitable Habitat for Species**	**USFWS Consultation Requirements**	**Preferred Alternative Effects/ Impacts Call**
Threatened			
Northern Spotted Owl (threatened)	*Yes*	Consultation Required	May Affect, Likely to Adversely Affect
Northern Bald Eagle (threatened)	*No*	None Required	No Effect
Sensitive			
Oregon Slender Salamander (sensitive)	*Yes*	None Required	May Impact Individuals, but not likely to cause a trend to federal listing or loss of viability to the species
Larch Mountain Salamander (sensitive)	*No*	None Required	No Impact
Cope's Giant Salamander (sensitive)	*Yes*	None Required	No Impact
Casacade Torrent Salamander (sensitive)	*Yes*	None Required	No Impact
Oregon Spotted Frog (sensitive)	*Yes*	None Required	No Impact
Painted Turtle (sensitive)	*No*	None Required	No Impact
Northwestern Pond Turtle (sensitive)	*No*	None Required	No Impact
Horned Grebe (sensitive)	*No*	None Required	No Impact
Bufflehead (sensitive)	*No*	None Required	No Impact
Harlequin Duck (sensitive)	*No*	None Required	No Impact
American Peregrine Falcon (sensitive)	*Yes*	None Required	No Impact
Gray Flycatcher (sensitive)	*No*	None Required	No Impact
Baird's Shrew (sensitive)	*Yes*	None Required	May Impact Individuals, but not likely to cause a trend to federal listing or loss of viability to the species
Pacific Fringe-tailed Bat (sensitive)	*Yes*	None Required	No Impact
California Wolverine (sensitive)	*No*	None Required	No Impact

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 the Collawash watershed. The proposed action (Alternative B) is to thin and harvest wood fiber from approximately 204 acres of matrix land and approximately 88 acres of riparian reserves.

The harvesting operation would utilize a variable density thinning prescription and generally remove the smaller trees, leaving approximately 80 to 140 variably spaced trees per acre. 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).

On the areas proposed for riparian reserve thinning, the prescription would be adjusted to create a wider spacing of leave trees. The intention is to enhance riparian reserves by accelerating the development of mature and late-successional stand conditions.

For this project, riparian reserve widths are 180 feet for non-fish-bearing streams and 360 feet for fish-bearing streams. A Design Criteria within the Collawash Environmental Assessment discusses no-harvest buffers of approximately 30 to 50 feet along streams. There are some small seeps and wet areas that would also be excluded from harvest.

Approximately .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 (.7 miles) to access the landings. Other roads have berms or driveable waterbars that would also be temporary removed. Upon project completion, these roads that were opened would be closed.

Unit six contains 20 acres that would be helicopter logged. The remainder of the units would involve ground-based logging systems. 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 and would not thin riparian reserves. Parts or all of units 3, 4, 5, 6, 9a, 9b & 10 that are inaccessible from existing roads would be helicopter logged (90 acres). Since the riparian reserve portion of all the units have been dropped, this alternative would thin and harvest wood fiber from the remaining 204 acres of matrix land. Some existing decommissioned or overgrown roads would still need to be reopened (.7 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 that were re-opened would be closed.

ALTERNATIVE D: This alternative is similar to Alternative C but would also eliminate the thinning of the older second-growth stands. Consequently, this alternative would thin and harvest wood fiber from approximately 149 acres of matrix lands. Some existing decommissioned or overgrown roads would still need to be reopened (.7 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 that were re-opened would be closed.

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. FIELD REVIEW

Habitat available on the district
The last time extensive field 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. During that time period there had been many documented sightings of adults and young produced on the District. (Historic records are on file at the District office).

Habitat available within the project area
Yes. Three of the harvest units within this commercial thinning timber sale (55 acres) contain the habitat components that comprise nesting/roosting/foraging (NRF) habitat for the spotted owl. The remainder of the sale contains dispersal-only habitat for this species (237 acres).

C. ANALYSIS OF DIRECT/INDIRECT 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 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)

North Willamette Late-Successional Reserve Areas and Critical Habitat Units:
The proposed action will not occur within a Late-Successional Reserve. Units 9b and 10 totaling 37 acres occur within Critical Habitat Unit OR-12. The remaining 255 acres of the proposed timber harvest occurs within Matrix and Riparian Reserve Lands of the Northwest Forest Plan.

Spotted Owl Suitable Habitat:
The Biological Opinion and Letter of Concurrence for Effects to Bald Eagles, Northern Spotted Owls and Northern Spotted Owl Critical Habitat from the U.S. Department of the Interior; Bureau of Land Management, Eugene District and Salem District, the U.S. Department of Agriculture; Mt. Hood National Forest and Willamette National Forest and the Columbia River Gorge National Scenic Area Calender Years 2005-2006 Habitat Modification Activities within the Willamette Province (USDI 2005) associated with this project includes a Standard Specific to the Northern Spotted Owl that is as follows: "Except for the removal of hazard trees to

protect public safety, no activity except hauling shall take place within suitable spotted owl habitat during the March 1st to July 15th critical nesting period, unless the habitat is known to be unoccupied or has no nesting activity as determined by protocol survey. The distance and timing may be modified by the unit wildlife biologist according to site-specific information."

There are three units (9a, 9b, 10) within the Collawash Environmental Assessment that include proposed activities within spotted owl suitable habitat. All timber harvest activities and associated projects such as road building, re-opening and clearing of roads, and post-sale activities associated with these units will have the above seasonal restriction in place for those operations and any others that have the potential to disturb the northern spotted owl.

Another Standard within the Biological Opinion states: "No helicopter use within the disruption distance (vertical or horizontal) of occupied or unsurveyed suitable habitat of the spotted owl between March 1 and July 15 is addressed by this assessment. This standard restricts helicopter use for the entire sale during this time period due to the proximity of suitable habitat to all the units and proposed project activities.

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. Three of the proposed units within the Collawash Environmental Assessment are considered both NRF 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 remaining eight of the harvest units are considered dispersal-only habitat. Dispersal habitat described below is a combination of NRF and dispersal-only habitat.

The Collawash Environmental Assessment occurs within the Collawash Watershed and contains dispersal habitat (11/40 rule - average 11 inch DBH with an average canopy cover of 40%) within approximately 70% (67,291 acres) of its area. The proposed action will degrade approximately 292 (.4%) acres of dispersal habitat from the watershed. 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 of dispersal habitat is not predicted to impact the spotted owl population within the watershed and is considered minimal at the watershed scale. However, individual owls might change their dispersal or foraging patterns within the project area to compensate for this reduction in quality in their habitat. Since there is abundant unaffected dispersal habitat remaining in the watershed and the immediate surrounding area, the potentially affected owls will be able to easily adjust their dispersal and foraging patterns to these habitats.

NRF habitat is considered to be one of the limiting factors for spotted owls. Approximately 49% (47,559 acres) of the Collawash watershed contains NRF habitat. The proposed action will downgrade within three units (9a, 9b & 10) 55 acres of spotted owl NRF to dispersal habitat. In effect, this timber sale will reduce the percentage of NRF habitat within this watershed by approximately .1%. On the local scale, although there are no known spotted owl nests within these units, the removal of this habitat could cause detrimental effects to unknown 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 scale, the proposed action is determined to have an adverse effect on the spotted owl and its habitat.

Two of the harvest units (9b & 10) occur within Critical Habitat Unit OR-12. Currently the percentage of NRF and dispersal habitat in this CHU is 56% (20,369 acres) and 64% (23,078 acres), respectively. The proposed action would downgrade to dispersal-only habitat a total of 37 acres of NRF habitat from OR-12. This loss of suitable habitat at the CHU scale would be negligible at scale that comprises critical habitat units.

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

The US Fish and Wildlife Service issued an opinion on the effects of the Collawash Commercial Thinning Project as well as many other projects within the document titled "Biological Opinion and Letter of Concurrence for Effects to Bald Eagles, Northern Spotted Owls and Northern Spotted Owl Critical Habitat from the U.S. Department of the Interior; Bureau of Land Management, Eugene District and Salem District, the U.S. Department of Agriculture; Mt. Hood National Forest and Willamette National Forest and the Columbia River Gorge National Scenic Area Calender Years 2005-2006 Habitat Modification Activities within the Willamette Province (USDI 2005)" The conclusion they reached is the following: "After reviewing the current status of the spotted owl and bald eagle, 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 2005-2006 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). The Service's rationale for these conclusions can be found within the Biological Opinion noted above.

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 Collawash 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 as required by NFMA and would provide federal lands contribution to recovery of the northern spotted owl under ESA."

A report titled "Scientific evaluation of the status of the Northern Spotted Owl" was published by Sustainable Ecosystems Institute (Courtney 2004). The report is a review and synthesis of information on the status of the Northern Spotted Owl. The report was prepared to aid the US Fish and Wildlife Service in their 5-year status review process, as set out in the Endangered Species Act. The report did not make recommendations on listing status or on management, but focused on identifying the best available science and the most appropriate interpretations of that science. The focus is on new information developed since the time of listing in 1990. The report relied on demography studies summarized in a report titled "Status and Trends in Demography of Northern Spotted Owls, 1985-2003" (Anthony 2004). This Biological Evaluation and the effects determination for the spotted owl takes into consideration these documents and evaluated the new information and it's relevance to the Collawash project.

Alternative C
Effects to suitable/NRF habitat are the same as in alternative B. However, alternative C would only degrade 204 acres of dispersal habitat in this alternative, compared to the 292 acres in alternative B. Although the amount of dispersal habitat degraded is less in this alternative than in the proposed action, there would still be adverse affects to the spotted owl and its habitat with this alternative due to the loss of suitable habitat and is described in Alternative B.

Alternative D
This alternative would not include the loss or downgrade of any suitable habitat. A total of 149 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. For this reason, this alternative is determined to not have an adverse effect on the spotted owl and its habitat.

Table 2: Effects of Action Alternatives on Spotted Owl Dispersal and NRF (Suitable) Habitat

Analysis Scale	Dispersal Habitat		NRF (Suitable) Habitat			
	Current Level (2005)	Level After Action Alternatives (Same as Current Level)	Current Level (2005)	Level After Alt. B	Level After Alt. C	Level After Alt. D
Collawash Watershed (96,476 acres)	69.7% (67,291 acres)	69.7% (67,291 acres)	49.3% (47,559 acres)	49.2% (47,504 acres)	49.2% (47,504 acres)	49.3% (47,559 acres)
Critical Habitat Unit OR-12 (36,293 acres)	63.6% (23,078 acres)	63.6% (23,078 acres)	56.1% (20,369 acres)	56.0% (20,314 acres)	56.0% (20,314 acres)	56.1% (20,369 acres)

D. ANALYSIS OF CUMULATIVE EFFECTS

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 (See Table 3). 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).

Late-seral habitat is available in the Collawash watershed in larger and less fragmented blocks than elsewhere in the subbasin. Connectivity of late seral habitats is poor to moderate to good at the watershed scale (USDA 1995).

The barred owl has been expanding into northern spotted owl territory from northeastern Canada since about 1900, moving into Washington, Oregon and Northern California and in some cases has been displacing spotted owls. Barred owls are known to be present on the Forest. Barred owls may be expanding their range because of changes to forest structure from logging, wildfire or climate change.

A combination of the loss of habitat and increase in fragmentation has reduced the amount of habitat for spotted owls currently present within this watershed. The Collawash commercial thinning project adds to the effects of the above by downgrading 55 acres of suitable habitat and turning them into dispersal habitat. However, these stands affected are still relatively young stands, the oldest stand age being 104 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 within the watershed that is 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.

Table 3: Effects of Alternative B (Proposed Action) on Spotted Owl Dispersal and NRF (Suitable) Habitat as Compared to Historical Conditions

Analysis Scale	Dispersal Habitat		NRF (Suitable) Habitat		
	Historic Level (1940)	Current Level (2005) & Level After Timber Harvest (Alt. B)	Historic Level (1940)	Current Level (2005)	Level After Timber Harvest (Alt. B)
Collawash Watershed (96,476 acres)	94% (86,649 acres)	70% (67,291 acres)	75% (72,689 acres)	49% (47,559 acres)	49% (47,504 acres)
Critical Habitat Unit OR-12 (36,293 acres)	97% (35,040 acres)	64% (23,078 acres)	90% (32,551 acres)	56% (20,369 acres)	56% (20,314 acres)

E. CONFLICT DETERMINATION (all alternatives):

For alternatives B and C, the Collawash Thinning Sale "may affect, and is likely to adversely affect," the spotted owl or its habitat. For alternative D, the Collawash Timber Sale "may affect, but is not likely to adversely affect," the spotted owl or its habitat.

F. 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 "Collawash Timber Sale" in August of 2004 through the document titled "The Programmatic Biological Assessment for Projects with the Potential to Modify the Habitats of Northern Spotted Owls and/or Bald Eagles or Modify Critical Habitats of the Northern Spotted Owl - Willamette Province FY 2005-2006." The Fish and Wildlife Service issued the Biological Opinion in April 2005. More information on the Biological Opinion is found about under the Effects to spotted owl on a province scale.

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. FIELD REVIEW

Bald eagles 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 to exist on the District. There has been consistent use by adults in two areas of the Clackamas River Ranger District, one of which has had recent nesting attempts by a bald eagle pair. These areas are greater than 10 miles away from the proposed project site.

Habitat available within the project area

No. The only water source within the area that has potential habitat for the bald eagle and is within ¼ mile of the project area is a portion Collawash River between Little Fan Creek and the confluence with the Clackamas River. However, the Collawash thinning units (#1-4), that are within ¼ mile of this river do not have the stand characteristics necessary for nesting, roosting, or perching by the bald eagle.

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. FIELD REVIEW

Habitat available within the project area
No. The Collawash 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 wright* - 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. FIELD REVIEW

Habitat available within the project area
Yes. All the older second-growth stands (55 acres) have potential Oregon Slender salamander habitat.

C. ANALYSIS OF DIRECT/INDIRECT 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) & C

Effects to Habitat
Approximately 55 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 80-120 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 55 acres of potential Oregon Slender salamander habitat from the area.

Effects to Individuals
Although no surveys for this species have been completed in the Collawash 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 impacts 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.

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.

D. CUMULATIVE EFFECTS

The loss of mature moist forested stands has substantially reduced the amount of suitable habitat for the Oregon slender salamander currently present within this watershed.

The Collawash timber sale adds to the effects of the above by degrading an additional 55 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.

E. CONFLICT DETERMINATION

Alternatives B and C of the Collawash 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.

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 and 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.

B. FIELD REVIEW

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.

Habitat available within the project area

Yes. Seven of the units (#1, 2, 3, 5, 6, 7, & 8) within the Collawash thinning sale include perennial or intermittent streams, wet areas, or seeps.

C. ANALYSIS OF DIRECT/INDIRECT 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)

Effects to Habitat and Individuals

There are several streams and wet areas occurring within or adjacent to the Cloak timber sale units. There are seven units that have a total of 88 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.

Alternative C & D

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. Consequently, this alternative that includes no road building and management in riparian reserves should have similar effects.

D. CUMULATIVE EFFECTS

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

E. CONFLICT DETERMINATION

The action alternatives of the Collawash 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. FIELD REVIEW

Habitat available within the project area
No. Although potential habitat for this species does exist within the Clackamas River drainage, none of the older second-growth units have riparian sites within the outer boundaries of the stands.

No further analysis needed due to lack of habitat

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.

B. FIELD REVIEW

Habitat available within the project area
None. There is no habitat for this species on the Clackamas River Ranger District

No further analysis needed due to lack of habitat.

American Peregrine Falcon

(Falco peregrinus anatum – Sensitive)

A. HABITAT

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.

B. FIELD REVIEW

Habitat available within the project area
Yes, there is an active peregrine falcon eyrie within 1.5 miles of the proposed harvest unit and management activities.

C. ANALYSIS OF DIRECT/INDIRECT EFFECTS

Alternative A (No Action)

No effects to the Peregrine Falcon would occur with implementation of the no action alternative. Although for other reasons, peregrines could stop using this cliff near the proposed project in the future, the site would continue to provide potential habitat for the species.

Alternative B (Proposed Action), C & D

Effects to Habitat and Individuals

The Draft Peregrine Falcon Management Direction Document for this eyrie provides direction for the management of this site. None of the harvest units or related management activities occurs within .5 miles of the active peregrine falcon eyrie, the primary nest protection zone for the species. However, two units (#7 & 4) occur within 1.5 miles of the eyrie, the secondary nest protection zone. Units #1, 2, 3, 6 & 5 occur within the tertiary habitat management zone. The remainder of the units fall outside any management zone designated for this nest site.

To minimize potential disturbance to the active eyrie, no mechanized slash piling, site preparation, road building, log loading, yarding, helicopter use, or other management activities that produce sound above the ambient noise level of the area would be permitted in units 7 and 4 from January 1st to July 31st. Helicopter use is also restricted below 1500 feet Above Ground Level anywhere within the primary and secondary management zones during this time period as well. These restrictions may be waived if the site is unoccupied or if nesting effort(s) fail and there is not possibility of renesting. Documentation of nesting failures can be finalized no earlier than June 30th due to the possibility of renesting. The remainder of the units fall outside of the secondary nest protection zone and do not need a seasonal restriction for protection of the species.

Providing large diameter snags within the secondary and tertiary zones of this active eyrie would maintain or improve on the existing prey base for foraging falcons. This is direction that was provided in the Peregrine Falcon

Management Direction Document mentioned above. Although the proposed harvest units present within these areas are managed plantations and have few, if any, large diameter snags, there is the potential to create snags through restoration projects associated with this project area. The analysis for this habitat improvement project was completed within the Restoration 2003 Environmental Assessment. The Decision notice for snag creation within the Collawash Thinning Project area was completed on April 2005. If any money becomes available for snag creation in this area, priority will be given to units 1, 2, 3, 4, 5, 6, and 7 of the timber sale due to their location within the secondary and tertiary management zones.

The above seasonal restriction for units #4 and 7 have been incorporated into the design criteria for the project. For this reason, project activities are predicted to have a no effect to peregrine falcon habitat or individuals.

D. CUMULATIVE EFFECTS

None since no direct or indirect effects are predicted to occur with the proposed action.

E. CONFLICT DETERMINATION

The action alternatives of the Collawash Timber Sale will have "no impact" on the peregrine falcon or its 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. 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. FIELD REVIEW

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.

Habitat available within the project area
No. None of the units within the Collawash thinning sale include any perennial streams that are potential habitat for the harlequin duck. The headwaters of Fan creek that runs through unit 6 is of the required size but is too steep and fast flowing to provide potential habitat for the species.

No further analysis needed due to lack of 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. FIELD REVIEW

Habitat available within the project area:
No. Elevation within the project area ranges from approximately 2000 to 3800 feet in elevation. Just over 4 air miles south of the project area, within the Bull of the Woods Wilderness, lies some marginal but potential wolverine habitat in the area. All 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. 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 (# 9a, 9b & 10) of the Collawash Timber Sale does seem to fit with what little is known about the species.

C. ANALYSIS OF DIRECT/INDIRECT 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) & C

Effects to Habitat
Approximately 55 acres of these older second growth stands are proposed for commercial thinning. This alternative will leave 80-120 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 55 acres of potential Baird shrew habitat from the area.

Effects to Individuals
Although no surveys for this species have been completed in the Collawash 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.

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.

D. CUMULATIVE EFFECTS

The loss of moist forested stands has substantially reduced the amount of suitable habitat for the Baird's shrew currently present within this watershed.

The Collawash timber sale adds to the effects of the above by degrading an additional 55 acres of suitable habitat. Currently, there are no foreseeable future actions other than the timber sales previously mentioned on Forest Service lands within this watershed that are predicted to impact the Baird's shrew or its habitat.

E. CONFLICT DETERMINATION

Alternatives B & C of the Collawash Thinning 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. Alternative D would have a "no impact" to the Baird's shrew or its habitat.

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. ANALYSIS OF DIRECT/ INDIRECT 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.

D. CONFLICT DETERMINATION

The action alternatives of the Collawash Thinning Sale will have a "no impact" to the Pacific Fringe-tailed bat or its habitat.

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