



United States  
Department of  
Agriculture

Forest  
Service

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National Forest

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**Date:** March 30, 2005

**Report #:** 2005.01A

**RE:** Botanical Biological Evaluation for R6 Sensitive Plants  
Bear Knoll Proposed Thinning

**To:** Project File

This Biological Evaluation has been completed for 32 vascular plant species and 37 nonvascular species (lichens, bryophytes, fungi) on the R6 Sensitive Plant List, revised July 2004, that are within the range of the Mt. Hood National Forest (Table 1, pages 5-8 of this report). The steps of the biological evaluation process, according to Forest Service policy, are detailed on page 2. A description of the Alternative options is included on page 3. Existing Conditions are discussed on page 4. An Effects Determination follows on page 9.

A risk assessment for State Certified Noxious Weeds has been completed in a separate report titled Bear Knoll Noxious Weed Risk Assessment – Report # 2005.01B.

## **EXISTING CONDITION - SUMMARY**

### R6 Sensitive Plant Species

Surveys have been conducted for all vascular plants, lichens, and bryophyte listed in Table 1 of this report, with an emphasis on those that are listed as having “suitable habitat present”. Surveys were conducted during 1997, 1998, 1999, 2000, and 2004 and focused on potential suitable habitat for 6 vascular plant species, 2 bryophyte species, 5 lichen species, and 1 fungi species (listed in Table 1 pages 6-8 of this report). Surveys for 18 R6 Sensitive fungi formerly listed as Survey and Manage were not required. Surveys for one fungi, *Bridgeoporus nobilissimus*, were required and were conducted in according to protocol. **No R6 Sensitive Species were found during multiple surveys over 5 years, and there are no known sites of R6 Sensitive Plants in the proposed project area.**

### Future Surveys May be Required

The Regional Forester’s list of Sensitive Plants is currently being updated; species may be added in 2005 or 2006. If the Bear Knoll EA is not signed before the list is finalized, or if the projects are not implemented before July 2009, the District Botanist should review the updated R6 Sensitive Plant list to determine if additional surveys are necessary.

## **EFFECTS ANALYSIS - SUMMARY**

Alternative I - No Action: **No Impact to R6 Sensitive Plants or their habitat.**

Alternative II - Proposed Action, and Alternative III: Surveys have been conducted as required. There are no known sites of R6 Sensitive Plants in the proposed project area and surveys over 5 years have only found unoccupied suitable habitat, therefore the proposed project would have **No Impact on R6 Sensitive Plants or their habitats.**

## **INTRODUCTION – Management Direction**

The objectives of the Biological Evaluation are as follows:

1. To ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or contribute to animal species or trends toward Federal listing of any species.
2. To comply with the requirements of the Endangered Species Act that actions of Federal agencies not jeopardize or adversely modify critical habitat of Federally listed species.
3. To provide a process and standard by which to ensure that threatened, endangered, proposed, and sensitive species receive full consideration in the decisionmaking process.

To achieve these objectives, all Forest Service projects, programs, and activities are to be reviewed for possible effects on Proposed, Endangered, Threatened, and Forest Service Sensitive (PETS) Species and the findings documented in the Decision Notice (FSM 2672.4).

The three steps to complete a biological evaluation are outlined in US Forest Service Manual (2672.42, 2672.43). Step 4 may also be required in certain circumstances. The steps are as follows.

**Step 1. Pre-field Review:** Each area potentially affected by management actions is investigated for potential PETS plant habitat in the pre-field review. To determine whether potential habitat exists in the proposed project area a number of sources should be used including the Oregon Natural Heritage Database of rare species, MHNH PETS plants database, aerial photos, topographic maps, and knowledge provided by individuals familiar with the area. Each PETS plant species documented or suspected to occur on the Mt. Hood National Forest is considered.

**Step 2. Field Reconnaissance:** Field reconnaissance is conducted when Step 1 has determined that there is potential for PETS species to occur within or adjacent to the project area. Surveys must be conducted during the time of year when the target species can be identified.

**Step 3. Risk Assessment:** If a PETS plant is found on or adjoining a site where an action is proposed, a risk assessment of the effects of the proposed action on the species and its habitats must be completed. A risk assessment considers (a) the likelihood of beneficial or adverse effects to the population or individuals from the proposed activities, and (b) the consequences of these effects to determine what the cumulative effects will be to the species as a whole. The risk assessment then makes a determination of No Effect, Beneficial Effect, or May Effect on the species and the process and rationale for the determination is documented in the environmental assessment or the environmental impact statement. Recommendations are offered for removing, avoiding, or mitigating for adverse effects.

**Step 4. Botanical Investigation:** When a risk assessment determines that information is not sufficient enough to assess the significance of the effects, a Botanical Investigation is required. This procedure involves additional investigation that essentially becomes background information for a conservation strategy. The result is a determination of significance of effects on species conservation and population objectives.

## **DESCRIPTION OF ALTERNATIVE OPTIONS**

### **Alternative I – No Action**

- No thinning, timber harvest, timber management, or associated activities.
- No new or temporary roads would be constructed or reconstructed.
- No roads would be closed and road density would remain at 3.32 miles per square mile.
- Driving for pleasure, hunting, and wood-cutting would continue.
- Road maintenance, noxious weed control, grazing, and fire suppression would continue.

### **Alternative II - Proposed Action**

- Thin 531 acres within the Bear Knoll planning area in order to reduce the current stand basal area from a range of 120-400 square feet to a range of 120-180 square feet depending on existing stand conditions. Thinning stands under this alternative include stand numbers 139, 146, 160, 164, 167, 174, 175, 177, 186, 211, 217, 220, and 225. Logging methods would include ground-based tractor and loader skidding. Fuels reduction would be accomplished by machine piling and burning of logging slash. Species such as Douglas fir, western hemlock, larch and Noble fir would be left where they are present. Existing remnant trees would be left on-site.
- Snags and down woody debris would be retained in the treated stands at 240-500 lineal feet per acre or 3-10 percent ground cover per acre.
- 1.46 miles of temporary roads would be established on existing footprints and would be obliterated after harvest.
- Prehaul maintenance would occur along established system roads.
- 3.62 miles of closed roads would be opened.
- 5.52 miles of roads would be closed with a heavy duty gate, and 1.78 miles would be closed with earth berms.
- Road maintenance, noxious weed control, grazing, and fire suppression would continue.
- Activities such as hunting, driving for pleasure, and wood-cutting would continue.
- FDR 2640-230 would continue to be used as part of the snowmobile system.
- No riparian areas would be entered in this alternative.

### **Alternative III**

- Thin 289 acres in order to reduce the current stand basal area range to 140-180 square feet. Thinning stands under this alternative include stand numbers: 160, 164, 167, 174, 175, 177, 186, a portion of 211. Logging methods would include ground-based tractor, and loader skidding. Fuels reduction would be accomplished through machine piling and burning of logging slash. Species such as Douglas fir, western hemlock, larch and Noble fir would be left where there are present in the stand. Existing remnant trees would be left.
- Snags and down wood would be retained. Down woody debris would be retained in the treated stands at 240-500 lineal feet per acre or 3-10 percent ground cover per acre. eliminate harvest in designated scenic viewsheds
- Temporary road TRI-11 would be used and then partially obliterated after harvest is complete.
- miles of currently closed roads would be re-opened.
- Prehaul maintenance would occur along established system roads.
- No new system road construction.
- Road maintenance, noxious weed control, grazing, and fire suppression would continue.
- Activities such as hunting, driving for pleasure, and wood-cutting would continue.
- No riparian reserves would be entered in this alternative.

## EXISTING CONDITIONS – Affected Environment

### Biological Evaluation Steps 1 and 2

There are 32 vascular plant species and 37 non-vascular species currently on the Region 6 list of Sensitive Plants that are within range of the Mt. Hood National Forest.

#### Prefield Review and Field Surveys - Summary

Prefield review of the proposed planning area identified potential suitable habitat for 15 species listed in Table 1 below. Field surveys focused on suitable habitats in riparian areas, natural openings, and forested stands older than 80 years. Surveys were conducted during appropriate seasons for definitive identification in May-July 1997, August-September 1998, June and August 1999, October 2000, and September 2004. No listed species were found.

#### Survey Results – Potential Suitable Habitat

Plant communities associated with *Botrychium minganense* and *Botrychium montanum* were found in Cedar forests along floodplains in riparian areas in Sections 25 and 26, Frog Creek and tributaries, and Frog Creek Ditch. Presence of associated plant communities indicates that potential suitable habitat is present, although the species have not been found during repeated field visits to the area over 5 years; there are no known sites in the vicinity of the planning area.

There are 2 known sites of *Shistostega pennata* (moss) near Barlow Creek approximately 2 miles north of the planning area boundary. Potential suitable habitat, in the pits under uprooted trees in wet areas, was identified in late seral forested areas in the Frog Creek riparian reserve, although the species was not located during repeated surveys over 5 years.

#### Former Survey and Manage Fungi

Surveys were previously not required for 19 former Survey and Manage fungi species that were moved to the R6 Sensitive Plant List in July 2004 (Regional Forester memo 7/21/2004). It is the line officer's decision to continue with the original Survey and Manage (SM) Standards and Guidelines (S&Gs) or comply with the Forest Service Sensitive Species Policy for ongoing projects that were in the development stage when the amended decision to remove the Survey and Manage Mitigation Measure S&Gs was signed March 22, 2004. Bear Knoll was in the developmental planning stage when the decision was signed. The line officer has chosen to follow the original SM S&Gs for fungi species that are now listed as R6 Sensitive, therefore surveys are still not required.

Under the original SM S&Gs surveys were required for one fungi species, *Bridgeoporus nobillissimus*. Potential suitable Habitat was identified in late seral forested stands in the planning area and surveys were conducted according to protocol. The species was not found during repeated surveys over 5 years between 1997 and 2004.

#### Former R6 Sensitive Plant Species

Two species formerly listed as R6 Sensitive Plants were found in the riparian reserve in section 3 and along Frog Creek: *Lycopodium annotinum* and *Lycopodium selago*. The species are not presently listed as R6 Sensitive because their populations are currently stable throughout their range. Protection Measures Are Not Required. The presence of these species is documented in this report for tracking purposes and historic reference.

**STEP 1. Pre-field Review of Existing Information  
And STEP 2. Result of Field Surveys**

The Region 6 Regional Forester’s Sensitive Species List as revised July 2004 was used to determine vascular plant species, fungi, bryophytes and lichens that are documented from or suspected to occur on the Mt. Hood National Forest. Table 1 documents those species that have potential to occur, or are known to occur, in the proposed planning area. Surveys have been conducted for all vascular plants, lichens, and bryophytes including those that are listed below as having “suitable habitat present”, including one fungi *Bridgeoporus nobillissimus*.

**TABLE 1.**

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

VASCULAR PLANTS					
Species Name	Common Name	Habitat	Season	Habitat Present	Species Present?
<i>Lewisia columbiana</i> <i>var. columbiana</i>	Columbia lewisia	Dry cliffs, talus, rocky slopes	June-Sept	No	No
<i>Lomatium Watsonii</i>	Watson's lomatium	Dry, cobbly soil	April-May	No	No
<i>Lycopodiella inundata</i>	bog club-moss	Wet meadows and bogs	July-Sept	No	No
<i>Montia howellii</i>	Howell's montia	Moist-dry open lowland forest	April-July	No	No
<i>Ophioglossum pusillum</i>	adder's tongue	Wet-moist meadow	June-Sept	No	No
<i>Phlox hendersonii</i>	Henderson's phlox	Subalpine, dry, rocky, Scree	July-Sept	No	No
<i>Potentilla villosa</i>	villous cinquefoil	Subalpine, dry, rocky, scree	July-Sept	No	No
<i>Ranunculus reconditus</i>	obscure buttercup	Shrub-steppe grasslands	April-June	No	No
<i>Romanzoffia thompsonii</i>	mistmaiden	Vernally wet cliffs	April-June	No	No
<i>Scheuchzeria palustris</i> <i>var. americana</i>	scheuchzeria	Wet meadow, bog, fen	June-Sept	No	No
<i>Sisyrinchium sarmentosum</i>	pale blue-eyed grass	Moist-dry meadow	June-Aug	Yes	No
<i>Suksdorfia violacea</i>	violet suksdorfia	Moist cliffs, talus, rocky slopes	May-July	No	No
<i>Taushia stricklandii</i>	Strickland's taushia	Moist-dry meadow	June-Sept	Yes	No
<i>Wolffia borealis</i>	dotted water-meal	Pond, lake, gently flowing water	May-Sept	No	No
<i>Wolffia columbiana</i>	water-meal	Pond, lake, gently flowing water	May-Sept	No	No
BRYOPHYTES					
<i>Rhizomnium nudum</i>	moss	Moist mineral soil in forest habitat, 3000 – 5000 ft.	June - Oct	Yes	No
<i>Schistostegia pennata</i>	green goblin moss	Moist mineral soil on rootwads	June-Oct	Yes	No
<i>Scouleria marginata</i>	moss	Rock and boulders in streams	May - Nov	No	No
<i>Tetraphis geniculata</i>	bent-awn moss	Large down wood in moist old growth forest primarily below 2500'	May-Oct	No	No

## LICHENS

Species Name	Common Name	Habitat	Season	Habitat Present	Species Present?
<i>Chaenotheca subroscida</i>	pin lichen	Boles of live trees and snags in low elevation forest habitat.	May-Nov	No	No
<i>Dermatocarpon luridum</i>	lichen	On rock submerged in streams	May-Nov	No	No
<i>Hypogymnia duplicata</i>	lichen	Conifer boles in areas of >90 inches of precipitation.	May - Oct	No	No
<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	lichen	Low elevation. Bark of deciduous trees, down rotted logs and moss on rock.	May-Nov	No	No
<i>Leptogium cyanescens</i>	lichen	Moss and bark of deciduous and less often coniferous trees.	May-Nov	Yes	No
<i>Lobaria linita</i>	lichen	Lower bole of conifers and less often mossy boulders.	May-Nov	No	No
<i>Nephroma occultum</i>	lichen	Tree boles and branches in older forest habitat	May-Nov	Yes	No
<i>Pannaria rubiginosa</i>	lichen	Bark of conifer and deciduous trees in moist forest habitat.	May-Nov	Yes	No
<i>Peltigera neckeri</i>	lichen	Many substrates in moist forest.	May-Nov	Yes	No
<i>Peltigera pacifica</i>	lichen	On moss in high humidity forest habitats	May-Nov	No	No
<i>Pilophorus nigricaulis</i>	lichen	Rock on cool, open, north-facing slopes.	May-Nov	No	No
<i>Pseudocyphellaria rainierensis</i>	specklebelly	Tree boles of hardwoods and conifers in wet older westside forest habitat.	May-Nov	No	No
<i>Ramalina pollinaria</i>	lichen	Bark in moist, low-elevation habitats.	May-Nov	No	No
<i>Tholurna dissimilis</i>	lichen	Branches of krummolz at moderate to high elevations.	Jun-Oct	No	No
<i>Usnea longissima</i>	lichen	Branches of conifers and hardwoods in moist westside forest habitats.	Apr-Nov	No	No

**FUNGI**

<b>Species Name</b>	<b>Common Name</b>	<b>Habitat</b>	<b>Season</b>	<b>Habitat Present</b>	<b>Species Present?</b>
<i>Bridgeoporus nobilissimus</i>	noble polypore	Large true fir snags	May-Nov	Yes	No
<i>Cordyceps capitata</i>	earthtongue	Parasitic on deer truffles (Elaphomyces spp.)	Sept-Oct	Yes	Unknown
<i>Cortinarius barlowensis</i>	mushroom	Montane coniferous forest to 4000 ft.	Sept-Nov	Yes	Unknown
<i>Cudonia monticola</i>	earthtongue	Spruce needles and debris.	Aug-Nov	No	Unlikely
<i>Gomphus kauffmanii</i>	mushroom	Terrestrial in deep humus under pine and true fir	Sep-Nov	Yes	Unknown
<i>Gyromitra californica</i>	mushroom	On or adjacent to well-rotted confer stumps and logs.	June	Yes	Unknown
<i>Leucogaster citrinus</i>	truffle	Associated with the roots of conifers up to 6600 feet.	Aug-Nov	Yes	Unknown
<i>Mycena monticola</i>	mushroom	Terrestrial in conifer forest to 3300 feet.	Aug-Nov	Yes	Unknown
<i>Otidea smithii</i>	cup fungi	Terrestrial under cottonwood, Doug.-fir and w. hemlock.	Aug-Dec	Yes	Unknown
<i>Phaeocollybia attenuata</i>	mushroom	Terrestrial in conifer forest.	Oct-Nov	Yes	Unknown
<i>Phaeocollybia californica</i>	mushroom	Terrestrial associated with silver fir, Doug.-fir and w. hemlock	May, Oct-Nov	Yes	Unknown
<i>Phaeocollybia olivacea</i>	mushroom	Terrestrial in low-elevation conifer forest.	Oct-Nov	Yes	Unknown
<i>Phaeocollybia oregonensis</i>	mushroom	Terrestrial with Doug fir, silver fir, w. hemlock	Oct-Nov	Yes	Unknown
<i>Phaeocollybia piceae</i>	mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Oct-Nov	Yes	Unknown
<i>Phaeocollybia pseudofestiva</i>	mushroom	Terrestrial under mixed conifers and hardwoods.	Oct-Dec	Yes	Unknown
<i>Phaeocollybia scatesiae</i>	mushroom	With true fir and <i>Vaccinium</i> spp.	May, Oct-Nov	Yes	Unknown
<i>Ramaria amyloidea</i>	coral mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Sept-Oct	Yes	Unknown
<i>Ramaria aurantiiscescens</i>	coral mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Oct	Yes	Unknown
<i>Ramaria geltiniaurantia</i>	coral mushroom	Terrestrial, associated with true fir, Doug.-fir and w. hemlock.	Oct	Yes	Unknown
<i>Sowerbyella rhanana</i>	cup fungi	Terrestrial in older conifer forest.	Oct-Dec	Yes	Unknown



## EFFECTS DETERMINATION

The following Direct, Indirect, and Cumulative Effects determinations are based on analysis of potential effects to unoccupied suitable habitat that exists for *Botrychium minganense*, *Botrychium montanum*, *Shistostega pennata*, in the riparian reserves within the Bear Knoll planning area. **Although these species have not been found during repeated surveys over 5 years of field reconnaissance, this analysis is being conducted because the habitat conditions, plant associations, and vicinity of known sites indicates that the suitable habitat could become occupied by these species in the near future.**

Direct and Indirect Effects: Short Term = Effects that occur during project implementation and during 5 years after projects are completed. Long Term = Effects that occur between 5 and 50 years after project activity.

### ALTERNATIVE I – No Action

- **Short and Long Term Direct and Indirect Effects**

There would be no Short or Long Term Effects, such as those associated with activities described under Alternatives II and III, because there would be no change in the activities that are currently present in the planning area.

- **Cumulative Effects**

Natural ecological succession of riparian plant communities would likely continue to develop suitable habitat for *Botrychium minganense*, *Botrychium montanum*, and *Shistostega pennata* and other riparian associated vascular plants, bryophytes, lichens, and fungi. Late seral habitat would likely continue to increase and as forested stands mature, large woody debris would continue to fall creating organic material that would enhance potential suitable habitat for terrestrial fungi, bryophytes, and vascular plants.

### ALTERNATIVES II and III

- **Short and Long Term Direct and Indirect Effects Common to Both Alternatives**

Potential suitable habitat for species listed above has been found only in the riparian reserves. Proposed activities identified under Alternative II and Alternative III do not include entering riparian reserves, therefore the Short and Long Term Direct and Indirect Effects would be the same as those identified under Alternative 1.

- **Cumulative Effects**

Although potential suitable habitat for *Botrychium minganense*, *Botrychium montanum*, and *Shistostega pennata* has been found in the riparian reserves, the species have not been found during 5 years of surveys conducted between May and September. There are no known Sensitive Plants in the planning area, therefore Alternative II and III would have No Impact on R6 Sensitive Plants or Their Habitats.

## CONCLUSION

There are no known sites of R6 Sensitive Plants in the proposed project area, therefore the proposed project would have No Impact on R6 Sensitive Plants or their habitats. This Biological Evaluation is complete.

/s/ J. Susan Nugent  
Prepared By: Susan Nugent, Hood River Ranger District Botanist

March 30, 2005  
Date