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**A Checklist of Vascular Plants on the
 H. J. Andrews Experimental Forest,
 Western Oregon**

by

Jerry F. Franklin, *Principal Plant Ecologist*

and

C. T. Dyrness, *Principal Soil Scientist*

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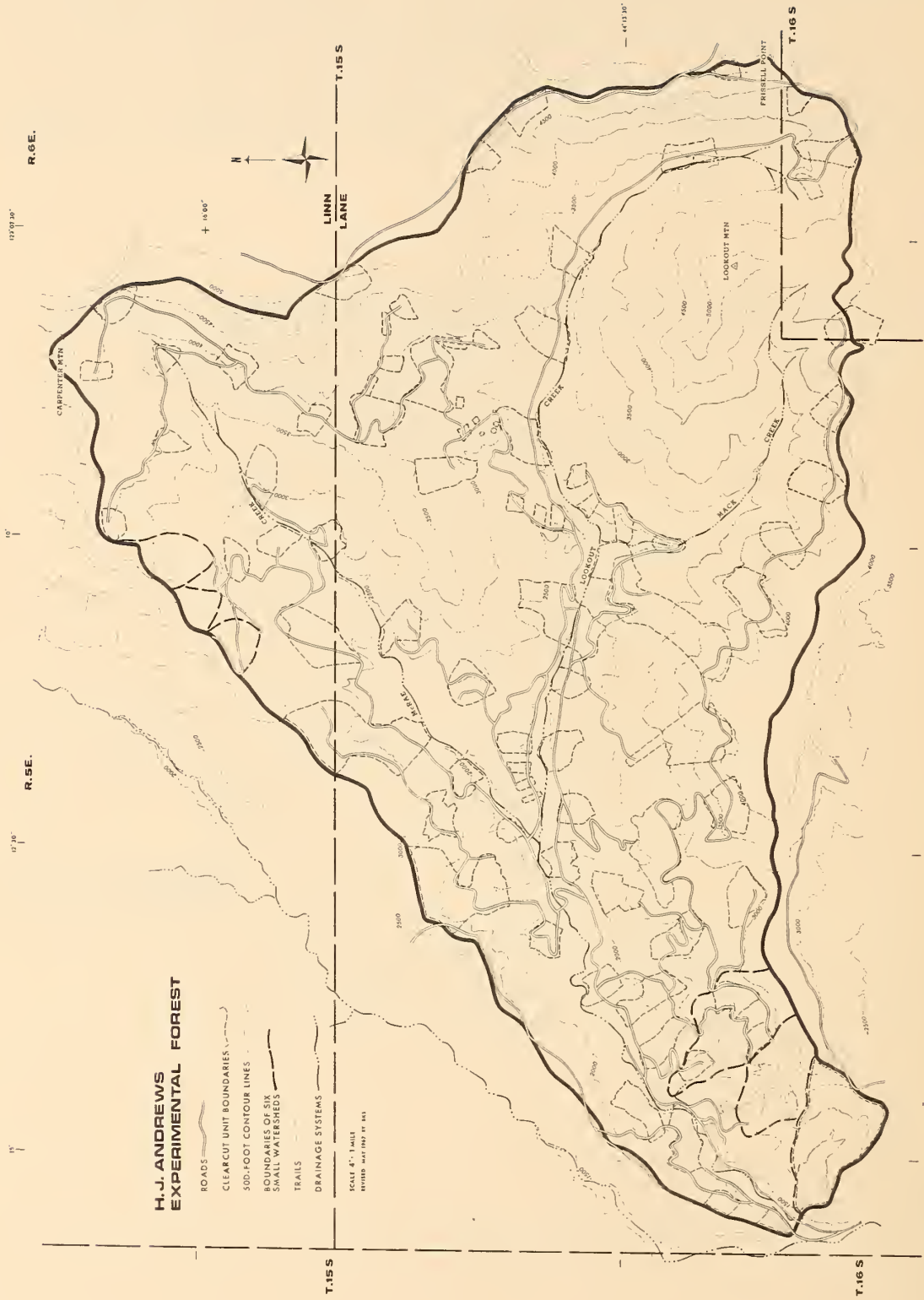


Figure 1.--Map of H. J. Andrews Experimental Forest showing roads, clearcut unit boundaries, 500-foot contour lines, and other topographic features.

ABSTRACT

Lists 480 plant taxa which have been encountered in the 6,000-hectare Lookout Creek drainage of west-central Oregon. Notes on habitats and abundance are included for most taxa.

The H. J. Andrews Experimental Forest occupies the 6,000-hectare drainage of Lookout Creek, a tributary of the McKenzie River, on the western slopes of the Oregon Cascade Range in west-central Oregon (fig. 1). This experimental forest has been administered by the U.S. Forest Service for scientific and educational purposes since its establishment in 1948. It is an active center for watershed, timber management, and ecological research programs of the Pacific Northwest Forest and Range Experiment Station and the Coniferous Forest Biome's Analysis of Ecosystems Project in the International Biological Program. This checklist of vascular plants encountered on the forest during the first 20 years of its existence will assist scientists working on the forest, and other interested visitors, in plant identification.

ENVIRONMENT

The H. J. Andrews Experimental Forest is mountainous with climate, soils, topography, and bedrock geology typical of the Western Cascades, the older Oligocene-Miocene segment of the Oregon Cascade Range. Lookout Creek is a headwaters drainage with geologically mature topography (fig. 1). Well-defined drainages, sharp ridges, and steep slopes are common except at higher elevations, where areas of gentle, undulating topography are common. All rock formations are volcanic in origin, with tuffs, breccias, and basalts common at lower elevations and andesite on the ridges. These formations typically belong to the Little Butte Volcanic Series and, with increasing elevation, to the Sardine and Cascade Andesite formations. Major soil groups are Reddish-Brown Lateritics and Brown Podzolics, which are typically moderately deep and fine textured. Deep colluvial soils are common at lower elevations and soils from volcanic ash, on higher ridges.

The climate of the experimental forest is maritime, with a pronounced dry summer season. Annual precipitation varies from about 2,300 millimeters at lower elevations to 2,800 millimeters or more on the high ridges. About 90 percent of this falls from October through April, and the June through August period is typically very dry. At elevations above 900 meters, winter snowpacks accumulate to a depth of 1 meter or more. Temperatures are moderate with mean July maxima of around 29° C. and January minima of around -3° C. Temperature and moisture combine to produce an excess of potential evapotranspiration over precipitation from about mid-May to September (Rothacher, Dyrness, and Fredriksen 1967).

COMMUNITIES AND PLANT HABITATS

The distribution of the taxa included in this checklist is related to the vegetative zones found on the H. J. Andrews Experimental Forest and the successional stages of the plant communities found within each zone, e.g., recently clearcut areas and old-growth forests. A number of special plant habitats and communities, such as riparian and bog types, will be noted, since many species are found only in these locations.

There are two major vegetative zones on the experimental forest based on climax forest types (Franklin and Dyrness 1969): (1) the *Tsuga heterophylla* (TSHE) zone, and (2) the *Abies amabilis* (ABAM) zone. These are roughly comparable to Merriam's Humid Transition and Canadian Life Zones. Scattered stands of *Tsuga mertensiana* are found at the highest elevations in the forest. However, because of their fragmented nature, these areas are not considered representative of the true TSME zone (a zone which approximates the Hudsonian Life Zone), but rather are included within the ABAM zone.

The *Tsuga heterophylla* (TSHE) zone occurs from the lowest part of Lookout Creek (400 meters) to about 1,050 meters. Mature forests are dominated by *Pseudotsuga menziesii* with varying mixtures of *Tsuga heterophylla* and *Thuja plicata*. There is a broad spectrum of forest communities associated with a moisture gradient within this zone. The *Pseudotsuga menziesii*/*Holodiscus* association is found on the warmest and driest sites with *Pseudotsuga* the major climax species. With increasing moisture, the *Pseudotsuga-Tsuga heterophylla*/*Corylus cornuta*, *Tsuga/Castanopsis chrysophylla-Rhododendron macrophyllum*, *Tsuga/Rhododendron*, *Tsuga/Berberis nervosa*, *Tsuga/Polystichum munitum*, and *Tsuga/Polystichum-Oxalis oregana*, or their seral associates, are encountered. *Tsuga heterophylla* is the major climax species in all except the driest of the associations in this zone.

The *Abies amabilis* (ABAM) zone is found at higher elevations, generally over 1,050 meters. Old-growth forests in this zone are generally dominated by *Abies amabilis* and *Tsuga heterophylla*, although in some areas large, old *Pseudotsuga menziesii* may be dominant. Apparently largely as a result of fires, many stands in the ABAM zone are composed of trees in the younger age classes (100-125 years old). These second-growth stands are most often dominated by *Abies procera*. Other tree species frequently present in the zone include *Tsuga mertensiana* (over 1,350 meters), *Pinus monticola*, and *Abies grandis*. Only a limited number of forest communities have been described within the ABAM zone. At high elevations, sites having the lowest productivity are generally occupied by the *Tsuga mertensiana/Xerophyllum tenax* community. Other communities, listed in order of increasing site productivity, include *Abies amabilis/Achlys triphylla*, *Abies/Vaccinium alaskanse*, and *Abies/herb*. The latter community, found on moist, rich sites, is characterized

by abundant cover of such herbs as *Tiarella unifoliata*, *Smilacina stellata*, *Cornus canadensis*, and *Clintonia uniflora*.

The H. J. Andrews Experimental Forest was virtually undisturbed until 1950, when logging and road construction began. Logging in the area has been of two types: (1) salvage logging in which scattered decadent trees are harvested from old-growth stands adjacent to roads; and (2) clearcut logging where all trees are removed from areas ranging from about 4 to 16 hectares in size. Following logging, these clearcut units are generally broadcast-burned to eliminate logging slash. In the ensuing 20 years, 91 clearcut units have been logged, totaling 856 hectares, or approximately 14 percent of the total forest area. Thus, clearcut areas undergoing secondary succession range from 1 to 20 years in age and occupy a number of diverse sites (fig. 1). Road rights-of-way are also important in providing routes for plant migration in the forest. Road mileage now totals about 40, and rights-of-way occupy almost 2 percent of the total area.

Specialized habitats existing on the forest include rock outcrops, mountain meadows, small bogs, and riparian zones. Rock outcrop areas, although numerous, are small and scattered throughout the forest over a wide range in elevation. Meadow openings are generally confined to ridge-top positions at elevations of 1,200 to 1,350 meters and often ringed by stands of *Abies lasiocarpa*. These rock outcrops and meadows offer a diversity of microhabitats and provide refuge for many plant species unable to compete elsewhere (Hickman 1968). Plant collections have been made in several bog areas which are situated over a considerable range in elevation. The most interesting boggy area, taxonomically, has been one at the head of Mack Creek near the summit of Lookout Mountain. Riparian zones are probably the most extensive of all specialized habitats, as it is estimated that approximately 100 miles of perennial stream channel exist on the forest. Finally, there are extensive areas of *Alnus sinuata*-dominated communities within the ABAM zone which occupy areas of heavy snow accumulation and impeded drainage.

Intensive plant collecting on the forest began in 1958 and most has been carried out by the authors and Dr. James Hickman. Voucher specimens have been obtained for the majority of species listed and, in most cases, are on file at both the Oregon State University Herbarium and the U.S. Forest Service Herbarium in Fort Collins, Colo. In addition, most collections are also represented in a small working herbarium maintained at the H. J. Andrews Experimental Forest headquarters in Blue River, Oregon. Abbreviations used in identifying plant collectors are as follows:

- F - Jerry F. Franklin, U.S. Forest Service
- D - C. T. Dyrness, U.S. Forest Service
- F&D - Franklin and Dyrness, U.S. Forest Service
- M - Ross C. Mersereau, Jr., U.S. Forest Service
- H - James C. Hickman, Washington State University,
Pullman, Washington

Taxa for which no collection numbers are listed were identified in the field by the authors or are reported as being present by other workers. We would like to especially acknowledge the assistance of Dr.'s F. J. Hermann and Charles Feddema of the U.S. Forest Service Herbarium, who made many of the original identifications, and Mrs. LaRea Dennis Johnston and Dr. Kenton Chambers at the Oregon State University Herbarium, who assisted with many difficult identification problems.

Nomenclature follows the most recent taxonomic manuals available as follows: Most herbs and shrubs--*Vascular Plants of the Pacific Northwest*, vols. 1-5, by C. L. Hitchcock, et al. (1955-69); trees and a few of the shrubs--*Checklist of Native and Naturalized Trees of the United States (Including Alaska)*, by E. L. Little, Jr., (1953); and nomenclature for taxa not covered in Hitchcock et al. follows "*A Manual of the Higher Plants of Oregon*," 2d ed., by Morton E. Peck (1961). Common names provided, except for trees and a few shrubs which follow Little (1953), follow a variety of sources, the most important being Peck (1961) and Garrison, Skovlin, and Poulton (1967).

The following listing includes 480 plant taxa. Of these, 135 are generally found only in the TSHE zone, 175 are characteristic of the ABAM zone, and 170 occur in both zones. Where the habitat or abundance of a taxon or both are believed adequately known they are indicated; where they are poorly known the collection site is usually indicated.

LYCOPODIOPHYTA

Lycopodiaceae

Lycopodium clavatum L., ground- or running-pine, elk moss. Rare in dense conifer forest, ABAM zone.

Selaginellaceae

Selaginella densa Rydb. var. *scopulorum* (Maxon) Tryon, Rocky Mountain selaginella. Occasional to common in dry, open areas, especially on outcropping rock or in crevices, ABAM zone.

Selaginella wallacei Hieron., Wallace's selaginella. Common in dry, rocky areas, both zones. [F&D 145]

EQUISETOPHYTA

Equisetaceae

Equisetum arvense L., common horsetail. Occasional in wet areas, both zones. [F&D 37]

Equisetum telmateia Ehrh. var. *braunii* (Milde) Milde, giant horsetail. Common in wet areas, TSHE zone. [F 47]

POLYPODIOPHYTA

Ophioglossaceae

Botrychium multifidum (Gmel.) Trevis., leathery grape-fern. Collected in bog on Lookout Mountain, ABAM zone. [F 645]

Botrychium virginianum (L.) Swartz, Virginia grape-fern. Collected in swamp, TSHE zone. [F&D 178]

Polypodiaceae

Adiantum pedatum L., maidenhair-fern. Common, streamsides and wet forests, TSHE zone.

Athyrium filix-femina (L.) Roth, lady-fern. Occasional to abundant, streamsides, moist forests, and swamps, both zones.

Blechnum spicant (L.) With., deer-fern. Occasional to abundant, streamsides, moist forest, and swamps, both zones.

Cheilanthes gracillima D.C. Eat., lace-fern. Occasional, rocky outcrops, both zones. [F 402, F&D 146]

Cryptogramma crispa (L.) R. Br. ex Hook. var. *acrostichoides* (R. Br.) C. B. Clarke, parsley-fern. Common, rock outcrops, both zones. [F 401, F&D 229]

Cryptogramma densa (Brackenr.) Diels, Oregon cliff-brake. Occasional, on Lithosols or under boulders on exposed south slopes, ABAM zone. [H 483-1]

- Cystopteris fragilis* (L.) Bernh., bladder-fern. Occasional to common, rock outcrops, both zones. [F 406, F 664]
- Dryopteris austriaca* (Jacq.) Woyner ex Schinz & Thell., spreading woodfern. Occasional, swamps and moist forests, TSHE zone. [F&D 59]
- Gymnocarpium dryopteris* (L.) Newm., oak-fern. Occasional, streamsides and moist woods. TSHE zone. [F 795]
- Polypodium glycyrrhiza* D.C. Eat., licorice fern. Common on rocks and trees (especially *Acer macrophyllum*) along streams, TSHE zone. [F 12]
- Polypodium hesperium* Maxon, occasional on south- or west-facing outcrops, Frissell Mountain, ABAM zone.
- Polystichum munitum* (Kaulf.) Presl, western sword-fern. Common to abundant in forests and clearcuts, TSHE zone; occasional ABAM zone. [F 539]
- Polystichum munitum* (Kaulf.) Presl var. *imbricans* Maxon, imbricated sword-fern. Occasional on rock outcrops, ABAM zone.
- Pteridium aquilinum* (L.) Kuhn var. *pubescens* Underw., bracken or western brake-fern. Occasional in forests, common to abundant on clearcuts or mountain meadows, both zones.

PINOPHYTA

Taxaceae

- Taxus brevifolia* Nutt., western yew. Present both zones, but common in forests and on clearcuts, TSHE zone.

Cupressaceae

- Chamaecyparis nootkatensis* (D. Don) Spach, Alaska-cedar. Occasional on rocky ridges and in moist forest, ABAM zone. [F 98]
- Juniperus communis* L. var. *montana* Ait., common juniper. Common on open, rocky slopes or ridges, ABAM zone. [F 101]
- Libocedrus decurrens* Torr., incense cedar. Common, dry ridges and slopes, TSHE zone; occasional in and around mountain meadows, ABAM zone. [F 723]
- Thuja plicata* Donn, western redcedar. Common, especially moister sites, TSHE and lower ABAM zones. [F 57, F 94]

Pinaceae

- Abies amabilis* (Dougl.) Forbes, Pacific silver fir. Common to abundant, ABAM zone; occasional to rare, TSHE zone. [F 659, F 798]
- Abies grandis* (Dougl.) Lindl., grand fir. Common along Lookout Creek, occasional in forest, TSHE zone; populations approaching intermediates between *Abies concolor* and *Abies grandis* common in forests and invading meadows, ABAM zone.

- Abies lasiocarpa* (Hook.) Nutt., subalpine fir. Common in and around meadows, ABAM zone.
- Abies lasiocarpa* (Hook.) Nutt. var. *arizonica* (Merriam) Lemm., corkbark fir. Introduced plantation in middle-elevation clearcut (L202).
- Abies procera* Rehder, noble fir. Common in ABAM zone.
- Larix decidua* x *leptolepis*, Dunkeld larch. Introduced plantation of F₂ progeny in low-elevation clearcut (B131).
- Picea engelmannii* Parry ex Engelm., Engelmann spruce. Not known to occur naturally; plantation in middle-elevation clearcut (L303).
- Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm., lodgepole pine. Rare to occasional in forest and on rock outcrops and ridges, ABAM zone. [F&D 22]
- Pinus jeffreyi* Grev. & Balf., Jeffrey pine. Introduced plantation on clearing near entrance (lower Lookout Creek), TSHE zone.
- Pinus lambertiana* Dougl., sugar pine. Occasional, mainly on dry ridges, TSHE zone.
- Pinus monticola* Dougl., western white pine. Occasional to common, forests and clearcuts, mainly ABAM zone.
- Pinus ponderosa* Laws., ponderosa pine. Rare native specimens on rock outcrops, ABAM zone; plantations on several low-elevation clearcuts (especially B134). [F&D 21]
- Pinus thunbergiana* Parl., Japanese black pine. Plantation on low-elevation clearcut (B131).
- Pseudotsuga menziesii* (Mirb.) Franco, Douglas-fir. Most abundant tree species in virgin forests and on clearcuts, TSHE and lower ABAM zones.
- Tsuga heterophylla* (Raf.) Sarg., western hemlock. Second most abundant tree species, TSHE and lower ABAM zones.
- Tsuga mertensiana* (Bong.) Carr., mountain hemlock. Common to abundant, upper ABAM zone.

MAGNOLIOPHYTA

Liliatae

Juncaceae

- Juncus effusus* L. var. *gracilis* Hook., common rush. Common in wet areas on clearcuts and roadbanks, TSHE and lower ABAM zones. [F 108]
- Juncus ensifolius* Wikst., dagger-leaved rush. Common in boggy areas, ABAM zone. [F 648, F 735, F 778, F&D 39]
- Juncus mertensianus* Bong., Merten's rush. Collected at spring on Carpenter Mountain, ABAM zone. [F 776]

Juncus parryi Engelm., Parry's rush. Occasional in rocky areas,
ABAM zone. [F 403, F 787]

Luzula intermedia (Thuill.) Spenner, common wood-rush.^{1/} Occasional on
clearcuts and roadbanks, both zones. [F 23, F 429, F&D 148]

Luzula parviflora (Ehrh.) Desv., small-flowered wood-rush. Collected
on wet roadbank, ABAM zone. [F&D 71]

Cyperaceae

Carex abrupta Mack., abruptly-beaked sedge. Collected in woods near
Carpenter Mountain Lookout, ABAM zone. [F 339]

Carex amplifolia Boott in Hook., ample-leaved sedge. Wet areas, TSHE
zone. [F&D 48]

Carex aperta Boott in Hook., Columbia sedge. Abundant in shallower
parts of temporary ponds, upper TSHE and lower ABAM zones. [F 637]

Carex aquatilis Wahl., water sedge. Collected in bog on Lookout
Mountain, ABAM zone. [F 733]

Carex brevicaulis Mack., short-stemmed sedge. Occasional, forest or
clearcut areas, both zones. [F&D 133, F&D 155]

Carex deweyana Schw. var. *bolanderi* W. Boott, Bolander's sedge.
Occasional, wet roadsides, both zones. [F 772, M 12]

Carex deweyana Schw. ssp. *leptopoda* (Mack.) Calder & Taylor, short-
scaled sedge. Common, wet areas, including *Alnus sinuata*
communities and swamps, both zones. [F 768, F&D 137, F&D 179]

Carex hendersonii L. H. Bailey, Henderson's sedge. Collected in forest,
upper TSHE zone. [F&D 158]

Carex hoodii Boott in Hook., Hood's sedge. Common, mountain meadows,
ABAM zone. [F 718, F&D 224]

Carex interior L. H. Bailey, inland sedge. Collected in swamp, TSHE
zone. [F&D 170a]

Carex interrupta Boeck., green-fruited sedge. Collected in bog on
Lookout Mountain, ABAM zone. [F 646]

Carex jonesii L. H. Bailey, Jones' sedge. Collected in bog on
Lookout Mountain, ABAM zone. [F 730]

Carex laeviculmis Meinsh., smooth-stemmed sedge. Occasional to abundant
in wet areas, clearcuts, or roadbanks, both zones.
[F 108a, F 773, F&D 40, M 1]

^{1/} At the recommendation of F. J. Hermann we are using *Luzula intermedia* (Thuill.) Spenner instead of *L. campestris* L. DC. which C. L. Hitchcock uses for this taxon.

- Carex lenticularis* Michx., lenticulate sedge. Collected at spring on Carpenter Mountain, ABAM zone. [F 780]
- Carex luzulina* Olney, cold-loving sedge. Common, wet areas and bogs, ABAM zone. [F 738, F 782, F&D 41]
- Carex mertensii* Prescott ex Bong., Merten's sedge. Occasional to common, *Alnus sinuata* communities, ABAM zone. [F&D 138]
- Carex ormantha* (Fern.) Mack., western stellate sedge.^{2/} Collected in bog on Lookout Mountain, ABAM zone. [F 732, F&D 110]
- Carex pachystachya* Cham. ex Steud., thick-headed sedge. Occasional to abundant, wet areas, including swamps, clearcuts, and roadsides, both zones. [F 769, F 771, F&D 96, F&D 120, F&D 170]
- Carex pensylvanica* Lam. var. *vespertina* L. H. Bailey, long-stoloned sedge. Occasional to abundant, mountain meadows and forests, ABAM zone. [F 407, F 720, F&D 15, F&D 66, F&D 95, F&D 151]
- Carex rossii* Boott in Hook., Ross' sedge. Collected on summit of Carpenter Mountain, ABAM zone. [F 793a]
- Carex rostrata* Stokes ex With., beaked sedge. Collected in forest swamp, TSHE zone. [F&D 169]
- Carex subfusca* W. Boott in Wats., rusty sedge. Collected in swamp, lower TSHE zone. [F&D 168]
- Carex vesicaria* L., inflated sedge. Abundant, temporary ponds, upper TSHE zone. [F 634]
- Eleocharis pauciflora* (Lightf.) Link, few-flowered spike-rush. Common, boggy areas, ABAM zone. [F 728, F 781]
- Eriophorum* L., cotton-grass. Collected on wet roadbank, ABAM zone. [F 649]
- Scirpus microcarpus* Presl, small-fruited bulrush. Common, swamps and bogs, upper TSHE and ABAM zones. [F 644, F&D 49]

Gramineae

- Agropyron caninum* (L.) Beauv., bearded wheat-grass. Occasional to abundant, mountain meadows, ABAM zone. [F&D 228]
- Agrostis alba* L. var. *palustris* (Huds.) Pers., creeping bent-grass. Occasional to common, disturbed roadsides, both zones. [F 770, D 10]
- Agrostis diegoensis* Vasey, leafy bent-grass. Collected near entrance (lower Lookout Creek), TSHE zone. [F 627]

^{2/} At the recommendation of F. J. Hermann we are using *Carex ormantha* (Fern.) Mack. instead of *C. muricata* L. which C. L. Hitchcock uses for this taxon.

- Agrostis exarata* Trin., western bent-grass. Occasional, mountain meadows and wet roadsides, ABAM zone. [F 774, F&D 221]
- Agrostis scabra* Willd., rough bent-grass. Occasional, open forest and mountain meadows, ABAM zone. [F 760, F&D 197]
- Agrostis tenuis* Sibth., colonial bent-grass. Introduced, occasional on disturbed sites, both zones. [F 442, F 788].
- Agrostis thurberiana* A. S. Hitchc., Thurber's bent-grass. Collected at bog on Lookout Mountain, ABAM zone. [F 736]
- Aira caryophyllea* L., silvery hair-grass. Occasional, rock outcrops along creeks, TSHE zone. [F 364]
- Avena sativa* L., common cultivated oat. Introduced as bait, rare, TSHE zone. [F 438a, F 762, F&D 227]
- Bromus carinatus* Hook. & Arn., California brome-grass. Occasional to common, clearcuts, forest openings, and mountain meadows, ABAM zone.
- Bromus ciliatus* L., fringed brome-grass. Collected on clearcut area, TSHE zone. [D 9]
- Bromus orcuttianus* Vasey, Orcutt's brome-grass. Occasional, in open forest, ABAM zone. [F 338]
- Bromus sterilis* L., sterile brome-grass. Collected in clearing near entrance (lower Lookout Creek), TSHE zone. [F 628, F&D 162]
- Bromus vulgaris* (Hook.) Shear, narrow-flowered brome-grass. Common, dry forests and clearcuts, TSHE zone. [F&D 57, F&D 183, F&D 184, D 35]
- Calamagrostis canadensis* (Michx.) Beauv., blue joint. Common, margins of temporary ponds and bogs, both zones. [F 638, F&D 111]
- Calamagrostis inexpansa* Gray, narrow-spiked reed-grass. Collected at bog on Lookout Mountain, ABAM zone. [F 740]
- Deschampsia caespitosa* (L.) Beauv., tufted hair-grass. Collected at bog on Lookout Mountain, ABAM zone. [F 737, F&D 109]
- Deschampsia elongata* (Hook.) Munro ex Benth., slender hair-grass. Occasional, disturbed areas, TSHE zone. [F 357, F 631]
- Elymus glaucus* Buckl., western rye-grass. Occasional, open woods and mountain meadows, ABAM zone. [F&D 199, F&D 205]
- Elymus glaucus* x *Sitanion hystrix*, Hansen's squirrel-tail. Collected on summit of Carpenter Mountain, ABAM zone. [F 786]
- Festuca arundinacea* Schreb., tall meadow fescue. Introduced, common in disturbed areas such as roadsides, both zones. [F 356, F 430, F 444]

- Festuca bromoides* L., six-weeks fescue. Introduced, collected on skid roads in clearcuts, TSHE zone. [F 359]
- Festuca megalura* Nutt., western six-weeks fescue. Occasional, dry rock outcrops, TSHE zone. [F 366]
- Festuca occidentalis* Hook., western fescue. Widespread and sometimes common, in dry, open woods, and less often on clearcuts, both zones. [F 358, F 791, F792a, F&D 56, F&D 99, F&D 181, F&D 182, F&D 203, D 8]
- Festuca ovina* L., sheep fescue. Occasional, mountain meadows, ABAM zone. [F&D 16]
- Festuca pratensis* Huds., meadow fescue. Introduced, collected on clearcut area, TSHE zone. [D 34]
- Festuca rubra* L., red fescue. Widespread, and sometimes common, especially on roadsides and disturbed sites, ABAM zone. [F 431, F 439, F 761, F 793, F&D 225]
- Festuca subulata* Trin. in Bong., nodding fescue. Collected along disturbed streamside, TSHE zone. [F 441]
- Glyceria elata* (Nash) M. E. Jones, tall manna-grass. Common, swamps and boggy areas, both zones. [F 546, F 647, F 755, M 14]
- Hierochloe occidentalis* Buckley, western vanilla grass. Rare, dry forest, TSHE zone. [F&D 230]
- Holcus lanatus* L., velvet grass. Introduced, widespread along roadsides and clearcuts, both zones. [F 548]
- Koeleria cristata* (L.) Pers., June grass or Koeler's-grass. Occasional, forest openings and mountain meadows, ABAM zone. [F&D 223]
- Lolium perenne* L., English rye-grass. Introduced, widespread (used in roadbank seedings) and sometimes common, both zones. [F 629]
- Melica aristata* Thurb. ex Boland., awned melic. Collected in open forest, ABAM zone. [F&D 132]
- Melica harfordii* Boland., Harford's melic. Occasional to common, disturbed areas such as clearcuts, TSHE zone. [F&D 147, F&D 185, D 28, D 65]
- Melica smithii* (Porter) Vasey, Smith's melic. Collected in open forest, ABAM zone. [F&D 204]
- Melica subulata* (Griseb.) Scribn., Alaska onion-grass. Occasional to common in forests, forest opening, and clearcut areas, TSHE zone. [F 365, F 535, F&D 24]
- Muhlenbergia filiformis* (Thurb.) Rydb., slender muhlenbergia. Collected in bog on Lookout Mountain, ABAM zone. [F 749]
- Panicum capillare* L., old-witch grass. Collected in clearing near entrance (lower Lookout Creek), TSHE zone. [D 71]

- Pleuropogon refractus* (Gray) Benth. in Vasey, nodding pleuropogon. Occasional to common, swamps and boggy areas, both zones. [F 739, F&D 50]
- Poa gracillima* Vasey, Pacific bluegrass. Occasional rock outcrops, both zones. [F 790, F&D 174]
- Poa incurva* Scribn. & Williams, subalpine Sandberg's bluegrass. Occasional, mountain meadows, ABAM zone. [F 719]
- Poa scabrella* (Thurb.) Benth. ex Vasey, malpais bluegrass. Occasional, mountain meadows, ABAM zone. [F&D 226]
- Puccinellia pauciflora* (Presl) Munz, few-flowered alkali grass. Swampy areas, TSHE zone. [F&D 62, M 8]
- Sitanion hystrix* (Nutt.) J. G. Smith, bottle-brush squirrel-tail. Collected on summit of Carpenter Mountain, ABAM zone. [F&D 222]
- Stipa occidentalis* Thurb. ex Wats., western stipa or needlegrass. Collected on summit of Carpenter Mountain, ABAM zone. [F 789]
- Stipa occidentalis* Thurb. ex Wats. var. *minor* (Vasey) C. L. Hitchc., subalpine stipa or needlegrass. Occasional to common, mountain meadows, ABAM zone. [F&D 121, F&D 198]
- Trisetum cernuum* Trin., nodding trisetum. Common, open woods, ABAM zone. [F 340, F&D 131]
- Trisetum spicatum* (L.) Richter, downy oat-grass. Collected on summit of Carpenter Mountain, ABAM zone. [F 792]
- Triticum aestivum* L., wheat. Introduced as bait, rare, TSHE zone. [D 67]

Sparganiaceae

- Sparganium simplex* Huds., simple-stemmed bur-reed. Collected in swampy area, TSHE zone. [M 11]

Typhaceae

- Typha latifolia* L., broad-leaved cattail. Common, wet areas, especially along roadsides and in clearcuts, both zones.

Araceae

- Lysichitum americanum* Hultén & St. John, yellow skunk-cabbage. Common, swampy habitats, both zones.

Liliaceae

- Brodiaea congesta* Smith, field brodiaea. Occasional, rocky outcrops, TSHE zone. [F&D 76]

- Calochortus subalpinus* Piper, Cascade mariposa lily. Common, mountain meadows, ABAM zone. [F 409]

- Clintonia uniflora* (Schult.) Kunth, one-flowered clintonia or queen-cup bead-lily. Common, forests of upper TSHE and ABAM zones, but extending to lower elevations along Lookout Creek.
- Disporum hookeri* (Torr.) Nicholson var. *oreganum* (Wats.) Q. Jones, Hooker's fairy bells. Common, moist forests and streamsides, TSHE zone. [D 11]
- Erythronium grandiflorum* Pursh, yellow adder's tongue or fawn lily. Common, rock outcrops and meadow areas, ABAM zone. [F 97, F&D 94]
- Lilium columbianum* Hanson in Baker, Columbia or tiger lily. Occasional, clearcuts and second growth forest, both zones. [F&D 75]
- Lilium washingtonianum* Kell. var. *purpurascens* Stearn, Washington's lily. Occasional, forest or clearcut areas, both zones. [D 48]
- Maianthemum dilatatum* (Wood) Nels. & Macbr., false lily-of-the-valley. Rare, dense forest along lower Mack Creek, TSHE zone. [F&D 188]
- Smilacina racemosa* (L.) Desf., false Solomon's seal. Widespread, occasional, forest and clearcut areas, both zones. [F&D 65]
- Smilacina stellata* (L.) Desf., few-flowered false Solomon's seal. Widespread, occasional to common, moist forests, both zones.
- Stenanthium occidentale* Gray, western stenanthium. Rare, collected in seepage area, TSHE zone. [F&D 167]
- Streptopus amplexifolius* (L.) DC. in Lam. & DC., larger twisted-stalk. Occasional, moist to wet forests, TSHE zone. [F&D 142]
- Streptopus roseus* Michx. var. *curvipes* (Vail) Fassett, smaller twisted-stalk. Occasional in moist, shady forest, Frissel Mountain, ABAM zone.
- Trillium ovatum* Pursh, western trillium or wake-robin. Widespread, occasional to common, forests and clearcut areas, both zones. [F 11]
- Veratrum viride* Ait., green false hellebore. Occasional, mountain meadows, ABAM zone.
- Xerophyllum tenax* (Pursh) Nutt., Indian basket-grass or bear-grass. Widespread, common to abundant, forests, both zones. [F&D 141]
- Zigadenus venenosus* Wats. var. *gramineus* (Rydb.) Walsh ex Peck, poison or death camas. Common, rock outcrops and mountain meadows, ABAM zone. [F 410, F 703]

Iridaceae

- Iris chrysophylla* Howell, slender-tubed iris. Occasional, forests and clearcuts, both zones. [F 49, D 12]
- Iris tenax* Dougl. ex Lindl., Oregon iris. Occasional to common, dry forests and clearcuts, TSHE zone. [F 540]

Orchidaceae

- Calypso bulbosa* (L.) Oakes in Thompson, calypso (fairy slipper). Rare to abundant, dense forests, TSHE zone. [F 666]
- Corallorhiza maculata* Raf., spotted coral-root. Occasional, dense forests, both zones. [F&D 47]
- Corallorhiza mertensiana* Bong., Merten's or western coral-root. Occasional to common, dense forests, both zones.
- Eburophyton austinae* (Gray) Heller, ghost orchid. Widespread, but rare, dense forests, both zones.
- Goodyera oblongifolia* Raf., rattlesnake plantain. Common, dense forests, both zones.
- Habenaria dilatata* (Pursh) Hook., collected in seepage area, TSHE zone. [F&D 165]
- Habenaria saccata* Greene, slender bog orchid. Collected in bog on Lookout Mountain, ABAM zone. [F 106]
- Habenaria unalascensis* (Spreng.) Wats., occasional, dry forests, TSHE zone. [D 41]
- Listera caurina* Piper, western twayblade. Occasional to common, dense forests, both zones. [F&D 27, F&D 187]
- Listera cordata* (L.) R. Br. in Ait., heart-leaved twayblade. Occasional, forests, TSHE zone. [F 187a, F&D 143]

Salicaceae

- Populus trichocarpa* T. & G. ex Hook., black cottonwood. Common, along creeks and on cutover areas, especially moist habitats, TSHE zone.
- Salix geyeriana* Anderss., collected around bog on Lookout Mountain, ABAM zone. [F 753]
- Salix lasiandra* Benth., red willow. Common, moist areas on clearcuts and along roads, both zones. [F 763, F&D 33, F&D 64]
- Salix scouleriana* Barratt in Hook., Scouler willow. Common, clearcut areas, TSHE zone. [F 13, F 360]
- Salix sitchensis* Sanson in Bong., Sitka willow. Common, swamps, boggy areas, and moist sites on clearcuts and along roadsides, both zones. [F 361, F 542, F 752, F 766, F&D 60]

Betulaceae

- Alnus rubra* Bong., red alder. Common, moist to wet areas of clearcuts and along roadsides and in swampy areas, TSHE zone. [F 63]
- Alnus sinuata* (Regel) Rydb., Sitka alder. Abundant in snowslide communities, ABAM zone.

Corylus cornuta Marsh. var. *californica* (DC.) Sharp, California hazel. Widespread, most common dry forests and clearcuts, TSHE zone, but distributed to summit Carpenter Mountain, ABAM zone.

Fagaceae

Castanopsis chrysophylla (Dougl.) A. DC., golden chinkapin. Widespread, common, dry forests and clearcuts, TSHE zone, typically attaining tree size on dry ridges. [F 58]

Quercus garryana Dougl. ex Hook., Oregon white oak. Rare, dry rock outcrops, both zones (collected near summit Lookout Mountain). [F 725]

Loranthaceae

Arceuthobium campylopodum Engelm. forma *tsugensis* (Rosend.) Gill, yellow leafless mistletoe or dwarf mistletoe. Occasional to common, western and mountain hemlock stands, and sometimes in associated Pacific silver firs, both zones.

Santalaceae

Comandra umbellata (L.) Nutt. var. *californica*. (Eastw.) C. L. Hitchc., bastard toad-flax. Occasional to common, mountain meadows, clearcuts, and forest openings, ABAM zone. [F 414, F 726, F&D 213]

Aristolochiaceae

Asarum caudatum Lindl., western wild ginger. Occasional, generally in moist forest, both zones.

Polygonaceae

Eriogonum compositum Dougl. ex Benth. var. *compositum*, heart-leaved eriogonum. Occasional, rock outcrops and dry meadows, ABAM zone. [F&D 90, F&D 195]

Eriogonum umbellatum Torr. var. *umbellatum*, sulphur-flowered eriogonum. Occasional, rock outcrops and dry meadows, ABAM zone.

Polygonum douglasii Greene, Douglas' knotweed. Occasional, rock outcrops and dry meadows, ABAM zone. [F 656, D 72]

Polygonum minimum Wats., leafy knotweed. Occasional, rock outcrops and dry meadows, ABAM zone. [F 657]

Polygonum phytolaccaefolium Meisn. ex Small, jimson knotweed. Common, mountain meadows and boggy areas, ABAM zone. [F 653, F 741, F 779]

Rumex acetosella L., red sorrel. Introduced, common, disturbed areas and mountain meadows, both zones. [F 419]

Rumex crispus L., curly-leaved dock. Introduced, collected along roadsides, TSHE zone. [F&D 171]

Rumex crispus L., curly-leaved dock. Introduced, collected along roadsides, TSHE zone. [F&D 171]

Rumex obtusifolius L., broad-leaved dock. Rare, collected along roadsides, TSHE zone. [F&D 55]

Portulacaceae

Claytonia lanceolata Pursh, lance-leaved spring beauty. Occasional in mountain meadows, early spring, ABAM zone.

Lewisia triphylla (Wats.) Robins., three-leaved lewisia. Common, rock outcrops, ABAM zone. [F 709, F&D 18]

Montia cordifolia (Wats.) Pax & K. Hoffm. in E. & P., broad-leaved montia. Occasional, wet areas, both zones. [F 438]

Montia parvifolia (Moc.) Greene var. *parvifolia*, streambank spring beauty. Occasional to common, streamsides, TSHE zone. [F 363, F 794]

Montia perfoliata (Donn) Howell, miner's lettuce. Widespread, occasional to common, moist forest and clearcut areas, both zones. [F 705, D 16]

Montia sibirica (L.) Howell, western spring beauty. Widespread, common in moist forest and cutover areas, both zones. [F 105, F 437, F 706, D 17]

Caryophyllaceae

Arenaria capillaris Poir. var. *americana* (Maguire) Davis, American sandwort. Occasional on Lithosols on ridges, collected in cutover area, ABAM zone. [F 416]

Arenaria macrophylla Hook., large-leaved sandwort. Widespread, occasional to common, rock outcrops, mountain meadows, and clearcuts, both zones. [F 536, F 708, F&D 149, D 13]

Cerastium arvense L., field chickweed. Common, mountain meadows, ABAM zone. [F 713, F&D 215]

Silene douglasii Hook., Douglas' campion or pink. Occasional on Lithosols or exposed south-facing outcrops, ABAM zone. [H 482-3]

Silene menziesii Hook., Menzie's campion or pink. Rare, rock outcrops, both zones. [F&D 91]

Stellaria calycantha (Ledeb.) Bong. (= *S. borealis*), northern starwort. Collected in boggy area on Carpenter Mountain, ABAM zone. [F 775]

Stellaria crispa Cham. & Schlecht., crisped starwort. Collected along roadside, ABAM zone. [F 764]

Ranunculaceae

Actaea rubra (Ait.) Willd., western baneberry. Widespread, occasional, wet forests and cutover areas, both zones. [F&D 72]

Anemone deltoidea Hook., western white anemone. Common, dense forests, primarily ABAM zone. [F&D 23]

Anemone lyallii Britt., little mountain anemone. Occasional, forests and cutover areas, TSHE zone. [F 10, F 665, D 22]

Anemone oregana Gray, Oregon anemone. Occasional, forests and cutover areas, ABAM zone.

Aquilegia formosa Fisch. in DC., western columbine. Occasional, mountain meadows and forest openings, ABAM zone. [M 3]

Coptis laciniata Gray, western gold-thread. Common, dense forests, TSHE and lower ABAM zones. [F 345]

Delphinium menziesii DC. var. *pyramidale* (Ewan) C. L. Hitchc. (= *D. nuttallianum*), Menzie's larkspur. Common, rock outcrops and mountain meadows, ABAM zone. [F 423, F 715]

Delphinium trolliifolium Gray, poison larkspur. Single plant observed in moist clearcut, Frissell Mountain, ABAM zone.

Ranunculus occidentalis Nutt. in T. & G., western buttercup. Rare, observed in clearcut, Lookout Mountain, ABAM zone.

Ranunculus uncinatus D. Don in G. Don var. *parviflorus* (Torr.) Benson, little buttercup. Along streams and clearcut areas, both zones. [F&D 36]

Thalictrum occidentale Gray, western meadow-rue. Occasional to common, streamside areas, dense forests, and clearcuts, TSHE zone. [F 106]

Berberidaceae

Achlys triphylla (Smith) DC., vanilla-leaf. Common to abundant, forest and cutover areas, both zones. [F 100]

Berberis aquifolium Pursh, Oregon grape. Rare, except occasional along rocky ridges, ABAM zone. [F&D 30]

Berberis nervosa Pursh, long-leaved Oregon grape. Widespread, common to abundant, forests and cutover areas, both zones.

Vancouveria hexandra (Hook.) Morr. & Dec., inside-out flower. Common, moist forests and cutover areas, both zones.

Fumariaceae

Dicentra formosa (Andr.) Walpers, western bleeding-heart. Occasional to common, moist habitats in forests, cutover areas, and in Sitka alder communities, both zones. [F 79, F&D 70]

Dicentra uniflora Kell., one-flowered dicentra. Observed on Carpenter Mountain, ABAM zone.

Cruciferae

- Arabis hirsuta* (L.) Scop. var. *glabrata* T. & G., hairy rock cress.
Collected on rock outcrop, TSHE zone. [F&D 97]
- Arabis holboellii* Hornem. var. *retrofracta* (Grah.) Rydb., Holboell's
rock cress. Common, mountain meadows and rock outcrops, ABAM zone.
[F&D 13]
- Cardamine breweri* Wats., Brewer's bitter cress. Collected in swampy
area, TSHE zone. [F&D 180]
- Cardamine occidentalis* (Wats.) Howell, western bitter cress. Collected
from stream in cutover area, upper TSHE zone. [F 530]
- Cardamine oligosperma* Nutt. in T. & G., little western bitter cress.
Occasional, wet portions of cutover areas, TSHE zone. [F 661,
F 668, M 9]
- Cardamine oligosperma* Nutt. in T. & G. var. *kamtschatica* (Regel) Detl.,
little western bitter cress. Occasional, portions of temporary
ponds, TSHE zone. [F 636]
- Cardamine pulcherrima* (Robins.) Greene var. *tenella* (Pursh) C. L. Hitchc.,
slender dentaria. Occasional, second-growth forest and cutover areas,
TSHE zone. [D 20]
- Erysimum asperum* (Nutt.) DC., rough wallflower. Common to abundant,
mountain meadows, ABAM zone. [F 418, F 714]
- Rorippa curvisiliqua* (Hook.) Bessey ex Britt., western yellow cress.
Occasional, portions of temporary ponds, TSHE zone. [F 635]

Crassulaceae

- Sedum oregonum* Nutt. in T. & G., Oregon stonecrop. Occasional on
shaded rock outcrops, Frissell Mountain, ABAM zone.
- Sedum oregonense* (Wats.) Peck, creamy stonecrop. Rock outcrops, ABAM
zone. [F&D 191]
- Sedum spathulifolium* Hook., broad-leaved stonecrop. Collected from
rock outcrops along Lookout Creek, TSHE zone. [F&D 85]
- Sedum stenopetalum* Pursh, narrow-petaled stonecrop. Occasional on
Lithosols and rock outcrops, Frissell Mountain, ABAM zone. [H 482-4]

Saxifragaceae

- Boykinia elata* (Nutt.) Greene, slender boykinia. Occasional along
Lookout Creek and on Carpenter Mountain, both zones. [F 145, F&D 82]
- Boykinia major* Gray var. *major*, large-flowered boykinia. Collected in
bog on Lookout Mountain, ABAM zone. [F 734, F&D 104]
- Heuchera micrantha* Dougl. ex Lindl., small-flowered heuchera.
Widespread, rock outcrops, both zones. [F 400, F&D 78]

- Lithophragma parviflora* (Hook.) Nutt. ex T. & G., small-flowered fringecup. Forest openings and mountain meadows, ABAM zone. [F 712]
- Mitella breweri* Gray, feathery mitrewort. Occasional, moist woods, ABAM zone. [F 551]
- Mitella ovalis* Greene, oval-leaved mitrewort. Occasional, moist forest and cutover areas, TSHE zone. [F 531, F 667]
- Mitella trifida* Grah., three-toothed mitrewort. Occasional, moist forest, ABAM zone. [F&D 17]
- Saxifraga ferruginea* Grah. var. *macounii* Engl. & Irmsch., rusty saxifrage. Occasional to common, forest openings, rock outcrops, and occasionally disturbed roadsides, ABAM zone. [F 765, F&D 20]
- Saxifraga integrifolia* Hook., northwestern saxifrage. Occasional on vernal-wet rock outcrops, Carpenter Mountain, ABAM zone.
- Saxifraga mertensiana* Bong., Merten's saxifrage. Rock outcrops along Lookout Creek, TSHE zone. [F 362]
- Saxifraga occidentalis* Wats. var. *rufidula* (Small) C. L. Hitchc., western saxifrage. Common, rock outcrops, both zones. [F&D 4, F&D 93]
- Saxifraga oregana* Howell, Oregon saxifrage. Occasional in forest openings and on clearcuts, ABAM zone. [F 702]
- Tellima grandiflora* (Pursh) Dougl. in Lindl., large fringe-cup. Occasional, moist woods and clearcuts, both zones.
- Tiarella laciniata* Hook., lance-leaved coolwort. Rare, observed in forest along upper Lookout Creek, TSHE zone.
- Tiarella trifoliata* L., three-leaved coolwort. Occasional, moist forests, TSHE zone.
- Tiarella unifoliata* Hook., western coolwort or foam flower. Common to abundant, forests and clearcut areas, especially on moister sites, both zones. [F&D 69]
- Tolmiea menziesii* (Pursh) T. & G., youth-on-age. Common along creeks and occasional in wet habitats, both zones. [F 103, F&D 84]

Grossulariaceae

- Ribes binominatum* Hel., Siskiyou gooseberry. Common in clearcuts and beneath *Abies grandis* in meadows on Lookout and Frissell Mountains, ABAM zone. [H 217-1]
- Ribes bracteosum* Dougl. ex Hook., stink currant. Rare to occasional, wet areas in forests or on cutovers, both zones.
- Ribes lacustre* (Pers.) Poir. in Lam., occasional to common, moist forests and cutovers, both zones. [F 69, F 541]

Ribes lobbii Gray, pioneer gooseberry. Collected in small clearcuts, upper TSHE zone. [F 53]

Ribes sanguineum Pursh, red-flowering currant. Rare in forests, common on clearcut areas, both zones. [F 78, D 19]

Ribes viscosissimum Pursh var. *hallii* Jancz., sticky currant. Occasional to common, forests and cutover areas, ABAM zone. [F 96]

Hydrangeaceae

Whipplea modesta Torr., modest whipplea. Common to abundant, cutover areas and dry forests, TSHE zone. [F&D 101]

Rosaceae

Amelanchier alnifolia Nutt. var. *humptulipensis* (G. N. Jones) C. L. Hitchc., western serviceberry. Occasional, cutover areas, TSHE zone. [D 31]

Amelanchier alnifolia Nutt. var. *semiintegrifolia* (Hook.) C. L. Hitchc., western serviceberry. Occasional to common, old burns and forest openings, ABAM zone.

Arunacus sylvester Kostel in Ind., goat's-beard. Occasional to common on wet roadsides, both zones. [M 4]

Fragaria vesca L. var. *bracteata* (Heller) Davis, western wood strawberry. Rock outcrops, cutovers, and mountain meadows, both zones. [F 533, F 662]

Fragaria virginiana Duchesne var. *platypetala* (Rydb.) Hall, broad-petaled strawberry. Collected in mountain meadow, ABAM zone. [F 425]

Geum macrophyllum Willd. var. *macrophyllum*, large-leaved avens. Occasional in wet meadows, ABAM zone. [F 742]

Holodiscus discolor (Pursh) Maxim., ocean-spray. Occasional to common in dry forest and cutover areas, TSHE zone, but extending to ABAM zone on rock outcrops and in very dry forests.

Osmaronia cerasiformis (T. & G.) Greene, Indian plum. Occasional, cutover areas, TSHE zone. [F 343]

Potentilla glandulosa Lindl., sticky cinquefoil. Occasional, mountain meadows and rock outcrops, ABAM zone. [F&D 218]

Potentilla gracilis Dougl. ex Hook. var. *gracilis*, slender cinquefoil. Occasional, mountain meadows, ABAM zone. [F&D 127]

Potentilla gracilis Dougl. ex Hook. var. *permollis* (Rydb.) C. L. Hitchc., occasional, mountain meadows, ABAM zone. [F&D 127]

Prunus emarginata (Dougl.) Walpers, bittercherry. Common, cutover areas, both zones. [F 543]

- Rosa gymnocarpa* Nutt. in T. & G., little wildrose. Occasional, forests and cutover areas, both zones. [F 427]
- Rubus lasiococcus* Gray, dwarf bramble. Common, forests, ABAM zone.
- Rubus leucodermis* Dougl. ex T. & G., western blackcap. Occasional to common, cutover areas, TSHE zone.
- Rubus nivalis* Dougl. ex Hook., snow bramble. Occasional, cutover areas and forests, upper TSHE and lower ABAM zones.
- Rubus parviflorus* Nutt., thimbleberry. Occasional to common, cutover areas and mountain meadows, both zones. [D 39]
- Rubus procerus* Muell. in Boulay, Himalaya berry. Introduced, observed on roadsides and cutover areas, TSHE zone.
- Rubus spectabilis* Pursh, salmonberry. Occasional, wet portions of cutover areas or rarely forests, both zones.
- Rubus ursinus* Cham. & Schlecht., western dewberry or trailing blackberry. Widespread, common to abundant, forests and cutover areas, both zones.
- Sorbus sitchensis* Roemer, western mountain ash. Occasional, forest openings, ABAM zone.
- Spiraea douglasii* Hook., western spiraea. Occasional to common, swamps and temporary ponds, both zones. [F&D 61]

Leguminosae

- Cytisus scoparius* (L.) Link, Scotch broom. Introduced, roadsides and cutover areas, both zones. [F&D 31]
- Lathyrus holochlorus* (Piper) C. L. Hitchc., thin-leaved pea. Rare, in clearcut on Lookout Mountain, ABAM zone.
- Lathyrus nevadensis* Wats. ssp. *lanceolatus* (Howell) C. L. Hitchc., var. *pilosellus* (Peck) C. L. Hitchc., Sierra Nevada pea. Widespread, occasional to common, cutover areas, both zones, and in boggy areas, ABAM zone. [F 424, F 745, F&D 54]
- Lathyrus nevadensis* Wats. ssp. *nevadensis*, Sierra Nevada pea. Occasional, mountain meadows, ABAM zone. [F 710]
- Lathyrus polyphyllus* Nutt. ex T. & G., leafy pea. Occasional, cutover areas and dry forests, TSHE zone. [D 21]
- Lotus corniculatus* L., bird's foot trefoil. Introduced, collected on cutover area, TSHE zone. [M 21]
- Lotus crassifolius* (Benth.) Greene, thick-leaved lotus. Occasional to common, cutover areas, upper TSHE and lower ABAM zones. [F&D 29]
- Lotus micranthus* Benth., small-flowered lotus. Occasional, collected on cutover area, TSHE zone. [D 26]

- Lotus nevadensis* (Wats.) Greene var. *douglasii* (Greene) Ottley,
Douglas' lotus. Occasional to common, rock outcrops, both zones.
[F&D 53, F&D 98]
- Lotus purshianus* (Benth.) Clements & Clements, Pursh's lotus.
Occasional to abundant, roadsides, cutover areas, and mountain
meadows, both zones. [F 545, F&D 35, F&D 212]
- Lupinus latifolius* Agardh, broadleaved lupine. Common, cutover areas
and roadsides, both zones.
- Lupinus laxiflorus* Dougl. ex Lindl. var. *laxiflorus*, spurred lupine.
Forest openings and mountain meadows, ABAM zone. [F&D 9, F&D 175]
- Melilotus alba* Desr. in Lam., white sweet-clover. Introduced,
collected along roadside, TSHE zone. [M 18]
- Trifolium dubium* Sibth., least hop clover. Introduced, collected along
roadside, TSHE zone. [F&D 87]
- Trifolium pratense* L., red clover. Introduced, occasional, collected
along roadside, TSHE zone. [F&D 32]
- Trifolium repens* L., white clover. Introduced, occasional to common,
cutover areas and roadsides, both zones. [F 444a]
- Trifolium wormskjoldii* Lehm., spring-bank clover. Collected in clearing
near entrance (lower Lookout Creek), TSHE zone. [F&D 79]
- Vicia americana* Muhl. ex Willd. var. *truncata* (Nutt.) Brew., American
vetch. Common, mountain meadows and boggy areas, ABAM zone.
[F 746, F&D 115, F&D 208]
- Vicia americana* Muhl. ex Willd. var. *villosa* (Kell.) Hermann, California
vetch. Occasional, cutover areas, TSHE and lower ABAM zones.
[F&D 43, D 18]

Geraniaceae

- Geranium carolinianum* L., Carolina geranium. Collected in cutover area,
TSHE zone. [D 27]
- Geranium dissectum* L., cut-leaved geranium. Introduced, collected in
cutover area, TSHE zone. [F 550]

Oxalidaceae

- Oxalis oregana* Nutt. ex T. & G., Oregon oxalis. Occasional to common,
wet forests and cutover areas, TSHE and lower ABAM zones. [F 51]
- Oxalis suksdorfii* Trel., western yellow oxalis. Occasional, disturbed
areas, both zones. [F&D 45]

Callitrichaceae

- Callitriche heterophylla* Pursh ex Darby, varied-leaf water starwort.
Occasional, temporary ponds, TSHE zone. [M 7]

Anacardiaceae

Rhus diversiloba T. & G., poison oak. Occasional, dry forest and rock outcrops, TSHE zone.

Celastraceae

Pachistima myrsinites (Pursh) Raf., Oregon boxwood. Occasional to common, forests, cutover areas, and rock outcrops, upper TSHE and ABAM zones.

Aceraceae

Acer circinatum Pursh, vine maple. Widespread, common in forest and cutover areas, and abundant on some rock outcrops and talus, both zones. [F 77]

Acer glabrum Torr. var. *douglasii* (Hook.) Dippel, Douglas maple. Occasional, open forest on rocky ridge tops and around Sitka alder communities, both zones. [F 552]

Acer macrophyllum Pursh, bigleaf maple. Occasional in forest and common on cutover areas, TSHE zone, but abundant along creeks and extending as high as 1,350-meter elevation. [F 669]

Rhamnaceae

Ceanothus integerrimus H. & A., deerbrush. Occasional, dry cutover areas and roadsides, TSHE zone. [F&D 73]

Ceanothus sanguineus Pursh, buckbrush or redstem. Common, clearcuts and roadsides, TSHE zone.

Ceanothus velutinus Dougl. ex Hook. var. *laevigatus* (Hook.) T. & G., varnishleaf ceanothus. Common, dryer portions of cutover areas, lower TSHE zone.

Ceanothus velutinus Dougl. ex Hook. var. *velutinus*, snowbrush ceanothus. Common, old burns and cutover areas, upper TSHE and ABAM zones.

Rhamnus purshiana DC., cascara. Rare in forests and occasional on cutover areas, TSHE zone.

Hypericaceae

Hypericum anagalloides C. & S., bog St. John's-wort. Common, boggy areas, ABAM zone. [F 727, F&D 108]

Hypericum perforatum L., common St. John's-wort. Introduced, rare to occasional, roadsides and cutover areas, TSHE zone, and sometimes abundant in meadows of ABAM zone. [D 36]

Violaceae

Viola glabella Nutt. in T. & G., smooth woodland violet. Common, second-growth forests, in ABAM zone.

- Viola nuttallii* Pursh var. *bakeri* (Greene) C. L. Hitchc., Baker's violet. Occasional, dry meadow areas, ABAM zone. [F 415]
- Viola orbiculata* Geyer ex Hook., round-leaved violet. Occasional, forests and overcut areas, ABAM zone.
- Viola palustris* L., marsh violet. Collected in swampy area, TSHE zone. [F&D 58]
- Viola sempervirens* Greene, evergreen violet. Common to abundant, forests and cutover areas, TSHE and lower ABAM zones. [F 9]

Onagraceae

- Circaea alpina* L., small enchanter's nightshade. Common in Sitka alder communities and in disturbed microsites in forests, both zones. [F&D 135]
- Epilobium alpinum* L. var. *alpinum*, alpine willow-herb. Wet portions of cutover areas and bogs, ABAM zone. [F 435, F 731]
- Epilobium alpinum* L. var. *nutans* (Hornem.) Hook., Hornemann's willow-herb. Occasional on wet sites, Frissell and Lookout Mountains, ABAM zone.
- Epilobium angustifolium* L., fire-weed. Common to abundant, cutover areas, and rarely, open forests, both zones.
- Epilobium glandulosum* Lehm., glandular willow-herb. Occasional, wet areas, ABAM zone. [F&D 107]
- Epilobium luteum* Pursh, yellow-flowered willow-herb. Collected along wet roadsides, ABAM zone. [F 762a]
- Epilobium minutum* Lindl. ex Hook., small-flowered willow-herb. Widespread, occasional to common, cutover areas and mountain meadows, both zones. [D 4, F&D 211]
- Epilobium paniculatum* Nutt. ex T. & G., tall annual willow-herb. Occasional to common, cutover areas, both zones.
- Epilobium watsonii* Barbey in Brew. & Wats., Pacific willow-herb. Occasional, cutover areas and mountain meadows, both zones.
- Epilobium watsonii* Barbey in Brew. & Wats. var. *occidentale* (Trel.) C. L. Hitchc., common western willow-herb. Occasional to common, cutover areas, both zones. [F 109]
- Gayophytum humile* Juss., dwarf gayophytum. Occasional to common on Lithosols and dry meadows, ABAM zone. [F&D 3, H 218-4]
- Gayophytum diffusum* T. & G. ssp. *parviflorum* Lewis & Szweyk., spreading gayophytum. Common on dry open ridges, Frissell Mountain, ABAM zone. [H 484-4]

Araliaceae

- Aralia californica* Wats., western aralia, ginseng, elk clover.
Occasional to common, streamsides and forests or cutovers, mainly
in TSHE zone. [F 440]
- Oplopanax horridum* (J. E. Smith) Miq., devil's club. Occasional to
common, streamsides, wet forests, and Sitka alder communities,
both zones.

Umbelliferae

- Angelica arguta* Nutt. in T. & G., shining angelica. Occasional in
mountain meadows and common in boggy areas, ABAM zone. [F 758,
F&D 217]
- Angelica genuflexa* Nutt. in T. & G., kneeling angelica. Collected in
bog on Lookout Mountain, ABAM zone. [F 640]
- Cicuta douglasii* (DC.) Coult. & Rose, western waterhemlock. Collected
in bog on Lookout Mountain, ABAM zone. [F 641, F 751]
- Daucus carota* L., wild carrot, Queen Anne's lace. Introduced,
collected on cutover area, TSHE zone. [D 49]
- Heraacleum lanatum* Michx., cowparsnip. Occasional, wet habitats,
including seeps and bogs in wet meadows, both zones.
- Ligusticum grayi* Coult. & Rose, Gray's lovage. Common, mountain
meadows and forest openings, ABAM zone. [F 342, F 777, F&D 216]
- Lomatium hallii* (S. Wats.) Coult. & Rose, canyon desert parsley.
Occasional, rock outcrops and cutover areas, TSHE zone.
[F 534, F&D 144]
- Lomatium martindalei* Coult. & Rose, few-fruited desert parsley.
Common, rock outcrops, both zones. [F 95, F 532, F 716]
- Lomatium nudicaule* (Pursh) Coult. & Rose, naked desert parsley or
pestle parsnip. Collected near summit Lookout Mountain, ABAM zone.
[F&D 189]
- Lomatium utriculatum* (Nutt.) Coult. & Rose, fine-leaved desert parsley.
Observed on cutover area, TSHE zone.
- Orogenia fusiformis* S. Wats., mountain orogenia. Cutover areas and
mountain meadows, ABAM zone. [F&D 150]
- Osmorhiza chilensis* H. & A., western sweet cicely. Occasional, moist
forests and cutovers, TSHE zone. [F&D 83]
- Osmorhiza purpurea* (Coult. & Rose) Suksd., purplish sweet cicely.
Occasional to common, open forests and mountain meadows, ABAM zone.
[F 421]

Perideridia gairdneri (H. & A.) Mathias, western false caraway.

Collected in moist cutover area, TSHE zone. [F&D 231]

Sanicula graveolens Poepp. ex DC., Sierra snake-root. Common, mountain meadows, ABAM zone. [F 717, F&D 220]

Cornaceae

Cornus canadensis L., bunchberry or dwarf dogwood. Occasional to common, forests and cutovers, upper TSHE and ABAM zones.

Cornus nuttallii Aud. ex T. & G., Pacific or flowering dogwood. Common, dry forests and cutover areas, TSHE zone. [F 59, F 670]

Garryaceae

Garrya fremontii Torr., bear bush. Observed on cutover area, TSHE zone.

Ericaceae

Allotropa virgata T. & G. ex Gray, sugar stick. Rare, dry forests, TSHE zone.

Arbutus menziesii Pursh, Pacific madrone. Occasional, cutover areas and dry forests, TSHE zone.

Arctostaphylos columbiana Piper in Piper & Beattie, bristly or hairy manzanita. Occasional, cutover areas, TSHE zone. [F 344]

Arctostaphylos nevadensis Gray, pine-mat manzanita. Occasional to common, rock outcrops, both zones. [F&D 14, D 32]

Chimaphila menziesii (R. Br.) Spreng., little prince's pine. Occasional, dense forests, both zones.

Chimaphila umbellata (L.) Bart. var. *occidentalis* (Rydb.) Blake, western prince's pine. Occasional to common, forests and cutover areas, both zones. [F 99]

Gaultheria ovatifolia Gray, slender gaultheria. Occasional, dense forests, upper TSHE and lower ABAM zones. [F&D 28, F&D 159]

Gaultheria shallon Pursh, salal. Occasional to abundant, forests and cutover areas, TSHE zone.

Hypopitys monotropa Crantz, broad-leaved pinesap. Occasional, dense forests, both zones.

Monotropa uniflora L., Indian pipe. Occasional, dense forests, both zones. [M 16]

Pterospora andromedea Nutt., pine drops. Rare, forests, TSHE zone.

Pyrola aphylla Smith in Rees, leafless pyrola. Occasional, dense forests, both zones.

Pyrola asarifolia Michx., large pyrola. Occasional to common, forests and cutover areas, TSHE and lower ABAM zones. [F 748]

- Pyrola dentata* Smith in Rees, toothed pyrola. Rare, collected in cutover areas, TSHE zone. [F&D 156]
- Pyrola picta* Smith in Rees, white-veined pyrola. Occasional to common, mainly dense forests, TSHE and lower ABAM zones.
- Pyrola secunda* L. var. *secunda*, one-sided wintergreen. Occasional to common, upper TSHE and ABAM zones.
- Pyrola virens* Schweigg. in Schweigg. & Koerte, greenish pyrola. Rare, collected in cutover area, TSHE zone. [F&D 186]
- Rhododendron macrophyllum* G. Don, Pacific rhododendron. Common to abundant, forests and cutovers, both zones. [F&D 152]
- Vaccinium alaskaense* Howell, Alaska blueberry. Occasional, forests and cutover areas, upper TSHE and ABAM zones. [F 658, F 672]
- Vaccinium membranaceum* Dougl. ex Hook., thin-leaved huckleberry. Widespread, occasional in forests, TSHE zone, common to abundant in forests and cutovers, ABAM zone.
- Vaccinium parvifolium* Smith in Rees, red huckleberry. Common, forests and cutovers, TSHE and lower ABAM zones.

Primulaceae

- Dodecatheon jeffreyi* van Houtte, tall mountain shooting star. Collected in bog on Lookout Mountain, ABAM zone. [F 434]
- Trientalis latifolia* Hook., broad-leaved star-flower. Occasional to common, dry forests, and cutover areas, TSHE zone.

Apocynaceae

- Apocynum androsaemifolium* L., spreading dogbane. Occasional, dry forests and cutovers, TSHE zone. [F&D 100]

Convolvulaceae

- Convolvulus nyctagineus* Greene, night-blooming morning-glory. Occasional, disturbed areas, both zones. [F&D 154]

Polemoniaceae

- Collomia heterophylla* Hook., varied-leaved collomia. Common, cutover areas and roadsides, TSHE zone. [F 549, F 630]
- Collomia linearis* Nutt., narrow-leaved collomia. Rock outcrops and dry meadows, ABAM zone. [F&D 1]
- Gilia capitata* Sims, blue field gilia. Common, rock outcrops and mountain meadows, both zones. [F 552a, F&D 88, F&D 124, D 25]
- Microsteris gracilis* (Hook.) Greene var. *gracilis*, pink annual phlox. Common, rock outcrops and dry meadows, both zones. [F 538, F 707, F&D 172, F&D 201]

Navarretia divaricata (Torr.) Greene, short-stemmed navarretia. Common, mountain meadows and rock outcrops, ABAM zone. [F&D 194]

Phlox adsurgens Torr. ex Gray, woodland phlox. Occasional, collected on cutovers, TSHE zone. [D 24]

Phlox diffusa Benth. var. *longistylis* (Wherry) Peck, spreading phlox. Occasional, rock outcrops and dry meadows, ABAM zone. [F&D 7]

Polemonium carneum Gray, great polemonium. Occasional, cutover areas and forests, ABAM zone. [F 417]

Hydrophyllaceae

Hydrophyllum occidentale (Wats.) Gray, western waterleaf. Occasional to common, moist meadows and habitats, ABAM zone. [F 701]

Hydrophyllum tenuipes Heller, slender-stemmed waterleaf. Occasional to common, moist habitats, both zones. [F 671]

Nemophila parviflora Dougl. ex Benth. var. *parviflora*, small-flowered nemophila. Widespread, cutover areas, seeps, mountain meadows, and forests, both zones. [F&D 163, F&D 177, F&D 209, D 14]

Phacelia heterophylla Pursh, varied-leaved phacelia. Common, cutover areas and some mountain meadows, ABAM zone. [F&D 5]

Boraginaceae

Cryptantha intermedia (Gray) Greene, large-flowered cryptantha. Collected on cutover area, TSHE zone. [D 40]

Mertensia bella Piper, Oregon lungwort. Occasional, moist meadows and forests, ABAM zone. [F 550a, F 700]

Myosotis discolor Pers. in Murr., yellow-and-blue scorpion-grass. Introduced, collected on cutover area, TSHE zone. [D 29]

Labiatae

Prunella vulgaris L. var. *lanceolata* (Barton) Fern., heal-all. Common, cutover areas, both zones. [F 510, F&D 80]

Stachys cooleyae Heller, great hedge nettle. Occasional to common, wet portions of cutovers, bogs, and Sitka alder communities, both zones. [F 744, F&D 136, M 20]

Stachys palustris L. var. *pilosa* (Nutt.) Fern., swamp hedge nettle. Wet portions of cutover areas, both zones. [F 511, F&D 103, D 52]

Stachys rigida Nutt. ex Benth. in DC. var. *rigida*, ridge hedge nettle. Observed on Carpenter and Lookout Mountains, ABAM zone.

Scrophulariaceae

Castilleja hispida Benth. in Hook. var. *hispida*, harsh paintbrush. Occasional, variety of forest openings, both zones. [F&D 19, F&D 157, F&D 164]

- Castilleja miniata* Dougl. ex Hook., common paintbrush. Forest openings and mountain meadows, ABAM zone. [F&D 118]
- Collinsia parviflora* Lindl., small-flowered collinsia. Rock outcrops and mountain meadows, ABAM zone. [F&D 2]
- Digitalis purpurea* L., foxglove. Introduced, occasional, cutover areas, TSHE zone. [F&D 161]
- Linaria vulgaris* Hill, butter-and-eggs. Introduced, occasional, cutover areas, TSHE zone. [D 33]
- Mimulus alsinoides* Dougl. ex Benth., chickweed monkeyflower. Occasional, rock outcrops and cutover areas, both zones. [F 537, F 660, D 15]
- Mimulus breweri* (Greene) Rydb., Brewer's monkeyflower. Occasional, mountain meadows, ABAM zone. [F&D 210]
- Mimulus guttatus* DC., common monkeyflower. Common, along streams, in wet portions of clearcuts, and in boggy areas, both zones. [F 104, F 743, F&D 81, F&D 232]
- Mimulus moschatus* Dougl. in Lindl., musk monkeyflower. Occasional to common, wet meadows and wet portions of clearcut areas, upper TSHE and ABAM zones. [F 426, F&D 44]
- Nothochelone nemorosa* (Dougl.) Straw, woodland penstemon. Occasional in open forest, Carpenter and Frissell Mountains, ABAM zone.
- Orthocarpus imbricatus* Torr. ex Wats., mountain orthocarpus. Common, mountain meadows and cutover areas, ABAM zone. [F 420, F 759]
- Pedicularis bracteosa* Benth. in Hook. var. *flavida* (Pennell) Cronq., bracted pedicularis or lousewort. Common in wet meadows and boggy areas, ABAM zone.
- Pedicularis contorta* Benth. in Hook., coiled pedicularis or lousewort. Observed on Lookout Mountain, ABAM zone.
- Pedicularis racemosa* Dougl. ex Hook., leafy pedicularis or lousewort. Common, forests and cutover areas, both zones.
- Penstemon cardwellii* Howell, Cardwell's penstemon. Occasional, forest openings and cutovers, upper TSHE and ABAM zones. [M 5]
- Penstemon procerus* Dougl. ex R. Grah. var. *brachyanthus* (Pennell) Cronq., tall penstemon. Occasional to common, dry meadows, ABAM zone. [F&D 219]
- Penstemon rupicola* (Piper) Howell, rock penstemon. Occasional on exposed outcrops and rocky ridges, ABAM zone.
- Penstemon serrulatus* Menzies ex Smith in Rees, spreading penstemon. Common, cutover areas, forest openings, and meadows, both zones. [F 107, F&D 34, F&D 46, F&D 116, D 37]

Synthyris reniformis (Dougl.) Benth. in DC., round-leaved synthyris or snowqueen. Common, dry forests and cutover areas, TSHE zone. [F 663]

Verbascum thapsus L., mullein. Introduced, disturbed areas, both zones. [F&D 200]

Veronica americana Schwein. ex Benth. in DC., American speedwell. Common, swamps, streams, and wet portions of clearcut areas, both zones. [F&D 42, M 2, M 13]

Veronica arvensis L., corn speedwell. Introduced, collected in mountain meadow, ABAM zone. [F&D 207]

Veronica scutellata L., marsh speedwell. Swampy areas and temporary ponds, TSHE zone. [F 639, M 10, M 19]

Veronica serpyllifolia L., thyme-leaved speedwell. Observed on Carpenter Mountain, ABAM zone.

Orobanchaceae

Orobanche uniflora L. var. *minuta* (Suksd.) Beck, naked broom-rape. Occasional, typically on rock outcrops, both zones. [F 704, F&D 153]

Plantaginaceae

Plantago major L., common plantain. Introduced, occasional, disturbed areas, both zones. [F&D 86]

Rubiaceae

Galium aparine L. var. *echinospermum* (Wallr.) Farw., cleavers. Occasional, cutover areas, TSHE zone. [F&D 140]

Galium bifolium Wats. Low mountain bedstraw. Occasional to common in exposed areas or beneath other mountain plants, Frissell and Carpenter Mountains, ABAM zone.

Galium oreganum Britt., Oregon bedstraw. Common in forests and cutover areas, ABAM zone, occasional TSHE zone.

Galium trifidum L. var. *pacificum* Wieg., small bedstraw. Occasional, swampy areas, both zones. [F&D 63]

Galium triflorum Michx., fragrant bedstraw. Occasional to common, moist forests and cutovers, TSHE zone. [F 443, D 23]

Sherardia arvensis L., blue field madder. Introduced, observed on cutover area, TSHE zone.

Caprifoliaceae

Linnaea borealis L. var. *longiflora* Torr., American twinflower. Common to abundant, forests and cutovers, TSHE and lower ABAM zones.

Lonicera ciliosa (Pursh) DC., orange honeysuckle. Occasional, dry forests and cutover areas, TSHE zone. [F&D 77]

Sambucus cerulea Raf., blue elderberry. Occasional, wet areas, clearcuts or forest openings, both zones.

Sambucus racemosa L. ssp. *pubens* (Michx.) House var. *arborescens* (T. & G.) Gray, red elderberry. Occasional, wet portions of cutovers or forest openings, ABAM zone. [F&D 68]

Symphoricarpos albus (L.) Blake var. *laevigatus* (Fern.) Blake, snowberry. Occasional, dry forests and cutovers, both zones. [F&D 125]

Symphoricarpos mollis Nutt. in T. & G. var. *hesperius* (G. N. Jones) Cronq., creeping snowberry. Occasional to common, dry forests and cutovers, TSHE zone.

Valerianaceae

Plectritis congesta (Lindl.) DC., rosy plectritis. Rare, rock outcrops, TSHE zone. [F&D 92]

Valeriana scouleri Rydb., Scouler's valerian. Collected in cutover area, TSHE zone. [D 30]

Valeriana sitchensis Bong., northern valerian. Occasional to common, bogs, wet meadows and forests, ABAM zone. [F&D 113]

Campanulaceae

Campanula scouleri Hook. ex A. DC., Scouler's campanula or bell flower. Occasional to common, forests and cutover areas, both zones. [F&D 122]

Compositae

Achillea millefolium L. ssp. *lanulosa* (Nutt.) Piper var. *lanulosa* (Nutt.) Piper, yarrow. Occasional to common, mountain meadows, open forests, and cutover areas, both zones. [F&D 6, D 38]

Adenocaulon bicolor Hook., trail plant. Occasional, forests, both zones.

Agoseris aurantiaca (Hook.) Greene var. *aurantiaca*, slender agoseris. Common, rock outcrops and dry meadows, ABAM zone; occasional, cutover areas and rock outcrops, TSHE zone. [F 785, F&D 10, F&D 129, D 51]

Agoseris grandiflora (Nutt.) Greene, large-flowered agoseris. Occasional, cutover areas, rock outcrops, and dry meadows, both zones.

Agoseris heterophylla (Nutt.) Greene var. *heterophylla*, varied-leaved agoseris. Occasional to common, mountain meadows, ABAM zone. [F&D 206]

Anaphalis margaritacea (L.) B. & H., pearly everlasting. Occasional to common, cutover areas, both zones; occasional, boggy areas and mountain meadows, ABAM zone. [F 747]

Antennaria racemosa Hook., slender everlasting. Occasional, cutover areas and mountain meadows, both zones. [F 408]

- Antennaria rosea* Greene, rosy everlasting. Occasional, rock outcrops and dry meadows, ABAM zone. [F 783]
- Anthemis cotula* L., dog fennel. Introduced as bait, rare, TSHE zone.
- Arnica amplexicaulis* Nutt., clasping arnica. Collected in seepage areas, TSHE zone. [F&D 166]
- Arnica cordifolia* Hook. var. *cordifolia*, heart-leaved arnica. Collected on Frissell Mountain, ABAM zone. [H 481-2]
- Arnica discoidea* Benth. var. *eradiata* (Gray) Cronq., small-flowered arnica. Collected on cutover areas, TSHE zone. [D 6]
- Arnica latifolia* Bong. var. *latifolia*, broad-leaved arnica. Occasional to common, open forests, cutover areas, and mountain meadows, ABAM zone. [F 422]
- Artemisia ludoviciana* Nutt. var. *latiloba* Nutt., western wormwood. Local but often common in mountain meadows, Carpenter Mountain, ABAM zone.
- Aster foliaceus* Lindl. in DC., leafy aster. Occasional in mountain meadows, Frissell Mountain, ABAM zone.
- Aster ledophyllus* Gray, Cascades aster. Occasional, open forests, forest openings, and mountain meadows, ABAM zone. [F 655, F&D 117]
- Aster oregonensis* (Nutt.) Cronq., white-topped aster. Occasional, cutovers and roadsides, TSHE zone. [M 15]
- Aster radulinus* Gray, rough-leaved aster. Occasional to common, disturbed areas, ABAM zone. [F&D 123, F&D 202]
- Chrysanthemum leucanthemum* L., ox-eyed daisy. Introduced, occasional, cutovers and roadsides, TSHE zone. [F 547]
- Cirsium arvense* (L.) Scop., Canada thistle. Introduced, occasional to common, cutovers, TSHE zone.
- Cirsium brevistylum* Cronq., Indian thistle. Occasional to common, cutovers, TSHE zone. [M 6]
- Cirsium centaureae* (Rydb.) K. Schum., slender mountain thistle. Occasional to common, forest openings, cutovers, mountain meadows, and boggy areas, ABAM zone. [F 757, F&D 102, F&D 196]
- Cirsium vulgare* (Savi) Airy-Shaw, common or bull thistle. Introduced, occasional to common, cutovers, both zones.
- Conyza canadensis* (L.) Cronq. var. *glabrata* (Gray) Cronq., horseweed. Occasional to common, cutover areas and roadsides, TSHE zone. [D 53, D 68]
- Crepis setosa* Haller f., bristly hawkbeard. Introduced, collected on cutover areas, TSHE zone. [D 55]

- Erigeron aliceae* Howell, Alice's erigeron or fleabane. Occasional to abundant, forest openings, mountain meadows, and boggy areas, ABAM zone. [F 428, F 433, F&D 114]
- Erigeron cascadiensis* Heller, Cascade erigeron or fleabane. Occasional, dry meadows, ABAM zone. [F&D 192]
- Erigeron foliosus* Nutt. var. *confinis* (Howell) Jeps., leafy erigeron. Occasional in exposed rock crevices on ridgetops, Frissell Mountain, ABAM zone. [H 483-3]
- Eriophyllum lanatum* (Pursh) Forbes, common woolly sunflower. Occasional to common, forest openings, cutovers, and mountain meadows, ABAM zone. [F 413, F 509, F&D 119]
- Gnaphalium microcephalum* Nutt. var. *thermale* (E. Nels.) Cronq., slender cudweed. Occasional to common, cutover areas, TSHE zone.
- Gnaphalium purpureum* L. var. *purpureum*, purplish cudweed. Collected in disturbed area near entrance (Lower Lookout Creek), TSHE zone. [D 70]
- Haplopappus hallii* Gray, Hall's haplopappus. Occasional on Lithosols, open south or west slopes, Frissell Mountain, ABAM zone. [H 494-6, H 482-2]
- Hieracium albiflorum* Hook., white-flowered hawkweed. Occasional, dry forests and common on cutover areas, both zones.
- Hieracium cynoglossoides* Arv.-Touv., houndstongue hawkweed. Occasional to common, open forests, cutovers, and mountain meadows, ABAM zone. [F 508, F 784, F&D 126, F&D 193, F&D 214]
- Hieracium scouleri* Hook. var. *scouleri*, Scouler's hawkweed. Observed on Carpenter and Frissell Mountains, ABAM zone.
- Hypochaeris radicata* L., hairy catsear or false dandelion. Introduced, occasional, disturbed areas, both zones. [F&D 160]
- Lactuca biennis* (Moench.) Fern., tall blue lettuce. Collected on cutover areas, TSHE zone. [D 62]
- Lactuca muralis* L., wall lettuce. Introduced, collected on disturbed area, TSHE zone. [D 5]
- Lactuca serriola* L., prickly lettuce. Introduced, collected on cutover area, TSHE zone. [M 17]
- Luina stricta* (Greene) Robb., rainiera. Occasional, mountain meadows on Carpenter Mountain, ABAM zone. [F 341]
- Madia gracilis* (Smith) Keck, common tarweed. Occasional to common, cutover areas and roadsides, TSHE zone. [F&D 51, F&D 74, D 66]
- Madia madioides* (Nutt.) Greene, woodland tarweed. Occasional, dry forests and cutover areas, TSHE zone. [F&D 52, D 7]

- Madia minima* (Gray) Keck, least tarweed. Occasional, rock outcrops, both zones. [F 724]
- Microseris nutans* (Geyer) Schultz-Bip., microseris. Occasional, forest openings and mountain meadows, ABAM zone. [F&D 11, F&D 176]
- Petasites frigidus* (L.) Fries var. *palmatus* (Ait.) Cronq., western coltsfoot. Common, wet areas, including cutovers and roadsides, both zones. [F 52]
- Rudbeckia occidentalis* Nutt. var. *occidentalis*, western rudbeckia or coneflower. Occasional, mountain meadows and cutovers, ABAM zone. [F 654]
- Senecio harfordii* Greenm., Harford's senecio. Occasional, forests and cutover areas, both zones. [F&D 25, D 54]
- Senecio integerrimus* Nutt. var. *exaltatus* (Nutt.) Cronq., tall western senecio. Forest openings and mountain meadows, ABAM zone. [F 721, F&D 173]
- Senecio jacobaea* L., tansy ragwort. Introduced, occasional, disturbed areas, both zones. [D 69]
- Senecio sylvaticus* L., woodland groundsel. Introduced, occasional to abundant, cutover areas, both zones.
- Senecio triangularis* L., spear-head senecio. Common, boggy areas and mountain meadows, ABAM zone. [F 729, F 754, F&D 105, F&D 112, F&D 130]
- Solidago canadensis* L. var. *salebrosa* (Piper) Jones, narrow goldenrod. Occasional, boggy areas and mountain meadows, ABAM zone. [F 756, F&D 128]
- Sonchus asper* (L.) Hill, prickly sow-thistle. Introduced, cutover areas and roadsides, TSHE zone. [F&D 139, D 50, D 64]
- Taraxacum officinale* Weber in Wiggers, common dandelion. Introduced, cutover areas and mountain meadows, both zones. [F 722]
- Tragopogon dubius* Scop., large yellow goatsbeard. Introduced, occasional, cutover areas, both zones. [F&D 233, D 63]

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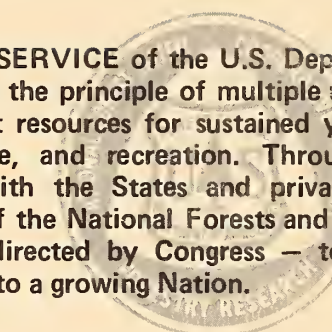
The mission of the PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION is to provide the knowledge, technology, and alternatives for present and future protection, management, and use of forest, range, and related environments.

Within this overall mission, the Station conducts and stimulates research to facilitate and to accelerate progress toward the following goals:

1. Providing safe and efficient technology for inventory, protection, and use of resources.
2. Development and evaluation of alternative methods and levels of resource management.
3. Achievement of optimum sustained resource productivity consistent with maintaining a high quality forest environment.

The area of research encompasses Oregon, Washington, Alaska, and, in some cases, California, Hawaii, the Western States, and the Nation. Results of the research will be made available promptly. Project headquarters are at:

College, Alaska	Portland, Oregon
Juneau, Alaska	Roseburg, Oregon
Bend, Oregon	Olympia, Washington
Corvallis, Oregon	Seattle, Washington
La Grande, Oregon	Wenatchee, Washington

The seal of the U.S. Forest Service is faintly visible in the background, centered behind the text. It features a tree in the center, surrounded by the words "FOREST SERVICE" and "DEPARTMENT OF AGRICULTURE".

The FOREST SERVICE of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.