Biological Evaluation

for

Proposed, Endangered, Threatened, and Sensitive (PETS)
Botanical Species

(Vascular Plants, Bryophytes, Lichens, and Fungi)

Upper Clack Thinning Project

Clackamas River Ranger District
Mt. Hood National Forest
USDA - Forest Service

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Introduction

U.S. Forest Service policy requires that all actions be taken to "assure that management activities do not jeopardize the continued existence of sensitive species or result in an adverse modification of their essential habitat" (FSM 2670.3). Section 7 of the Endangered Species Act of 1973 (as amended in 1978, 1979, and 1982) directs federal departments/agencies to assure that actions authorized, funded, and/or conducted by them are not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of their critical habitat. The Act also directs each federal agency to confer or consult with the appropriate Secretary on any action that is likely to jeopardize or affect the continued existence of any species or its habitat. All Forest Service projects, programs, and activities require review and documentation of possible effects on Proposed, Endangered, Threatened, or Sensitive (PETS) species (FSM 2672.4). To comply with these directions and policies, a biological evaluation must be performed for all ground-disturbing activities on federal lands.

A 5-step process is used to summarize assessment procedures for PETS species currently listed on the Regional Forester's Sensitive Species List for the Mt. Hood National Forest (FSM 2672.4). The PETS species addressed during this process were based on the Regional Forester's Sensitive Species List for Region 6 (last revised 07-21-2004) and the current U.S. Fish and Wildlife Service (USFWS) Federal Species List.

The 5-step process consists of (1) a pre-field review of existing information; (2) a field reconnaissance if listed species or habitats are determined to be present and potentially affected by the proposed action; (3) an evaluation of project effects on species and habitats; (4) an analysis of the significance of the project's effects on local and entire populations of PETS species; and (5), if needed (due to lack of information), a biological investigation.

A determination of No Impact for PETS species can be made at any step in the process, at which time the biological evaluation is complete. If the results of the biological evaluation indicate that there may be an effect to proposed or listed species, conferencing or informal/formal consultation with the USFWS, as outlined in FSM 2673.2, would be initiated.

Project Location and Description

The proposed Upper Clack Thinning project is located on the Clackamas River Ranger District, Mt. Hood National Forest, in Clackamas County, Oregon.

The project is located in T.6S., R.6E.; T.6S., R.7E.; T.7S., R.7E.; T.8S., R.7E.; and T.7S., R.8E., Willamette Meridian.

The purpose of the project is to thin second-growth plantations (ranging in age from 40 to 55 years old) to achieve multiple objectives: (a) provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies; (b) increase health and growth that results in larger wind-firm trees; and (c) enhance riparian

reserves, late-successional reserves, and structural and biological diversity.

Step 1: Pre-field Review of Existing Information: Management proposals are investigated to determine whether potential PETS species habitat may exist within or adjacent to the project areas. Sources used include the Oregon Natural Heritage Database of rare species, the Mt. Hood National Forest Region 6 Sensitive Species plant database, GeoBOB (BLM database for ISMS rare plant records), scientific literature, aerial photos, topographic maps, and knowledge provided by individuals familiar with the area. Appendix A lists the habitat and identification period for PETS botanical species documented from, or suspected to occur on, the Mt. Hood National Forest.

Table 1. PETS botanical species documented or suspected to occur on the Mt. Hood National Forest

Species

Vascular Plants	**Common Name**	**Habitat in Project Area**
Agoseris elata	Tall agoseris	**Yes**
Arabis sparsiflora var. *atrorubens*	Sicklepod rockcress	No
Aster gormanii	Gorman's aster	**Yes**
Astragalus tyghensis	Tygh Valley milkvetch	No
Botrychium lanceolatum	Lance-leaved grape fern	No
Botrychium minganense	Mingan moonwort	**Yes**
Botrychium montanum	Mountain grape fern	**Yes**
Botrychium pinnatum	Pinnate grape fern	**Yes**
Calamagrostis breweri	Brewer's reedgrass	No
Carex livida	Pale sedge	**Yes**
Castilleja thompsonii	Thompson's paintbrush	No
Cimicifuga elata	Tall bugbane	**Yes**
Coptis trifolia	3-leaflet goldthread	No
Corydalis aquae-gelidae	Cold-water corydalis	**Yes**
Diphasiastrum complanatum	Ground cedar	No
Erigeron howellii	Howell's daisy	No
Fritillaria camschatcensis	Indian rice	No
Lewisia columbiana var. columbiana	Columbia lewisia	No
Lycopodiella inundata	Bog club-moss	**Yes**
Montia howellii	Howell's montia	**Yes**
Ophioglossum pusillum	Adder's tongue	**Yes**
Phlox hendersonii	Henderson's phlox	No
Potentilla villosa	Villous cinquefoil	No
Ranunculus reconditus	Obscure buttercup	No
Romanzoffia thompsonii	Mistmaiden	No
Scheuchzeria palustris	Scheuchzeria	**Yes**
Sisyrinchium sarmentosum	Pale blue-eyed grass	**Yes**
Suksdorfia violacea	Violet suksdorfia	No
Taushia stricklandii	Strickland's taushia	**Yes**
Wolfia boralis	Dotted water-meal	No

Wolfia columbiana	Water-meal	No

Bryophytes

Rhizomnium nudum	moss	**Yes**
Schistostega pennata	Green goblin moss	**Yes**
Scouleria marginata	moss	**Yes**
Tetraphis geniculata	Bent-awn moss	**Yes**

Lichens

Chaenotheca subroscida	pin lichen	**Yes**
Dermatocarpon luridum	Brook lichen	**Yes**
Fuscopannaria rubiginosa	Brown-eyed shingle lichen	**Yes**
Hypgymnia duplicata	Ticker-Tape lichen	**Yes**
Leptogium burnetiae var. *hirsutum*	Jellyskin lichen	**Yes**
Leptogium cyanescens	Blue jellyskin lichen	**Yes**
Lobaria linita	Cabbage lungwort	**Yes**
Nephroma occultum	Cryptic kidney lichen	**Yes**
Peltigera neckeri	Black saddle lichen	**Yes**
Peltigera pacifica	Fringed pelt lichen	**Yes**
Pilophorus nigricaulis	Matchstick lichen	**Yes**
Pseudocyphellaria rainierensis	Specklebelly lichen	No
Ramalina pollinaria	Chalky ramalina	No
Tholurna dissimilis	Urn lichen	No
Usnea longissima	Methuselah's beard lichen	**Yes**

Fungi

Bridgeoporus nobilissmus	noble polypore	**Yes**
Cordyceps capitata	earthtongue	**Yes**
Cortinarius barlowensis	mushroom	**Yes**
Cudonia monticola	earthtongue	**Yes**
Gomphus kauffmanii	mushroom	**Yes**
Gyromitra californica	mushroom	**Yes**
Leucogaster citrinus	truffle	**Yes**
Mycena monticola	mushroom	**Yes**
Otidea smithii	cup fungi	**Yes**
Phaeocollybia attenuata	mushroom	**Yes**
Phaeocollybia californica	mushroom	**Yes**
Phaeocollybia olivacea	mushroom	No
Phaeocollybia oregonensis	mushroom	**Yes**
Phaeocollybia piceae	mushroom	**Yes**
Phaeocollybia pseudofestiva	mushroom	**Yes**
Phaeocollybia scatesiae	mushroom	**Yes**
Ramaria amyloidea	coral fungi	**Yes**
Ramaria gelatiniaurantia	coral fungi	**Yes**
Sowerbyella rhenana	cup fungi	**Yes**

PETS botanical species <u>documented</u> to occur within or adjacent to the proposed project area:

Peltigera pacifica sites are documented near the proposed Upper Clack Thinning project area.

<u>Step 2: Field Reconnaissance</u>

Intuitive-controlled field surveys were conducted in the proposed project area in June and July of 2007. Surveys were done by two Mt. Hood National Forest botanists. Surveyed microhabitats included tree boles and branches, the forest floor, litterfall, stumps, snags, decaying logs, edges of streams, and seeps. The proposed project area consists of upland and riparian second-growth plantation forests that were logged 40-55 years ago.

The proposed Upper Clack Thinning project area includes young, mesic, low- to mid-elevation, mixed-conifer stands containing Douglas-fir (*Pseudostuga menziesii*), western hemlock (*Tsuga heterophylla*), Pacific silver fir (*Abies amabilis*), western red cedar (*Thuja plicata*), and mountain hemlock (*Tsuga mertensiana*). Dominant understory shrubs, ferns, and trees include baldhip rose (*Rosa gymnocarpa*), bracken fern (*Pteridium aquilinum*), hazelnut (*Corylus cornuta*), Oregon grape (*Berberis nervosa*), rhododendron (*Rhododendron macrophyllum*), salal (*Gaultheria shallon*), snowberry (*Symphoricarpos mollis*), sword fern (*Polystichum munitum*), and vine maple (*Acer circinatum*). Dominant herbs include prince's-pine (*Chimaphila umbellata*), starry Solomon's Seal (*Smilacina stellata*), twinflower (*Linnaea borealis*), and wild strawberry (*Fragaria vesca* and *F. virginiana*).

<u>Survey Results</u>

Fourteen sites for *Peltigera pacifica* (Fringed Pelt), a lichen on the Regional Forester's Sensitive Species list and the Survey and Manage list, were found in the proposed project area. A list of the sites with locations (unit numbers and UTM coordinates) is on file. No-cut buffers need to be established around these sites to protect (buffer) them not only from ground disturbance but also from alteration of stand microclimate resulting from thinning (opening of the stand). Stand microclimate changes can affect the survival of some lichen species.

Surveys to detect the presence of all PETS species of fungi identified as having habitat within the proposed project areas (FEIS 2004), except *B. nobilissimus*, are not considered practical because of the variability in fruiting-body (mushroom, truffle) production from year to year of most fungi, necessitating multi-year surveys to detect a species' presence. Therefore, PETS fungi other than *B. nobilissimus* were not targeted during the field surveys. If surveys determined suitable habitat to be present in the project areas for a particular species, however, then it was assumed that the species is likely present. Surveys for *B. nobilissimus* are practical because it produces perennial fruiting bodies on stumps and, less commonly, on snags and live trees. The other PETS species produce ephemeral, so-called fleshy, fruiting-bodies that decompose after a few weeks or more. Species of fleshy fungi are identified by aboveground or belowground fruiting bodies (e.g., mushrooms, truffles) that do not appear (i.e., fruit) each year. Belowground

fruiting bodies are located by lightly raking or digging in the upper surface (organic horizon and immediate sub-horizon) of the forest floor. For the 17 species of fungi on the Regional Forester's Sensitive Species list identified as having potential habitat in the project area (see below), a one-time survey is usually insufficient to detect their presence.

Invasive plant species (e.g., tansy ragwort, common tansy, St.-Johns-wort, and scotch broom) were found along roads and at other disturbed sites within the project area. Appendix B lists all native and non-native plant species inventoried in the proposed project area.

PETS botanical species <u>found</u> within or adjacent to the project areas: *Peltigera pacifica*

PETS botanical (fungal) species assumed present within or adjacent to the project areas:

1. *Cordyceps capitata*
2. *Cortinarius barlowensis*
3. *Cudonia monticola*
4. *Gomphus kauffmanii*
5. *Gyromitra californica*
6. *Leucogaster citrinus*
7. *Mycena monticola*
8. *Otidea smithii*
9. *Phaeocollybia attenuata*
10. *Phaeocollybia californica*
11. *Phaeocollybia oregonensis*
12. *Phaeocollybia piceae*
13. *Phaeocollybia pseudofestiva*
14. *Phaeocollybia scatesiae*
15. *Ramaria amyloidea*
16. *Ramaria gelatiniaurantia*
17. *Sowerbyella rhenana*

<u>Step 3: Risk Assessment</u>

Below is a brief discussion of those species whose individuals or habitat may be impacted although the impact is not expected to lead to a trend toward federal listing, including 17 species of PETS fungi that were not detected during the field survey but whose presence in the proposed project area is assumed. Table 2 summarizes the effect of the proposed action on all PETS botanical species.

The lichen *Peltigera pacifica* (Fringed Pelt) is on the Regional Forester's Sensitive Species list and the Survey and Manage list and is considered regionally rare (in the Northwest Forest Plan area) but may be uncommon, rather than rare, on the Mt. Hood National Forest. Field surveys over the last few years have found a large number of sites (>100) scattered in young forests proposed for commercial thinning on the Clackamas River Ranger District and in old forests in the summer home tracts on the Zigzag Ranger District. **Fourteen sites were found in the proposed project area.**

P. pacifica is a foliose (leaf-like) lichen that grows on soil, moss, rocks, logs, and tree bases (McCune and Geiser 1997). Its abundant marginal lobules and a glabrous upper surface (no tomentum) make this lichen distinctive from other *Peltigera* species. Like other *Peltigera* species, *P. pacifica* contains cyanobacteria that fix atmospheric nitrogen. *Peltigera* species thereby provide a valuable ecosystem service by adding nitrogen to forest soils. Ground disturbance or alteration of stand microclimate (opening of the stand) resulting from commercial thinning may affect the survival of *P. pacifica*. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

The clubmoss *Diphasiastrum complanatum* (Ground Cedar) is on the Regional Forester's Sensitive Species list and is considered rare. It grows in open forest habitat. Sites for ground cedar have been found on Tom, Dick, and Harry Ridge (high-elevation meadows above Ski Bowl) on the Zigzag Ranger District and nearby the proposed project area on the Clackamas River Ranger District. No individuals or sites were found during surveys in the proposed project area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

The grass-like iris *Sisyrinchium sarmentosum* (Pale Blue-Eyed Grass) is on the Regional Forester's Sensitive Species list and is considered rare. It grows in meadows. Sites for pale blue-eyed grass have been found at Little Crater Meadow and in meadows nearby the proposed project area on the Clackamas River Ranger District. No individuals or sites were found during surveys in the proposed project area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

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

2. *Cortinarius barlowensis* is widely distributed, known from 16 sites in the western Cascade Range, Coast Range, and Olympic Mountains of Washington and Oregon. There are two known sites from the Mt. Hood National Forest on the Zigzag Ranger District. Habitat is soil under conifers. Although some host trees might be removed, potentially impacting *C. barlowensis* individuals, other host trees will remain continuing to provide substrate for this species. Key elements of suitable habitat would still exist in the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

3. *Cudonia monticola* is endemic to the Pacific Northwest and grows under conifers in the spring and summer. This earth tongue fungus is scattered to gregarious or grows in dense clusters in humus, soil, and on rotting wood. Key elements of suitable habitat would still exist in the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

4. *Gomphus kauffmanii* is endemic to western North America and found in California, Oregon, and Washington along the Pacific coast or in the Cascade Range. There are 6 known sites for this mushroom on the Mt. Hood National Forest. Host trees for *G. kauffmanii* include true firs and pines. *G. kauffmanii* forms symbiotic associations with the fine-root systems of plants. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

5. *Gyromitra californica* is found from British Columbia south 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 National Forest (Hood River Ranger District). *G. californica* grows on well-rotted stumps and logs of conifers or in soil with rotted wood. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

6. *Leucogaster citrinus* is endemic to the Pacific Northwest with 45 sites known from western Washington, western Oregon, and northern California. There are four sites on the Zigzag Ranger District on the Mt. Hood National Forest. This truffle (belowground-fruiting) species is associated with the roots of conifers. The proposed action will not remove all host trees, so it is assumed that *L. citrinus* will be able to persist. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.**

7. *Mycena monticola* is endemic to the Pacific Northwest and is known from a number of sites in the Northwest Forest Plan area, scattered in the western and eastern Cascade Range, the Klamath Mountains, and the Olympic Mountains. On the Mt. Hood National Forest, one site has been documented (Bear Springs Campground, Barlow Ranger District). *M. monticola* is restricted to conifer forests above 1,000 meters in elevation, particularly those with *Pinus* spp. and usually found in gregarious, caespitose clusters in duff (Castellano et al. 1999). Key elements of suitable habitat would still exist in the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat

for this species, if it is present. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

8. *Otidea smithii* is known from 10 scattered sites in western Washington, western Oregon, and northwestern California. One location is known from the Clackamas River Ranger District on the Mt. Hood National Forest. *O. smithii* grows in soil under Douglas-fir, western hemlock, and cottonwood. Although some host trees might be removed, potentially impacting *Otidea* individuals, other trees will remain continuing to provide substrate for this species. Key elements of suitable habitat would still exist in the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

9. *Phaeocollybia attenuata* is endemic to the Pacific Northwest with 131 sites known from western Washington and western Oregon to northern California. One site is known from the Mt. Hood National Forest on the Zigzag Ranger District. *P. attenuata* grows in soil under conifers. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

10. *Phaeocollybia californica* is endemic to the Pacific Northwest with 34 sites known from western Washington, western Oregon, and northern California. No sites are known to occur on the Mt. Hood National Forest; however, there is a site in the adjacent Columbia River Gorge National Scenic Area. *P. californica* is terrestrial and associated with the roots of Douglas-fir, western hemlock, and Pacific silver fir. The proposed action will not remove all host trees, so it is assumed that *P. californica* will be able to persist. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.**

11. *Phaeocollybia oregonensis* is endemic to the Pacific Northwest with 10 sites known from the Oregon Coast Range and the western Cascade Range. On the Mt. Hood National Forest, there are two sites known from the Zigzag Ranger District. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock, and Pacific silver fir. The proposed action will not remove all host trees, so it is assumed that *P. oregonensis* will be able to persist. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.**

12. *Phaeocollybia piceae* is endemic to the Pacific Northwest with 49 sites known from western Washington, western Oregon, and northern California. There is one known site on the on the Zigzag Ranger District on the Mt. Hood National Forest. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock, and Pacific silver fir. The proposed action will not remove all host trees, so it is assumed that *P. piceae* will be able to persist. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing for this species.**

13. *Phaeocollybia pseudofestiva* is endemic to the Pacific Northwest from British Columbia south through western Washington and western Oregon to California. There are 36 known sites in Washington, Oregon, and California, four of which are on the Zigzag Ranger District on the Mt. Hood National Forest. The species grows in soil under conifers. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

14. *Phaeocollybia scatesiae* is endemic to the Pacific Northwest with 17 sites documented in the Northwest Forest Plan area, three on the Mt. Hood National Forest (Zigzag Ranger District). This species is associated with the roots of *Abies* spp., *Picea sitchensis*, and *Vaccinium* spp. from sea level to 1,250 meters in elevation (Castellano et al. 1999). Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

15. *Ramaria amyloidea* is endemic to the Pacific Northwest with 16 sites known from western Washington to northern California. Habitat for the species is soil on sites with true fir, Douglas-fir, and western hemlock. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

16. *Ramaria gelatiniaurantia* is endemic to the Pacific Northwest with 24 sites known from western Washington to northern California. Two sites are located on the Clackamas River Ranger District on the Mt. Hood National Forest. Habitat for the species is soil on sites with true fir, Douglas-fir, and western hemlock. Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to

provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

17. *Sowerbyella rhenana* is found in Europe, Japan, and northwest North America. In the Pacific Northwest, it is known from 55 sites in western Washington, western Oregon, and northern California, including two sites from the Mt. Hood National Forest on the Clackamas River and Zigzag Ranger Districts. Habitat for the species is soil under conifers. One collection was found under tanoak (*Lithocarpus densiflorus*). Soil compaction could have a localized negative impact on individuals. Key elements of suitable habitat would still exist inside the project areas, and similar habitat located in reserves adjacent to the project areas would presumably continue to provide undisturbed habitat for this species, if it is present. The proposed action **May Impact Individuals but is not likely to lead to a trend toward federal listing.**

Table 2. Biological Evaluation Process Summary by Species

SPECIES	Step #1 Prefield Review Habitat present?	Step #2 Field Reconn. Species present?	Step #3 Conflict Determination Conflict?	Step #4 Analysis of Effects Important?	Step #5 Biological Investigation Needed?
Vascular Plants					
Agoseris elata	Yes	No	No Impact	N/A	N/A
Arabis sparsiflora var. *atrorubens*	Yes	No	No Impact	N/A	N/A
Aster gormanii	Yes	No	No Impact	N/A	N/A
Botrychium minganense	Yes	No	No Impact	N/A	N/A
Botrychium montanum	Yes	No	No Impact	N/A	N/A
Botrychium pinnatum	Yes	No	No Impact	N/A	N/A
Carex livida	Yes	No	No Impact	N/A	N/A
Castilleja thompsonii	Yes	No	No Impact	N/A	N/A
Cimicifuga elata	Yes	No	No Impact	N/A	N/A
Coptis trifolia	Yes	No	No Impact	N/A	N/A
Corydalis aquae-gelidae	Yes	No	No Impact	N/A	N/A
Diphasiastrum complanatum	Yes	No, but nearby	MII	Yes	N/A
Lycopodiella inundata	Yes	No	No Impact	N/A	N/A
Montia howellii	Yes	No	No Impact	N/A	N/A
Ophioglossum pusillum	Yes	No	No impact	N/A	N/A
Scheuchzeria palustris var.*americana*	Yes	No	No Impact	N/A	N/A
Sisyrinchium sarmentosum	Yes	No, but nearby	MII	Yes	N/A
Taushia stricklandii	Yes	No	No Impact	N/A	N/A
Wolfia boralis	Yes	No	No Impact	N/A	N/A
Wolfia columbiana	Yes	No	No Impact	N/A	N/A

Bryophytes					
Rhizomnium nudum	Yes	No	No Impact	N/A	N/A
Schistostega pennata	Yes	No	No Impact	N/A	N/A
Scouleria marginata	Yes	No	No Impact	N/A	N/A
Tetraphis geniculata	Yes	No	No Impact	N/A	N/A
Lichens					
Chaenotheca subroscida	Yes	No	No Impact	N/A	N/A
Dermatocarpon luridum	Yes	No	No Impact	N/A	N/A
Fuscopannaria rubiginosa	Yes	No	No Impact	N/A	N/A
Fuscopannaria saubinetii	Yes	No	No Impact	N/A	N/A
Hypogymnia duplicata	Yes	No	No Impact	N/A	N/A
Leptogium burnetaie var. *hirsutum*	Yes	No	No Impact	N/A	N/A
Leptogium cyanescens	Yes	No	No Impact	N/A	N/A
Lobaria linita	Yes	No	No Impact	N/A	N/A
Peltigera neckeri	Yes	No	No Impact	N/A	N/A
Peltigera pacifica	Yes	Yes	MII	N/A	N/A
Usnea longissima	Yes	No	No Impact	N/A	N/A
Fungi					
Bridgeoporus nobilissimus	Yes	No	No Impact	N/A	N/A
Cordyceps capitata	Yes	Assumed Presence	MII	N/A	N/A
Cortinarius barlowensis	Yes	Assumed Presence	MII	N/A	N/A
Cudonia monticola	Yes	Assumed Presence	MII	N/A	N/A
Gomphus kauffmanii	Yes	Assumed Presence	MII	N/A	N/A
Gyromitra californica	Yes	Assumed Presence	MII	N/A	N/A
Leucogaster citrinus	Yes	Assumed Presence	MII	N/A	N/A
Mycena monticola	Yes	Assumed Presence	MII	N/A	N/A
Otidea smithii	Yes	Assumed Presence	MII	N/A	N/A
Phaeocollybia attenuata	Yes	Assumed Presence	MII	N/A	N/A
Phaeocollybia californica	Yes	Assumed Presence	MII	N/A	N/A
Phaeocollybia oregonensis	Yes	Assumed Presence	MII	N/A	N/A
Phaeocollybia piceae	Yes	Assumed Presence	MII	N/A	N/A
Phaeocollybia pseudofestiva	Yes	Assumed Presence	MII	N/A	N/A

Phaeocollybia scatesciae	Yes	Assumed Presence	MII	N/A	N/A
Ramaria amyloidea	Yes	Assumed Presence	MII	N/A	N/A
Ramaria gelatiniaurantia	Yes	Assumed Presence	MII	N/A	N/A
Sowerbyella rhenana	Yes	Assumed Presence	MII	N/A	N/A

MII = May Impact Individuals or Habitat, but will ***not*** likely contribute to a trend towards Federal listing or loss of viability to the population or species.

Implementation of the projects may **impact PETS vascular plant, bryophyte, or lichen species or their habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species**.

____ No Impact

__X__ May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species.

_____ Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

Implementation of the projects **may impact individuals or the habitat of fungi**, but will ***not*** likely contribute to a trend towards Federal listing or loss of viability to the population of the species.

_____ No Impact

__X__ May Impact Individuals or Habitat, but will ***not*** likely contribute to a trend towards Federal listing or loss of viability to the population or species.

_____ Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

The Biological Evaluation is complete.

Prepared by: _/s/ David S. Lebo_____ December 10, 2007

David S. Lebo, Ecologist/Botanist Date
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