

**BIOLOGICAL EVALUATION FOR
Proposed, Endangered, Threatened, and Sensitive Plants, Lichens,
Bryophytes and Fungi**

**South Fork Commercial Thinning Project
Clackamas River Ranger District
Mt. Hood National Forest**

INTRODUCTION

This report evaluates the potential effects of the proposed action on Proposed, Endangered, Threatened, and Sensitive (PETS) plant species in accordance with The National Environmental Policy Act (42 USC 4321 et seq.) the federal Endangered Species Act (16 USC 1531 et seq.), and the National Forest Management Act (16 USC 1604 et seq.). To comply with the above, the Forest Service has set forth guidance in FSM 2670 that is designed to ensure Forest Service actions (1) do not contribute to the loss of viability of any native or desired non-native species or cause a trend toward federal listing for any species, (2) comply with the requirements of the Endangered Species Act; and (3) provide a process and standard which ensures that PETS species receive full consideration in the decision making process.

To achieve these objectives, all Forest Service projects, programs and activities are reviewed for possible effects on PETS species and the findings documented in the Decision Notice (FSM 2672.4). On the Mt. Hood National Forest there are no federally listed (proposed, endangered, threatened) plant species known to occur, however one federally threatened species (*Howellia aquatilis*) is suspected.

The Region 6 Regional Forester's Sensitive Species List (April, 2004) was used to determine species of vascular plants, fungi, bryophytes and lichens that are documented from or suspected to occur on the Mt. Hood National Forest.

PROJECT LOCATION & DESCRIPTION

The project consists of 13 units located on the Clackamas River Ranger District of the Mt. Hood National Forest.

Proposed Action

The action proposed by the Forest Service to meet the purpose and need is to thin and harvest wood fiber from approximately 423 acres of matrix land and approximately 74 acres of the dry upland portion of riparian reserves. Since each stand is different, a silvicultural prescription would be developed to refine the number and types of trees to be retained. Variable density thinning prescriptions would be designed to enhance diversity. Thinning would generally remove the smaller trees, leaving approximately 80 to 140 variably spaced trees per acre (variations are described below); the average cut tree size would be approximately 10 to 15 inches in diameter. Design criteria describe the retention of snags and other wildlife trees as

well as down logs. Design criteria also describe that skidding equipment will be restricted to designated skid trails but other equipment, such as harvesters, will operate within the units on beds of slash.

Riparian – On 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. Wider spacing would also mean that one thinning entry would create the desired conditions (compared to the matrix thinning spacing where multiple thinning entries would likely occur). Riparian thinning would generally remove the smaller trees, leaving approximately 80 of the largest trees per acre, variably spaced throughout the reserve. For this project, riparian reserve widths are 180 feet for non-fish-bearing streams and 360 feet for fish-bearing streams. Design Criteria #5 discusses no-harvest buffers of approximately 30 to 50 feet along streams. There are some small seeps and wet areas that are too small to show on the maps below. These areas would be excluded from harvest.

Fertilization – The proposed action is to aerially apply 200 pounds of nitrogen per acre to approximately 178 acres of second-growth conifer plantations within the matrix. (This is a connected action because it would occur in thinned plantations to supplement nutrient availability. Fertilization is not made necessary by thinning; it is a supplemental treatment to enhance growth. Fertilization is contingent upon funding availability. If funding is not immediately available, the thinning of plantations without fertilization is a viable option.) Fertilization would not occur in riparian reserves or seeps and wet areas.

Roads – For Alternative C, new temporary roads (approximately 2800 feet) would be constructed to access the landings. These roads would be obliterated and revegetated after completion of the project. Some existing overgrown roads need to be reopened to access landings for some units. Upon project completion, the roads that were opened would be closed.

Unit	Acres	Fertilization ac.
1	25	25
2	50	
3	16	16
4	13	13
5	12	12
6	28	
7	112	112
8	48	
9	25	
10	25	
11	105	
12	25	
13	13	
	497	

METHODOLOGY

Pre-Field Analysis: Prior to any site visits, the following pertinent information was reviewed: Aerial photography, Regional Forester's list of PETS species (revised April, 2004), Mt. Hood PETS plant database, and the Interagency Species Management System (ISMS) with information on the project area. No PETS species are known to occur within or adjacent to the proposed project area. Based on habitat and range information, (herbarium records, technical manuals, plant atlases, etc.), PETS species that are known or suspected to occur on the Mt. Hood National Forest and have potential habitat within the proposed project area are shown in Table 1.

TABLE 1. PETS Species Known Or Suspected Within The Vicinity Of The Proposed Project Area

Species	Common Name	General Habitat	Survey Period	Potential Habitat?
Vascular Plants				
<i>Agoseris elata</i>	tall agoseris	Moist-dry meadow	June-Aug	No
<i>Arabis sparsiflora</i> var. <i>atorubens</i>	sicklepod rockcress	Dry meadow, shrub-steppe	May-Aug	No
<i>Aster gormanii</i>	Gorman's aster	Dry cliffs, talus, rock slopes above 3500'	June-Sept	Yes
<i>Astragalus tyghensis</i>	Tygh Valley milkvetch	Shrub-steppe grassland	May-Aug	No
<i>Botrychium lanceolatum</i>	lance-leaved grape fern	Sub-alpine meadow, glacial till	July-Sept	No
<i>Botrychium minganense</i>	Mingan moonwort	Forested wetlands	June-Sept	Yes
<i>Botrychium montanum</i>	mountain grape-fern	Forested wetlands	June-Sept	Yes
<i>Botrychium pinnatum</i>	pinnate grape fern	Forested wetlands	June-Sept	Yes
<i>Calamagrostis breweri</i>	Brewer's reedgrass	Sub-alpine, moist – dry meadows	June- Sept	No
<i>Carex livida</i>	pale sedge	Wet-dry meadow, fen	June-Sept	No
<i>Castilleja thompsonii</i>	Thompson's paintbrush	Rock outcrops east of the Cascade Crest	July-Aug	No
<i>Cimicifuga elata</i>	tall bugbane	Mesic mixed hardwood/ conifer forest	June-Sept	Yes
<i>Coptis trifolia</i>	3-leaflet goldthread	Edge of forested fens	June-July	No
<i>Corydalis aquae-gelidae</i>	cold water corydalis	Forested seeps and streams	June-Sept	Yes
<i>Diphasiastrum complanatum</i>	ground cedar	Open conifer forest	Apr-Nov	No
<i>Erigeron howellii</i>	Howell's daisy	Moist-dry cliffs, talus, rocky slopes	June-Sept	No
<i>Fritillaria camschatcensis</i>	Indian rice	Moist-dry meadow	June-Aug	No
<i>Howellia aquatilis</i> var <i>howellia</i>	howellia	Low elevation lakes and ponds	June- Sept	No

Species	Common Name	General Habitat	Survey Period	Potential Habitat?
<i>Lewisia columbiana</i> var. <i>columbiana</i>	Columbia lewisia	Dry cliffs, talus, rocky slopes	June-Sept	No
<i>Lycopodiella inundata</i>	bog club-moss	Wet meadows and bogs	July-Sept	No
<i>Montia howellii</i>	Howell's montia	Moist-dry open lowland forest	April-July	Yes
<i>Ophioglossum pusillum</i>	adder's tongue	Wet-moist meadow	June-Sept	Yes
<i>Phlox hendersonii</i>	Henderson's phlox	Sub-alpine, dry, rocky, scree	July-Sept	No
<i>Potentilla villosa</i>	villous cinquefoil	Sub-alpine, dry, rocky, scree	July-Sept	No
<i>Ranunculus reconditus</i>	obscure buttercup	Shrub-steppe grasslands	April-June	No
<i>Romanzoffia thompsonii</i>	mistmaiden	Vernally wet cliffs	April-June	No
<i>Scheuchzeria palustris</i> var. <i>americana</i>	scheuchzeria	Wet meadow, bog, fen	June-Sept	No
<i>Sisyrinchium sarmentosum</i>	Pale blue-eyed grass	Moist-dry meadow	June-Aug	Yes
<i>Suksdorfia violacea</i>	Violet suksdorfia	Moist cliffs, talus, rocky slopes	May-July	No
<i>Taushia stricklandii</i>	Strickland's taushia	Moist-dry meadow	June-Sept	No
<i>Wolffia borealis</i>	Dotted water-meal	Pond, lake, gently flowing water	May-Sept	No
<i>Wolffia columbiana</i>	water-meal	Pond, lake, gently flowing water	May-Sept	No
Bryophytes				
<i>Rhizomnium nudum</i>	moss	Moist mineral soil in forest, 3000 – 5000 ft.	June - Oct	Yes
<i>Schistostega pennata</i>	green goblin moss	Moist mineral soil on rootwads	June- Oct	Yes
<i>Scouleria marginata</i>	moss	Rock and boulders in streams	May - Nov	No
<i>Tetraphis geniculata</i>	bent-awn moss	Large down wood in old growth forest	May- Oct	Yes
Lichens				
<i>Chaenotheca subroscida</i>	pin lichen	Boles of live trees and snags in moist forest	May-Nov	Yes
<i>Dermatocarpon luridum</i>	Brook lichen	Rock submerged in streams	May-Nov	No
<i>Hypogymnia duplicata</i>	Ticker-Tape lichen	Conifer boles where > 90" inches of precipitation	May - Oct	Yes
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	Jellyskin lichen	Bark of deciduous trees, down rotted logs and moss on rock	May-Nov	Yes
<i>Leptogium cyanescens</i>	Blue jellyskin lichen	Moss and bark of deciduous trees	May-Nov	Yes
<i>Lobaria linita</i>	Cabbage lungwort	Lower bole of conifers /often mossy boulders	May-Nov	Yes
<i>Nephroma occultum</i>	Cryptic kidney lichen	Tree boles and branches in older forest habitat	May-Nov	No

Species	Common Name	General Habitat	Survey Period	Potential Habitat?
<i>Pannaria rubiginosa</i>	Brown-eyed shingle lichen	conifer/deciduous tree bark in moist forest habitat	May-Nov	Yes
<i>Peltigera neckeri</i>	Black saddle lichen	Many substrates in moist forest	May-Nov	Yes
<i>Peltigera pacifica</i>	Fringed pelt lichen	On moss in moist forest habitats	May-Nov	Yes
<i>Pilophorus nigricaulis</i>	Matchstick lichen	Rock on cool, north-facing slopes	May-Nov	No
<i>Pseudocyphellaria rainierensis</i>	specklebelly	boles of hardwoods and conifers in older forests..	May-Nov	No
<i>Ramalina pollinaria</i>	Chalky ramalina	Bark in moist, low-elevation habitats	May-Nov	Yes
<i>Tholurna dissimilis</i>	Urn lichen	Branches of krummolz at moderate to high elev.	Jun-Oct	No
<i>Usnea longissima</i>	Methuselah's beard lichen	Branches of conifers and hardwoods in moist forest	Apr-Nov	Yes
Fungi				
<i>Bridgeoporus nobilissimus</i>	noble polypore	Large true fir snags	May-Nov	Yes
<i>Cordyceps capitata</i>	earthtongue	Parasitic on truffles (<i>Elaphomyces</i> spp.)	Sept-Oct	Yes
<i>Cortinarius barlowensis</i>	mushroom	Montane coniferous forest to 4000 ft.	Sept-Nov	Yes
<i>Cudonia monticola</i>	earthtongue	Spruce needles and coniferous debris	Aug-Nov	No
<i>Gomphus kauffmanii</i>	mushroom	Terrestrial in deep humus under pine and true fir	Sep-Nov	Yes
<i>Gyromitra californica</i>	mushroom	On/adjacent to-rotted confer stumps/ logs	June	Yes
<i>Leucogaster citrinus</i>	truffle	With the roots of conifers to 6600 feet	Aug-Nov	Yes
<i>Mycena monticola</i>	mushroom	Terrestrial in conifer forest above 3300 feet	Aug-Nov	Yes
<i>Otidea smithii</i>	cup fungi	Under cottonwood, D.-fir and w. hemlock	Aug-Dec	Yes
<i>Phaeocollybia attenuata</i>	mushroom	Terrestrial in conifer forest	Oct-Nov	Yes
<i>Phaeocollybia californica</i>	mushroom	With silver fir, Doug.-fir and w. hemlock	May, Oct-Nov	Yes
<i>Phaeocollybia olivacea</i>	mushroom	Terrestrial in low-elevation conifer forest	Oct-Nov	Yes
<i>Phaeocollybia oregonensis</i>	mushroom	Terrestrial with Doug fir, silver fir, w. hemlock	Oct-Nov	Yes
<i>Phaeocollybia piceae</i>	mushroom	Terrestrial with true & Doug.-fir /w. hemlock	Oct-Nov	Yes
<i>Phaeocollybia pseudofestiva</i>	mushroom	under mixed conifers and hardwoods	Oct-Dec	Yes

Species	Common Name	General Habitat	Survey Period	Potential Habitat?
<i>Phaeocollybia scatesiae</i>	mushroom	With true fir and <i>Vaccinium</i> spp.	May, Oct-Nov	Yes
<i>Ramaria amaloidea</i>	Coral mushroom	Terrestrial with true & Doug fir, w. hemlock	Sept-Oct	Yes
<i>Ramaria gelatiniaurantia</i>	Coral mushroom	Terrestrial with true & Doug fir, w. hemlock	Oct	Yes
<i>Sowerbyella rhenana</i>	Cup fungi	Moist, undisturbed, older conifer forests	Oct-Dec	No

Field Surveys: Field surveys were conducted within the project area between June 9 and September 14, 2004. With the exception of *Bridgeoporus nobilissimus*, surveys are not considered practical to detect the presence of PETS fungi species identified as having habitat within the proposed project area (FEIS 2004). It is assumed that these species are present in the project area where there is suitable habitat. Although there was an incidental find of one Sensitive Fungi within the project area, the surveys were not designed to survey for Sensitive fungi. Surveys to detect all other PETS species identified as having habitat in the project area are considered practical.

FINDINGS

Table 2.

Unit No.	Location	Habitat
3	Roads 45-220 & 45-63	Elevation is between 3000-3300'. Dominant trees are 30-50 year old silver fir, noble fir, western hemlock, western red cedar, Douglas fir with some red alder and bitter cherry. Poorly developed understory except on edges.
4 & 5	45-240 & 45-220	Elevation is between 3200-3400'. Dominant trees are 30-50 year old silver fir, noble fir, western hemlock, western red cedar, Douglas fir with some red alder and bitter cherry. Poorly developed understory except on edges and in disturbed openings.
6	45, 45-190	Elevation is between 3200-3500'. Lower portion dominated by western hemlock and Douglas fir aged 30-40 years and upper had pockets of silver and noble firs 50-70 years old, with western red cedar in wet areas. Wet areas and stream within central part of unit, east of the 4500 and south of the 190 spur, denoted by pink/black dot flagging.
7	Roads 45, 45-220 and 45-230	Elevation is between 3400-3600'. Old gravel storage area within unit is north of junction of 45-220 & 45-230 is weedy. Stream crosses 45-220 on the southern end of unit and there's a vernal wet meadow just off road 45 on the south end of unit that may be east of unit boundary. Much diversity present in the wet meadow, including Columbia brome (grass), native blue wild-rye (grass), carex species, willows, iris, lillies, and weeds too, with many large stumps. Obvious deer presence in meadow. Dominant trees are 30-50 year old silver fir, noble fir, western hemlock, western red cedar, and Douglas fir. Poorly developed understory due to

		dense stands, except on edges and in wet areas.
8	Roads. 45, 4510, 4510-021	Elevation is between 3200-3700'. Dominant trees are silver fir & western hemlock with some noble fir; some forest openings with rhododendron and vine maple; west of rd 4510 are some streams and wetlands and braided seeps; some wetlands contain skunk cabbage and salmonberry and other diverse species.
13	Road 4510-130	Elevation is between 2100-2400'. Western hemlock and Douglas fir trees dominate with western red cedar and red alder present along streams and in wet areas. The dominant understory shrub is salal. Clear Creek borders the east and south sides of the unit and there's a tributary to Clear Creek on the southwest side of the unit, near the bottom. The streamside vegetation is more lush and diverse and includes deer fern, skunk cabbage, and salmonberry.
11	Road 4510-160	Dominant trees include western hemlock, silver fir, and western red cedar and are up to 16" DBH. The area is largely dry and has few herbs and shrubs with some rhododendron presence. There's a small stream in the western part of the unit, observable from the 160 spur
10	4510-150	This unit is largely silver fir and noble fir with some western hemlock, western red cedar, Douglas fir, rhododendron and dwarf Oregon grape. Unit has some stumps over 3' diameter.
9	4510-161	This unit is near the top of Goat Mountain and is dominated by silver fir with some noble fir. Some high meadow & rocky openings near the top of the unit.
12	4510-150	Stand is dominated by western hemlock and Douglas fir, but there are some silver fir and noble fir also. This unit is bordered on the west side by a stream. Close to the western boundary, there's another fork that joins the stream, going through the unit's SW corner. Another stream flows southward through approximately the center of the unit. Near the east end of the unit there's a culvert with wet areas below, within the unit. The wet areas are evidenced by skunk cabbage, red alder, devil's club and mitrewort. The unit is quite wet and it's likely that water can be found wherever you observe the red alder.
1	Road 45	Dominant trees are western hemlock, silver fir, and Douglas fir and tend to be 50-70' tall and 8-12" DBH. There are some Pacific yew; the few understory herbs are spotty; common shrubs are rhododendron and vine maple
2	Road 45	Dominant trees are western hemlock, silver fir and Douglas fir and tend to be 50-70' tall and 8-12" DBH, some Pacific yew; the few understory herbs are spotty; common shrubs are rhododendron and vine maple. Memaloose Creek forms the western unit boundary.

PETS species detected by surveys:

Only one Sensitive Botanical species was found in the project area, *Gomphus kaufmannii*. One fruiting specimen for this fungal species was found between unit #13 and Clear Creek, within the 50' perennial stream buffer where no thinning is proposed. Although the identification of

this species has not yet been confirmed by experts, it will be assumed the preliminary identification is accurate.

Species Assumed Present due to presence of habitat:

Cordyceps capitata
Cortinarius barlowensis
Gomphus kaufmannii
Gyromitra californica
Leucogaster citrinus
Mycena monticola
Otidea smithii
Phaeocollybia attenuata
Phaeocollybia californica
Phaeocollybia olivacea
Phaeocollybia oregonensis
Phaeocollybia piceae
Phaeocollybia pseudofestiva
Phaeocollybia scatesiae
Ramaria amaloidea
Ramaria gelatiniaurantia

DETERMINATION OF EFFECT

Proposed, Threatened and Endangered Species

Howellia aquatilis is generally confined to palustrine wetlands. No habitat of this type exists within the project area, thus the proposed action will have **NO EFFECT** on this threatened species.

Sensitive Species

Table 3 displays the impact of the proposed action on species that were targeted by the field survey. Only one PETS species, *Gomphus kaufmannii*, was detected by the surveys, however, for the following fungi species, presence is assumed, because surveys are not practical and habitat is present.

Cordyceps capitata is a widespread but locally rare species documented from 38 sites in the western Cascade and Coast Ranges in Washington, Oregon and northern California. Two sites are known from Mt. Hood NF on Zigzag District. The species is parasitic on the fruiting body of *Elaphomyces* spp., a genus of underground-fruiting fungi in the truffle group. *Elaphomyces* are associated with the roots of conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees for *Elaphomyces*, and it is assumed that *C. capitata* will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Cortinarius barlowensis is widely distributed, known from 16 sites in the western Cascades, Coast Range and Olympic Mountains of Washington and Oregon. There are three known sites from the Mt. Hood NF on the Zigzag District. Habitat is soil under conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that *C. barlowensis* will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Gomphus kaufmannii is endemic to western North America and is found in California, Oregon, and Washington states. It is located either along the Pacific coast or in the Cascade-Sierran Range. Prior to locating the new site in this project area there were 5 known sites for this mushroom on the Mt. Hood National Forest, one of which is also on the Clackamas River Ranger District. The new site adjacent to unit 13 will not be impacted by project activities in the area where the above-ground fruiting body was collected. However, the below ground mycelium could extend into the unit where commercial thinning activities may compact the soil. Host trees for this species include a true firs and pines. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. Although some host trees will be removed in the thinning units potentially impacting individuals, others will remain, continuing to provide the host trees for this species. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Gyromitra californica is distributed from British Columbia to northern California and east to Colorado, Montana and Nevada. It is known in Washington, Oregon and northern California from 35 sites, one of which is on the Mt. Hood NF, Hood River District. This species is found on well-rotted stumps and logs of conifers or in soil with rotted wood. Removal of some trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Leucogaster citrinus is endemic to the Pacific Northwest, known from western Washington, western Oregon and northern California and known from 45 sites. There are four sites from the Mt. Hood NF, Zigzag District. This truffle species is associated with the roots of conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Mycena monticola is endemic to the Pacific Northwest where it is known from 153 sites, one of which is on the Mt. Hood National Forest. It is restricted to forests above 3000' in elevation, particularly those with *Pinus* spp. *Mycena monticola* is a saprophytic mushroom, living on the dead and decaying organic matter associated with coniferous forests. Commercially thinning units with this species may temporarily reduce the amount of suitable substrate for this species, potentially impacting some individuals. Removal of some trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Otidea smithii is known from 10 scattered sites in the western Washington, Western Oregon and northern California. On the Mt. Hood NF, there is one known location on Clackamas River District. This is found on soil under Douglas-fir, western hemlock and cottonwood. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Phaeocollybia attenuata is endemic to the Pacific Northwest from western Washington and western Oregon to northern California where it is known from 131 sites. One site is known from the Mt. Hood NF on Zigzag Ranger District. This species is on soil under conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Phaeocollybia californica is endemic to the Pacific Northwest, known from 34 sites in western Washington, western Oregon, and northern California. No sites are known to occur on the Mt. Hood NF, however, there is a site on the adjacent Columbia River Gorge National Scenic Area. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Phaeocollybia olivacea is endemic to the Pacific Northwest, known from 92 sites in western Washington, western Oregon and northern California. There is one known site on the Mt. Hood NF on Zigzag District. This species is terrestrial under conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Phaeocollybia oregonensis is endemic to Oregon where it is known from 11 sites, three of which are on the Mt. Hood National Forest, and one is known from the Clackamas River Ranger District. This species is terrestrial and associated with the roots of Douglas fir, western hemlock and Pacific silver fir. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Phaeocollybia piceae is endemic to the Pacific Northwest, known from 49 sites in western Washington, western Oregon and northern California. There is one known site on the Mt. Hood NF on Zigzag District. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The

proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Phaeocollybia pseudofestiva is endemic to the Pacific Northwest, known from British Columbia south through western Washington, western Oregon to California. There are 36 known sites in Washington, Oregon and California, four of which are on the Mt. Hood NF, Zigzag District. The species grows on soil under conifers. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist.. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing.

Phaeocollybia scatesiae is endemic to western Oregon and northwestern California where it is currently known from 16 sites. Three of these sites are on the Zigzag Ranger District of the Mt. Hood National Forest. This species is associated with the roots of true firs, Sitka spruce, and huckleberry species, from sea level to 3750' elevation. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Ramaria amaloides is endemic to the Pacific Northwest where one site has been documented on the Mt. Hood National Forest. This species is terrestrial and associated with the roots of Douglas fir, western hemlock, and true firs. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Ramaria gelatiniaurantia is another Pacific Northwest endemic species. It is currently known from a total of 24 sites, two of which are on the Mt. Hood National Forest. This species fruits in humus or soil and is associated with true firs, Douglas fir, and western hemlock. Removal of some host trees, soil compaction, and nitrogen fertilization could have a localized negative impact on individuals. The proposed action will not remove all the host trees and it is assumed that this species will be able to persist. The proposed action May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.

Table 3.

Vascular Plants			
Species Name	Common Name	Species Likely Present in Project Area?	Impact of Project
<i>Aster gormanii</i>	Gorman's aster	No	No Impact
<i>Botrychium minganense</i>	mingan moonwort	No	No Impact
<i>Botrichium montanum</i>	Mountain grape-fern	No	No Impact
<i>Botrychium pinnatum</i>	pinnate moonwort	No	No Impact
<i>Cimicifuga elata</i>	tall bugbane	No	No Impact
<i>Corydalis aquae-gelidae</i>	cold water corydalis	No	No Impact
<i>Montia howellii</i>	Howell's montia	No	No Impact
<i>Ophioglossum pusillum</i>	Adder's tongue	No	No Impact
<i>Sisyrinchium sarmentosum</i>	Pale blue-eyed grass	No	No Impact
Bryophytes			
<i>Rhizomnium nudum</i>	Moss	No	No Impact
<i>Schistostega pennata</i>	Green goblin moss	No	No Impact
<i>Tetraphis geniculata</i>	Bent-awn moss	No	No Impact
Lichens			
<i>Chaenotheca subroscida</i>	pin lichen	No	No Impact
<i>Hypogymnia duplicata</i>	Ticker-tape lichen	No	No Impact
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	jellyskin lichen	No	No Impact
<i>Leptogium cyanescens</i>	blue jellyskin lichen	No	No Impact
<i>Lobaria linita</i>	lungwort	No	No Impact
<i>Pannaria rubiginosa</i>	brown-eyed shingle lichen	No	No Impact
<i>Peltigera neckeri</i>	black saddle lichen	No	No Impact
<i>Peltigera pacifica</i>	fringed pelt lichen	No	No Impact
<i>Ramalina pollinaria</i>	Chalky ramalina	No	No Impact
<i>Usnea longissima</i>	Methuselah's beard lichen	No	No Impact
Fungi			
<i>Bridgeoporus nobilissimus</i>	Noble polypore	No	No Impact
<i>Cordyceps capitata</i>	earthtongue	Yes	MIIH
<i>Cortinarius barlowensis</i>	mushroom	Yes	MIIH
<i>Gomphus kaufmannii</i>	Mushroom	Yes	MIIH
<i>Gyromitra californica</i>	mushroom	Yes	MIIH
<i>Leucogaster citrinus</i>	truffle	Yes	MIIH
<i>Mycena monticola</i>	Mushroom	Yes	MIIH
<i>Otidea smithii</i>	cup fungi	Yes	MIIH
<i>Phaeocollybia attenuata</i>	mushroom	Yes	MIIH
<i>Phaeocollybia californica</i>	mushroom	Yes	MIIH
<i>Phaeocollybia olivacea</i>	mushroom	Yes	MIIH
<i>Phaeocollybia oregonensis</i>	Mushroom	Yes	MIIH
<i>Phaeocollybia piceae</i>	mushroom	Yes	MIIH
<i>Phaeocollybia pseudofestiva</i>	mushroom	Yes	MIIH
<i>Phaeocollybia scatesiae</i>	Mushroom	Yes	MIIH
<i>Ramaria amaloidea</i>	Coral mushroom	Yes	MIIH
<i>Ramaria gelatinaurantia</i>	Coral mushroom	Yes	MIIH

<i>Sowerbyella rhenana</i>	Cup fungi	Yes	MIIH
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MIIH = May Impact Individuals or Habitat but not likely to lead to a trend toward federal listing.

NI = A project or activity will have No environmental impacts on habitat, individuals, a population, or a species.

The Biological Evaluation is complete.

Recommended Design Criteria or Mitigation:

If an alternative is selected that has new road construction outside the existing proposed units, they will be surveyed by a trained Botanist and a supplemental BE will be prepared.

/s/ Carol Horvath

Carol Horvath, Botanist

November 20, 2004

Date

REFERENCES

Castellano, MA, Jane E. Smith, Thom O'Dell, Efren Cazares, Susan Nugent. Handbook to Strategy 1 Fungal Species in the Northwest Forest Plan, USDA Forest Service, Pacific Northwest Research Station, PNW-GTR-476-1999. Portland, OR.

Castellano, MA, Efren Cazares, Bryan Fondrick, Tina Dreisbach. Handbook to Additional Fungal Species of Special Concern in the Northwest Forest Plan, USDA Forest Service, Pacific Northwest Research Station, PNW-GTR-572-2003. Portland, OR.

Castellano, MA, Thom O'Dell. Management Recommendations for Survey and Manage Fungi Version 2.0, September 1997. USDA Forest Service.

Halverson, N.M., C. Topik and R. Van Vickle. Plant Association and Management Guide for the Western Hemlock Zone. Mt. Hood National Forest. USDA Forest Service, Pacific Northwest Region. R6-ECOL-232A-1986. Portland, OR.

Lilleskov, Erik A. and T. Bruns. Nitrogen and ectomycorrhizal fungal communities: what we know, what we need to know, Dept of Plant and Microbial Biology, U of Cal, Berkeley, CA from the New Phytologist (2001) 149:154-158

Tresder, Kathleen. A meta-analysis of mycorrhizal responses to nitrogen, phosphorus, and atmospheric CO2 in field studies by Kathleen K, Dept of Ecology and Evolutionary Biology and Dept. of Earth Systems Science, U of CA, Irvine, CA , New Phytologist (2004)

USDA Forest Service and USDI Bureau of Land Management. 2004. Record of Decision to Remove or Modify the Survey and Manage Mitigation Measure Standards and Guidelines in Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl. Portland, OR.