

Rare Species Survey of Uninventoried Alpine/Subalpine and Wetland Habitats within the Oregon Cascades Recreation Area and Thielsen Wilderness Area



Report to the Interagency Sensitive and Special Status Program

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Introduction

The Mt. Thielsen Wilderness Area and Oregon Cascades Recreation Area (OCRA) occupy the High Cascades crest north of Crater Lake National Park. This area has received little botanical exploration. In fact, other than the Pacific Crest Trail and the popular trail to the peak of Mt. Thielsen, the area gets relatively little use at all. At 2799 m (9182 ft.), Mt. Thielsen is the highest peak in the vicinity. This area was surveyed in 2005 as part of a separate Interagency Sensitive and Special Status Program funded survey (Helliwell, York and Baxter 2005). This previous inventory established that the reports of *Arabis suffrutescens* var. *horizontalis* and *Carex atosquama* were misidentifications however a disjunct occurrence of rare *C. nardina* was discovered below the summit. Tipsoo Peak (2450 m, 8034 ft.) is the only other peak in the Wilderness that has a trail to it. This peak was informally surveyed on 9 July 2000. Tanya Harvey also produced a species list for Tipsoo Peak on 13 Aug. 2006. Otherwise, there are vascular plant collections at the Oregon State University Herbarium (OSC) from the Howlock Mountain area by Wayne Rolle from 1991 and V.L. Crosby from 1975.

Based on the current Umpqua National Forest sensitive species list and habitats, the following target species were identified for survey: *Anastrophyllum minutum*, *Anomobryum julaceum*, *Arabis suffrutescens* var. *horizontalis*, *Arnica viscosa*, *Asplenium septentrionale*, *Botrychium pumicola*, *Bryum calobryoides*, *Calamagrostis breweri*, *Carex crawfordii*, *Carex diandra*, *Carex lasiocarpa* var. *americana*, *Carex nardina*, *Carex vernacula*, *Chiloscyphus gemmiparus*, *Gentiana newberryi* var. *newberryi*, *Grimmia anomala*, *Gymnomitrium concinnatum*, *Harpanthus flotovianus*, *Hygrohypnum alpinum*, *Jamesoniella autumnalis* var. *heterostipa*, *Meesia uliginosa*, *Pohlia tundra*, *Polytrichum sexangulare*, *Polytrichastrum sexangulare* var. *vulcanicum*, *Scapania obscura*, *Schistostega pennata*, *Schofieldia monticola*, *Trematodon asanoi* and *Tritomaria exsectiformis*.

Methods

On 7-9 August 2012, Juliana Willsen, Andy Gustafson, Katina Verardo, and Daniel Thomas hiked into the Mt. Thielsen Wilderness area from the Tipsoo Mountain trailhead. The crew camped at the intersection of the Howlock Mountain trailhead and the Pacific Crest Trail, and the following morning climbed to the ridge of the crest of the cascades. Working in two groups, the crew surveyed south to Thielsen Creek (Verardo and Thomas) and northward to along Howlock Mountain (Gustafson and Willsen). On the north end of Howlock Mountain, a large volcanic extrusion precluded further safe travel along the ridge. Katy Weidman, Gabe Dour, and Dan Thomas returned on 23 August to survey from the base of Tipsoo to the north side of the volcanic extrusion, completing the target survey area. Judy Harpel and Richard Helliwell surveyed the wetlands associated with Warrior Creek on 19 September 2012 from the Kelsay Trailhead. Lightning caused wildfires had limited access to much of the target area prior to August.

The botany crew members had been given a brief introduction the target species and directed to collect, where there was sufficient material, any vascular plant species that could be one of the target species. Photographs were taken of unknown species with populations too small to collect from. All bryophytes were collected as long as there was enough material. Vascular Plant

identifications were made by Thomas and Helliwell. Bryophyte determinations were made by Harpel and Helliwell.



Figures 1 & 2. Whitebark pine along Sawtooth Ridge and red needles on a whitebark pine caused by a mountain pine beetle infestation.

Results and Discussion

No detections were made of any of the target vascular plants. Occurrences of two species that the Oregon Natural Heritage Information Center (2010) is tracking were identified although both *Hazardia whitneyi* var. *discoidea* (G4G5, T4, S3) and *Hieracium greenii* (G3G4, SNR) were previously known from this area. There was one isolated *Carex* plant with a solitary spike similar to *C. nardina* that could only be photographed. The photographs are insufficient in detail to confidently assign a name to but it is probably just the common *C. breweri*. *Festuca saximontana* ssp. *purpusiana* is the most interesting collection that was made. It is known from Mt. Hood, Steens Mountain and the Wallowa Mountains. There are a few other unvouchered observations noted on the Oregon Flora Project's atlas (<http://www.oregonflora.org/atlas>.) from the Cascades but none from or near the Mt. Thielsen Wilderness Area. *Pinus albicaulis* occurs scattered along the spine of Sawtooth Ridge (Figure 1) and Howlock mountain. Red needles known as branch flags (Figure 2) symptomatic of white pine blister rust (*Cronartium ribicola*) and mountain pine beetle (*Dendroctonus ponderosae*) were seen throughout the area as well. An outbreak of mountain pine beetle has been ongoing within the *P. contorta* forests around Diamond Lake and in Crater Lake NP for several years so it was not surprising to discover pitch tubes of the mountain pine beetle on *P. albicaulis*. See Table 1 for the complete species list of plants that were either collected or observed.



Figure 3. The largest of the meadows at Warrior Fen.

The bryophyte inventory did yield new locations of rare species. Warrior Fen (Figure 3) is a collection of several wetlands at the headwaters of Warrior Creek in the OCRA, not all of which were able to be visited due to time limitations. There is a relatively large population of *Helodium blandowii* in the largest wetland. It occupies low, broad mounds under *Vaccinium uliginosum* along with *Carex aquatilis* and *Tofieldia glutinosa*. Mosses within the wetland are segregated in distinct bands apparently associated with moisture and perhaps pH or nutrients. *Helodium blandowii* occurs with *Aulacomnium palustre* on slightly elevated areas. Below these species is a band of *Meesia triquetrus* while *Hamatocaulis vernicosus* forms a lawn below the *M. triquetrus*. Floating in the open water below the lawn of *H. vernicosus* is *Warnstorfia exannulata*. The *Helodium blandowii* population is scattered within an approximately 0.3 acre area in west arm of the main meadow.

New to the Umpqua National Forest is *Lophozia laxa* (Figure 4). This rare liverwort was discovered within a collection of *Sphagnum capillifolium* where it was intertwined with *Cephalozia pleniceps* as threads within the loose mat of sphagnum. The half red stem and the numerous tiny oil bodies are distinctive. This species was located only a few meters to the north of the *H. blandowii* population where *S. capillifolium* extends from the banks of open water along a low broad rise with scattered *Carex* sp. stems and *Kalmia microphylla*. This liverwort had been previously documented only on the Willamette National Forest in Oregon. Neither *Mylia anomala* nor *Oncophorus virens* have identified conservation concerns but are both new records for the Umpqua National Forest. *Mylia anomala* occurred in *Lophozia vernicosa* pockets

within *Sphagnum fuscum* banks. *Oncophorus virens* is a widespread species in the Dicranaceae family.

There were relatively few bryophytes found from Sawtooth Ridge or Howlock Mountain. These areas lacked the moisture to sustain bryophyte populations beyond tiny pockets of habitat within north-facing rock crevices. Much of what was collected consisted of sterile *Pohlia* sp. In the absence of sporophytes or brood bodies, no name can confidently be applied to these collections. Otherwise, *Polytrichum juniperinum* and *Meiotrichum lyallii* occurred sporadically above timberline in the rocks. These are typical species of the High Cascades. *Pseudoleskea radicata* was a slight surprise to be found at such a high elevation but it is not an uncommon species locally. The most interesting specimen is what appears to be an atypical form of *Polytrichum juniperinum*. The toothed, bicolored hair point and the dense, dirty white rhizoids suggest the boreal *P. hyperboreum*, a species not known from south of Canada. However, the lack of branching and the slightly thickened apex of the marginal cells of the lamellae seem to place it more appropriately with the ubiquitous *P. juniperinum*. The upper reaches of Thielsen Creek near the Pacific Crest Trail yielded species typical of seepy, headwater streams including *Philonotis fontana*, *Bryum pseudotriquetrum* and *B. weigellii*. See Table 2 for the complete list of species encountered.



Figure 4. *Lophozia laxa* after being dissected from the *Sphagnum* collection in which it was growing.

Recommendations

There has been enough survey completed on the Umpqua NF to recommend dropping *Arabis suffrutescens* var. *horizontalis* and *Gentiana newberryi* var. *newberryi*, as suspected species from the USFS sensitive list. The most likely habitat for both species has been inventoried and they are relatively conspicuous species that should have been detected if they were present. *Lophozia laxa* should be added to the sensitive list as documented on the Umpqua NF. The remaining species have uninventoried habitat on the forest.

Literature Cited

Helliwell, R., D. York and E. Baxter. 2005. Verification of Rare Plants Reported to Occur in the Thielsen Wilderness Area, Umpqua National Forest, Oregon, Report to the Interagency Special Status/Sensitive Species Program, Roseburg, Oregon. 15 pp.

Oregon Biodiversity Information Center. 2010. Rare, Threatened and Endangered Species of Oregon. Institute for Natural Resources, Portland State University, Portland, Oregon. 105 pp.

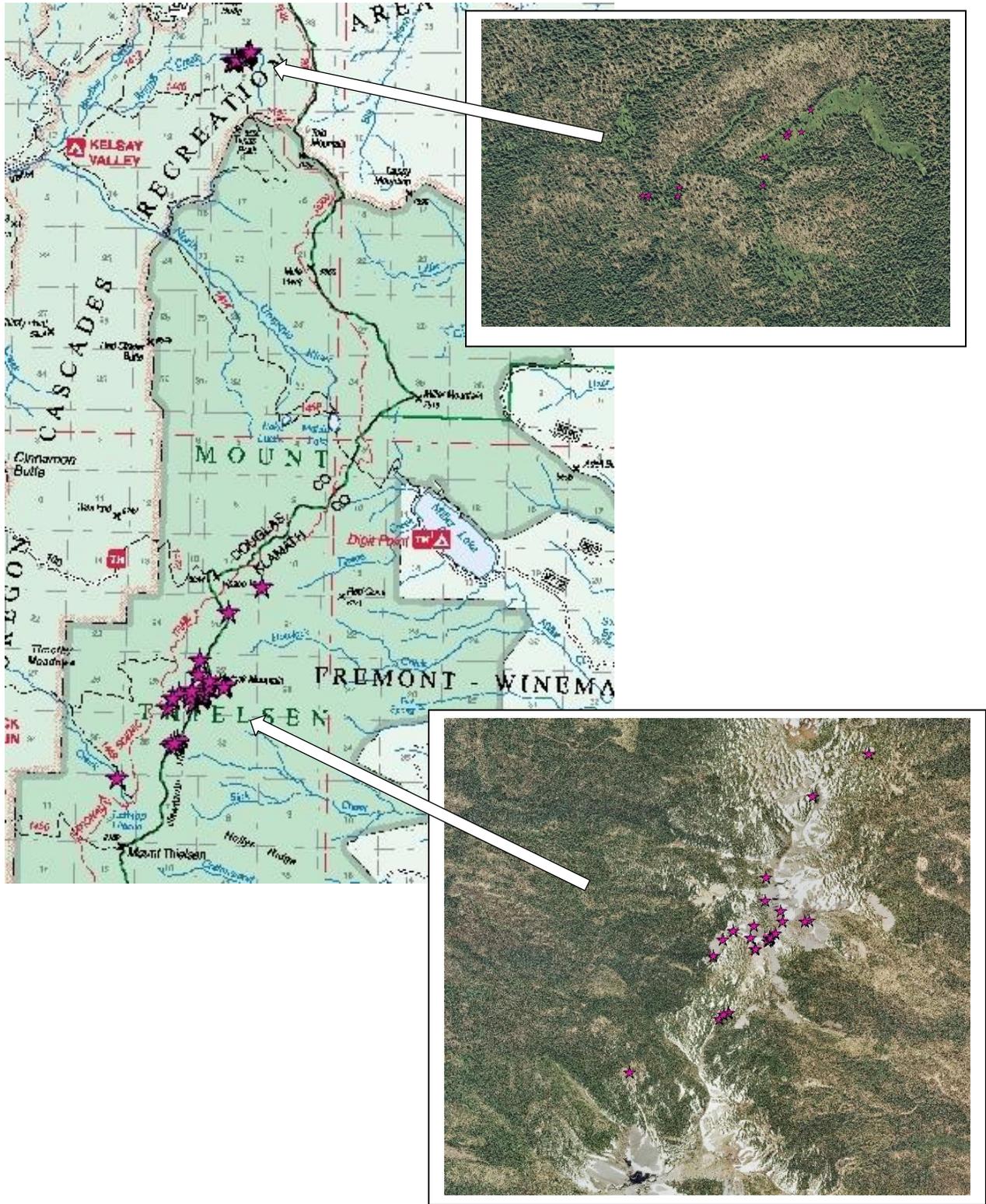


Figure 5. Vicinity Map of the inventoried areas. The starred locations indicate collection areas.

Table 1. List of Vascular Plant collected or observed in the Sawtooth Ridge and Howlock Mountain areas.

Aconogonon davisiae (A. Gray) Soják var. *davisiae*
Anemone drummondii S. Watson var. *drummondii*
Anemone occidentalis S. Watson
Antenneria media Greene
Arctostaphylos nevadensis A. Gray
Arnica cordifolia Hook.
Arnica mollis Hook.
Boechnera lemmonii (S. Watson) W.A. Weber
Boechnera lyallii (S. Watson) Dorn
Calyptidium umbellatum (Torrey) Greene
Cardamine bellidifolia L.
Carex breweri Boott
Carex halliana L.H. Bailey
Carex nigricans C.A. Mey.
Carex rossii Boott
Carex stramineiformis L.H. Bailey
Carex subfusca cf. W. Boott
Castilleja arachnoidea Greenm.
Chimaphila umbellata (L.) W.P.C. Barton
Claytonia megarhiza (A. Gray) S. Watson
Cryptogramma acrostichoides R. Br.
Elymus elymoides (Raf.) Swezey
Epilobium glaberrimum Barbey ssp. *fastigiatum* (Nutt.) Hoch. & P.H. Raven
Eremogone pumicola (Coville & Leiberger) Ikonn.
Erigeron compositus Pursh var. *compositus*
Erigeron nivalis Nutt.
Eriogonum marifolium Torr. & A. Gray
Eriogonum pyrolifolium Hook. var. *coryphaeum* Torr. & A. Gray
Festuca saximontana Rydb. ssp. *purpusiana* (St.-Yves) Fred. & Pravick
Hazardia whitneyi (A. Gray) Greene var. *discoidea* (J.T. Howell) W.D. Clark
Hieracium greenei A. Gray
Hieracium gracile Hook. (= *H. triste* Spreng.)
Holodiscus microphyllus Rydb. var. *glabrescens* (Greenm.) F.A. Ley
Hulsea nana A. Gray
Ipomopsis congesta (Hook.) V.E. Grant var. *montana* (A. Nelson & P.B. Kenn.)
Juncus drummondii E. Mey.
Juncus parryi Engelm.
Lewisia pygmaeus (Brand) J.M. Porter & L.A. Johnson
Ligusticum grayi Coult. & Rose
Lomatium martindalei (Coult. & Rose) Coult. & Rose
Luetkea pectinata (Pursh) Kuntze
Lupinus lepidus Lindl. var. *lobbii* (S. Watson) C.L. Hitchc.
Luzula divaricata S. Watson
Luzula hitchcockii Hämet-Ahti
Micranthes tolmei (Torr. & A. Gray) Brouillet & Gornall
Nothocalais alpestris (A. Gray) K. Chambers
Orthilia secunda (L.) House

Oxyria digyna (L.) Hill.
Penstemon rupicola (Piper) Howell
Phacelia hastata Lehm. ssp. *compacta* (Brand) Heckard
Pinus albicaulis Engelm.
Poa cusickii Vasey ssp. *purpurascens* (Vasey) Soreng
Polemonium pulcherrimum Hook.
Polygonum shastense W.H. Brewer
Drymocallis glandulosa (Lindl.) Rydb. [= *Potentilla g.*(Lindl.)]
Raillardella argentea (A. Gray) A. Gray
Sagina saginoides (L.) H. Karst.
Silene suksdorfii B.L. Rob.
Trisetum spicatum (L.) K. Richt.
Tsuga mertensiana (Bong.) Carrière
Woodsia oregana D.C. Eaton ssp. *oregana*
Vaccinium scoparium Coville

Table 2. List of Bryophytes collected or observed in the Warrior Fen, Sawtooth Ridge and Howlock Mountain areas.

Liverworts and Hornworts

Anthoceros fusiformis Aust.
Blepharostoma trichophyllum (L.) Dum.
Calapogeia fissa (L.) Raddi
Cephalozia pleniceps (Aust.) Lindb.
Chiloscyphus polyanthus (L.) Corda
Jungermannia leiantha Grolle
Lophozia incisa (Schrad.) Dum.
Lophozia laxa (Lindb.) Grolle
Lophozia ventricosa (Dicks.) Dum.
Marchantia polymorpha L.
Mylia anomola (Hook.) S.Gray
Pellia endiviifolia (Dicks.) Dum.
Scapania cf. *oaksii* Aust.
Scapania undulata (L.) Dum.

Mosses

Aulacomnium palustre (Hedw.) Schwaegr.
Bartramia ithyphylla Brid.
Brachythecium frigidum C. Mull.) Besch.
Bryum pseudotriquetrum (Hedw.) Gaertn. *et al.*
Bryum weigeli Spreng. in Biehler
Ceratodon purpureus (Hedw.) Brid.
Dicranoweissia crispula (Hedw.) Lindb. *ex.* Milde
Drepanocladus aduncus (Hedw.) Warnst.
Fontinalis antipyretica Hedw.
Fontinalis neomexicana Sull. & Lesq.
Hamatocaulis vernicosus (Mitt.) Hedenäs
Helodium blandowii (Web. & Mohr.) Warnst.
Heterocladium procurrens (Mitt.) Jaeg.
Meesia triquetrus (Richt.) Ångstr.
Meiotrichum lyallii (Mitt.) G.L. Smith
Oncophorus virens (Hedw.) Brid.
Philonotis fontana (Hedw.) Brid.
Pohlia sp.
Polytrichum commune Hedw.
Polytrichum juniperinum Hedw.
Pseudoleskea radicata (Mitt.) Mac. & Kindb.
Rhizomnium magnifolium (Horik.) T. Kop.
Sanionia uncinata (Hedw.) Loeske
Sphagnum capillifolium (Ehrh.) Hedw.
Sphagnum fuscum (Schimp.) Klinggr.
Sphagnum squarrosum Crome
Warnstorfia exannulata (Schimp. *in.* B.S.G.) Loeske