ALASKA • OREGON • WASHINGTON
PNW RESEARCH NOTE
809 NE 6th AVE
Portland, Oregon
97232
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

PNW-341 October 1979

A CHECKLIST OF THE VASCULAR PLANTS IN ABBOTT CREEK RESEARCH NATURAL AREA, OREGON[1]

by

Rod Mitchell, *Colorado Women's College, Denver, Colorado*

ABSTRACT

This paper is a checklist of 277 vascular plant taxa that have been collected or encountered in Abbott Creek Research Natural Area, Oregon; a brief description of five forested and two nonforested vegetation types is included.

KEYWORDS: Vascular plants, checklists (vascular plants), Oregon (Abbott Creek Research Natural Area)

INTRODUCTION

Abbott Creek Research Natural Area is located 19 km (12 miles) west of Crater Lake National Park in the Rogue River National Forest of southern Oregon (fig. 1). This Research Natural Area was established on November 18, 1946, as representative of the southwestern Oregon, Sierra-type mixed conifer forests and specifically because it contained excellent stands of sugar pine (*Pinus lambertiana*) (Franklin et al. 1972). The purpose of this note is to document the vascular flora of this Research Natural Area (RNA) to aid future scientific research (Franklin 1970, Moir 1972) and to complement a previous study of forest community composition in the Research Natural Area (Mitchell and Moir 1976).

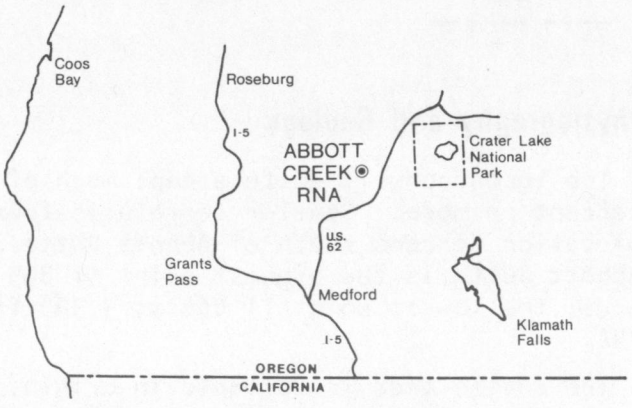


Figure 1.--Location of Abbott Creek Research Natural Area.

[1]This work was supported by a contract from the Pacific Northwest Forest and Range Experiment Station and the Pacific Northwest Natural Area Committee.

STUDY AREA

Abbott Creek Research Natural Area is located in Douglas and Jackson Counties, and has a total area of 1 076 ha (2,660 acres). Its western border, defined by the main branch of Abbott Creek, provides the easiest access to major portions of the area. An unmaintained logging road parallels the southwestern boundary. This road is reached from U.S. Highway 26 via Forest Road 3047 (fig. 2). The northern border is defined by a ridge between the Rogue and Umpqua River drainages. The main access to this ridge is via trail remnants from Abbott Butte fire lookout, served by Forest Road 2923. The eastern edge of the area generally follows the Golden Stairs Trail, accessible at its southern end by Forest Road 3017 and by Forest Road 3016 at a more northern point. There are no maintained trails or roads within the RNA.

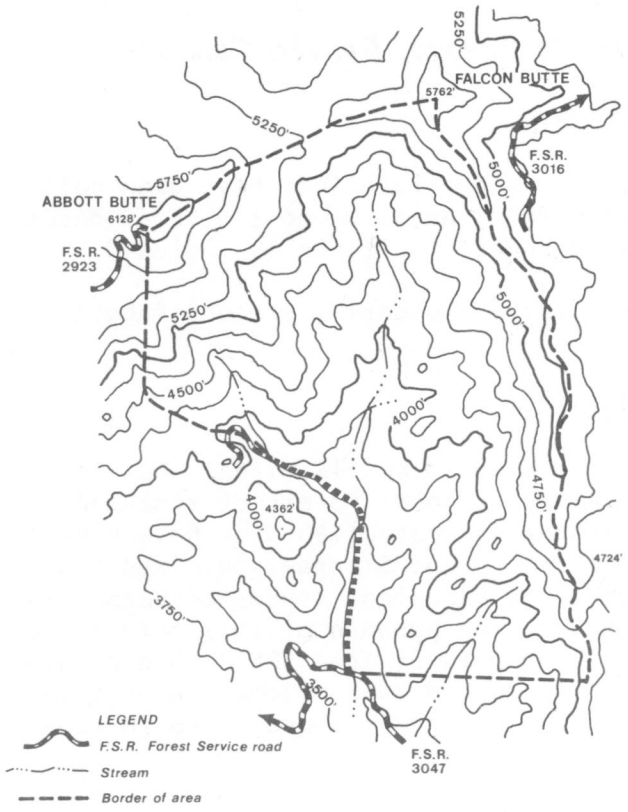


Figure 2.--Features of the Abbott Creek Research Natural Area and vicinity.

Physiography and Geology

The topography is quite steep; much of the area consists of slopes of 25 percent or more. Gentler terrain is found near Abbott Creek and on some high elevation benches south of Abbott Butte and between Abbott and Falcon Buttes. Abbott Butte is the highest point (1 869 m; 6,128 ft) in the Research Natural Area; the lowest point (1 006 m; 3,300 ft) is located in the southwest of the RNA.

The entire area is volcanic in origin. Soils belong to the Freezener-Coyata soil series (Power and Simonson 1969). Typically the soils are acid in reaction and well drained with dark reddish-brown, friable, loam surface layers. Rock fragments range from abundant to less than 30 percent by volume.

Climate

A modified maritime climate characterizes the Research Natural Area. Most of the precipitation results from low pressure systems that move eastward across western Oregon from the Pacific Ocean. During the summers, this dominant climatic feature is modified by high pressure systems that shift fronts northward, resulting in clear, dry weather. This phenomenon results in cool, wet winters and warm, dry summers.

Grazing

The Research Natural Area lies within the Woodrull Cattle and Horse Allotment and presently experiences light grazing on its eastern border.[2] The USDA Forest Service has issued permits in the area since 1923. As early as the 1860's settlers used the area for grazing. It can be speculated that this grazing has affected the present flora, both through the introduction of species not originally found in the area and through a disproportionate amount of foraging on some of the original species.

VEGETATION TYPES

In the forested locations, 119 reconnaissance plots (Franklin et al. 1970) were used to sample vegetation (Mitchell 1972) and develop a classification. These included transects to determine the percentage of ground cover and frequency of understory species (Daubenmire 1968). Five major forest and two nonforested vegetation types have been recognized (Mitchell and Moir 1976). About 80 percent of the Research Natural Area is forested.

1. The *Abies magnifica* vegetation type located at higher elevations in the northwest corner of the RNA is floristically distinct and belongs to the *Abies magnifica* var. *shastensis* Zone (Dennis 1959, Whittaker 1960, Franklin and Dyrness 1973). The overstory consists of *Abies magnifica*, *Libocedrus decurrens*, *Abies concolor*, and *Tsuga mertensiana*. The understory averages over 80-percent cover and is dominated by *Adenocaulon bicolor*, *Bromus vulgaris*, *Circaea alpina*, *Erigeron aliceae*, *Montia sibirica*, *Osmorhiza chilensis*, *Trientalis latifolia*, *Ribes viscosissimum*, *Rubus parviflorus*, *Smilacina sessilifolia*, *Vancouveria hexandra* and *Vicia americana* which occur in over 67 percent of the locations sampled. The ecoclass is CR F9 (Hall 1978).

2. The *Abies concolor-Tsuga heterophylla/Acer circinatum-Taxus brevifolia* vegetation type is on the moist end of the gradient that includes the three other forested vegetation types that are part of the Mixed-Conifer Zone as it occurs in the RNA (Mitchell and Moir 1976). This vegetation type is found at the bottom of the major drainages, usually where there is a permanent streamflow. *Pseudotsuga menziesii*, *Abies concolor*, *Tsuga heterophylla*, *Pinus lambertiana*, and *Pinus monticola* comprise the overstory. The shrub layer is very well developed; *Acer circinatum*, *Taxus brevifolia*, *Castanopsis chrysophylla*, *Corylus cornuta*, and *Cornus nuttallii* are the most important representatives. The understory is quite dense and is dominated by *Achlys triphylla*, *Berberis nervosa*, *Chimaphila umbellata*, *Linnaea borealis*, *Pachystima myrsinites*, *Trientalis latifolia*, *Vaccinium membranaceum*, and *Whipplea modesta*, all of which occurred in over 78 percent of the locations sampled. The ecoclass is CH 32 (Hall 1978).

---

[2]Walker, Gorden J., Range Technician, Prospect Ranger Station, Prospect, Oregon; personal communication, 1979.

3. The *Abies concolor/Linnaea borealis* vegetation type occurs on mesic slopes at lower elevations in the RNA. The overstory consists of *Pseudotsuga menziesii*, *Abies concolor*, and *Libocedrus decurrens*. The understory of this vegetation type is very well developed and is dominated by evergreen species. The major understory species are *Achlys triphylla*, *Berberis nervosa*, *Chimaphila umbellata*, *Corylus cornuta*, *Hieracium albiflorum*, *Linnaea borealis*, *Trientalis latifolia*, and *Whipplea modesta* which occur in over 71 percent of the locations sampled. The ecoclass is CW F3 (Hall 1978).

4. The *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* vegetation type is located on dry midslopes to upper slopes that face south or west. The tree component is dominated by *Pseudotsuga menziesii* and *Libocedrus decurrens*. The understory is poorly developed, often with less than 10-percent total cover. *Castanopsis chrysophylla*, *Amelanchier alnifolia*, and *Garrya fremontii* occasionally provide a shrub layer. *Whipplea modesta* is about the only understory plant with significant cover values in most locations. *Berberis nervosa*, *Chimaphila umbellata*, *Hieracium albiflorum*, *Iris chrysophylla*, and *Trientalis latifolia* are found in 75 percent of the locations sampled. The ecoclass is CW S6 (Hall 1978).

5. The *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* vegetation type is found mainly on south- and west-facing slopes near ridgetops where there are poorly developed slabby lithosols. The overstory is open and dominated by *Pseudotsuga menziesii* and *Libocedrus decurrens; Pinus lambertiana* is also present. The shrub layer is quite well developed and dominated by *Arctostaphylos nevadensis*, *Castanopsis chrysophylla*, *Ceanothus prostratus*, and *Garrya fremontii*, all of which occur in 63 percent or more of the sample locations. The nonshrub component of the understory is quite sparse and is represented by *Arenaria macrophylla*, *Chimaphila umbellata*, *Hieracium albiflorum*, *Trientalis latifolia*, and *Whipplea modesta* which are present in 81 percent or more of the locations sampled. The ecoclass is CD C3 (Hall 1978).

6. A nonforested community occupies dry, rocky sites at midelevations on the western edge of the RNA. This is a very drought resistant and heterogeneous vegetation type. Most of the species are not found on other sites in the RNA. *Brodiaea pulchella*, *Madia minima*, *Perideridia bolanderi*, and *Stipa occidentalis* are the only species that occur in over 30 percent of the locations sampled; the total cover never reaches 50 percent. The ecoclass is GB 29 (Hall 1978).

7. There are several meadows on the northern edge of the Research Natural Area between Abbott and Falcon Buttes. These meadows continue north of the RNA at higher elevations. Snowpack remains as late as June and is followed by rapid growth of dense herbaceous vegetation. *Bromus vulgaris*, *Erigeron aliceae*, *Heracleum sphondylium*, *Hydrophyllum fendleri*, *Lonicera conjugialis*, *Melica spectabilis*, *Osmorhiza occidentalis*, *Pteridium aquilinum*, *Salix scouleriana*, and *Veratrum viride* are dominant members of this vegetation type. There is evidence that these meadows are being invaded by trees, especially *Libocedrus decurrens*. The ecoclass is FW 19 (Hall 1978).

CHECKLIST

Methodology

Specimens were collected of all vascular plants found within the Research Natural Area during the summers of 1971, 1972, and 1973. All specimens were verified by F. J. Hermann, Curator of the USDA Forest Service Herbarium,

Fort Collins, Colorado, or by K. L. Chambers, Curator, Oregon State University Herbarium, Corvallis, Oregon. Voucher specimens were deposited in both herbaria.

The checklist of plants is arranged in alphabetical order by family. The nomenclature follows Peck (1961) but in several instances is updated by Hitchcock and Cronquist (1973). The common names follow various authorities, primarily Franklin and Dyrness (1973) and Garrison et al. (1976). Voucher specimens of most species are on file in the USDA Forest Service Herbarium, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, or the Oregon State University Herbarium, Corvallis, Oregon.

Most species are given abundance ratings by vegetation type. Some species, however, occupy highly specialized habitats and cannot be related to the seven types.

The checklist of the vascular plants indicate vegetation types where taxa are found, voucher specimen numbers, and the herbaria where deposited. The abbreviations for vegetation types are:

S -- *Abies magnifica* (Shasta red fir)
H -- *Abies concolor-Tsuga heterophylla/Acer circinatum* (western hemlock)
W -- *Abies concolor/Linnaea borealis* (white fir)
D -- *Abies concolor-Pseudotsuga menziesii/Whipplea modesta* (Douglas-fir)
I -- *Pseudotsuga menziesii-Libocedrus decurrens/Arctostaphylos nevadensis* (incense-cedar)
R -- Drought-resistant, heterogeneous species
M -- Herbaceous meadow

The abbreviations for abundance scale are:

A -- Abundant
C -- Common
R -- Rare

Abbreviations for the herbaria where voucher specimens are located are:

O -- Oregon State University Herbarium, Corvallis, Oregon
F -- USDA Forest Service Herbarium, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Species	Vegetation types							Voucher number	Herbaria
	S	H	W	D	I	R	M		
ACERACEAE									
Acer circinatum Pursh (vine maple)		A						116	O/F
Acer glabrum Torr. (Rocky Mountain maple)		R						248	O/F
Acer macrophyllum Pursh (bigleaf maple)		C						340	O/F
APOCYNACEAE									
Apocynum androsaemifolium L. (spreading dogbane)						R		267	O
ARISTOLOCHIACEAE									
Asarum caudatum Lindl. (wild ginger)	C	C	C	R	R			57	O/F
BERBERIDACEAE									
Achlys triphylla (Sm.) DC. (deerfoot vanillaleaf)	R	A	A	C	R			164	O/F
Berberis nervosa Pursh (Oregongrape)	R	A	A	A	C			120	O
Vancouveria hexandra (Hook.) Moor. & Dec. (white inside-out-flower)	C	A	A		R			145	O/F
BETULACEAE									
Alnus sinuata (Regel) Rydb. (Sitka alder)							R	187	O/F
Corylus cornuta var. *Californica* (DC.) Sharp (California hazel)	C	A	A	C				143	O/F
BORAGINACEAE									
Cryptantha affinis (Gray) Greene (slender cryptantha)						C		128	O/F
Cynoglossum grande Dougl. ex Lehm. (great hound's tongue)				R				28	O/F
Hackelia jessicae (McGregor) Brand. (Jessica stickweed)							C	182	O/F
Mertensia ciliata (Torr.) G. Don (broadleaved lungwort)		C						16	O/F
CAMPANULACEAE									
Campanula prenanthoides Dur. (California harebell)	R			R				255	O/F
Campanula scouleri Hook. ex A. DC. (Scouler bellflower)	R							271	O
CAPRIFOLIACEAE									
Linnaea borealis var. *longiflora* Torr. (twinflower)		A	A					161	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Lonicera conjugialis Kell. (purpleflower honeysuckle)							R	193	O/F
Sambucus racemosa L. (black elderberry)				R				379	O
Symphoricarpos mollis Nutt. (creeping snowberry)		C	C	R				361	O
CARYOPHYLLACEAE									
Arenaria aculeata Wats. (needle-leaved sandwort)						R		200	O/F
Arenaria macrophylla Hook. (bigleaf sandwort)	A		A	C	A			27	O/F
Silene campanulata Wats. (slender campion)						R		102	O/F
CELASTRACEAE									
Pachystima myrsinites (Pursh) Raf. (Oregon boxwood)	C	A	A			R		168	O/F
COMPOSITAE									
Achillea millefolium ssp. *lanulosa* Piper (western yarrow)	C						C	140	O/F
Adenocaulon bicolor Hook. (trail plant)	A	C	C	R	R			284	O/F
Agoseris aurantiaca (Hook.) Greene (orange agoseris)							R	328	O/F
Agoseris glauca (Pursh) Raf. (pale agoseris)							R	112, 202	O/F
Agoseris grandiflora (Nutt.) Greene (large-flowered agoseris)							R	265	O
Anaphalis margaritacea (L.) B. & H. (pearly everlasting)							C	259, 306	O/F
Antennaria racemosa Hook. (slender everlasting)		C						24	O/F
Arnica latifolia Bong. (broadleaf arnica)		C						144	O/F
Arnica spathulata Greene (spatulate arnica)				R				291	O
Aster ledophyllus Gray (Cascades aster)							R	319, 383	O/F
Balsamorhiza deltoidea Nutt. (Puget balsamroot)							R	199	O/F
Cirsium centaurea (Rydb.) K. Schum. (slender mountain thistle)					R			382	O/F
Cirsium vulgare (Savi) Airy-Shaw (common thistle)					R			363	O/F
Crepis occidentalis Nutt. (western hawksbeard)						R		196	O
Erigeron aliceae Howell (Alice fleabane)	C						A	260, 211	O/F
Erigeron foliosus var. *confinis* (Howell) Jeps. (leafy fleabane)						R		71	O/F
Erigeron inornatus Gray (rayless fleabane)						C		77	O/F
Eriophyllum lanatum var. *achillaeoides* (DC.) Jeps. (common woolly sunflower)						C		89	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Eupatorium occidentale Hook. (western eupatorium)						R		380	O/F
Hieracium albiflorum Hook. (white hawkweed)	C	C	A	A	A			163	O/F
Hieracium cynoglossoides Arv.-Touv. (houndstongue hawkweed)						R		324	O/F
Luina nardosmia (Gray) Cronq.							R	154	O/F
Madia bolanderi Gray (Bolander's tarweed)							A	334	O/F
Madia gracilis (Smith) Keck (common tarweed)						C		37	O/F
Madia minima (Gray) Keck (least tarweed)						C		68	O/F
Petasites frigidus (L.) Fries (alpine coltsfoot)							C	165	O/F
Rudbeckia occidentalis Nutt. (western coneflower)	C						C	301	O/F
Senecio integerrimus Nutt. (western groundsel)						R		35, 197	O/F
Senecio triangularis Hook. (arrowleaf senecio)							C	283, 311	O/F
Solidago canadensis L. (Canada goldenrod)							R	338	O/F
Taraxacum laevigatum (Willd.) DC. (smooth dandelion)						R		149	O
Taraxacum officinale Weber (common dandelion)						R		141	O
CORNACEAE									
Cornus nuttallii T. & G. (Pacific dogwood)	C	C	R	R				113	O/F
CRASSULACEAE									
Sedum oregonense (Wats.) Peck (creamy stonecrop)						C		67	O/F
CRUCIFERAE									
Arabis holboellii var. *retrofracta* (Grah.) Rydb. (Holboell rockcress)						C		79	O/F
Arabis microphylla Nutt. (littleleaf rockcress)						R		381	O/F
Athysanus pusillus (Hook.) Greene (sandweed)						C		126	O/F
Descurainia richardsonii (Sweet) Schulz (western tansy mustard)						C		315	O/F
CUCURBITACEAE									
Marah oregonus (T. & G.) Howell (Oregon wild cucumber)						R		38	O/F
CUPRESSACEAE									
Libocedrus decurrens Torr. (incense-cedar)	C	C	C	C	C				
CYPERACEAE									
Carex bolanderi Olney (Bolander sedge)		C						2, 368	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Carex concinnoides Mack. (northwestern sedge)						R		159	F
Carex fracta Mack. (fragile-sheathed sedge)		R		R		R		14, 151, 167, 374	F
Carex hoodii Boott (Hood sedge)				R		R		61, 194, 320	O/F
Carex multicaulis Bailey (thick-fruited sedge)							R	244	F
Carex paucicostata Mack. (few-ribbed sedge)							R	337	F
Carex rossii Boott (Ross sedge)						R		26, 279, 289, 375	O/F
Carex subfusca W. Boott (rusty sedge)		R					R	10, 138, 335	F
EQUISETACEAE									
Equisetum arvense L. (common horsetail)		C						341	O/F
ERICACEAE									
Arctostaphylos nevadensis Gray (pine-mat manzanita)			R		A	R		376	O/F
Arctostaphylos patula Greene (green manzanita)					C			377	O/F
Chimaphila menziesii (R. Br.) Spreng. (little prince's pine)					R			277	O
Chimaphila umbellata (L.) Bart. (western prince's pine)	A	C	A	A	A			230	O/F
Gaultheria ovatifolia Gray (slender gautheria)		R	C					285	O/F
Pterospora andromedea Nutt. (pine drops)			R						
Pyrola aphylla Smith (leafless pyrola)						R		254, 276, 231	O/F
Pyrola asarifolia Michx. (large pyrola)								342	O/F
Pyrola dentata Smith			R	R	R			153, 290	O/F
Pyrola picta Smith (whitevein pyrola)			R	R	R			224, 270	O
Pyrola secunda L. (one-sided wintergreen)			R					177, 262	O
Rhododendron macrophyllum G. Don (Pacific rhododendron)		R	R					359	O/F
Sarcodes sanguinea Torr. (snow plant)		R	R					119	O/F
Vaccinium membranaceum Hook. (big huckleberry)		A	A					162	O/F
FAGACEAE									
Castanopsis chrysophylla (Dougl.) A. DC. (golden chinkapin)		A	A	A	C			252	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Quercus garryana Hook. (Oregon white oak)				R				110, 248	O/F
FUMARIACEAE									
Dicentra formosa (Andr.) Walp. (Pacific bleeding-heart)							R	46	O/F
GARRYACEAE									
Garrya fremontii Torr. (bear bush)					C			239	O/F
GENTIANACEAE									
Swertia umpquaensis (Peck & Appleg.) St. John (Umpqua swertia)	R						C	215, 299	O/F
GRAMINEAE									
Agropyron caninum (L.) Beauv. (bearded wheatgrass)						C		332	O
Agrostis exarata Trin. (spike bentgrass)						C		367	O
Agrostis scabra Willd. (winter bentgrass)							C	323	O/F
Bromus carinatus H. & A. (California brome)						C		210, 238, 295	O/F
Bromus orcuttianus Vas. (Orcutt's brome)						R		241	O/F
Bromus tectorum L. (cheatgrass brome)						C		237	O
Bromus vulgaris (Hook.) Shear (Columbia brome)	C	R					C	233, 286, 317, 388, 393, 268, 278, 282	O/F
Bromus vulgaris var. *eximius* Shear	R							178	O/F
Cinna latifolia (Trev.) Griseb. (drooping wood-reed)							R	353	O
Danthonia unispicata (Thurb.) Macoun (one-spike danthonia)						C		40	O
Elymus glaucus Buckl. (blue wildrye)	C						C	131, 218, 246, 281, 296, 322, 369, 385, 390	O/F
Festuca californica Vas. (California fescue)				R		R		109	O/F
Festuca microstachys Nutt. (Nuttall's fescue)					R			236	O
Festuca occidentalis Hook. (western fescue)				R	R	R		123, 235, 269	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Festuca reflexa Buckl. (twoflower fescue)						R		41	O/F
Festuca subulata Trin. (bearded fescue)	R							371	O
Festuca subuliflora Scribn. (crinkleawn fescue)								232, 287	O
Glyceria elata (Nash) Hitchc. (tall manna-grass)		R						372	O
Glyceria striata (Lam.) Hitchc. (fowl manna-grass)		R						347	O
Hierochloe occidentalis Buckl. (California sweetgrass)								153	O/F
Melica aristata Boland. (bearded melic)								263, 389	O/F
Melica californica Scribn. (western melic)						R		394	O/F
Melica harfordii Boland. (Harford's melic)								156	O/F
Melica spectabilis Scribn. (showy onion-grass)						R		198	O/F
Melica subulata (Griseb.) Scribn. (Alaska onion-grass)						R		30, 179, 219, 223, 356, 391	O/F
Phleum alpinum L. (alpine timothy)						R		220	O
Poa pratensis L. (Kentucky bluegrass)						R		330	O
Poa sandbergii Vas. (Sandberg's bluegrass)								245	O/F
Poa scabrella (Thurb.) Vasey (pine bluegrass)					R			33	O/F
Sitanion hystrix (Nutt.) J. G. Sm. (bottlebrush squirreltail)					C			87, 297, 325, 326, 327	O/F
Stipa lemmonii (Vas.) Scribn. (Lemmon needlegrass)						R		34, 354, 355	O/F
Stipa occidentalis Thurb. ex Wats. (Western needlegrass)						C		311	O
Stipa occidentalis var. *minor* ((Vas.) Hitchc. *S. columbiana* Macoun) (Columbia needlegrass)						R		66	O/F
Trisetum canescens Buckl. (tall trisetum)							R	280, 392	O
HYDRANGEACEAE									
Whipplea modesta Torr. (whipple vine)	R	C	A	A	C			21	O/F
HYDROPHYLLACEAE									
Hydrophyllum fendleri (Gray) Heller (Fendler waterleaf)							C	192	O/F
Nemophila parviflora Benth. (smallflower nemophila)		C						192	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Phacelia hastata Lehm. (whiteleaved phacelia)						R		98	O/F
IRIDACEAE									
Iris chrysophylla Howell (slender-tubed iris)	R	C	C	C	R			25	O/F
JUNCACEAE									
Juncus orthophyllus Cov. (straight-leaved rush)							R	139	O/F
Luzula comosa E. Mey. (hairy woodrush)							C	207, 243	F
Luzula parviflora (Ehrh.) Desv. (millet woodrush)		C					C	17, 316	O/F
LABIATAE									
Agastache urticifolia (Benth.) Kuntze (nettle-leaved giant-hyssop)						R		212, 300	O/F
Monardella odoratissima Benth. (western balm)							R	292	O/F
Scutellaria antirrhinoides Benth. (snapdragon skullcap)							R	107	O/F
Stachys cooleyae Heller (Cooley's hedge nettle)		R						351A, 356	O/F
Stachys rigida Benth. (rigid hedge nettle)		R						351	O/F
LEGUMINOSAE									
Lathyrus polyphyllus T. & G. (Pacific peavine)		R						4	O/F
Lotus formosissimus Greene (Seaside lotus)							R	137	O/F
Lotus nevadensis (Wats.) Greene (Nevada lotus)						R		99	O/F
Lupinus albifrons Lindl. (white-leaved lupine)						R		94	O/F
Lupinus argenteus Pursh (silvery lupine)				R				217	O/F
Lupinus latifolius Agardh (broadleaf lupine)	C							213	O
Lupinus laxiflorus Lindl. (spur lupine)				R				93	O/F
Trifolium howellii Wats. (bigleaf clover)							C	344	O/F
Vicia americana var. *villosa* (Kell.) F. J. Herm. (American vetch)	C	C	A	C	R			7	O/F
LILIACEAE									
Allium siskiyounense Owns. (Siskiyou onion)						R		203, 204	O
Brodiaea congesta Smith							R	251	O/F
Brodiaea pulchella (Salisb.) Greene (purplehead brodiaea)						R		74	O/F
Calochortus elegans Pursh (elegant mariposa lily)						R		32	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Disporum hookeri (Torr.) Nichols. (Hooker's fairybells)	C	C	C	R	R			62	O
Erythronium grandiflorum Pursh (lambstongue fawnlilly)								201	O/F
Fritillaria atropurpurea Nutt. (purple fritillaria)							R	58	O
Lilium columbianum Hanson (Columbia lily)							R	157	O/F
Lilium washingtonianum Kell (Washington lily)							R	329	O
Smilacina racemosa (L.) Desf.	C	C	R					358	O
Smilacina stellata (L.) Desf. (starry solomonplume)	C	C	R					55	O/F
Trillium ovatum Pursh (white trillium)	C	A	R					51, 52	O/F
Veratrum viride Ait. (American false hellebore)							C		
Xerophyllum tenax (Pursh) Nutt. (common beargrass)							R	234	O/F
LINACEAE									
Linum Lewisii Pursh (Lewis flax)						R		293	
ONAGRACEAE									
Circaea alpina L. (alpine circaea)	A	R	R	C	C			169, 222	O/F
Clarkia rhomboidea Hook. (common clarkia)				R		R		90	O/F
Epilobium angustifolium L. (fireweed)						R		294	O/F
Epilobium glaberrimum Barbey (smooth willowweed)		C						5, 362	O/F
Epilobium minutum Hook. (small-flowered willowweed)						C		69, 106	O/F
Gayophytum humile Juss. (dwarf gayophytum)						R		127	O
Gayophytum nuttallii Piper (Nuttall's gayophytum)						C		75, 395	O/F
ORCHIDACEAE									
Calypso bulbosa (L.) Oakes (calypso)		R							
Corallorhiza maculata Raf. (spotted coralroot)		C	C					261	O
Corallorhiza mertensiana Bong. (Mertens' coralroot)		C	C					121, 225	O/F
Goodyera oblongifolia Raf. (rattlesnake plantain)		C	R					275	O/F
Habenaria dilatata var. *leucostachys* (Lindl.) Ames (boreal bogorchid)							R	333	F
Habenaria elegans (Lindl.) Boland. (California hillside habenaria)		R						242	O/F
Habenaria saccata Greene (slender bog orchid)							R	346	O/F
Listera caurina Piper (western twayblade)								386	O

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
PINACEAE									
Abies concolor Lindl. & Gord. (white fir)	A	C	A	A	C				
Abies magnifica var. *shastensis* Lemm. (Shasta red fir)	A								
Pinus lambertiana Dougl. (sugar pine)		R	R	R	C				
Pinus monticola Dougl. (western white pine)		R							
Pinus ponderosa Dougl. (ponderosa pine)				R	R				
Pseudotsuga menziesii (Mirb.) Franco (Douglas-fir)		C	A	A	A				
Tsuga heterophylla (Raf.) Sarg. (western hemlock)	R	A	C	R	R				
POLEMONIACEAE									
Collomia grandiflora Dougl. (large-flowered collomia)						R		256	O/F
Collomia heterophylla Hook. (varied-leaved collomia)				R	C			23	O/F
Gilia aggregata (Pursh) Spreng. (scarlet gilia)							R	305	O/F
Gilia capitata Sims (globe gilia)						R		36	O/F
Linanthus harknessii (Curran) Greene (harkness linanthus)						R		100	O/F
Navarretia divaricata (Torr.) Greene (short-stemmed navarretia)						C		43	O
Phlox adsurgens Gray (woodland phlox)								125	O/F
Phlox diffusa Benth. (sens. E. Wherry) (spreading phlox)						R		205	O/F
Polemonium pulcherrimum Hook. (showy polemonium)		R						53, 206	O/F
POLYGONACEAE									
Eriogonum compositum Benth. var. *compositum* (northern buckwheat)						C		88	O/F
Eriogonum nudum Benth. (naked eriogonum)						C		78	O/F
Eriogonum umbellatum Torr. var. *umbellatum* (sulfur buckwheat)						C		130	O/F
Polygonum bistortoides Pursh (American bistort)							C	336	O/F
Polygonum cascadense W. H. Baker (Cascade knotweed)						C		42	O/F
Polygonum majus (Meisn.) Piper (wiry knotweed)						R		70	O/F
Rumex acetosella L. (sheep sorrel)							C	250	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
POLYPODIACEAE									
Athyrium filix-femina (L.) Roth (ladyfern)	R	R						346, 364	O/F
Cheilanthes gracillima D.C. Eat. (lace-fern)						R		76	O/F
Cryptogramma densa (Bracknr.) Diels (Oregon cliffbreak)						R		82	O/F
Pellaea glabella Kuhn (cliffbreak)						R		73	O/F
Polystichum munitum (Kaulf.) Presl. (swordfern)	C	C						352	O/F
Pteridium aquilinum (L.) Kuhn (bracken fern)	A	C	R				A		
PORTULACACEAE									
Claytonia lanceolata Pursh (lance-leaved spring beauty)							A	45	O/F
Montia parvifolia (Moc.) Greene (Miner's lettuce)		R						96	O/F
Montia sibirica (L.) Howell (western spring beauty)	A	C						9	O/F
Spraguea umbellata Torr. (pussypaws)						R		64	O/F
PRIMULACEAE									
Trientalis latifolia Hook. (starflower)	A	A	A	A	A			117	O/F
RANUNCULACEAE									
Actaea rubra (Ait.) Willd. (baneberry)							C	47, 313	O/F
Anemone deltoidea Hook. (threeleaf anemone)	C	C	R					1	O/F
Aquilegia formosa Fisch. (western columbine)						R		135	O/F
Delphinium glaucum Wats. (pale larkspur)							R	304	O/F
Delphinium menziesii DC. (Menzies' larkspur)	R						R	54	O/F
RHAMNACEAE									
Ceanothus integerrimus H. & A. (deerbrush)						C		80	O/F
Ceanothus prostratus Benth. (squawcarpet)					A	C		378	O/F
Ceanothus velutinus Hook. (varnishleaf ceanothus)					A	C		133	O/F
RIBESACEAE									
Ribes binominatum Heller (Siskiyou gooseberry)	A					R		171	O/F
Ribes cruentum Greene (shiny-leaved gooseberry)	R							132, 266	O/F
Ribes lacustre (Pers.) Poir. (prickly currant)	R							166	O/F
Ribes lobbii Gray (pioneer gooseberry)						R		181, 257	O/F
Ribes sanguineum Pursh (winter currant)						R		150	O/F
Ribes viscosissimum Pursh (sticky currant)	C				R	R		60, 174	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
ROSACEAE									
Amelanchier alnifolia Nutt. (Saskatoon serviceberry)	R							272	O/F
Fragaria vesca L. (western wood strawberry)	R	C	R					20, 175	O/F
Holodiscus discolor (Pursh) Maxim. (creambush oceanspray)	C						R	108	O/F
Osmaronia cerasiformis (T. & G.) Greene (Indian plum)		R						387	O/F
Potentilla glandulosa Lindl. (gland cinquefoil)								81	O/F
Prunus emarginata (Dougl.) Walp. (bitter cherry)								63	O/F
Rosa gymnocarpa Nutt. (baldhip rose)	C	A	A	C	R			115	O/F
Rosa nutkana Presl. (Nootka rose)	R							273	O
Rubus lasiococcus Gray (dwarf blackberry)	R							228	O/F
Rubus leucodermis T. & G. (western blackcap)						R		122, 264	O/F
Rubus nivalis Hook. (snow dewberry)	C	R	C					360	O/F
Rubus parviflorus Nutt. (thimbleberry)	R							160, 302	O/F
Sorbus scopulina Greene (Greene mountain-ash)		R					R	384	O/F
Sorbus sitchensis Roemer (Sitka mountain-ash)							R	274	O/F
RUBIACEAE									
Galium oreganum Britt. (Oregon bedstraw)	A	C						176, 310	O/F
Galium triflorum Michx. (sweetscented bedstraw)	A	C	C					13, 343	O/F
Kelloggia galioides Torr. (kelloggia)						C		247	O/F
SALICACEAE									
Populus tremuloides Michx. (quaking aspen)							C	186	O/F
Salix scouleriana Barratt (Scouler's willow)		R					C	8, 188	O/F
SAXIFRAGACEAE									
Boykinia major Gray (large-flowered boykinia)		R						365	O/F
Lithophragma sp. cf. *L. tenella* Nutt.									
Tellima grandiflora (Pursh) Dougl. (Alaska fringecup)		R					R	6, 191	O/F
Tiarella unifoliata Hook. (western coolwort)							C	126, 229	O/F
SCROPHULARIACEAE									
Castilleja miniata Hook. (scarlet paintbrush)						R		208, 303	O/F
Castilleja pruinosa Fern. (frosted paintbrush)						R		85	O/F
Collinsia parviflora Lindl. (littleflower collinsia)								18, 44	O/F

Species	Vegetation types S	H	W	D	I	R	M	Voucher number	Herbaria
Nimulus breweri (Greene) Rydb. (Brewer monkeyflower)						R		129	O/F
Mimulus guttatus DC. (common monkeyflower)		R						125	O/F
Mimulus pulsiferae Gray							R	103	O/F
Mimulus tilingii Regel (clustered monkeyflower)		R						136	O/F
Orthocarpus imbricatus Wats. (mountain owlclover)							C	195	O/F
Pedicularis bracteosa Benth. (bracted pedicularis)							R	314	O
Pedicularis racemosa Hook. (sickletop pedicularis)							C	288	O/F
Penstemon davidsonii (Greene) var. *davidsonii* Piper (Davidson penstemon)						R		97	O/F
Penstemon deustus Lindl. (scabland penstemon)						R		91	O/F
Synthyris reniformis (Dougl.) Benth. (snowqueen)		C	R					155	O/F
TAXACEAE									
Taxus brevifolia Nutt. (western yew)		C							
UMBELLIFERAE									
Heracleum sphondylium L. (cowparsnip)	R					C		189	O
Ligusticum apiifolium (Nutt.) Gray (parsleyleaf licoriceroot)							C	209	O
Ligusticum grayi C. & R. (Gray's lovage)							C	209, 312	F
Lomatium nudicaule (Pursh) C. & R. (barestem lomatium)						C		72	O/F
Lomatium triternatum (Pursh) C. & R. (nineleaf lomatium)						R		111	O/F
Osmorhiza chilensis H. & A. (mountain sweetroot)	C	C					A	19	O/F
Osmorhiza occidentalis (Nutt.) Torr. (sweet anise)							C	190	O/F
Oxypolis occidentalis C. & R. (western oxypolis)								348	O/F
Perideridia bolanderi (Gray) Nels. & Macbr. (mountain false caraway)						A		39	O/F
Sanicula graveolens Poepp. ex DC. (Sierra snake-root)						R		56, 134	O/F
Sphenosciadium capitellatum Gray (range wolleyhead-parsnip)							C	339	O/F
VALERIANACEAE									
Valeriana sitchensis Bong. (Sitka valerian)							R	221, 308	O/F
VIOLACEAE									
Viola glabella Nutt. (wood violet)	C	A	R	R				49, 226	O/F
Viola sheltonii Torr. (Shelton violet)	R							22	O/F

LITERATURE CITED

Daubenmire, R.
1968. Plant communities, a textbook of plant synecology. 300 p. Harper and Row, New York.

Dennis, L. R. J.
1959. A taxonomic study of the vascular flora of Ashland Peak, Jackson County, Oregon. M. A. thesis. Oreg. State Univ., Corvallis, 144 p.

Franklin, J. F.
1970. Research Natural Areas in the Pacific Northwest. Mazama 52(13):30-34.

Franklin, J. F., and C. T. Dyrness.
1973. Natural vegetation of Oregon and Washington. USDA For. Serv. Gen. Tech. Rep. PNW-8, 417 p., illus. Pac. Northwest For. and Range Exp. Stn., Portland, Oreg.

Franklin, J. F., C. T. Dyrness, and W. H. Moir.
1970. A reconnaissance method of forest site classification. Shinrin Richi 12:1-14 (with Japanese summary).

Franklin, J. F., F. C. Hall, C. T. Dyrness, and C. Maser.
1972. Federal Research Natural Areas in Oregon and Washington. Pac. Northwest For. and Range Exp. Stn., USDA For. Serv. Portland, Oreg.

Garrison, G. A., J. M. Skovlin, C. E. Poulton, and A. H. Winward.
1976. Northwest plant names and symbols for ecosystem inventory and analysis. 4th ed. USDA For. Serv. Gen. Tech. Rep. PNW-46, 263 p. Pac. Northwest For. and Range Exp. Stn., Portland, Oreg.

Hall, F. C.
1978. Pacific Northwest ecoclass vegetation identification, concepts and codes. USDA For. Serv. Pac. Northwest Reg., R-6 Reg. Guide 1-3.

Hitchcock, C. L., and A. Cronquist.
1973. Flora of the Pacific Northwest. Univ. Wash. Press, Seattle.

Mitchell, R. J.
1972. An analysis of the vegetation of Abbott Creek Natural Area, Oregon. Ph. D. thesis. Oreg. State Univ., Corvallis.

Mitchell, R. J., and W. Moir.
1976. Vegetation of the Abbott Creek Research Natural Area, Oregon. Northwest Sci. 50(1):42-58.

Moir, W. H.
1972. Natural areas. Science 177(4047):396-400.

Peck, M. E.
1961. A manual of the higher plants of Oregon. 2d ed. 936 p. Binford and Mort, Portland, Oreg.

Power, W. E., and G. H. Simonson.
1969. Oregon long range requirements for water. General soils map report with irrigable areas - Rogue Drainage Basin. Portland, Oreg. (State Water Resour. Board, 1-15). 4 p.

Whittaker, R. H.
1960. Vegetation of the Siskiyou Mountains, Oregon and California. Ecol. Monogr. 30:279-338.

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.

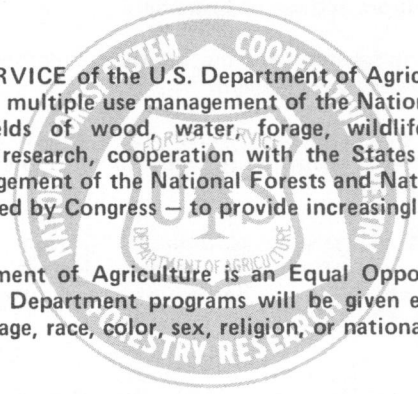
2. Developing and evaluating alternative methods and levels of resource management.

3. Achieving 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 are made available promptly. Project headquarters are at:

Anchorage, Alaska
Fairbanks, Alaska
Juneau, Alaska
Bend, Oregon
Corvallis, Oregon
La Grande, Oregon
Portland, Oregon
Olympia, Washington
Seattle, Washington
Wenatchee, Washington

Mailing address: Pacific Northwest Forest and Range Experiment Station
809 N.E. 6th Ave.
Portland, Oregon 97232



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.

The U.S. Department of Agriculture is an Equal Opportunity Employer. Applicants for all Department programs will be given equal consideration without regard to age, race, color, sex, religion, or national origin.