



United States
Department of
Agriculture

Forest
Service

Mt. Hood
National Forest

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Subject: R6 Sensitive Plant Species Biological Evaluation for Long Prairie Allotment

To: Daina Bambe

The following biological evaluation has been completed for 33 vascular plant species and 38 nonvascular species that are within range of the Mt. Hood National Forest. A summary of the risk assessment is detailed on page 2. Mitigation measures are discussed under Descriptions of Alternative Options, pages 13, 14, and 16.

PROJECT DESCRIPTION

The Long Prairie Grazing Allotment is located on the Mt. Hood National Forest (MHNF) in T.1S, R.10E, Sections 1,2,3, E. ½ Sec.10, 11,12,13,14, E.1/2 Sec. 15, NW ¼ Sec. 23 (Hood River County) and T. 1S, R. 11E, portions of sections 7 and 18 (Wasco County). The allotment is approximately 5700 acres, and has supported livestock grazing since the inception of the Mt. Hood National Forest in 1906. The current active permit allows 52 cow/calf pairs and there is one waived permit (inactive) for 53 cow/calf pairs. The analysis area includes portions of streams that lie within the approximately 1200 acres of Forest Service land that were exchanged to a private owner in 1992, and that were historically within the Allotment boundary. This is located in T. 1N, R. 10E, Sec. 36 and T. 1N, R. 11E, Sec. 31 (Hood River County). This land may continue to be grazed by the FS permittee under a verbal agreement with the landowner. Vegetation includes mixed conifer forests, meadows, and open grassy slopes. Average annual precipitation ranges from 50 inches on the west side to 30 inches on the east side, occurring mostly during the winter months. Elevation ranges from 2,200 to 4,200 feet. The area supports a wide variety of human uses, including recreation, wood products, and grazing. The area is important for fisheries, wildlife, plant, and other natural values.

SUMMARY OF EXISTING CONDITIONS

There are 71 R6 Sensitive botanical species in range of the Mt. Hood National Forest. Of the 71 species there is suitable habitat in the Long Prairie Allotment for 40 (13 vascular plant species, 4 lichen species, 2 bryophyte species, and 18 fungi species).

Known Sites

Three R6 Sensitive Plant species are present within the allotment area; 1) *Arabis sparsiflora* var. *atrorubens* has been reported at 8 sites along Surveyors Ridge Trail at the west edge of the allotment; 2) *Botrychium minganense* has been reported at 9 sites in riparian floodplains and springs in the analysis area and 3) *Lomatium watsonii* grows under the powerlines near Surveyors Ridge trailhead. For location details and a description of the habitat conditions see Existing Conditions - Known Sites, pages 8-11.

Fungi Surveys Not Conducted

There are 18 fungi species that have potential suitable habitat in the allotment area. Surveys have been conducted according to survey protocol for *Bridgeopurus nobilissimus*; it was not found in the area. At the time surveys were conducted under previous direction of the Northwest Forest Plan, they were not conducted for 17 fungi species because there were no survey protocols for those species. Surveys were considered “not practical” because certain fungi do not always appear in the same location every year and might not appear consistently season to season, therefore it would be necessary to survey during several seasons over multiple years. Because surveys were not conducted, this biological evaluation makes the assumption that any one or more of the 17 fungi species may be present in areas where suitable habitat is present.

SUMMARY OF RISK ASSESSMENT

There are no mitigation measures identified to reduce the risk for fungi because potential impacts are not expected to affect viability as suitable habitat is maintained in Late Successional Reserves in the area and across the Mt. Hood National Forest.

TABLE 2.

VASCULAR PLANTS				
Species Name	Common Name	Species Present in Allotment area?	Potential Impact: NO ACTION	Potential Impact: ALTERNATIVES II AND III
SURVEYORS RIDGE PASTURE				
<i>Arabis sparsiflora v. atrorubens</i>	Sicklepod rockcress	Yes	Beneficial Impact	MIIH*
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	MIIH
<i>Lomatium watsonii</i>	Watson's lomatium	Yes	Beneficial Impact	MIIH
LONG PRAIRIE PASTURE				
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	MIIH
GIBSON PASTURE				
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	Beneficial Impact
FUNGI				
<i>Cordyceps capitata</i>	earthtongue	Unknown	Beneficial Impact	MIIH
<i>Cortinarius barlowensis</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Gomphus kauffmanii</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Gyromitra californica</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Leucogaster citrinus</i>	truffle	Unknown	Beneficial Impact	MIIH
<i>Mycena monticola</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Otidea smithii</i>	cup fungi	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia attenuata</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia californica</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia olivacea</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia oregonensis</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia piceae</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia pseudofestiva</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Phaeocollybia scatesiae</i>	mushroom	Unknown	Beneficial Impact	MIIH
<i>Ramaria amyloidea</i>	coral fungi	Unknown	Beneficial Impact	MIIH
<i>Ramaria gelatiniaurantia</i>	coral fungi	Unknown	Beneficial Impact	MIIH
<i>Sowerbyella rhenana</i>	cup fungi	Unknown	Beneficial Impact	MIIH

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

THE BIOLOGICAL EVALUATION PROCESS

Four 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 described below.

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 allotment 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 allotment 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.

AFFECTED ENVIRONMENT / EXISTING CONDITION

STEP 1. Pre-field Review of Existing Information

Methodology

Prior to any site visits, the following pertinent information was reviewed: Aerial photography, Regional Forester's list of Sensitive Species (revised April, 2004), Mt. Hood Sensitive Plant database, and the Interagency Species Management System (ISMS) with information on the allotment area. Based on habitat and range information, (herbarium records, technical manuals, plant atlases, etc.), Sensitive Species that are known or suspected to occur on the Mt. Hood National Forest and that have potential habitat within the proposed allotment area are shown in Table 1 below.

Pre-field Review of Existing Information

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 allotment area.

TABLE 1.

VASCULAR PLANTS					
Species Name	Common Name	Habitat	Season	Suitable Habitat Present?	Known Sites?
<i>Agoseris elata</i>	tall agoseris	Moist-dry meadow	June-Aug	Yes	No
<i>Arabis sparsiflora</i> var. <i>atrорubens</i>	sicklepod rockcress	Dry meadow, shrub-steppe	May-Aug	YES	YES
<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	YES
<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	Yes	No
<i>Castilleja thompsonii</i>	Thompson's paintbrush	Rock outcrops east of the Cascade Crest	July-Aug	Yes	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	No	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	Yes	No
<i>Lomatium Watsonii</i>	Watson's lomatium	Dry, cobbly soil	April-May	YES	YES
<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	Yes	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	Yes	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>Schistostega 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	Yes	No
<i>Dermatocarpon luridum</i>	lichen	On rock submerged in streams	May-Nov	Yes	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	Yes	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	Yes	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	No	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 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 forest habitats.	Apr-Nov	No	No

FUNGI					
Species Name	Common Name	Habitat	Season	Habitat Present	Species Present?
<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 conifer 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	
<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.	Sep-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

AFFECTED ENVIRONMENT / EXISTING CONDITION

Results of Prefield Review

There is suitable habitat in the allotment area for 40 of the 71 species that are listed as R6 Sensitive in range of the Mt. Hood National Forest (13 vascular plants, 4 lichen species, 2 bryophyte species, and 18 fungi species). Potential suitable habitats for these species include Long Prairie, Gibson Prairie, Middle Prairie, Gibson Prairie Horse Camp, other smaller wet and dry meadows, all seeps, springs, ponds, streams, swales, rock outcrops and cobbly slopes, pine/oak woodlands, and late successional forested habitats throughout the allotment area. A search of District Botany records found site reports for the following known sites in and around the allotment area. Additional sites were found during field surveys that are documented under Field Reconnaissance on the following page.

Known Sites in The Proposed Allotment area

Surveyors Ridge Pasture

○ *Arabis sparsiflora* var. *atorrubens* (Nutt. mss.), Sicklepod rockcress

In 1990 24 sites of *Arabis sparsiflora* var. *atorrubens* were documented along Surveyors Ridge Trail; 8 of the sites are within the allotment area. The number of *A. sparsiflora* var. *atorrubens* individuals varied at each site at the time they were reported in 1990. The majority of the habitat area is in the steep grassy openings along the edges of the trail, and occasionally at the forest edges adjacent to the trail. The sites were last visited in 1995. It was noted that the species was more prevalent in the loose disturbed soil at the edges of the trail. It was also noted that cattle, horses, and wildlife were obviously using the trail as well as mountain bikes and hikers. The sites along Surveyor's Ridge Trail have not been visited since 1995, and the stability of the populations is unknown at this time. The known site near Surveyor's Ridge Trailhead was visited in 2004 and the population is currently stable.

○ *Botrychium minganense* Victorin, Mingan moonwort

In 1990 1 population of *B. minganense* plants was found in section 36 within the allotment area that is currently delineated on the proposed action map. The site was found on Forest Service land that was later included in the Lensky/Smith land exchange in the early 1990's and is now privately owned. The habitat is in a floodplain with an overstory of western red cedar and an understory of vine maple, mixed shrubs, and skunk cabbage. Monitoring plots were established at the site in 1990 and 23 individuals were tallied. The site was monitored again in 1992 and 35 individuals were tallied. Although monitoring was not conducted again until 1998 the site has been informally observed every other year since 1988. In 1997 the entire cedar forest habitat had been clear cut logged. Only 1 *B. minganense* plant was found under slash debris.

○ *Lomatium Watsonii* Coult. & Rose, Watson's desert parsley

In 1988 a single population of approximately 465 *Lomatium watsonii* individuals was found under the powerlines near the Surveyors Ridge trailhead. The habitat is a cobbly slope that is sparsely covered with herbaceous vegetation. The population has been observed annually since 1988. There is evidence that cows have been near the habitat area over the years although there has been no evidence of damage to the actual site. The primary impact to the habitat has been caused in the past by off-road vehicles and automobiles parking at the top edge of the habitat. In 1996 boulders were placed between the road and the habitat to deter traffic and have provided effective protection of the site. The site was visited in 2004 and the population is currently stable.

AFFECTED ENVIRONMENT / EXISTING CONDITION (cont.)

Known Sites in The Vicinity

○ ***Botrychium minganense* Victorin**

Two sites were found in 1988 approximately 300 meters north of the allotment area on Forest Service land that was later included in the Lensky/Smith land exchange in the early 1990's and is now privately owned. The habitat at both sites was primarily comprised of western red cedar, vine maple, huckleberry, and skunk cabbage. One *B. minganense* site (#HR88b) was found in section 36 in a floodplain approximately ¾ mile downstream of the headwaters of the West Fork of Neal Creek. Monitoring plots were established in 1988 and 40 *B. minganense* plants were tallied. The site was monitored again in 1991 and 131 individuals were tallied. In 1992, 523 individuals were tallied. The site was not monitored again until 1998 and 78 individuals were tallied. In 1998 it was noted that the habitat had been impacted by trampling and grazing cows and native ungulates, and by windthrown trees that had fallen into the habitat from the outer edges of a riparian buffer strip between 2 logged units. Herbivory of *B. minganense* individuals was also been noted.

The other *B. minganense* site (#HR88a) was found in a floodplain near the spring on the upper western fork of Neal Creek in section 31. Monitoring plots were established in 1988 and 20 *B. minganense* plants were tallied. The site was monitored again in 1992 and 16 individuals were tallied. The site was not monitored again until 1998 and 12 individuals were tallied. In 1999 the site was obliterated by clear-cut logging methods and *B. minganense* plants have not been found on repeated visits since 1999.

○ ***Agoseris elata* (Nutt.) Greene**

There is 1 known population of *Agoseris elata* in Brooks Meadow 4 miles south of the allotment boundary. The species has been observed annually since 1990. The population has expanded into the east end of the meadow and appears to be stable. The meadow is protected within The Dalles Watershed and grazing is not permitted.

Fungi Species Assumed Present Due to Presence of Suitable Habitat but Not Survey Practical:

Cordyceps capitata
Cortinarius barlowensis
Gomphus kaufmannii
Gyromitra californica
Leucogaster citrinus
Mycena monticola
Otidea smithii
Phaeocollybia attenuata
Phaeocollybia californica
Phaeocollybia olivacea
Phaeocollybia oregonensis
Phaeocollybia piceae
Phaeocollybia pseudofestiva
Phaeocollybia scatesiae
Ramaria amaloides
Ramaria gelatiniaaurantia
Sowerbyella rhenana

AFFECTED ENVIRONMENT / EXISTING CONDITION

STEP 2. Field Reconnaissance

Methodology

An “intuitive controlled” survey methodology was used, where all recognized habitats are initially sampled. The survey then focused on those habitats with potential for one or more Sensitive species. Surveys focused on potentially suitable habitats such as Long Prairie, Gibson Prairie, Middle Prairie, Gibson Prairie Horse Camp, other wet and dry meadows and grassy openings, all seeps, springs, ponds, streams, swales, rock outcrops and cobbly slopes (especially along Surveyors Ridge), and late successional forested habitats. Micro-habitats surveyed included;

- 1) boles and branches of conifer trees from ground-level to approximately 15 feet,
- 2) boles and braches of hardwood trees and shrubs from ground-level to approximately 15 feet
- 3) snags
- 4) rootwads in high humidity microsites
- 5) large class III, IV and V down wood
- 6) cut ends of felled trees

R6 Sensitive species detected by surveys

Surveys have been conducted for 23 species (Table I) that are known or suspected to occur in the allotment area. Surveys were conducted during June through September of 2000, 2001, 2002, 2003, and October 2004. During surveys that were conducted in 2001, 2002, and 2003, *Botrychium minganense* was found at 7 locations in the range allotment. No other Sensitive Plant Species were found.

Long Prairie Pasture

In 2001 a *B. minganense* site (#BOMI.01c) was found in the floodplain near the headwaters of the western fork of the West Fork of Neal Creek in section 11 to the south of Long Prairie. Western red cedar is the dominant overstory. There are 2 subpopulations at the site; 1 of the populations was recorded in 2001 as having 23 *B. minganense* individuals. The other population was recorded in 2002 as having “<60” *B. minganense* individuals. Both populations are within a “high use” area where cows tend to congregate in the late summer. Field reports note damage to habitat and vegetation caused by trampling and grazing cows and native ungulates in the floodplain habitat. Some herbivory of *Botrychium minganense* plants was also noted at both sites. One site was reported to have windthrown trees in the habitat. The sites have not been observed since 2002 and 2003, the condition of the *B. minganense* populations and their habitat is unknown at this time.

Gibson Prairie Pasture

In 2002 and 2003, 3 *B. minganense* sites (#BOMI.02a and b, and BOMI.03.1) were found in riparian floodplains near the headwaters of North Fork Mill Creek in the south half of section 14. Western red cedar is the dominant overstory. Although the sites were originally documented as 3 separate populations they are actually associated subpopulations due to their close proximity to each other. The sites are located in a “low use” area of the allotment. The range specialist Dan Fissel has reported that cows typically do not go into the portion of the allotment south of the North Fork of Mill Creek. The sites have not been observed since 2002 and 2003, the condition of the *B. minganense* populations and their habitat is unknown at this time.

STEP 2. Field Reconnaissance (cont.)

R6 Sensitive species detected by surveys

Gibson Prairie Pasture (cont.)

In 2001, 2 *B. manganense* sites were found in the northeast ¼ of section 12 in a seep area approximately 200 meters southwest of the spring at the headwaters of Mosier Creek. There are 2 subpopulations at the site (#BOMI.01a and b). The sites are located in a “low use” area of the allotment that is mainly forested habitat. The range specialist Dan Fissel has reported that cows might migrate through that particular portion of the allotment on their way to better forage. The sites have not been observed since 2001, the condition of the *B. manganense* populations and their habitat is unknown at this time.

DESIRED FUTURE CONDITION

Forest Service Policy, Forest Plan Standards and Guidelines, and Laws

Viability

FSM Direction

2672.1 - Sensitive Species Management. “Sensitive species of native plant and animal species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing. There must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole. It is essential to establish population viability objectives when making decisions that would significantly reduce sensitive species numbers.”

FSM 2670.22(2) - “Maintain viable populations of all native and desired non-native wildlife, fish and plant species in habitats distributed throughout their geographic range on National Forest System lands.”

Mt. Hood National Forest Plan Direction

FW-148 and 149 - Management activities shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species. The diversity of plants and animals shall be at least as that which would be expected in a natural forest; the diversity of tree species shall be similar to that existing naturally in the allotment area (36 CFR 219.27) FW-150.

FW-162 - Habitat management should provide for the maintenance of viable populations of existing native and desired non-native wildlife, fish (36 CFR 219.19) and plant species (USDA Regulation 9500-4) well distributed throughout their current geographic range within the National Forest System.

FW-175 - Habitat for threatened, endangered, and sensitive plants and animals shall be protected and/or improved.

DESIRED FUTURE CONDITION

Forest Service Policy, Forest Plan Standards and Guidelines, and Laws

Viability (cont.)

1982 NFMA Implementing Regulations

36 CFR 219.19 - "Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the allotment area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the allotment area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the allotment area."

The 1983 USDA Departmental Regulation 9500-4 provides further direction to the Forest Service, expanding the viability requirements to include plant species:

"Habitats for all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species. In achieving this objective, habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range . . . Monitoring activities will be conducted to determine results in meeting population and habitat goals."

DESCRIPTION OF ALTERNATIVE OPTIONS

Alternatives:

I. No Action (no grazing):

- ✓ This alternative would eliminate commercial livestock grazing from the Long Prairie allotment. Existing improvements that do not serve another purpose (i.e.: use by recreational stock) would be removed.

II. Current Management:

- ✓ This alternative would propose no significant changes to current management.
- ✓ This alternative would continue to authorize grazing of 105 cow/calf pairs. This includes one active permit for 52 cow/calf pairs and one waived permit (in-active) for 53 cow/calf pairs. The waived permit may be re-issued to a legitimate livestock operator, following FSM procedures.
- ✓ The Long Prairie corral would be used as a turn out in the spring and a gathering site in the fall.
- ✓ The private land north of the allotment boundary would no longer be considered for inclusion in a grazing system with Forest Service lands, as in the past. A fence is not proposed under this alternative.
- ✓ Normal grazing season would be approximately June 15 to September 30 (actual season depends on condition of vegetation and other local factors).

DESCRIPTION OF ALTERNATIVE OPTIONS (cont.)

II. Current Management:

- ✓ A three pasture rest-rotation grazing system would continue to be followed.
- ✓ Existing exclosures around sensitive areas would be maintained.
- ✓ Use of fenced pasture and corrals at Long Prairie would be allowed through the season until 35% forage utilization is achieved.

Range Improvements/Design Features for this alternative:

- ✓ Before cattle are turned back out, the fence on 1711 (1.5 miles) and 1700 (2 miles) would be reconstructed.
- ✓ To protect stream banks from livestock trampling, down wood would be placed in headwaters of NF Mill creek in Gibson Prairie meadow (the timing of this is based on funding and may not occur before cattle are turned out).
- ✓ Reconstruct the eastern allotment boundary and drift fence (1-2 miles) of the allotment (the timing of this is based on funding and may not occur before cattle are turned out).

MITIGATION MEASURES FOR THIS ALTERNATIVE

○ *Arabis sparsiflora var. atrorubens* (Nutt. mss.), Sicklepod rockcress

It is expected that there would not be an increase in cattle use of Surveyors Ridge Trail under this alternative. It might be difficult to assess the exact cause of any measurable changes in the population trend of Sicklepod rockcress along the trail as it is regularly used by animals *and* humans. However, all sites along Surveyors Ridge should be revisited and site records should be updated to use as a baseline for tracking population trend. If numbers appear to have declined since the year of the original reports, monitoring should be conducted to determine the potential cause(s) and a conservation strategy should be developed if necessary to ensure viability of the species on the Mt. Hood National Forest.

○ *Botrychium minganense* Victorin, Mingan moonwort

An exclosure device should be constructed (by summer of 2007) around the habitat area (approximately 1-2 acres) at the headwaters of western fork of the West Fork of Neal Creek in section 11 to the south of Long Prairie. Monitoring should be conducted in 2006 and once every 2-3 years after the fence is constructed. If population numbers decline over a 3-5 year period, and if it is evident that the decline can be attributed to a particular cause, additional measures may be necessary to ensure viability of the population. Monitoring should be conducted as per the "Conservation Strategy for Rare Botrychium Species in Region 6" that is scheduled to be issued at the Regional level in 2005. Consultation with the District Botanist should occur for any placement of downed wood in riparian areas to ensure that the sites are directly impacted.

II. Current Management (cont.)

MITIGATION MEASURES FOR THIS ALTERNATIVE

○ *Lomatium Watsonii* Coult. & Rose, Watson's desert parsley

In the past the primary impact to the habitat area has been caused by off road vehicles and noxious weeds. It is expected that the cattle use near the habitat area on Surveyors Ridge would not increase, however the site should be revisited and the site records should be updated to use as a baseline for tracking population trend. If the population numbers appear to have declined since the year of the last report, protection measures should be implemented (such as continued control of noxious weeds and placement of additional boulders around the site to deter access by off road vehicles and/or cows and other large mammals). A conservation strategy may be necessary to ensure long term viability of the population.

III. Proposed Action: This alternative will focus on end results for the resources, through adaptive management. "Adaptive management requires knowledge of the current conditions, potential or capability of riparian sites, current management, effects of the management on the resources, and possible management changes that may be made to move the current condition toward the desired condition (Cowley and Burton, 2004)".

- ✓ This alternative proposes to use an adaptive management approach where detailed thresholds will be identified and monitored on an appropriate basis and identified in the specialist reports. Grazing management could be adjusted through increasing or decreasing livestock numbers, or adjusting the timing, frequency, intensity, or duration of grazing. Incremental increases to permitted livestock numbers would be based on resource recovery. Stream morphology and vegetation conditions would be monitored and stocking levels adjusted accordingly. This might include monitoring of cross-section channel conditions or the vegetation greenline along the streambanks. Cross sections of the stream channel would be assessed once for baseline and repeated every 3-5 years. On-going Mt. Hood NF stream surveys would continue and would be included as part of this adaptive management assessment. The monitoring methods wouldn't have a rigid scheme, although they would be done at the same time (season) of year. Short-term monitoring/implementation monitoring (stubble height, greenline, and stream alteration) would be done as part of the annual monitoring plan. Long-term trend monitoring/effectiveness monitoring (i.e. vegetation plots—permanent transect would be read every 3-5 years to evaluate) would be included as part of the monitoring plan.
- ✓ Under this alternative a maximum of 485 AUMs could be authorized. However under the adaptive management principle a course of action is selected as a starting point (240 AUMs, or 52/pair for 3.5 months) that is believed to best meet or move toward the desired objectives. Monitoring will occur over time with evaluation of the results then used by the Interdisciplinary Team and the Line Officer to make adjustments to management (timing, frequency, duration and intensity) as needed to ensure adequate progress toward the defined objectives. The maximum numbers under this alternative would be a 3.5 month grazing season with 105 cow/calf pairs or 485 AUMs.
- ✓ This alternative proposes a normal grazing season of June 15 to September 30 (season may be adjusted to reflect annual variations in range readiness, range condition, utilization levels, and fisheries spawning season requirements).

DESCRIPTION OF ALTERNATIVE OPTIONS (cont.)

III. Proposed Action:

- ✓ This alternative would convert the allotment to a two-pasture, deferred-rotation grazing scheme, utilizing the Long Prairie and Gibson Prairie pastures. Surveyor's Ridge pasture could be used in the future if resource conditions or management considerations warrant (this means that all animals could be in Surveyor's Ridge at once and although it is initially going to be a 2-pasture scheme, all pastures will need to be analyzed for use).
- ✓ The trough (Joe's Spring) in Long Prairie meadow would be piped from its current location into the new enclosed area.
- ✓ The new corral site at Long Prairie would be used as a gathering facility for animals in the fall before removal. There may be some incidental use throughout the season to accommodate horses used by the permittees to manage their livestock, or sick animals needing attention.
- ✓ Cattle would be turned out in the spring at one of four turn-out locations. The turn out location selected each year would be based on pasture in use. The turn out location in the Gibson Prairie pasture would be at the 90-degree bend in the 170013 (about half way in on the 170013). For the Long Prairie pasture the turn out location would be at the end of the 1710643 or the 1710630 (both will need to be analyzed). If Surveyor's Ridge pasture is utilized, the turn out location would be at the end of the 1700672.
- ✓ Salting locations would occur in the same spots as the turn out locations. In other words, a salt lick would be placed at the ends of roads 1710643, 1710630, 1700672 and at the bend in 170013.

Range Improvements/Design Features for this alternative:

- ✓ Before cattle are turned back out, the fence on 1711 (1.5 miles) and 1700 (2.5 miles) would be reconstructed.
- ✓ A fence would be constructed on the northern side of NF Mill Creek, to restrict cattle from the North Fork Mill Creek drainage. The fence runs through sections 7, 12-14. The fence would be constructed before the cattle are turned out in 2007.
- ✓ This alternative proposes to fence the northern boundary of the allotment. This would include 2 miles of fence and 3 cattleguards. The private land north of the allotment boundary would no longer be considered for inclusion in a grazing system with Forest Service lands, as in the past.

DESCRIPTION OF ALTERNATIVE OPTIONS (cont.)

III. Proposed Action:

- ✓ Where evidence of streambank trampling exists near the headwaters of NF Mill in Gibson Prairie meadow (on the north side of the proposed fence), down wood would be placed along riparian area.
- ✓ Reconstruct the eastern allotment boundary and drift fence (1-2 miles) of the allotment (the timing of this is based on funding and may not occur before cattle are turned out).

MITIGATION MEASURES FOR THIS ALTERNATIVE

- ***Botrychium minganense* Victorin, Mingan moonwort**

An enclosure device should be constructed (by summer of 2007) around the habitat area (approximately 1-2 acres) in the northeast $\frac{1}{4}$ of section 12 in a seep area approximately 200 meters southwest of the spring at the headwaters of Mosier Creek. Monitoring should be conducted in 2006 and once every 2-3 years after the fence is constructed. If population numbers decline over a 3-5 year period, and if it is evident that the decline can be attributed to a particular cause, additional measures may be necessary to ensure viability of the population. Monitoring should be conducted as per the "Conservation Strategy for Rare Botrychium Species in Region 6" that is scheduled to be issued at the Regional level in 2005. Consultation with the District Botanist should occur for any placement of downed wood in riparian areas to ensure that the sites are directly impacted.

EFFECTS ANALYSIS / ENVIRONMENTAL CONSEQUENCES

Effects Analysis Area = Mill Creek Watershed

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 (no grazing)

Short and Long Term Direct and Indirect Effects

- *Arabis sparsiflora var. atrorubens* (Nutt. mss.), Sicklepod rockcress

The known sites are within the “low use” area of Surveyors Ridge pasture where cows do not typically go unless they are migrating to more palatable forage or to water. During site revisits conducted prior to 1995 there was no observable evidence to indicate that the occasional presence or absence of cows in the area had measurable short or long term effects on Sicklepod rockcress and its habitat.

Under the No Action alternative recreational use of the trail would still be allowed. During site frequent informal site visits conducted prior to 1995 there was observable evidence that Sicklepod rockcress appeared to be thriving in areas where soil had been loosened by gophers/moles, frost heave, erosion at trail edges and around rock outcrops, etc. It was also noted that recreational use of the trail by hikers, bikers, horseback riders may have contributed to soil erosion along the edges of the trail. Informal observations also noted that Sicklepod rockcress was not thriving in compacted soils. Compacted soils in habitat areas off the Surveyors Ridge Trail occur around rock outcrops and flat or gently sloping grassy openings that are used as viewpoints by recreationists, and to a lesser degree by trampling caused by animal use.

ALTERNATIVE I = No Action (no grazing)

Cumulative Effects

- *Arabis sparsiflora var. atrorubens* (Nutt. mss.), Sicklepod rockcress (cont.)

Surveyors Ridge Trail also functions as a dispersal corridor for noxious weeds that spread out into grassy openings and compete with Sicklepod rockcress and native plant communities for water and nutrients.

Monitoring would be needed to accurately assess the long term effects that various factors might have on Sicklepod rockcress and its habitat along Surveyors Ridge. Currently assumptions can only be made based on occasional informal observation (which does not include tally of individual plants) over the past 10 years.

EFFECTS ANALYSIS / ENVIRONMENTAL CONSEQUENCES ALTERNATIVE I = No Action (no grazing)

Short and Long Term Direct and Indirect Effects (cont.)

○ *Botrychium minganense* Victorin, Mingan moonwort

In the allotment only 1 site is located in a “high use” area; the other 5 sites are located in areas that are not typically used by cows. Cattle tend to congregate in the high use areas during July and August when Mingan moonwort is emerging. The cattle have a direct effect on Mingan moonwort as they wallow in its riparian habitat which has been observed to cause a loss of vegetative cover and diversity of riparian associated plants, a decrease in streambank stability, and increased soil erosion and compaction. The absence of cows under the No Action alternative would allow riparian ecosystems and Mingan moonwort habitat in the allotment to respond to natural processes over the long term.

○ *Lomatium Watsonii* Coult. & Rose, Watson’s desert parsley

The site on Surveyors Ridge is within the “low use” area of Surveyors Ridge pasture where cows do not typically go unless forage is lacking late in the season in the other portions of the allotment. In previous years there has been some evidence of cows, as well as native ungulates, near the habitat but not in the actual sensitive plant site. There has been no evidence to indicate that the occasional presence or absence of cows in the area has measurable cumulative effects on Watson’s desert parsley and its habitat.

Under the No Action alternative recreational use of the area would still continue. Watson’s desert parsley and its habitat have been impacted over the years by recreationists using the site as a viewpoint. Soil compaction has occurred as a result which could make it difficult for desert parsley seeds to germinate and existing plants to grow. Boulders have been placed around the site to prevent vehicular traffic but foot traffic still occurs. Monitoring would be needed to determine the long term effects of the potential impacts on Watson’s desert parsley and its habitat.

There are noxious weeds encroaching on the site from a nearby grassy area. Although the weeds are pulled annually there is the potential for adverse short and long term effects on Watson’s desert parsley, its habitat, and the native plant community; monitoring would be needed to determine the potential long term effects.

○ **Fungi Species:** *Cordyceps capitata*, *Cortinarius barlowensis*, *Gomphus kaufmannii*, *Gyromitra californica*, *Leucogaster citrinus*, *Mycena monticola*, *Otidea smithii*, *Phaeocollybia attenuata*, *Phaeocollybia californica*, *Phaeocollybia olivacea*, *Phaeocollybia oregonensis*, *Phaeocollybia picea*, *Phaeocollybia pseudofestiva*, *Phaeocollybia scatesiae*, *Ramaria amaloides*, *Ramaria gelatiniaurantia*, *Sowerbyella rhenana*.

The habitat requirements for the fungi listed above appear to be generally mixed conifer late-successional forest. Most of the suitable habitat is present in the Gibson Prairie pasture in the eastern portion “low use” area around North Fork Mill and in the Surveyor’s Ridge Late-Successional Reserve. It has been reported by the range specialist that cattle do not typically use the areas because of steep terrain and lack of forage. The effects of cows migrating through forested habitats on in the area could be considered similar to migrational use by native ungulates and would not likely have measurable short or long term effects on fungi.

ALTERNATIVE I = No Action (cont.)

Cumulative Effects

Cumulative effects include management of state and private lands surrounding the Mill Creek watershed, particularly to the north of the allotment.

- ***Arabis sparsiflora var. atrorubens* (Nutt. mss.), Sicklepod rockcress**

On the Mt. Hood National Forest this species is widely distributed along Surveyors Ridge Trail from Shellrock to the top of Bald Butte, and along Mill Creek Ridge. There are also several reported sites on the Barlow Ranger District. At least 75% of the known sites are outside of the Long Prairie allotment. Previous informal observations of the Sicklepod rockcress populations indicate that they have remained stable.

The known sites on Surveyors Ridge are concentrated in a “low use” area of the allotment. There has been no evidence to indicate that the occasional presence of cows in the area has measurable cumulative effects on Sicklepod rockcress and its habitat.

Under the No Action alternative recreational use of the trail would still be allowed. Cumulative effects to the overall population would likely come from impacts related to recreational use of the Surveyors Ridge trail and parking area at the top of Bald Butte. A cumulative loss of habitat could occur around rock outcrops and grassy openings along the trail and on Bald Butte as a result of soil compaction at viewpoints used by recreationists. A cumulative loss of habitat could also occur as noxious weeds spread out into grassy openings and compete with native plant communities for water and nutrients. Monitoring would be needed to determine the measurable cumulative effects of recreation and noxious weed encroachment on Sicklepod rockcress and its habitat.

- ***Botrychium minganense* Victorin, Mingan moonwort**

On the Mt. Hood National Forest Mingan moonwort is known from 14 sites (2004 data) distributed in riparian floodplains, seeps, and springs on the east and west sides of the Forest. Nine of the sites are on the Hood River Ranger District; 6 sites are within the allotment. Three sites reported in 1988 and 1990 on private land directly to the north have been extirpated by logging. Surveys for Mingan moonwort have not been conducted off Forest Service land in the vicinity; the extent of the overall population in the area downstream north of the allotment is unknown at this time. It can be assumed however that Mingan moonwort is likely to be present in suitable habitat downstream from known sites in the allotment.

It can also be expected that timber harvest could continue downstream from Mingan moonwort sites on Forest Service land. If riparian areas on lands adjacent to Forest Service are logged, such as on private land in section 31 and 36, it could have a cumulative effect on the amount of potential suitable habitat that might be available for the species to disperse in our area.

The absence of cows under the No Action alternative would allow riparian ecosystems and Mingan moonwort habitat in the allotment to respond to natural processes. As trampled riparian ecosystems recover and begin to function properly, additional suitable habitat for Mingan moonwort may develop over time.

ALTERNATIVE I = No Action (cont.)

Cumulative Effects

○ *Lomatium Watsonii* Coult. & Rose, Watson's desert parsley

There is only one known site of Watson's desert parsley on the Mt. Hood National Forest, near Surveyors Ridge trailhead. There is 1 known site within a ¼ mile of the Forest boundary on BLM land on Mill Creek Ridge. Surveys of potential suitable habitat for this species have not been conducted extensively on across the Mt. Hood National Forest or on adjacent lands.

The site on Surveyors Ridge is within the "low use" area of Surveyors Ridge pasture where cows do not typically go unless forage is lacking late in the season in the other portions of the allotment. In previous years there has been some evidence of cows, as well as native ungulates, near the habitat but not in the actual sensitive plant site. There has been no evidence to indicate that the occasional presence of cows in the area has measurable cumulative effects on Watson's desert parsley and its habitat.

Although there have been recreational impacts to the site in the past (compaction, trampling), and potential for noxious weed encroachment, the population appears to have expanded from 100 plants in 1984 to over 450 in 1988. Informal observation of the site on Surveyors Ridge since 1988 have noted a continued increase in the dominant cover of Watson's desert parsley at the site. Boulders were placed around the sites in 1996 and noxious weeds are pulled annually. Monitoring would be needed to determine the potential cumulative effects related to recreational use and noxious weed encroachment.

○ **Fungi Species:** *Cordyceps capitata*, *Cortinarius barlowensis*, *Gomphus kaufmannii*, *Gyromitra californica*, *Leucogaster citrinus*, *Mycena monticola*, *Otidea smithii*, *Phaeocollybia attenuata*, *Phaeocollybia californica*, *Phaeocollybia olivacea*, *Phaeocollybia oregonensis*, *Phaeocollybia picea*, *Phaeocollybia pseudofestiva*, *Phaeocollybia scatesiae*, *Ramaria amaloides*, *Ramaria gelatiniaurantia*, *Sowerbyella rhenana*.

Extensive surveys for fungi recently added to the R6 Sensitive Species list have not been conducted in the allotment area. Surveys conducted for fungi in other areas of the Mill Creek watershed have not located fungi that were previously listed under Survey and Manage (Northwest Forest Plan). The majority of known sites have been found on the westside of the Mt. Hood National Forest. In the allotment area most of the suitable habitat is present in the Gibson Prairie pasture in the eastern portion "low use" area around North Fork Mill Creek and in the Surveyors Ridge Late- Successional Reserve at the western edge of the allotment. It has been reported by the range specialist that cattle do not typically use the areas because of steep terrain and lack of forage. The effects of cows migrating through forested habitats in the area could be considered similar to migrational use by native ungulates and would not likely have measurable cumulative effects on fungi.

If timber is harvested from late-successional forests on county, state, or private lands that adjoin Forest Service, particularly to the north and west of Surveyors Ridge Late-Successional Reserve, there could be a cumulative loss of potential suitable habitat for Sensitive fungi in our area.

**ALTERNATIVE II = Current Management
And ALTERNATIVE III = Proposed Action**

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

○ ***Botrychium minganense* Victorin, Mingan moonwort**
Surveyors Ridge Pasture

One site (2 subpopulations) has been documented in a “high use” area in a floodplain near the headwaters of the western fork of the West Fork of Neal Creek in section 11 to the south of Long Prairie. The site directly borders the Gibson Prairie pasture. The cattle have a direct short term effect on Mingan moonwort as they wallow in its riparian habitat which has been observed to cause a loss of vegetative cover and diversity of riparian associated plants, a decrease in streambank stability, and increased soil erosion and compaction. The riparian corridor habitat downstream to the north has also been directly impacted by cows as they tend to congregate in the “high use” areas during July and August when Mingan moonwort is emerging. There is evidence that cows have been in the habitat area over the years although there is very little baseline data with which to compare population trends for tracking short and long term response of Mingan moonwort to the impact.

Long Prairie Pasture

Two *B. minganense* sites were found in the northeast ¼ of section 12 in a seep area approximately 200 meters sw of the spring at the headwaters of Mosier Creek. The area has been reported to have “low to no use” by cattle because of the forested terrain. At the time the sites were reported in 2001 there was no reported evidence of cattle in the habitat area. It can be expected that use of the area by the current permitted cattle would remain “low”, however there is very little baseline data to compare future population trends for tracking short and long term response of Mingan moonwort to the potential impacts of cattle. Monitoring is needed to assess short and long term population trend. (The cumulative effects addresses an on-going project to exclude potential habitat in Long Prairie from cattle impact.)

Gibson Prairie Pasture

Three *B. minganense* sites were found in riparian floodplains near the headwaters of North Fork Mill Creek in the south half of section 14. The area has been reported to have “low use” by cattle. In 2002 and 2003 when the sites were documented it was noted that there was “old” evidence of cows in the habitat area. Both alternative actions propose to place down wood near the headwaters of North Fork Mill Creek near Gibson Prairie if evidence of streambank trampling exists. If the placement of down wood occurs north of the *B. minganense* sites, and if it is effective in keeping the cows out of that particular area, it may have indirect effects on the *B. minganense* population if it caused the cows to move south along the riparian area. If the placement of down wood provides an effective barrier it could also have a beneficial direct effect of creating a microhabitat that may eventually become suitable for *B. minganense*. Under both alternative actions it can be assumed this *B. minganense* sites would continue to be visited at some point in time by cattle and would receive some degree of impact, however there is very little baseline data to compare population trends for tracking short and long term response of Mingan moonwort to the impact. Monitoring is needed to assess short and long term population trend.

**ALTERNATIVE II = Current Management
And ALTERNATIVE III = Proposed Action (cont.)**

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

- *Arabis sparsiflora* var. *atrorubens* (Nutt. mss.), Sicklepod rockcress
Surveyors Ridge Pasture

The known sites on Surveyors Ridge are concentrated in a “low use” area of the allotment. Both alternative actions propose use of the pasture, either as part of the current “3 pasture rest rotation” or in the future under the proposed action. There has been no previous evidence to indicate that the occasional presence of cows in the area under the current management has had measurable short or long term effects on Sicklepod rockcress and its habitat. It is expected that there would not be a measurable change of potential short term effects under actions proposed in Alternatives II or III. Monitoring would be needed to track population trends in response to any potential long term effects.

- *Lomatium Watsonii* Coult. & Rose, Watson’s desert parsley
Surveyors Ridge Pasture

The known sites on Surveyors Ridge are concentrated in a “low use” area of the allotment. There has been no previous evidence to indicate that the occasional presence of cows in the area has had measurable short or long term effects on Sicklepod rockcress and its habitat. It is expected that there would not be a measurable change of potential short term effects under actions proposed in Alternatives II or III. Monitoring would be needed to track population trends in response to any potential long term effects.

- **Fungi Species:** *Cordyceps capitata*, *Cortinarius barlowensis*, *Gomphus kaufmannii*, *Gyromitra californica*, *Leucogaster citrinus*, *Mycena monticola*, *Otidea smithii*, *Phaeocollybia attenuata*, *Phaeocollybia californica*, *Phaeocollybia olivacea*, *Phaeocollybia oregonensis*, *Phaeocollybia picea*, *Phaeocollybia pseudofestiva*, *Phaeocollybia scatesiae*, *Ramaria amaloides*, *Ramaria gelatiniaurantia*, *Sowerbyella rhenana*.

The habitat requirements for the fungi listed above appear to be generally mixed conifer late-successional forest. Most of the suitable habitat is present in the Gibson Prairie pasture in the eastern portion “low use” area around North Fork Mill and in the Surveyor’s Ridge Late-Successional Reserve. It has been reported by the range specialist that cattle do not typically use the areas because of steep terrain and lack of forage. The effects of cows migrating through forested habitats on in the area could be considered similar to migrational use by native ungulates and would not likely have measurable short or long term effects on fungi.

**ALTERNATIVE II = Current Management
And ALTERNATIVE III = Proposed Action (cont.)**

Cumulative Effects

Cumulative effects include management of state and private lands surrounding the Mill Creek watershed, particularly to the north of the allotment.

○ ***Arabis sparsiflora var. atrorubens* (Nutt. mss.), Sicklepod rockcress**

On the Mt. Hood National Forest this species is widely distributed along Surveyors Ridge Trail from Shellrock to the top of Bald Butte, and along Mill Creek Ridge. There are also several reported sites on the Barlow Ranger District. At least 75% of the known sites are outside of the Long Prairie allotment. Previous informal observations of the Sicklepod rockcress populations indicate that they have remained stable.

The known sites on Surveyors Ridge are concentrated in a “low use” area of the allotment. There has been no evidence to indicate that the occasional presence of cows in the area has measurable cumulative effects on Sicklepod rockcress and its habitat.

Under all alternatives recreational use of the trail would still be allowed. Cumulative effects to the overall population would likely come from impacts related to recreational use of the Surveyors Ridge trail and parking area at the top of Bald Butte. A cumulative loss of habitat could occur around rock outcrops and grassy openings along the trail and on Bald Butte as a result of soil compaction at viewpoints used by recreationists. A cumulative loss of habitat could also occur as noxious weeds spread out into grassy openings and compete with native plant communities for water and nutrients. Monitoring would be needed to determine the measurable cumulative effects of recreation and noxious weed encroachment on Sicklepod rockcress and its habitat.

○ ***Botrychium minganense* Victorin, Mingan moonwort**

There are presently only 14 documented sites of Mingan moonwort on the Mt. Hood National Forest and potential suitable habitat is widely distributed across the Forest. Surveys for Mingan moonwort have not been conducted off Forest Service land in the allotment vicinity; the extent of the overall population in the area downstream north of the allotment is unknown at this time. It can be assumed however that Mingan moonwort is likely to be present in suitable habitat downstream from known sites in the allotment.

Under both alternatives it could be expected that cattle would continue to drift off Forest Service land downstream on previously suitable habitat for Mingan moonwort that was reported on private land in sections 31 and 36. All 3 sites on private lands in sections 31 and 36 were extirpated by clear cut logging in 1998; potential habitat loss by grazing in those areas is not an issue at this time.

Timber harvest could also continue downstream from Mingan moonwort sites on Forest Service land. If riparian areas on lands adjacent to Forest Service are logged in the same manner as those on private land in section 31 and 36, it could have a cumulative effect on the amount of potential suitable habitat that might be available for the species to disperse in our area.

A separate Decision Memo was completed that would relocate the Long Prairie corral and exclude cattle from the headwaters of West Fork Neal Creek with the construction of an enclosure fence. This enclosure fence will be completed in September 2005. The new fence within Long Prairie Pasture will prevent cattle from accessing the stream within the pasture. There are presently no known sites of Mingan moonwort in the area that would be fenced but there is a known site upstream. The fenced area may eventually recover to the point that habitat would become suitable for Mingan moonwort.

The absence of cows under the No Action alternative would allow riparian ecosystems and Mingan moonwort habitat in the allotment to respond to natural processes. As trampled riparian ecosystems recover and begin to function properly, additional suitable habitat for Mingan moonwort may develop over time.

**ALTERNATIVE II = Current Management
And ALTERNATIVE III = Proposed Action (cont.)**

Cumulative Effects

○ ***Lomatium Watsonii* Coult. & Rose, Watson's desert parsley**

There is only one known site of Watson's desert parsley on the Mt. Hood National Forest, near Surveyors Ridge trailhead. There is 1 known site within a ¼ mile of the Forest boundary on BLM land on Mill Creek Ridge. Surveys of potential suitable habitat for this species have not been conducted extensively on across the Mt. Hood National Forest or on adjacent lands.

The site on Surveyors Ridge is within the "low use" area of Surveyors Ridge pasture where cows do not typically go unless forage is lacking late in the season in the other portions of the allotment. In previous years there has been some evidence of cows, as well as native ungulates, near the habitat but not in the actual sensitive plant site. There has been no evidence to indicate that the occasional presence of cows in the area has measurable cumulative effects on Watson's desert parsley and its habitat.

Although there have been recreational impacts to the site in the past (compaction, trampling), and potential for noxious weed encroachment, the population appears to have expanded from 100 plants in 1984 to over 450 in 1988. Informal observation of the site on Surveyors Ridge since 1988 have noted a continued increase in the dominant cover of Watson's desert parsley at the site. Boulders were placed around the sites in 1996 and noxious weeds are pulled annually. Monitoring would be needed to determine the potential cumulative effects related to recreational use and noxious weed encroachment.

○ **Fungi Species:** *Cordyceps capitata*, *Cortinarius barlowensis*, *Gomphus kaufmannii*, *Gyromitra californica*, *Leucogaster citrinus*, *Mycena monticola*, *Otidea smithii*, *Phaeocollybia attenuata*, *Phaeocollybia californica*, *Phaeocollybia olivacea*, *Phaeocollybia oregonensis*, *Phaeocollybia picea*, *Phaeocollybia pseudofestiva*, *Phaeocollybia scatesiae*, *Ramaria amaloides*, *Ramaria gelatiniaurantia*, *Sowerbyella rhenana*.

Extensive surveys for fungi recently added to the R6 Sensitive Species list have not been conducted in the allotment area. Surveys conducted for fungi in other areas of the Mill Creek watershed have not located fungi that were previously listed under Survey and Manage (Northwest Forest Plan). The majority of known sites have been found on the westside of the Mt. Hood National Forest. In the allotment area most of the suitable habitat is present in the Gibson Prairie pasture in the eastern portion "low use" area around North Fork Mill Creek and in the Surveyors Ridge Late- Successional Reserve at the western edge of the allotment. It has been reported by the range specialist that cattle do not typically use the areas because of steep terrain and lack of forage. The effects of cows migrating through forested habitats in the area could be considered similar to migrational use by native ungulates and would not likely have measurable cumulative effects on fungi.

If timber is harvested from late-successional forests on county, state, or private lands that adjoin Forest Service, particularly to the north and west of Surveyors Ridge Late-Successional Reserve, there could be a cumulative loss of potential suitable habitat for Sensitive fungi in our area.

STEP 3. Risk Assessment

The determination of risks to populations of Sensitive Plants takes into consideration the size, density, vigor, habitat requirements, location of the population, and the consequence of an adverse effect on the species as a whole within its range and within the Mt. Hood National Forest. Determine the risk assessment for each sighting of Sensitive Plant species located within the allotment area, or outside the allotment area which may be impacted by project activities. Risk assessment levels for Sensitive Species are described below.

No Impact (NI)

A determination of “No Impact” for Sensitive Species occurs when a project or activity will have no environmental effects on habitat, individuals, a population, or a species.

May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species (MIIH)

Activities or actions that have effects that are immeasurable, minor or are consistent with Conservation Strategies would receive this conclusion. For populations that are small or vulnerable each individual may be important for short and long-term viability.

If risk assessment is MIIH, identify the cause(s) and effect(s) and describe mitigation measures necessary to reduce risks:

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 (WIFV)

Loss of individuals or habitat can be considered significant when the potential effect may be:

- a. Contributing to a trend toward Federal listing (C-1 or C-2 species),
- b. Results in a significantly increased risk of loss of viability to a species, or
- c. Results in a significantly increased risk of loss of viability to a significant population (stock).

If risk assessment is WIFV, identify the cause(s) and effect(s) and describe mitigation measures that, if adopted, would reduce the effects to a level so that the project would not cause a trend toward federal listing or a loss of viability.

Beneficial Impact (BI)

Projects or activities that are designed to benefit, or that measurably benefit a Sensitive Species should receive this conclusion.

Unknown Impact (UI)

The risk to Sensitive Species is unknown, proceed to Step 4. Botanical Investigation.

Species:

Site:

Risk Assessment:

RISK ASSESSMENT SUMMARY

TABLE 2.

VASCULAR PLANTS				
Species Name	Common Name	Species Present in Allotment area?	Potential Impact: NO ACTION	Potential Impact: ALTERNATIVES II AND III
SURVEYORS RIDGE PASTURE				
<i>Arabis sparsiflora v. atrorubens</i>	Sicklepod rockcress	Yes	Beneficial Impact	MIIH*
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	MIIH
<i>Lomatium watsonii</i>	Watson's lomatium	Yes	Beneficial Impact	MIIH
LONG PRAIRIE PASTURE				
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	MIIH
GIBSON PASTURE				
<i>Botrychium minganense</i>	Moonwort	Yes	Beneficial Impact	Beneficial Impact
BRYOPHYTES				
<i>Rhizomnium nudum</i>	moss	No	No Impact	No Impact
<i>Schistostega pennata</i>	Green goblin moss	No	No Impact	No Impact
LICHENS				
<i>Chaenotheca subroscida</i>	pin lichen	No	No Impact	No Impact
<i>Dermatocarpon luridum</i>	lichen	No	No Impact	
<i>Leptogium burnetiae var. hirsutum</i>	jellyskin lichen	No	No Impact	No Impact
<i>Lobaria linita</i>	lungwort	No	No Impact	No Impact
<i>Nephroma occultum</i>	lichen	No	No Impact	No impact
<i>Peltigera neckeri</i>	black saddle lichen	No	No Impact	No Impact
FUNGI				
<i>Cordyceps capitata</i>	earthtongue	Unknown	No Impact	MIIH
<i>Cortinarius barlowensis</i>	mushroom	Unknown	No Impact	MIIH
<i>Gomphus kauffmanii</i>	mushroom	Unknown	No Impact	MIIH
<i>Gyromitra californica</i>	mushroom	Unknown	No Impact	MIIH
<i>Leucogaster citrinus</i>	truffle	Unknown	No Impact	MIIH
<i>Otidea smithii</i>	cup fungi	Unknown	No Impact	MIIH
<i>Phaeocollybia attenuata</i>	mushroom	Unknown	No Impact	MIIH
<i>Phaeocollybia californica</i>	mushroom	Unknown	No Impact	MIIH
<i>Phaeocollybia olivacea</i>	mushroom	Unknown	No Impact	MIIH
<i>Phaeocollybia oregonensis</i>	mushroom	Unknown	No Impact	MIIH
<i>Phaeocollybia piceae</i>	mushroom	Unknown	No Impact	MIIH
<i>Phaeocollybia pseudofestiva</i>	mushroom	Unknown	No Impact	MIIH
<i>Ramaria amyloidea</i>	coral fungi	Unknown	No Impact	MIIH
<i>Ramaria gelatiniaurantia</i>	coral fungi	Unknown	No Impact	MIIH
<i>Sowerbyella rhenana</i>	cup fungi	Unknown	No Impact	MIIH

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

RISK ASSESSMENT RATIONALE

○ *Arabis sparsiflora* var. *atrorubens* (Nutt. mss.), Sicklepod rockcress

Sicklepod rockcress is endemic to the Pacific Northwest. According to the 2004 Oregon Natural Heritage Program list of Rare, Threatened, and Endangered Plants of Oregon, the species is currently stable in Oregon. On the Mt. Hood National Forest there are over 20 known sites all on the east side of the Cascade Crest. All of the known sites have been found in open areas that appear to receive some low level of disturbance (trails, roadsides, frostheave zones, etc.) where there is also minimal competing vegetation. In the Long Prairie Allotment the species grows along a trail that is used by hikers, bikers, horseback riders, wildlife, and cattle (although the area is considered to be in a “low use” area of the allotment).

Sicklepod rockcress is an annual/biennial that emerges in early April and goes to seed by late May, all before the cattle are near the area. Without extensive long term monitoring it would be difficult to isolate the exact cause(s) of potential impacts (if any) to Sicklepod rockcress along the ridge because it grows in a multiple use area. Although the species does appear to tolerate a low level of disturbance it can be expected that there may be some degree of impact associated with Alternatives II and III and that individuals and habitat might be impacted but it would not likely lead to a loss of viability of the species throughout its range.

○ *Botrychium minganense* Victorin, Mingan moonwort

Mingan Moonwort is endemic to northern North America. According to the 2004 Oregon Natural Heritage Program list of Rare, Threatened, and Endangered Plants of Oregon, the species is currently stable in Oregon and throughout its range. On the Mt. Hood National Forest there are 22 known sites most on the east side of the Cascade Crest. All of the sites are within riparian reserves. Some of the sites have been impacted by previous logging and cattle grazing. All of the sites in the Long Prairie Allotment have been impacted by cattle.

Under Alternatives II and III in the Surveyors Ridge Pasture and Long Prairie Pasture there would continue to be impacts to known sites in the allotment but it would not likely lead to a loss of viability of the species throughout its range. However, continued impacts to the known sites in the allotment could lead to a loss of individuals and habitat which could eventually lead to a loss of viability of Mingan’s moonwort on the Mt. Hood National Forest. Implementation of Mitigation/Protection Measures described on pages 13 and 16 should reduce the risk of potential future impacts.

Under Alternatives II and III in the Gibson Prairie Pasture the installation of a fence that effectively keeps the cattle out of headwaters in the southern half of section 14 would protect Mingan moonwort and its habitat therefor would have a beneficial impact.

○ *Lomatium Watsonii* Coult. & Rose, Watson’s desert parsley

Watson’s desert parsley is endemic to Oregon and Washington. According to the 2004 Oregon Natural Heritage Program list of Rare, Threatened, and Endangered Plants of Oregon, the species is currently threatened in Oregon. The only known site on the Mt. Hood National Forest grows on a bald cobbly slope on Surveyors Ridge. There is another known site adjacent to the Forest on Bureau of Land Management property on Mill Creek Ridge. Both sites have been impacted by off road vehicles and noxious weeds. The site on Surveyors Ridge is currently protected behind an arc of large boulders, and the noxious weeds are handpulled annually. There has been no recent evidence of cattle in the habitat area, probably because of its location on the shoulder of a cobbly slope with no forage, water, or shade. The population appears to be stable at this time.

Watson’s desert parsley grows from a perennial rootstock. The plant emerges in March and goes to seed by late April, all before the cattle are near the area. Although the site on Surveyors Ridge is considered to be in a “low use” area of the allotment it can be expected that it might receive some degree of impact under Alternatives II or III, but it is not likely to lead to a loss of viability of the species throughout its range. Implementation of Mitigation/Protection Measures described on page 14 should reduce the risk of potential future impacts.

RISK ASSESSMENT RATIONALE (cont.)

Fungi – Potential Suitable Habitat / Surveys Not Conducted

Cordyceps capitata

Cortinarius barlowensis

Gomphus kaufmannii

Gyromitra californica

Leucogaster citrinus

Mycena monticola

Otidea smithii

Phaeocollybia attenuata

Phaeocollybia californica

Phaeocollybia olivacea

Phaeocollybia oregonensis

Phaeocollybia piceae

Phaeocollybia pseudofestiva

Phaeocollybia scatesiae

Ramaria amaloidea

Ramaria gelatiniaurantia

Sowerbyella rhenana

Cordyceps capitata is a widespread but locally rare species documented from 38 sites in the western Cascade and Coast Ranges in Washington, Oregon and northern California. Three sites are known from Mt. Hood NF on Zigzag and Clackamas Districts. The species is parasitic on the fruiting body of *Elaphomyces* spp., a genus of underground-fruiting fungi in the truffle group. *Elaphomyces* are sequestrate (below ground) fungi. *Elaphomyces* species may be mycorrhizally associated with the roots of conifers. The project will not remove all host trees for *Elaphomyces*. If *Cordyceps capitata* grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Cortinarius barlowensis is widely distributed, known from 16 sites in the western Cascades, Coast Range and Olympic Mountains of Washington and Oregon. There are two known sites from the Mt. Hood NF on the Zigzag District. Habitat is soil under conifers. If *Cortinarius barlowensis* grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

RISK ASSESSMENT RATIONALE (cont.)

Gomphus kaufmannii is endemic to western North America and is found in California, Oregon, and Washington states. It is located either along the Pacific coast or in the Cascade-Sierran Range. There are 6 known sites for this mushroom on the Mt. Hood National Forest. Host trees for this species include true firs and pines. The species also forms symbiotic associations with the fine root systems of plants, growing out into the soil matrix. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Gyromitra californica is distributed from British Columbia to northern California and east to Colorado, Montana and Nevada. It is known in Washington, Oregon and northern California from 35 sites. Three sites are known from the Mt. Hood NF on Clackamas, Zigzag and Hood River Districts. This species is found on well-rotted stumps and logs of conifers or in soil with rotted wood. Project design would retain concentrations of down wood. The project is therefore not likely to result in adverse impacts to local populations because project design will maintain key elements of habitat for this species. Although there is reasonable likelihood of occurrence, there is a low risk to local populations or species viability, and a low likelihood of a trend toward listing caused by the project. The proposed action would have **No Impact on Individuals or habitat.**

Leucogaster citrinus is endemic to the Pacific Northwest, known from western Washington, western Oregon and northern California and known from 45 sites. There are five sites from the Mt. Hood NF, Zigzag District. This truffle species is associated with the roots of conifers. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Otidea smithii is known from 10 scattered sites in the western Washington, Western Oregon and northern California. On the Mt. Hood NF, there is one known location on Clackamas District. This species is found on soil under Douglas-fir, western hemlock and cottonwood. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

RISK ASSESSMENT RATIONALE (cont.)

Phaeocollybia attenuata is endemic to the Pacific Northwest from western Washington and western Oregon to northern California where it is known from 131 sites. There is one site known from the Mt. Hood NF on Zigzag District. This species is on soil under conifers. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Phaeocollybia californica is endemic to the Pacific Northwest, known from 34 sites in western Washington, western Oregon and northern California. No sites are known to occur on the Mt. Hood NF, however, there is a site on the adjacent Columbia River Gorge National Scenic Area. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Phaeocollybia olivacea is endemic to the Pacific Northwest, known from 92 sites in western Washington, western Oregon and northern California. There is one known site on the Mt. Hood NF on Zigzag District. This species is terrestrial under conifers. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Phaeocollybia oregonensis is endemic to the Pacific Northwest, known from 10 sites in the Oregon Coast Range and western Cascades. On Mt. Hood NF there are two sites from Zigzag District. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. The project will not remove all host trees for *P. oregonensis*. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

RISK ASSESSMENT RATIONALE (cont.)

Phaeocollybia piceae is endemic to the Pacific Northwest, known from 49 sites in western Washington, western Oregon and northern California. There are no known sites on the Mt. Hood NF. This species is terrestrial and associated with the roots of Douglas-fir, western hemlock and Pacific silver fir. The project will not remove all host trees for *P. piceae*. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others will remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Phaeocollybia pseudofestiva is endemic to the Pacific Northwest, known from British Columbia south through western Washington, western Oregon to California. There are 36 known sites in Washington, Oregon and California, four of which are on the Mt. Hood NF, Zigzag District. The species grows on soil under conifers. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others would remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Ramaria amyloidea is endemic to the Pacific Northwest from western Washington to northern California. It is currently known from 16 sites. No sites are known from the Mt. Hood NF. Habitat for the species is soil in sites associated with true fir, Douglas-fir and western hemlock. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others would remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

Ramaria gelatiniaurantia is endemic to the Pacific Northwest, known from 24 sites from western Washington to northern California. Two sites are located on the Mt. Hood NF, Clackamas River District. Habitat for the species is soil in sites associated with true fir, Douglas-fir and western hemlock. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others would remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

RISK ASSESSMENT RATIONALE (cont.)

Sowerbyella rhenana occurs 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 NF on Clackamas River and Zigzag Districts. Habitat for the species is soil under conifers. If this species grows within the allotment area cows could cause soil compaction and erosion, and nitrogen loading from the decomposition of manure could have a localized impact on individuals. Although some host trees might be removed for relocation of the corral, potentially impacting individuals, others would remain continuing to provide the host trees for this species. Key elements of suitable habitat would still exist inside the allotment area and similar habitat located in reserves adjacent to the allotment area would presumably continue to provide undisturbed habitat for this species, if it is present in the area. The proposed action **May Impact Individuals and habitat but is not likely to lead to a trend toward federal listing.**

This Biological Evaluation is complete.

/s/ J. Susan Nugent

Prepared By: Susan Nugent, Hood River Ranger District Botanist

September 6, 2005

Date

/s/ David Lebo

Reviewed by: David Lebo, Westside Zone Botanist/Ecologist

September 6, 2005

Date

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