Appendix O

Botany Specialist Report

Resource: Botany

Author: Ron Halvorson
Botanist
Prineville District BLM
Prineville, Oregon

Report No.: 01008
Date: October 30, 2000

BOTANICAL EVALUATION
Prineville District BLM

Project name: Little Canyon Mtn. Air Timber Management Plan

Project description: The project would involve commercial and pre-commercial thinning using aerial yarding techniques. Full suspension of logs would be required. Stems less than 24 inches in diameter would be "whole tree yarded" to minimize slash on site. All trees would be yarded to one landing. Isolated slash on site would be burned. No new roads would be constructed.

Descriptive location: This project involves the steep, north slope of Little Canyon Mountain, overlooking the towns of Canyon City and John Day.

Legal Description: T.14S.,R.31E., Secs.1 and 12; T. 14S.,R.32E., Secs. 6 and 7

Detailed directions to survey area: From Canyon City, on US 395, take the paved county cemetery road (Marysville Rd.) east toward Boot Hill. Continue on this road for about 1½ miles to an access point on public land. Taking this dirt road south for ¼ mile accesses the north-central portion of the TMP unit. Continuing on Marysville Rd. another ½ mile to the east brings you to a fork with one paved road cutting of to the SE. By taking this road for another ½ mile, you come to the "Little Canyon Mtn. Trailhead" road. This road skirts the unit on the east, by Quartz Creek, and also provides access to the top of Little Canyon Mtn., on the SE side of the unit.

USGS quad name(s)(map attached): Canyon Mtn. and John Day

Special status plants initially suspected, their flowering period and habitat: Three species were suspected in this area: *Cymopteris nivalis, Luina serpentina* and *Thelypodium eucosmum*.

Cymopteris nivalis (Hayden's cymopteris) is a member of the carrot family found in open, rocky places from the foothills to near timberline. Superficially similar to a *Lomatium sp*., it has white flowers, carrot-like leaves and leafless flower stems. The Natural Heritage Data Base considers this species to be "endangered or threatened in Oregon" and has placed it on list 2. BLM considers it an "assessment species". Hayden's cymopteris is not known from BLM lands in the Prineville District, but it is known from near Canyon Mountain in the Malheur National Forest and from rocky areas in big sagebrush vegetation in Lake County. Flowering occurs March through July, depending on location.

Luina serpentina (colonial luina), formerly a Category 1 Candidate for listing as endangered or threatened and now Bureau Sensitive, is endemic to the Fields Creek area of the Malheur National Forest and "slops" over on BLM, to the north. It has also been found near Canyon Mountain, near John Day. It grows on the very steep talus slopes in the area and forms colonies several meters in diameter, being one of the few plants you can inventory for with binoculars. This member of the aster family was once erroneously thought to be serpentine-specific.

Thelypodium eucosmum (arrowleaf thelypody) is a biennial (sometimes persisting for more than two years) member of the mustard family usually found in moist, seepy areas on ashy-clay soils in Grant and Wheeler counties in association with western juniper. Considered by the Natural Heritage Data Base to be threatened or endangered throughout its range (List 1) it is a Bureau Sensitive species (formerly C2). Most populations are found in steep drainages along the John Day River, from near Monument to Service Creek, with other populations in the Sutton Mountain/Twickenham, Dayville and John Day areas. It has been found 3/4 mile south of the unit on both BLM and Forest Service land.

Date of survey: July 10 and 11, 2000 Participating personnel: Armson and Halvorson

Size or dimension of area surveyed: 340 acres

Survey Intensity: Intuitive controlled. A cursory overview of the general area was obtained from the county road and then a total of eight "swaths" were made across the face of Little Canyon Mtn., within the unit. Additional time was spent in Whiskey Gulch and in the "40" extending north in the NE portion of the unit.

Time spent: two days

Visibility: fair

General habitat description:

Elevation, topography, slope and aspect: The unit consists of the generally steep, north slope of Little Canyon Mtn., basically from the top, and then north of the main ridge to the NE, and NE of the ridge just west of Whiskey Gulch. Elevations range from

about 5,740 feet at the top of Little Canyon Mtn. to about 4,060 feet in the extreme NE portion, adjacent to a residential subdivision. Topography is quite steep with 30-70% slopes. All but the southerly aspects are represented due to the various drainages dissecting the unit, but the predominate aspect is north.

Soils: Soils are generally loams with a significant rock component in places. The steepest, heavily forested slopes beginning at the highest elevations are McGarr stony loam, with Ruddley loam on the lower, moderate slopes. North and east of Whiskey Gulch is a soils unit mapped as Rock outcrop - Lemmonex complex.

Community and associated species: Mixed conifer (ponderosa pine, Douglas fir and grand fir) dominate the upper slopes changing to ponderosa pine and western juniper on the lower slopes. Common understory species include heart-leaf arnica and pinegrass. Pinegrass is the dominant species in most of the higher elevation meadows of this unit. Riparian areas are found in Whiskey Gulch (natural) and in the northeastern portion of the unit (resulting from constructed canals, ditches and ponds). Birch and chokecherry are common species here. The west-facing slopes above Whisky Gulch are rocky and dominated by mountain mahogany. A floristic list is attached.

Much of the area, especially the lower slopes and the drainages, has been impacted by historic and contemporary mining activity. Roads, mine shafts, piles of overburden, historic stuctures, water developments and other disturbances are found throughout the unit. Much of this land is in the process of revegetating and is dominated by young conifers and introduced grass species. There is significant woody downfall in portions of the more densely forested areas in this unit.

Microbiotic crust: Microbiotic crust was not observed in any great density.

Special status species observed or suspected: No special status species were observed or are suspected in this unit. Special attention was given the rocky and riparian areas. *Thelypodium eucosmum* populations south of the unit were found to be in full flower and therefore timing was appropriate for this species. *Cympoteris nivalis* and *Luina serpentina* would have been observed if they had been in the unit.

Cultural species observed and brief discussion of relative abundance: Cultural species are not present in any density in this unit.

Noxious weeds observed and related information: Small populations of dalmation toadflax were observed at several locations in the lower portion of the unit.

Other species of interest: None

Recommendations/Comments:

The project can occur as planned. Weed populations should be identified as the project progresses, marked in the field and with GPS, and treated as the opportunity arises.

Floristic List
Little Canyon Air TMP
July 10 and 11, 2000

Abies grandis x concolor
Achillea millefolium
Agoseris sp.
Agropyron spicatum
Alnus sp.
Alyssum alyssoides
Amelancier alnifolia
Antennaria anaphaloides
Apocynum androsaemifolium
Aquilegia formosa
Arenaria congesta var. prolifera
Arnica cordifolia
Asclepias speciosa
Astragalus conjunctus
Astragalus filipes
Balsamorhiza careyana
Berberis aquifolium
Berberis repens
Betula occidentalis
Brodiaea sp.
Bromus brizaeformis
Bromus inerme
Calamagrostis rubescens
Calochortus macrocarpus
Carex geyeri
Castilleja sp.
Castilleja applegatei
Ceanothus velutinus
Cerastium sp.
Cercocarpus ledifolius
Chimaphila umbellata
Chrysothamnus nauseosus
Circium undulatum
Clarkia pulchella

Clarkia rhomboidea
Clematis sp.
Collomia grandiflora
Cornus stolonifera
Crepis sp.
Cryptantha sp.
Dactylis glomerata
Elymus triticoides
Epilobium angustifolium
Eriogonum umbellatum var. subalpinum
Festuca idahoensis
Frageria virginiana
Fritillaria sp.
Geum triflorum
Gilia aggregata
Glyceria sp.
Goodyera oblongifolia
Grindelia sp.
Heuchera cylindrica
Hieracium albertinum
Hieracium albiflorum
Juniperus occidentalis
Linaria dalmatica
Lithospermum ruderale
Lomatium triternatum
Lupinus sp.
Lupinus polyphyllus
Melilotus alba
Melilotus officinalis
Mentha arvensis
Mimulus guttatus
Montia perfoliata
Osmorhiza chilensis
Penstemon sp.
Philadelphus lewisii
Phleum pratense
Pinus ponderosa
Plantago sp.
Plectritis macrocera
Poa nervosa
Poa secunda
Poa sp.
Populus trichocarpa
Prunus sp.
Pseudotsuga menziesii
Pterospora andromedea

Purshia tridentata
Pyrola picta
Rhamnus purshiana
Ribes cereum
Ribes sp.
Rosa nutkana
Salix exigua
Salix rigida
Salix sp.
Sambucus cerulea
Scutellaria angustifolia
Sedum stenopetalum
Selaginella densa
Shepherdia canadensis
Sidalcea oregana
Silene douglasii
Silene scaposa var. scaposa
Sitanion hystrix
Smilacena sp.
Solidago sp.
Sorbus sp.
Symphoricarpos albus
Tragopogon dubius
Trisetum spicatum
Viola sp.
Xanthium strumarium
Zigadenus venenosus

Report No.: 98030
Date: 12/8/2

BOTANICAL EVALUATION

Project name: Little Canyon Mtn. Timber Mgt. Plan - FY 1998 Date of survey: July 21 and 22, 1998

Descriptive location: SE slopes of Little Canyon Mtn., 2 mi. SE of Canyon City

Legal Description: T.14S.,R.31E., Sec.12:SESE; Sec.13:NE; T.14S.,R.32E.,Sec.7 (portion)

Detailed directions to survey area: From Canyon City take the county road east toward the cemeteries. Continue on this road toward the Canyon Mtn. trailhead. The timber sale area lies on both sides of Quartz Gulch. A pre-commercial thinning area is found to the SW, off the SW side of Little Canyon Mtn.

USGS quad name(s)(map attached): Canyon Mtn.

Special status plants initially suspected, their flowering period and habitat: Three species were suspected in this area: *Cymopteris nivalis, Luina serpentina* and *Thelypodium eucosmum*.

Cymopteris nivalis (Hayden's cymopteris) is a member of the carrot family found in open, rocky places from the foothills to near timberline. Superficially similar to a *Lomatium* sp., it has white flowers, carrot-like leaves and leafless flower stems. The Natural Heritage Data Base considers this species to be "endangered or threatened in Oregon" and has placed it on list 2. BLM considers it an "assessment species". Hayden's cymopteris is not known from BLM lands in the Prineville District, but it is known from near Canyon Mountain in the Malheur National Forest and from rocky areas in big sagebrush vegetation in Lake County. Flowering occurs March through July, depending on location.

Luina serpentina (colonial luina), formerly a Category 1 Candidate for listing as endangered or threatened and now Bureau Sensitive, is endemic to the Fields Creek area of the Malheur National Forest and "slops" over on BLM, to the north. It has also been found near Canyon Mountain, near John Day. It grows on the very steep talus slopes in the area and forms colonies several meters in diameter, being one of the few plants you

can inventory for with binoculars. This member of the aster family was once erroneously thought to be serpentine-specific.

Thelypodium eucosmum (arrowleaf thelypody) is a biennial (sometimes persisting for more than two years) member of the mustard family usually found in moist, seepy areas on ashy-clay soils in Grant and Wheeler counties in association with western juniper. Considered by the Natural Heritage Data Base to be threatened or endangered throughout its range (List 1) it is a Bureau Sensitive species (formerly C2). Most populations are found in steep drainages along the John Day River, from near Monument to Service Creek, with other populations in the Sutton Mountain/Twickenham, Dayville and John Day areas. It has been found just ¼ mile south of the timber management plan area on both BLM and Forest Service land.

Size or dimension of area surveyed: 400 acres

Survey Intensity: intuitive controlled

Time spent: 2 days, 2 people

Visibility: fair

General habitat description:

Elevation, topography, slope and aspect: The elevation of the surveyed lands varied from 5,760 feet on the top of Little Canyon Mtn. to about 4,300 feet in the northeast portion along Quartz Gulch. The main portion of the project area includes very steep slopes on the east/southeast side of Little Canyon Mountain, and somewhat gentler slopes northwest and southeast of Quartz Gulch, which flows from the southwest to the northeast. Quartz Gulch flows into Pine Creek, which is somewhat on the southeastern edge of the project area. Portions of these drainages are severely eroded. The proposed pre-commercial thinning area is on the steep southwestern slopes of Little Canyon Mountain, below the main project area.

Mining has occurred over much of the area, and as a result, the area is heavily roaded in places and there has been quite a bit of disturbance. Water was found at a spring in the center of the project area and in Quartz Gulch, below the spring.

Soils: Soils vary from deeper loams on the forest floor, where the slopes are gentle to moderate, to extremely rocky clays on some of the steeper slopes.

Community and associated species: Vegetation is basically a mixed conifer forest, consisting of a varied mix of ponderosa pine and Douglas fir. The drier the site, the more the vegetation will tend toward ponderosa pine. Timber harvest has occurred in the past. Some of the more open, rocky sites are dominated by mountain mahogany with scattered western juniper, as near the upper portion of Little Canyon Mtn. Understory species include lupine, arnica, Idaho fescue, elk sedge and a wide variety of herbs. The only

riparian area was found at the spring and along Quartz Gulch below the spring. Here the vegetation was dominated by water birch and dogwood, with little in the way of sedges or rushes.

Microbiotic crust: None was observed.

Special status species observed or suspected: None were observed or are suspected. Correct habitat for any of the suspected species was not present.

Cultural species observed and brief discussion of relative abundance: Species of tribal or cultural interest are indicated by an asterisk (*) on the species list. While these species are present, this area does not appear to be an area which possesses a high degree of cultural value based on existing vegetative composition.

Other species of interest: Three individuals of *Juniperus communis* v. *montanus* were observed on the east slope between the Golden West and Great Northern mining areas. While not uncommon in parts of Oregon and elsewhere, it is uncommon on lands administered by the Prineville BLM district. It has no special status.

Recommendation/comments:

Continue development of the timber management plan as planned. Insure impacts are kept out of Quartz Gulch and the spring area to keep disturbance to the riparian area to a minimum.

District Botanist

Species List
Little Canyon Mountain Timber Management Plan

Survey Dates: July 21 and 22, 1998

*Abies grandis**
Achillea millefolium
Aconitum columbianum
Agoseris sp.
Agropyron spicatum
*Alnus sinuata**
Alyssum alyssoides
Antennaria microphylla
*Apocynum androsaemifolium**
Aquilegia formosa
Arabis cusickii
Arabis holboellii
Arabis divaricarpa
Arenaria congesta v. congesta
Arnica cordifolia
Aster conspicuus
*Balsamorhiza careyana**
Balsamorhiza serrata
*Berberis repens**
Betula occidentalis
Bromus brizaeformis
Bromus tectorum
Bromus marginatus
Bromus mollis
Calamagrostis rubescens
*Calochortus macrocarpus**
*Carex filifolius**
*Carex geyeri**
Castilleja applegatei
Castilleja miniata
Ceanothus velutinus
Cerastium sp.
Cercocarpus ledifolius
Chimaphila umbellata

Chrysothamnus nauseosus
Circium utahensis
Circium undulatum
Clarkia pulchella
Clarkia rhomboidea
Collomia grandiflora
Collomia linearis
*Cornus stolonifera**
Cryptogramma stelleri
Dactylis glomerata
Draba densifolia
Elymus glaucus
Epilobium angustifolium
Epilobium minutum
Epilobium paniculatum
Erigeron linearis
Erigeron filifolius
Eriogonum vimineum
Eriogonum heracleoides
Eriogonum umbellatum
Erysimum asperum
*Erythronium grandiflorum**
Festuca idahoensis
*Frageria virginiana**
Frasera albicaulis
Fritillaria atropurpurea
Galium sp.
Geranium viscossimum
Geum triflorum
Habenaria unalascensis
Helianthella uniflora
Heracleum lanatum
Heuchera cylindrica
Hieracium albertinum
Hieracium albiflorum
Holodiscus dumosus
Hypericum perforatum
*Iris missouriensis**
Juniperus communis var. montanus
*Juniperus occidentalis**
Koeleria cristata
Lithospermum ruderale
Lomatium grayi
Lupinus caudatus
Lupinus latifolius
Luzula campestris

Medicago lupulina
Melilotus officinalis
Melilotus alba
Mimulus guttatus
*Monardella odoratissima**
Montia perfoliata
Osmorhiza chilensis
Penstemon procerus
Phacelia hastata
Philadelphus lewisii
Phleum pratense
*Pinus ponderosa**
Poa secunda
Poa pratensis
Poa nervosa
Potentilla gracilis
Potentilla argentea
Potentilla glandulosa
Prunella vulgaris
*Pseudotsuga menziesii**
Pteridium aquilinum
Pterospora andromedea
*Purshia tridentata**
Pyrola picta
*Ribes cereum**
Ribes hudsonianum
*Rosa woodsii**
Rumex acetosella
Salix scouleriana
*Sambucus cerulea**
Sanguisorba occidentalis
Scutellaria angustifolia
Sedum stenopetalum
Senecio canus
*Shepherdia canadensis**
Silene douglasii
Silene menziesii
Silene scaposa var. scaposa
Sitanion hystrix
Smilacena sp.
Spiranthes dumosus
Spirea betulifolia
Stephanomeria sp.
Stipa occidentalis
Streptanthus cordatus
Symphoricarpos alba

Taraxacum officinale
Tragopogon dubius
Trifolium repens
Trifolium pratense
Trisetum spicatum
Verbascum thapsus
Vicia disperma
*Zigadenus venenosus**

* indicates species of Native American interest