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Checklist of the Vascular Plants of Sister Rocks Research Natural Area

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Abstract

Lists 107 taxa of vascular plants found in the 87-hectare Sister Rocks Research Natural Area, Gifford Pinchot National Forest, southern Washington Cascades. Notes on habitats, community types, and abundance are included for most taxa.

Keywords: Vascular plants, checklists (vascular plants), natural areas (research), Washington (Sister Rocks Research Natural Area).

Purpose

This report provides scientists, educators, and land managers with information on the presence, location, and abundance of vascular plants within the Sister Rocks Research Natural Area. In the future, changes in the vegetation —additions, deletions, changes in abundance, and shifts in habitat—can be determined from this baseline. The checklist can also be used in evaluating the effects of human activities in similar ecosystems.

Environment

Sister Rocks Research Natural Area occupies 87 hectares (215 acres) in the Gifford Pinchot National Forest in the southern Washington Cascades. The Research Natural Area, administered by the Wind River Ranger District, was established in 1967; it exemplifies stands of Pacific silver fir *(Abies amabilis)* as they occur on older (Eocene-Oligocene) volcanic portions of the Cascade Range, Washington (Franklin et al. 1972). The Natural Area fills the need, as identified by Dyrness et al. (1975), for an example of Pacific silver fir forest (southern portion of the Province) in the Pacific silver fir zone of the Western Slopes and Crest Province, Washington Cascades.

The Sister Rocks Research Natural Area occupies a broad, north-trending ridge-top. Slopes are gentle to moderate (20- to 30-percent), except along the lower margins of the area where steeper (60- to 80-percent) slopes occur. Elevations range from 1100 to 1280 m (3,600 to 4,200 ft) (Franklin et al. 1972). Geologically, the area is simple; underlying bedrock is composed of Eocene-Oligocene volcanics, predominantly andesitic (Huntting et al. 1961). The overburden includes elements of various Pleistocene and recent volcanic ash and pumice falls, some of the ejecta forming distinct layers (Franklin et al. 1972).

The climate is wet and cold. Precipitation is seasonal, peaking during winter and becoming low during the summer. Much of the winter precipitation occurs as snow, accumulating in snowpacks that probably attain maximum depths of 2 to 3 m (70 to 120 in), based on a nearby snowcourse at Oldman Pass (U. S. Soil Conservation Service, n.d.).

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Habitats and Community Types

Four major habitats or plant community types were identified in the Research Natural Area. Because plant taxa in this checklist are related to these habitats or community types, a brief description of each follows. Within the checklist, an abbreviated symbol is used to designate a particular habitat or community type:

Symbol	Habitat or community type
ABAM	Pacific silver fir forest
BURN	Noble fir burn forest
ROCK	Rock outcrops and talus slopes
WET	Spring seeps and streams

Pacific silver fir forest (ABAM) is dominated by *Abies amabilis. Tsuga heterophylla* is common, with lesser amounts of *Abies procera* and *Pseudotsuga menziesii.* This type is prevalent throughout the area.

Noble fir burn forest (BURN) was burned by a wildfire about 50 years ago; this type is dominated by young *Abies procera, Vaccinium membranaceum,* and *Xerophyllum tenax.*

Rock-talus outcrop (ROCK) is a small, open area of rock outcrop, including boulder-sized talus near the southern border of the Research Natural Area at 1280 m (4,200 ft) elevation.

Spring seeps and streams (WET) includes several small spring seeps and streams along the west slopes.

Explanation and Arrangement of Checklist

The list includes all vascular plant taxa identified in the Sister Rocks Research Natural Area during field visits on July 14-15; August 12; and September 22, 1979. Plants occurring along road margins and clearcut areas were not included unless found elsewhere in the Research Natural Area.

Taxa for which no collection numbers are listed, I identified in the field. Collections were verified in the herbaria at the University of Washington, Seattle, and at Oregon State University, Corvallis. Vouchers are deposited at the University of Washington, Seattle.

Families, genera, and species are arranged alphabetically. Scientific nomenclature and taxonomy follow Hitchcock and Cronquist (1973). Common names are taken from Franklin and Dyrness (1973), Garrison et al. (1976), and Hitchcock and Cronquist (1973). Additional floristic references include Hitchcock et al. (1955, 1959, 1961, 1964, 1969).

I have attempted to identify only the major distribution among habitats and community types for each species. Species abundance was qualitatively estimated in the field and is recorded in the checklist on the following ordinal scale: rare, infrequent, occasional, frequent, and abundant. For taxa in which data on distribution and abundance are considered inadequate, only the collection site or sites have been listed.

Aceraceae

Acer circinatum Pursh, vine maple—occasional in ABAM, abundant in ROCK and WET.

Acer glabrum Torr. var. *douglasii* (Hook.) Dippel, Rocky Mountain maple—infrequent in WET.

Araliaceae

Oplopanax horridum (Smith) Miq., devil's club—frequent in WET.

Aristolochiaceae

Asarum caudatum Lindl., wild ginger—occasional in WET.

Berberidaceae

Achlys triphylla (Smith) DC., deerfoot vanillaleaf—occasional to frequent in ABAM.

Berberis nervosa Pursh, Oregongrape—occasional to frequent on southwest slope along the lower forest margin in ABAM.

Vancouveria hexandra (Hook.) Morr. & Dec., white inside-out-flower—occasional in ABAM, occasional to frequent in WET.

Betulaceae

Alnus sinuata (Regel) Rydb., Sitka alder—occasional in ROCK and in BURN.

Caprifoliaceae

Linnaea borealis L., twinflower—frequent in ABAM.

Sambucus racemosa L. var. *aborescens* (T. & G.) Gray, red elderberry—rare in ABAM and in ROCK.

Celastraceae

Pachistima myrsinites (Pursh) Raf., Oregon boxwood—rare along forest edges in ABAM and in ROCK.

Compositae (Asteraceae)

Adenocaulon bicolor Hook., trail-plant—infrequent in WET.

Anaphalis margaritacea (L.) B. & H., pearly-everlasting—infrequent in ROCK.

Arnica nevadensis Gray, Sierra arnica—frequent in ROCK *(C 401).*

Hieracium albiflorum Hook., white hawkweed—occasional in ROCK.

Senecio triangularis Hook., arrowleaf groundsel—frequent along seeps in WET.

Cornaceae

Cornus canadensis L., bunchberry dogwood—abundant in ABAM.

Cyperaceae

Carex laeviculmis Meinsh., smooth-stem sedge—collected in WET.

Carex limnophila Hermann, pond sedge—infrequent in ROCK *(C 409).*

Carex mertensii Prescott, Mertens' sedge—rare to infrequent in ABAM.

Carex pachystachya Cham., thick-headed sedge—rare to infrequent in ABAM.

Carex pensylvanica Lam. var. *vespertina* L. H. Bailey, long-stoloned sedge—collected in ROCK *(C 411).*

Carex rossii Boott, Ross sedge—occasional in ROCK *(C 412).*

Ericaceae

Arctostaphylos nevadensis Gray, pine-mat manzanita—infrequent in ROCK.

Chimaphila umbellata (L.) Bart. var. *occidentalis* (Rydb.) Blake, western prince's pine—occasional in ABAM.

Hypopitys monotropa Crantz., fringed pinesap—infrequent in ABAM.

Menziesia ferruginea Smith, rustyleaf—frequent in ABAM.

Pyrola asarifolia Michx. var. *purpurea* (Bunge) Fern., large pyrola—occasional in ABAM.

Pyrola secunda L., one-sided wintergreen—occasional to frequent in ABAM.

Vaccinium alaskaense Howell, Alaska huckleberry—abundant in ABAM.

Vaccinium membranaceum Dougl., big huckleberry—frequent in ABAM, frequent to abundant in BURN.

Vaccinium ovalifolium Smith, ovalleaf huckleberry—frequent in ABAM.

Gramineae (Poaceae)

Agrostis tenuis Sibth., colonial bentgrass—collected in ROCK.

Bromus vulgaris (Hook.) Shear, Columbia brome—collected near a stream in ABAM.

Elymus glaucus Buckl., blue wildrye—frequent in BURN.

Festuca idahoensis Elmer, Idaho fescue—collected in ROCK.

Grossulariaceae

Ribes bracteosum Dougl., stink currant—occasional to frequent in WET.

Ribes lacustre (Pers.) Poir., prickly currant—occasional to frequent in WET.

Juncaceae

Luzula campestris (L.) DC. var. *frigida* Buch., field woodrush—infrequent in ROCK.

Luzula divaricata Wats., spreading woodrush—occasional in ROCK, rare to infrequent in ABAM.

Luzula parviflora (Ehrh.) Desv., millet woodrush—rare in openings in ABAM.

Leguminosae (Fabaceae)

Lupinus latifolius Agardh, broadleaf lupine—frequent in BURN and in ROCK.

Liliaceae

Clintonia uniflora (Schult.) Kunth., queencup beadlily—abundant in ABAM.

Disporum hookeri (Torr.) Nicholson var. *oreganum* (Wats.) Jones, Hooker's fairy bells—frequent in WET.

Erythronium montanum Wats., avalanche fawnlily—frequent to abundant in ABAM.

Smilacina stellata (L.) Desf., starry solomonplume — occasional in WET.

Streptopus amplexifolius (L.) DC. var. *americanus* Schult., claspleaf twistedstalk —occasional in WET.

Trillium ovatum Pursh, white trillium — infrequent in ABAM.

Veratrum sp., false hellebore—infrequent in ABAM.

Xerophyllum tenax (Pursh) Nutt., common beargrass—occasional to frequent in ABAM, abundant in BURN.

Lycopodiaceae

Lycopodium clavatum L., running pine club-moss—occasional to locally frequent in ABAM.

Onagraceae

Epilobium alpinum L., alpine willoweed—occasional in WET and in ROCK.

Epilobium angustifolium L., fireweed—infrequent in ROCK, occasional to locally frequent along open stream edges in WET.

Epilobium luteum Pursh, yellow willowherb—occasional in WET.

Orchidaceae

Corallorhiza mertensiana Bong., Mertens' coralroot—occasional in ABAM.

Habenaria saccata Greene, slender bog-orchid—frequent in WET.

Listera caurina Piper, western twayblade—occasional in ABAM.

Listera convallarioides (Sw.) Nutt., broad-lipped twayblade—occasional in WET.

Oxalidaceae

Oxalis trilliifolia Hook., great oxalis—abundant in WET.

Pinaceae

Abies amabilis (Dougl.) Forbes, Pacific silver fir—abundant in ABAM.

Abies procera Rehder, noble fir—frequent to abundant in ABAM and BURN.

Pinus contorta Dougl. var. *latifolia* Engelm., lodgepole pine—frequent in BURN and in ROCK.

Pinus monticola Dougl., western white pine—occasional in BURN and in ROCK.

Pseudotsuga menziesii (Mirbel) Franco, Douglas-fir—occasional in lower forest in ABAM and in BURN.

Tsuga heterophylla (Raf.) Sarg., western hemlock—abundant in ABAM.

Tsuga mertensiana (Bong.) Carr., mountain hemlock—occasional in BURN.

Polypodiaceae

Athyrium filix-femina (L.) Roth., ladyfern—infrequent in ABAM, frequent in WET.

Blechnum spicant (L.) Roth., deerfern—occasional in ABAM, frequent in WET.

Cryptogramma crispa (L.) R. Br. var. *acrostichoides* (R. Br.) Clarke, parsley-fern —occasional in ROCK.

Gymnocarpium dryopteris (L.) Newm., oakfern—occasional in WET.

Polystichum munitum (Kaulf.) Presl, swordfern—infrequent in ABAM.

Pteridium aquilinum (L.) Kuhn. var. *pubescens* Underw., bracken fern—infrequent in BURN and in ROCK, rare in ABAM.

Ranunculaceae

Actaea rubra (Ait.) Willd., baneberry—occasional along streams in ABAM and in WET.

Anemone deltoidea Hook., threeleaf anemone—infrequent to occasional in WET.

Caltha biflora DC., twinflower marshmarigold—frequent in WET.

Rosaceae

Amelanchier alnifolia Nutt., Saskatoon serviceberry—one sighting on a small boulder outcrop in ABAM.

Aruncus sylvester Kostel., sylvan goatsbeard—rare along intermittent streams near the forest edge in ABAM.

Fragaria vesca L. var. *bracteata* (Heller) Davis, western wood strawberry—occasional in ROCK and in BURN.

Rosa gymnocarpa Nutt., baldhip rose—occasional in ROCK and infrequent in ABAM.

Rubus lasiococcus Gray, dwarf blackberry—abundant in ABAM.

Rubus parviflorus Nutt., thimbleberry—occasional in ROCK, frequent in WET.

Rubus pedatus J. E. Smith, strawberry-leaf blackberry—abundant in ABAM.

Rubus spectabilis Pursh, salmonberry—occasional to frequent in WET and locally frequent in openings in ABAM.

Rubus ursinus Cham. & Schlecht., trailing blackberry—sighted in open forest in ABAM.

Sorbus scopulina Greene var. *cascadensis* (Jones) Hitchc., Cascade mountainash—occasional along forest edges in ABAM and occasional in ROCK.

Sorbus sitchensis Roemer var. *grayi* (Wenzig) Hitchc., Sitka or Pacific mountain-ash—occasional in WET and in openings in ABAM.

Rubiaceae

Galium oreganum Britt., Oregon bedstraw—occasional to frequent in WET.

Galium triflorum Michx., sweetscented bedstraw—occasional in WET.

Salicaeae

Populus trichocarpa T. & G., black cottonwood—one individual in ROCK.

Salix lasiandra Benth., red willow—one sighting near road's edge in WET.

Salix sp., willow—one sterile shrub in ROCK.

Saxifragaceae

Mitella breweri Gray, feathery mitrewort—infrequent to occasional in ABAM and in ROCK.

Mitella pentandra Hook., fivepoint mitrewort—occasional in WET.

Tiarella trifoliata L. var. *unifoliata* (Hook.) Kurtz., western coolwort—abundant in ABAM.

Scrophulariaceae

Castilleja miniata Dougl., scarlet paintbrush—occasional in ROCK and in BURN.

Mimulus dentatus Nutt., tooth-leaved monkey-flower—occasional in WET.

Nothochelone nemorosa (Dougl.) Straw., woodland beard-tongue—one sighting on a mossy rock outcrop in ABAM.

Pedicularis groenlandica Retz., elephant's head pedicularis—one sighting in BURN.

Pedicularis racemosa Dougl., leafy lousewort—occasional to locally frequent in ABAM.

Penstemon davidsonii Greene var. *menziesii* (Keck) Cronq., Davidson penstemon—occasional in ROCK.

Taxaceae

Taxus brevifolia Nutt., western yew—one sighting in ROCK.

Umbelliferae (Apiaceae)

Osmorhiza chilensis H. & A., mountain sweetroot—occasional in ABAM and in WET.

Osmorhiza purpurea (Coult. & Rose) Suksd., purple sweetroot—occasional in ABAM and in WET.

Violaceae

Viola glabella Nutt., wood violet—frequent in WET.

Viola orbiculata Geyer, darkwoods vetch violet—occasional in ABAM.

The following list includes 107 plant taxa distributed among 31 families as shown below.

Family	No. Species	Family	No. Species
Aceraceae	2	Lycopodiaceae	1
Araliaceae	1	Onagraceae	3
Aristolochiaceae	1	Orchidaceae	4
Berberidaceae	3	Oxalidaceae	1
Betulaceae	1	Pinaceae	7
Caprifoliaceae	2	Polypodiaceae	6
Celastraceae	1	Ranunculaceae	3
Compositae	5	Rosaceae	11
Cornaceae	1	Rubiaceae	2
Cyperaceae	6	Salicaceae	3
Ericaceae	10	Saxifragaceae	3
Gramineae	4	Scrophulariaceae	6
Grossulariaceae	2	Taxaceae	1
Juncaceae	3	Umbelliferae	2
Leguminosae	1	Violaceae	2
Liliaceae	9		

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