

Biological Evaluation
for
Proposed, Endangered, Threatened, and Sensitive (PETS)
Vascular Plants, Bryophytes, Lichens, and Fungi

No Whisky Project

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

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 Description and Locations

The project proposes to commercially thin young forest stands in the No Whisky area to increase stand health and vigor; to enhance stand growth with the production of larger wind-firm trees; to increase and/or restore biological diversity; and to provide forest products consistent with the Northwest Forest Plan goal of maintaining the stability of local and regional economies now and in the future. High tree density (overstocking/overcrowding) has led to reduced tree growth in forest stands in the project area.

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 sensitive species plant database, the Interagency Species Management System (ISMS), 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

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

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Bryophytes

<i>Rhizomnium nudum</i>	moss	Yes
<i>Schistostega pennata</i>	Green goblin moss	Yes
<i>Scouleria marginata</i>	moss	No
<i>Tetraphis geniculata</i>	Bent-awn moss	Yes

Lichens

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

Fungi

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

PETS botanical species documented to occur within or adjacent to the project areas:

(1) *Usnea longissima* (Methuselah's Beard) and (2) *Peltigera pacifica*

Step 2: Field Reconnaissance

Intuitive field surveys were conducted for a total period of about three weeks in the proposed project area during the months of April, September, October, and November 2005. Field surveys were also done in several of the project areas in previous years by botanist Mark Boyll. Surveyed microhabitats included tree boles and branches, the forest floor, litterfall, stumps, snags, and decaying logs.

The project areas include mesic, low- to mid-elevation forest stands with a mixture of western hemlock (*Tsuga heterophylla*), Douglas-fir (*Pseudotsuga menziesii*), Pacific silver fir (*Abies amabilis*), western red cedar (*Thuja plicata*), and noble fir (*Abies procera*). Dominant understory shrubs and ferns include Oregon grape [*Mahonia* (= *Berberis*) *nervosa*], salal (*Gautheria shallon*), sword fern (*Polystichum munitum*), western rhododendron (*Rhododendron macrophyllum*), Alaska huckleberry (*Vaccinium alaskaense*), and bracken fern (*Pteridium aquilinum*). In most places within the project areas, understory vegetation is dense with little unoccupied growing space on the forest floor. Plant associations in the areas are in the western hemlock series, represented by associations such as TSHE/GASH, TSHE/MANE2, TSHE/MANE2-GASH, TSHE/MANE2/POMU, TSHE/RHMA3-MANE2, TSHE/ACCI-GASH/POMU, TSHE/VAAL-GASH, TSHE/VAAL/OXOR and others (McCain and Diaz 2002).

Survey Results

A number of locations for two lichens on the Regional Forester's sensitive species list for Region 6, *Usnea longissima* (Methuselah's Beard) and *Peltigera pacifica*, were found in the project areas. See Appendix C for locations of these lichens found in the project areas.

Usnea longissima is a highly distinctive epiphytic lichen that grows on hardwood and conifer branches and boles. It is long and pendant (hanging from tree branches) and resembles tinsel hanging on a Christmas tree. The largest populations of *U. longissima* were usually found in riparian areas in the project areas. Some upland-forest populations are also large (i.e., contained many individuals), but many were small (containing sometimes only a few thalli, or strands, of the lichen). This species likes moist and cool conditions, but also sunlight. Large populations seem to occur where there are canopy gaps in riparian areas or in upland forest. It is thought that this species reproduces vegetatively by fragmentation of the thallus, primarily: i.e., fragments of the lichen break off and are dispersed by the wind. The dispersal capability of this lichen is limited because of it being a relatively large and heavy lichen that easily becomes entangled on tree branches. Source populations may be those populations in the riparian areas from which the lichen then disperses into upland forest. Or larger populations in the upland forest may also act as source populations. The lichen has a very scattered distribution in the project areas.

Conservation of *U. longissima* in the project areas would probably be provided by marking trees on which it occurs as leave (no-cut) trees and not harvesting in those riparian areas where it occurs.

Peltigera pacifica is a foliose (leaflike) lichen that grows on soil, moss, rocks, decaying logs, and tree bases. This lichen is distinctive among species of *Peltigera* because of the abundant lobules (tiny lobes) on its thalli margins and glabrous (hairless) upper surface. The lichen can easily be overlooked during field surveys. There are probably more populations of *P. pacifica* in the project areas than were found. Botanist/lichenologist Mark Boyll, Mt. Hood National Forest, speculates that *P. pacifica* may actually be quite common to even abundant in some localities on the Mt. Hood National Forest although it is considered rare regionally. The area of summer homes along Highway 26 between Zigzag and Government Camp is a recently found apparent hotspot for this lichen. Individuals found in the area were usually growing on rocks.

Conservation of *P. pacifica* would be provided by protection buffer areas around the soil, rocks, or decaying logs where it was found in the project areas.

Invasive plant species were found along roads and existing landings within the project areas: e.g., tansy ragwort, common tansy, St.-Johns-wort, scotch broom, and cats-ear. Appendix B lists all plant species inventoried in the project area units.

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 seventeen R6 sensitive species of fungi identified as having potential habitat in the project area (see below), a one-time survey is usually not sufficient to detect their presence.

PETS botanical species found within or adjacent to the project areas: (1) *Usnea longissima* (Methuselah's Beard) and (2) *Peltigera pacifica*

PETS botanical 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*

Step 3: Risk Assessment

Table 3 displays the effect of the proposed action on PETS species of fungi that were not detected during the field survey but whose presence in the project areas is assumed.

1. *Cordyceps capitata* is a widespread but locally rare 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-fruited) 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

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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 displays the effect of the proposed action for PETS species identified in Step 1 as having potential habitat in the project areas.

Table 2. Biological Evaluation Process Summary by Species

SPECIES	Step #1	Step #2	Step #3	Step #4	Step #5
	Prefield Review	Field Recon.	Conflict Determination	Analysis of Effects	Biological Investigation
	Habitat present?	Species present?	Conflict?	Important?	Needed?
Vascular Plants					
<i>Cimicifuga elata</i>	Yes	No	No Impact	N/A	N/A
<i>Diphasiastrum complanatum</i>	Yes	No	No Impact	N/A	N/A
<i>Montia howellii</i>	Yes	No	No Impact	N/A	N/A
Bryophytes					
<i>Rhizomnium nudum</i>	Yes	No	No Impact	N/A	N/A
<i>Schistostega pennata</i>	Yes	No	No Impact	N/A	N/A
<i>Tetraphis geniculata</i>	Yes	No	No Impact	N/A	N/A
Lichens					
<i>Chaenotheca subroscida</i>	Yes	No	No Impact	N/A	N/A
<i>Hypogymnia duplicata</i>	Yes	No	No Impact	N/A	N/A
<i>Leptogium burnetaie</i> var. <i>hirsutum</i>	Yes	No	No Impact	N/A	N/A
<i>Leptogium cyanescens</i>	Yes	No	No Impact	N/A	N/A
<i>Lobaria linita</i>	Yes	No	No Impact	N/A	N/A
<i>Pannaria rubiginosa</i>	Yes	No	No Impact	N/A	N/A
<i>Peltigera neckeri</i>	Yes	No	No Impact	N/A	N/A
<i>Peltigera pacifica</i>	Yes	Yes	No Impact	N/A	N/A
<i>Usnea longissima</i>	Yes	Yes	No Impact	N/A	N/A
Fungi					
<i>Bridgeoporus nobilissimus</i>	Yes	No	MII	N/A	N/A
<i>Cordyceps capitata</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Cortinarius barlowensis</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Cudonia monticola</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Gomphus kauffmanii</i>	Yes	Assumed Presence	MII	N/A	N/A

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<i>Gyromitra californica</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Leucogaster citrinus</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Mycena monticola</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Otidea smithii</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia attenuata</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia californica</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia oregonensis</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia piceae</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia pseudofestiva</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Phaeocollybia scatesciae</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Ramaria amyloidea</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Ramaria gelatiniaurantia</i>	Yes	Assumed Presence	MII	N/A	N/A
<i>Sowerbyella rhenana</i>	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 will have **no impact** on **PETS vascular plant, bryophyte, or lichen species or their habitat.**

No Impact

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

Biological Evaluation
No Whisky Project
Vascular Plants, Bryophytes, Lichens, and Fungi

 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
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Westside Zone Botanist
Mt. Hood National Forest

 December 9, 2005
Date

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Appendix A

PETS botanical species that are known or suspected to occur on the Mt. Hood National Forest and have potential habitat within the proposed project areas are displayed in Table 2.

TABLE 2.

PETS Botanical Species Documented or Suspected from the Mt. Hood National Forest				
Vascular Plants				
Species	Common Name	General Habitat	Survey Period	Potential Habitat?
<i>Agoseris elata</i>	Tall agoseris	Moist-dry meadow	June-Aug	No
<i>Arabis sparsiflora</i> var. <i>atrurubens</i>	Sicklepod rockcress	Dry meadow, shrub-steppe	May-Aug	No
<i>Aster gormanii</i>	Gorman's aster	Dry cliffs, talus, rock slopes above 3,500 ft. elevation	June-Sept	No
<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	No
<i>Botrychium montanum</i>	Mountain grape-fern	Forested wetlands	June-Sept	No
<i>Botrychium pinnatum</i>	Pinnate grape fern	Forested wetlands	June-Sept	No
<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 crest of the Cascade Range	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	No
<i>Diphasiastrum complanatum</i>	Ground cedar	Open conifer forest	Apr-Nov	Yes
<i>Erigeron howellii</i>	Howell's daisy	Moist-dry cliffs, talus, rocky slopes	June-Sept	No

Biological Evaluation
No Whisky Project
Vascular Plants, Bryophytes, Lichens, and Fungi

<i>Howellia aquatilis</i> var. <i>howellia</i>	Howellia	Low-elevation lakes and ponds	June- Sept	No
<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	No
<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	No
<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 3,000 – 5,000 ft. in elevation	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 downed wood in old-growth forest	May- Oct	Yes

Biological Evaluation
No Whisky Project
Vascular Plants, Bryophytes, Lichens, and Fungi

Lichens				
Species	Common Name	General Habitat	Survey Period	Potential Habitat?
<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 annual precipitation	May - Oct	Yes
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	Jellyskin lichen	Bark of deciduous trees, decaying 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
<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 lichen	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	No
<i>Tholurna dissimilis</i>	Urn lichen	Branches of krummolz at moderate to high elevation	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 4,000 ft. elevation	Sept-Nov	Yes
<i>Cudonia monticola</i>	Earthtongue	Spruce needles and coniferous debris	Aug-Nov	Yes

Biological Evaluation
No Whisky Project
Vascular Plants, Bryophytes, Lichens, and Fungi

<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 conifer stumps/logs.	June	Yes
<i>Leucogaster citrinus</i>	Truffle	Associated with roots of conifers, up to 6,600 ft. elevation	Aug-Nov	Yes
<i>Mycena monticola</i>	Mushroom	Terrestrial in conifer forest above 3,300 ft. elevation	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, D-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	Associated with roots of silver fir, D-fir, and w. hemlock	Oct-Nov	Yes
<i>Phaeocollybia piceae</i>	Mushroom	Terrestrial with true fir, D-fir, and w. hemlock	Oct-Nov	Yes
<i>Phaeocollybia pseudofestiva</i>	Mushroom	Under mixed conifers and hardwoods	Oct-Dec	Yes
<i>Phaeocollybia scatesiae</i>	Mushroom	With true fir and <i>Vaccinium</i> spp	May, Oct-Nov	Yes
<i>Ramaria amyloidea</i>	coral fungi	Terrestrial under true fir, D-fir, and w. hemlock	Sep.-Oct.	Yes
<i>Ramaria gelatiniaurantia</i>	coral fungi	Terrestrial under true fir, D-fir, and w. hemlock	Oct.	Yes
<i>Sowerbyella rhenana</i>	cup fungi	Terrestrial under conifers	Oct.-Dec.	Yes

Appendix B. Species Inventory

TREES

Common name

Scientific name

Pacific silver fir	<i>Abies amabilis</i>
noble fir	<i>Abies procera</i>
vine maple	<i>Acer circinatum</i>
bigleaf maple	<i>Acer macrophyllum</i>
red alder	<i>Alnus rubra</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
willow	<i>Salix</i> sp.
western red cedar	<i>Thuja plicata</i>
western hemlock	<i>Tsuga heterophylla</i>

SHRUBS

pinemat manzanita	<i>Arctostaphylos nevadensis</i>
Oregon grape	<i>Berberis (= Mahonia) nervosa</i>
chinquapin	<i>Castanopsis chrysophylla</i>
salal	<i>Gaultheria shallon</i>
oceanspray	<i>Holodiscus discolor</i>
false huckleberry	<i>Menziesia ferruginea</i>
braken, brake-fern	<i>Pteridium aquilinum</i>
western rhododendron	<i>Rhododendron macrophyllum</i>
baldhip rose	<i>Rosa gymnocarpa</i>
salmonberry	<i>Rubus spectabilis</i>
Alaska huckleberry	<i>Vaccinium alaskaense</i>
big huckleberry	<i>Vaccinium membranaceum</i>
red huckleberry	<i>Vaccinium parvifolium</i>

FERNS

lady fern	<i>Athyrium felix-femina</i>
deer fern	<i>Blechnum spicant</i>
sword fern	<i>Polystichum munitum</i>
bracken fern	<i>Pteridium aquilinum</i>

HERBS

vanilla leaf	<i>Achlys triphylla</i>
pearly everlasting	<i>Anaphalis margaritacea</i>
anemone	<i>Anemone deltoidea</i>
wild ginger	<i>Asarum caudatum</i>

Biological Evaluation
No Whisky Project
Vascular Plants, Bryophytes, Lichens, and Fungi

prince's-pine, pipsissewa	<i>Chimaphila umbellata</i>
Queen's cup, bead lily	<i>Clintonia uniflora</i>
coptis	<i>Coptis laciniatus</i>
coralroot	<i>Corallorhiza</i> sp.
Canadian dogwood	<i>Cornus canadensis</i>
bleeding-heart	<i>Dicentra formosa</i>
foxglove	<i>Digitalis purpurea</i>
fragrant bedstraw	<i>Galium triflorum</i>
rattlesnake plantain	<i>Goodyera oblongifolia</i>
white-flowered hawkweed	<i>Hieracium albiflorum</i>
wild lettuce	<i>Lactuca muralis</i>
twinflower	<i>Linnaea borealis</i>
twayblade	<i>Listera</i> sp.
broadleaf lupine	<i>Lupinus latifolius</i> var. <i>latifolius</i>
large-leaved lupine	<i>Lupinus polyphyllus</i>
clubmoss	<i>Lycopodium clavatum</i>
skunk cabbage	<i>Lysichitum americanum</i>
false lily-of-the-valley	<i>Maianthemum dilatatum</i>
Indian pipe	<i>Monotropa uniflora</i>
oxalis	<i>Oxalis oregana</i>
coltsfoot	<i>Petasites frigidus</i>
pinedrops	<i>Pterospora andromeda</i>
whitevein pyrola	<i>Pyrola picta</i>
dwarf bramble	<i>Rubus lasiococcus</i>
trailing blackberry	<i>Rubus ursinus</i>
starry Solomon's-seal	<i>Smilacina stellata</i>
trillium	<i>Trillium ovatum</i>
inside-out flower	<i>Vancouveria hexandra</i>
violet	<i>Viola sempervirens</i>
beargrass	<i>Xerophyllum tenax</i>

GRASSES, SEDGES, AND RUSHES

orchard grass	<i>Dactylis glomerata</i>
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BRYOPHYTES

Antitrichia curtipendula
Dicranum fuscescens
Dicranum scoparium
Dicranum tauricum
Eurhynchium oreganum
Hylocomnium splendens
Hypnum circinale

Isothecium myosuroides
Metaneckeri menziesii
Neckeri douglasii
Plagiomnium insigne
Plagiothecium undulatum
Polytrichum juniperinum
Racomitrium elongatum
Racomitrium heterostichum
Rhizomnium glabrescens
Rhytidiadelphus loreus
Rhytidiadelphus triquetrus
Rhytidiopsis robusta
Scapania bolanderi
Sphagnum sp.
Trachybryum (=Homalothecium) megaptilum

LICHENS

Alectoria sarmentosa
Bryoria spp.
Cladonia spp.
Hypogymnia appinata
Hypogymnia enteromorpha
Hypogymnia inactiva
Hypogymnia occidentalis
Hypogymnia physodes
Ichmadophila ericetorum
Lobaria oregana
Lobaria pulmonaria
Parmelia sulcata
Parmeliopsis hyperopta
Peltigera canina
Peltigera collina
Peltigera membranacea
Peltigera neopolydactyla
Platismatia glauca
Platismatia herrei
Platismatia norvegica
Platismatia stenophylla
Sphaerophorus globosus
Stereocaulon tomentosum
Usnea filipendula

FUNGI

Albotrellus perscaprae
Armillaria ostoyae
Boletus zelleri (= *Xerocomus zelleri*)
Calocera viscosa
Cantharellus formosus (= *Cantharellus cibarius*)
Cantharellus infundibuliformis
Clavaria vermicularis
Coprinus atramentarius
Cortinarius violaceus
Cortinarius spp.
Cystoderma granulorum
Exidia glandulosa
Fomitopsis pinicola
Ganoderma applanatum
Gomphidius subroseus
Guepiniopsis alpinus
Gymnopus confluens (= *Collybia confluens*)
Helvella lacunosa
Hypomyces cervinigenus
Dentinum repandum (= *Hydnum repandum*)
Laccaria amethysteo-occidentalis (= *Laccaria amethystina*)
Laccaria laccata
Lactarius deliciosus
Lactarius rufus
Laetiporus sulphureus
Lepiota magnispora (= *Lepiota clypeolaria*)
Marasmius copelandi
Mucronella bresadolae
Mycena clavularis
Mycena sanguinolenta
Mycena monticola
Naematoloma capnoides (= *Hypholoma capnoides*)
Naematoloma fasciculare (= *Hypholoma fasciculare*)
Nolanea sp.
Pleurocybella porrigens
Polyporus badius
Polyporus decurrens
Polyporus schweinitzii
Poria corticola
Psseudohydnum gelatinosum
Ramaria stricta ?
Russula rosaea (= *Russula sanguinea*)
Russula silvicola (= *Russula emetica*)

Russula xerampelina
Stereum hirsutum
Strobilurus trullisatus
Suillus caeruleus
Suillus sibiricus
Thelephora terrestris
Tremella mesenterica
Trichaptum abietinus
Xylaria hypoxylon

INVASIVE PLANTS

Common Name

Scientific Name

bull thistle	<i>Cirsium vulgare</i>
Canada thistle	<i>Cirsium arvense</i>
grass pink	<i>Dianthus armeria</i>
oxeye-daisy	<i>Chrysanthemum leucanthemum</i>
scotch broom	<i>Cytisus scoparius</i>
St. Johns-wort	<i>Hypericum perforatum</i>
holly	<i>Ilex aquifolium</i>
tansy ragwort	<i>Senecio jacobaea</i>

Appendix C. Locations of R6 Sensitive Plant Species (*Usnea longissima* and *Peltigera pacifica*)

***Usnea longissima* Sites (19)**

1. 0566851 e, 5005798 n 4610 road by bridge
2. 0568094 e, 5005797 n on tree at corner of 4610 road and spur road
(0568115 e, 5005799 n = alternate GPS reading)
3. 0569693 e, 5005831 n along 4610 road (south side), 24" dbh PSME
4. 0566935 e, 5006027 n by bridge on both sides of road on 18-20" dbh alders
5. 0567089 e, 5006143 n alder along stream
(0567099 e, 5006140 n = alternate GPS reading)
6. 0567130 e, 5006149 n on PSME along stream
7. 0567157 e, 5006156 n on 16" dbh alder about 30' south of stream and on 14" dbh alder
about 50' south of stream
8. 0569737 e, 5005803 n large PSME along 4610 road by draw (swale) in forest
9. Unit 33 0566395 e, 5006921 n (0566391 e, 5006915 n = alternate GPS reading)
16-18" dbh red alder
10. Unit 33 0566412 e, 5006926 n (0566413 e, 5006947 n = alternate GPS reading)
18-20" dbh red alder, also on vine maple in understory
11. Unit 31 0567496 e, 5006387 n (0567497 e, 5006373 n = alternate GPS reading)
12" dbh red alder
12. Unit 31 0567502 e, 5006388 n 15" dbh red alder
13. Unit 31 0567529 e, 5006395 n 9" dbh red alder
14. Unit 31 0567622 e, 5006393 n 9" dbh red alder
15. Unit 31 0567712 e, 5006461 n 5" dbh snag, 25 ft. tall, canopy gap with ocean spray in
understory and young PSME 6-12" dbh, moss cover on forest floor instead of salal
16. Unit 31 0567815 e, 5006468 n 10" dbh PSME, two strands wrapped on lower branches
17. Unit 31 (next to site 16) 0567827 e, 5006516 n 10" and 12" dbh PSME, USLO scattered
throughout area on trees
18. Between Unit 31 and creek below 0567392 e, 5006343 n 36" dbh PSME
19. Next to site 18 0567400 e, 5006292 n 26" dbh PSME

***Peltigera pacifica* Sites (4)**

1. Unit 19 0568629 e, 5003453 n
2. Unit 19 0568353 e, 5003641 n
3. Unit 19 0568810 e, 5003462 n
4. Unit 16 0566270 e, 5004459 n