Major Indicator Shrubs and Herbs on National Forests of Eastern Oregon

By

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Hitchcock et al. 1977. Vascular Plants of the Pacific Northwest.

Abrams, L. and R. Ferris. 1980. Illustrated Flora of the Pacific States Washington, Oregon, and California.

Bailey, L. H. 1966. Manual of Cultivated Plants.

INTRODUCTION

General Discussion

A number of plant association guides have appeared in recent years describing both forest and non-forested lands in eastern Oregon (Driscoll, 1964; Hall, 1973; Volland, 1982; Hopkins, 1979a,-b; Hopkins, 1983; Johnson, 1984). These plant association guides characterize lands administered largely by the USDA Forest Service. The main purpose of these guides is to provide resource managers an ecological basis for making management decisions. These guides present not only diagnostic floristics but also describe the physical setting and soils for the various associations. Generally, three major life forms are used to reference a given plant association. The major tree(s), shrub(s), and herb(s) provide a three-part naming convention that is unique to a specific ecological setting. Through intensive field work and subsequent statistical analysis, a number of shrubs and herbs have been found to reference or indicate a specific or restrictive ecological condition i.e., plant association. Therefore, the presence of certain INDICATOR plant(s) on a given site may aid in either association recognition or in the identification of site characteristics, i.e., high elevation, wet, dry, cold, disturbed, etc.

This field aid has been developed to provide a nontechnical reference for the identification of major indicator species found in described plant associations of eastern Oregon. Only forested sites administered by the USDA Forest Service east of the crest of the Oregon Cascades are referenced. The plants presented here have been selected as the most common shrubs and herbs referred to in the various plant association guides. Coniferous trees have been excluded. The majority of the plants described here are perennial. A short description, general indicator characteristics, and both a line drawing and color photograph is presented for each plant.

The plants presented here are arranged alphabetically by scientific name and are divided into 1) shrubs, 2) herbs, and 3) grasses and grass-like plants.

It is commonly recognized that site disturbance will change the percent canopy cover of both shrubs and herbs. Therefore, in the absence of guides which address successional flora, a knowledge of the reaction of native vegetation to management is beneficial. Generally, most shrubs increase in either plants per acre or percent canopy cover if trees are removed, while some herbs decrease and others increase following removal of woody vegetation. Most grasses and sedges increase markedly in either canopy cover or plants per acre when profuse sunlight is allowed to reach the forest floor.

Organization of Species Characteristics

Name: The most widely accepted common name appears at the heading on each page. Under the common name the proper scientific name appears. The alpha numeric code is also listed, following Garrison, et al., 1976.

Range: Describes the geographic limits in which a given species occurs.

Indicator Value: A description of the general biological setting in which each plant occurs is provided with emphasis on either specific site conditions and/or plant reaction to management. For many species, an indication of relative site productivity which could be expected in terms of timber production has been provided. Further description of this information is portrayed in Table 1 and Figure 1.

Palatability: An important consideration for all vegetation is the apparent palatability expressed for a given plant species by livestock and wildlife. The abundance of a plant in a given area can be greatly influenced by its apparent palatability. More careful examination of the site may be necessary in order to recognize the occurrence of those species which are highly palatable and preferred by livestock and wildlife.

Fire Sensitivity: The use of fire as a vegetation manipulation tool is becoming more prevalent. Vegetative reaction to fire has to be understood if fire is to be successfully applied. Three major characteristics are presented in this guide and follow the format outlined by Volland and Dell, 1981.

1) Mode – the mechanism by which a plant species regenerates in response to treatment, i.e., through scarification of seed or fruit (exposure to heat) versus a vegetative mechanism such as underground stem sprouting.

2) Post Fire Regeneration Period – (Based on number of years required for the species to approximate preburn frequency, or coverage):

Slow	<10 years
Moderate	5-10 years
Rapid	2-5 years
Very Rapid	1-2 years

3) Degree of Fire Resistance – (Probability that at least 50% of the species population will survive or reestablish after passage of a fire with an average flame length of 12 inches):

Resistant	>65% Chance
Moderate	35-64% Chance
Susceptible	10-34% Chance
Very Susceptible	10% Chance

Cultural Significance: Considerable interest has developed in recent years in regard to either economic or domestic uses of native vegetation. Indian and pioneer uses have been outlined where information exists. IT MUST BE EMPHASIZED THAT THE USES OUTLINED IN THIS GUIDE HAVE BEEN DERIVED FROM THE LITERATURE CITED AND NOT ALL HAVE BEEN TESTED BY THE AUTHORS.

Description: A nontechnical description is provided dealing with stature, bark characteristics, leaves, flowers, and fruits. The description is enhanced by a color plate found on the front of each page and a line drawing which is found on the back.

Table 1. The tree species below are divided into two broad groups for the purpose of recognizing relative site quality. The seven productivity classes recognized follow the Forest Survey Handbook 4813.1 (1967), paragraph 48.2, chapter 40. This table provides the user with a means of identifying relative site quality in relation to timber production. In terms of comparative timber producing site capability, a medium site for the pine group (50 - 85 ft^3/acre/year) is equal to only a very low site potential for the true fir group.

True fir Group westside Douglas-fir, western hemlock, grand fir/white fir, Pacific silver fir, Shasta red fir	Productivity (ft^3/acre/year) FSH Code	Pine Group eastside Douglas-fir, ponderosa pine, subalpine fir, lodgepole pine, mountain hemlock
Very High	1	
High	2	
Medium	3	Very High
Low	4	High
Very Low	5	Medium
	6	Low
	7	Very Low

Species List by Scientific Name – Shrubs

SCIENTIFIC NAME	ALPHA CODE	COMMON NAME
Acer circinatum	ACCI	Vine maple
Acer glabrum	ACGL	Rockymountain maple
Amelanchier alnifolia alnifolia	AMALA	Saskatoon serviceberry
Arctostaphylos nevadensis	ARNE	Pinemat manzanita
Arctostaphylos patula	ARPA	Greenleaf manzanita
Arctostaphylos uva-ursi	ARUV	Bearberry
Artemisia arbuscula	ARAR	Low sagebrush
Artemisia rigida	ARRI	Ridged sagebrush
Artemisia tridentata	ARTR	Big sagebrush
Artemisia tridentata vaseyana	ARTRV	Subalpine sagebrush
Berberis aquifolium	BEAQ	Tall Oregon grape
Berberis nervosa	BENE	Oregon grape
Berberis repens	BERE	Creeping hollygrape
Castanopsis chrysophylla	CACH	Golden chinquapin
Ceanothus prostratus	CEPR	Squawcarpet
Ceanothus velutinus	CEVE	Snowbrush
Cercocarpus ledifolius	CELE	Curlleaf mountain-mahogany
Chimaphila umbellata	CHUM	Prince's pine
Cornus nuttallii	CONU	Pacific dogwood
Corylus cornuta	COCO2	California hazel
Haplopappus bloomeri	HABL	Rabbitbrush goldenweed
Holodiscus discolor	HODI	Ocean-spray
Lonicera caerulea	LOCA3	Fly honeysuckle
Lonicera conjugialis	LOCO	Purpleflower honeysuckle
Lonicera involucrata	LOIN	Bearberry honeysuckle
Pachistima mysinites	PAMY	Oregon boxwood
Physocarpus malvaceus	PHMA	Mallow ninebark
Purshia tridentata	PUTR	Bitterbrush
Ribes cereum	RICE	Squaw currant
Ribes lacustre	RILA	Prickly currant
Ribes viscosissimum	RIVI	Sticky currant
Rosa gymnocarpa	ROGY	Baldhip rose
Rubus parviflorus	RUPA	Thimbleberry
Salix scouleriana	SASC	Scouler willow
Spiraea betulifolia	SPBE	White spirea
Spiraea douglasii menzensii	SPDOM	Menzies spirea
Symphoricarpos albus	SYAL	Snowberry
Symphoricarpos mollis	SYMO	Trailing snowberry
Vaccinium caespitosum	VACA	Dwarf huckleberry
Vaccinium membranaceum	VAME	Big huckleberry
Vaccinium occidentale	VAOC2	Westernbog blueberry
Vaccinium scoparium	VASC	Grouse huckleberry

Species List by Common Name – Shrubs

COMMON NAME	ALPHA CODE	SCIENTIFIC NAME
Baldhip rose	ROGY	*Rose gymnocarpa*
Bearberry	ARUV	*Arctostaphylos uva-ursi*
Bearberry honeysuckle	LOIN	*Lonicera involucrata*
Big huckleberry	VAME	*Vaccinium membranaceum*
Big sagebrush	ARTR	*Artemisia tridentata*
Bitterbrush	PUTR	*Purshia tridentata*
California hazel	COCO2	*Corylus cornuta*
Creeping hollygrape	BERE	*Berberis repens*
Curlleaf mountain-mahogany	CELE	*Cercocarpus ledifolius*
Dwarf huckleberry	VACA	*Vaccinium caespitosum*
Fly honeysuckle	LOCA3	*Lonicera caerulea*
Golden chinquapin	CACH	*Castanopsis chrysophylla*
Greenleaf manzanita	ARPA	*Arctostaphylos patula*
Grouse huckleberry	VASC	*Vaccinium scoparium*
Low sagebrush	ARAR	*Artemisia arbuscula*
Mallow ninebark	PHMA	*Physocarpus malvaceus*
Menzies spirea	SPDOM	*Spiraea douglasii menziesii*
Ocean-spray	HODI	*Holodiscus discolor*
Oregon boxwood	PAMY	*Pachistima myrsinites*
Oregon grape	BENE	*Berberis nervosa*
Pacific dogwood	CONU	*Cornus nuttallii*
Pinemat manzanita	ARNE	*Arctostaphylos nevadensis*
Prickly currant	RILA	*Ribes lacustre*
Prince's pine	CHUM	*Chimaphila umbellata*
Purpleflower honeysuckle	LOCO	*Lonicera conjugialis*
Rabbitbrush goldenweed	HABL	*Haplopappus bloomeri*
Ridged sagebrush	ARRI	*Artemisia rigida*
Rockymountain maple	ACGL	*Acer glabrum*
Saskatoon serviceberry	AMALA	*Amelanchier alnifolia alnifolia*
Scouler willow	SASC	*Salix scouleriana*
Snowberry	SYAL	*Symphoricarpos albus*
Snowbrush	CEVE	*Ceanothus velutinus*
Squaw currant	RICE	*Ribes cereum*
Squawcarpet	CEPR	*Ceanothus prostratus*
Sticky currant	RIVI	*Ribes viscosissimum*
Subalpine sagebrush	ARTRV	*Artemisia tridentata vaseyana*
Tall Oregon grape	BEAQ	*Berberis aquifolium*
Thimbleberry	RUPA	*Rubus parviflorus*
Trailing snowberry	SYMO	*Symphoricarpos mollis*
Vine maple	ACCI	*Acer circinatum*
Westernbog blueberry	VAOC2	*Vaccinium occidentale*
White spirea	SPBE	*Spiraea betulifolia*

Species List by Scientific Name – Herbs

SCIENTIFIC NAME	ALPHA CODE	COMMON NAME
Achillea millefolium	ACMI	Western yarrow
Achlys triphylla	ACTR	Vanilla leaf
Anemone oregana	ANOR	Oregon anemone
Anemone piperi	ANPI	Piper's anemone
Arenaria kingii	ARKI	King's sandwort
Arenaria macrophylla	ARMA3	Bigleaf sandwort
Arnica cordifolia	ARCO	Heartleaf arnica
Arnica latifolia	ARLA	Broadlead arnica
Aster conspicuus	ASCO	Showy aster
Balsamorhiza sagittata	BASA	Arrowleaf balsamroot
Cirsium vulgare	CIVU	Bull thistle
Clintonia uniflora	CLUN	Queenscup beadlily
Disporum trachycarpum	DITR	Fairybells
Fragaria virginiana	FRVI	Strawberry
Goodyera oblongifolia	GOOB	Western rattlesnake-plantain
Hieracium albertinum	HIAL2	Yellow hairy hawkweed
Hieracium albiflorum	HIAL	White hawkweed
Lathyrus lanszwertii	LALA2	Thickleaf peavine
Linanthastrum nuttallii	LINU	Linanthastrum
Linneae borealis	LIBO2	Twinflower
Lupinus albicaulis	LUAL	Pine lupine
Lupinus argenteus	LUAR3	Silvery lupine
Lupinus caudatus	LUCA	Tailcup lupine
Mitella stauropetala	MIST2	Side-flowered mitella
Osmorhiza chilensis	OSCH	Mountain sweetroot
Penstemon euglaucus	PEEU	Glaucus penstemon
Penstemon laetus	PELA	Gay penstemon
Polemonium pulcherrimum	POPU	Skunk-leaved polemonium
Pteridium aquilinum	PTAQ	Bracken fern
Pyrola secunda	PYSE	Sidebells pyrola
Smilacina racemosa	SMRA	Feather solomonplume
Smilacina stellata	SMST	Starry solomonplume
Stellaria jamesiana	STJA	Tuber starwort
Thalictrum occidentale	THOC	Western meadowrue
Trientalis latifolia	TRLA2	Western starflower
Wyethia amplexicaulis	WYAM	Mules ear wyethia
Wyethia helianthoides	WYHE	White-head wyethia
Wyethia mollis	WYMO	Woolly wyethia
Xerophyllum tenax	XETE	Beargrass

Species List by Common Name - Herbs

COMMON NAME	ALPHA CODE	SCIENTIFIC NAME
Arrowleaf balsamroot	BASA	*Balsamorhiza sagittata*
Beargrass	XETE	*Xerophyllum tenax*
Bigleaf sandwort	ARMA3	*Arenaria macrophylla*
Bracken fern	PTAQ	*Pteridium aquilinum*
Broadleaf arnica	ARLA	*Arnica latifolia*
Bull thistle	CIVU	*Cirsium vulgare*
Fairybells	DITR	*Disporum trachycarpum*
Feather solomonplume	SMRA	*Smilacina racemosa*
Gay penstemon	PELA	*Penstemon laetus*
Glaucous penstemon	PEEU	*Penstemon euglaucus*
Heartleaf arnica	ARCO	*Arnica cordifolia*
King's sandwort	ARKI	*Arenaria kingii*
Linanthastrum	LINU	*Linanthastrum nuttallii*
Mountain sweetroot	OSCH	*Osmorhiza chilensis*
Mules ear wyethia	WYAM	*Wyethia amplexicaulis*
Oregon anemone	ANOR	*Anemone oregana*
Pine lupine	LUAL	*Lupinus albicaulis*
Piper's anemone	ANPI	*Anemone piperi*
Queenscup beadlily	CLUN	*Clintonia uniflora*
Showy aster	ASCO	*Aster conspicuus*
Side-flowered mitella	MIST2	*Mitella stauropetala*
Sidebells pyrola	PYSE	*Pyrola secunda*
Silvery lupine	LUAR3	*Lupinus argenteus*
Skunk-leaved polemonium	POPU	*Polemonium pulcherrimum*
Starry solomonplume	SMST	*Smilacina stellata*
Strawberry	FRVI	*Fragaria virginiana*
Tailcup lupine	LUCA	*Lupinus caudatus*
Thickleaf peavine	LALA2	*Lathyrus lanzwertii*
Tuber starwort	STJA	*Stellaria jamesiana*
Twinflower	LIBO2	*Linnaea borealis*
Vanilla leaf	ACTR	*Achlys triphylla*
Western meadowrue	THOC	*Thalictrum occidentale*
Western rattlesnake-plantain	GOOB	*Goodyera oblongifolia*
Western starflower	TRLA2	*Trientalis latifolia*
Western yarrow	ACMI	*Achillea millefolium*
White hawkweed	HIAL	*Hieracium albiflorum*
White-head wyethia	WYHE	*Wyethia helianthoides*
Woolly wyethia	WYMO	*Wyethia mollis*
Yellow hawkweed	HIAL2	*Hieracium albertinum*

Species List by Scientific Name – Grasses and Grass-like

SCIENTIFIC NAME	ALPHA CODE	COMMON NAME
Agropyron spicatum	AGSP	Bluebunch wheatgrass
Bromus carinatus	BRCA	California brome
Bromus tectorum	BRTE	Cheatgrass brome
Bromus vulgaris	BRVU	Columbia brome
Calamagrostis inexpansa	CAIN	Northern reedgrass
Calamagrostis rubescens	CARU	Pinegrass
Carex concinnoides	CACO	Northwestern sedge
Carex geyeri	CAGE	Elk sedge
Carex nebraskensis	CANE	Nebraska sedge
Carex pensylvanica	CAPE5	Long-stolon sedge
Carex rossii	CARO	Ross sedge
Elymus glaucus	ELGL	Blue wildrye
Festuca idahoensis	FEID	Idaho fescue
Festuca occidentalis	FEOC	Western fescue
Luzula campestris multiflora	LUCAM	Common woodrush
Luzula hitchcockii	LUHI	Smooth woodrush
Poa nervosa	PONE	Wheeler's bluegrass
Poa sandbergii	POSA3	Sandberg's bluegrass
Sitanion hystrix	SIHY	Bottlebrush squirreltail
Stipa occidentalis	STOC	Western needlegrass

Species List by Common Name – Grasses and Grass-like

COMMON NAME	ALPHA CODE	SCIENTIFIC NAME
Blue wildrye	ELGL	*Elymus glaucus*
Bluebunch wheatgrass	AGSP	*Agropyron spicatum*
Bottlebrush squirreltail	SIHY	*Sitanion hystrix*
California brome	BRCA	*Bromus carinatus*
Cheatgrass brome	BRTE	*Bromus tectorum*
Columbia brome	BRVU	*Bromus vulgaris*
Common woodrush	LUCAM	*Luzula campestris multifloria*
Elk sedge	CAGE	*Carex geyeri*
Idaho fescue	FEID	*Festuca idahoensis*
Long-stolon sedge	CAPE5	*Carex pensylvanica*
Nebraska sedge	CANE	*Carex nebraskensis*
Northern reedgrass	CAIN	*Calamagrostis inexpansa*
Northwestern sedge	CACO	*Calamagrostis concinnoides*
Pinegrass	CARU	*Calamagrostis rubescens*
Ross sedge	CARO	*Carex rossii*
Sandberg's bluegrass	POSA3	*Poa sandbergii*
Smooth woodrush	LUHI	*Luzula hitchcockii*
Western fescue	FEOC	*Festuca occidentalis*
Western needlegrass	STOC	*Stipa occidentalis*
Wheeler's bluegrass	PONE	*Poa nervosa*

SHRUBS

Vine Maple

Acer circinatum **ACCI**

Range: Wide distribution from eastern slope of Cascades westward.

Indicator Value: High productivity sites for the true fir group, especially Douglas-fir and white fir; requires well drained soils.

Palatability: Palatable to deer and elk.

Fire Sensitivity: Mode – Regeneration from root caudex and stem buds.
Regeneration Period – Rapid.
Resistance – Moderate.

Cultural Significance: Flexible stems used in various forms by Indians, i.e., baskets, net frames, scoops, cradles, etc. Wood smoke used to cure and flavor meats.

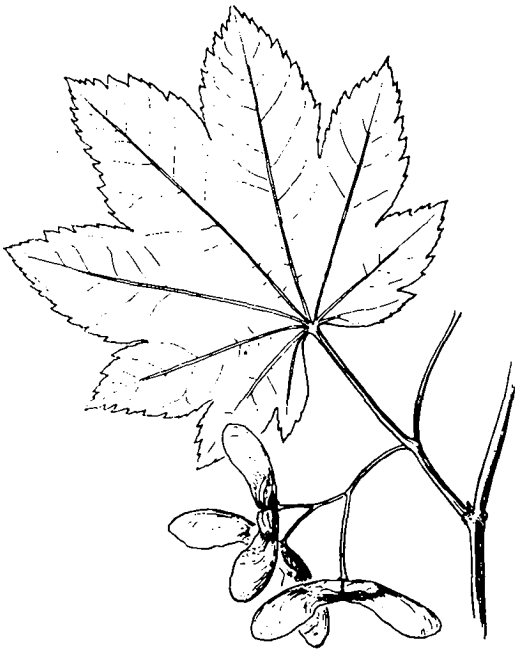
Vine Maple

Acer circinatum **ACCI**

Description: Large upright shrub or small tree to 20 feet in height; wood is very dense and hard; bark is thin, grayish to green.

Leaves: Opposite, large, circular in outline with 7 - 9 palmate lobes and finely sawtoothed margins, borne on petioles which are usually shorter than the leaf blades; deciduous.

Flowers: (May - June.) Small reddish flowers in axils of the terminal upright stems. Fruit winged, the wings widely spread.



Rockymountain Maple

Acer glabrum **ACGL**

Range: Western and eastern slopes of Cascades to Montana.

Indicator Value: High productivity sites favoring true firs.

Palatability: Moderate palatability for deer and elk.

Fire Sensitivity: Mode – Regeneration from root caudex and basal stem sprouts.
Regeneration Period – Rapid.
Resistance – Moderate.

Cultural Significance: Wood smoke used to cure and flavor meats.

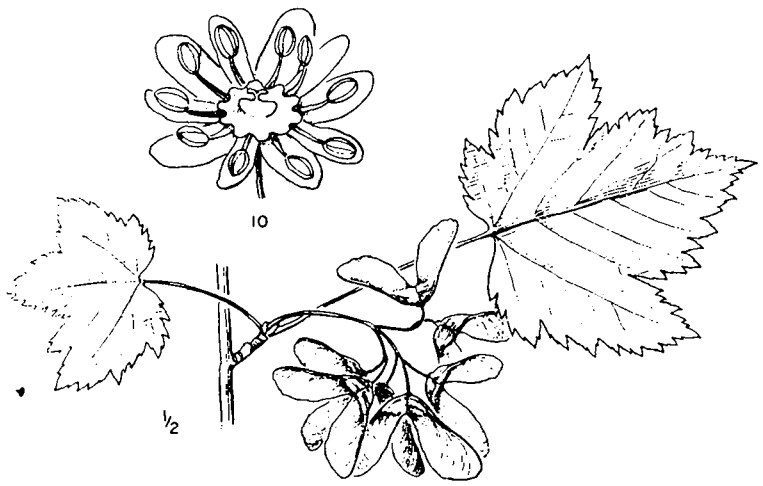
Rockymountain Maple

Acer glabrum **ACGL**

Description: Large erect shrub or small tree to 20 feet in height; bark smooth grayish-red.

Leaves: Opposite, with 3 - 5 palmate lobes and very coarse saw-toothed margins; petiole usually longer than the leaf blade; deciduous.

Flowers: (April - June.) Small yellowish flowers borne in clusters in the axils of the upright stems. Fruit winged, the wings somewhat recurved and not widely spreading.



Saskatoon Serviceberry

Amelanchier alnifolia* var. *alnifolia **AMALA**

Range: Essentially eastern Cascades, extending to Utah.

Indicator Value: Climax white fir, Douglas-fir, and ponderosa pine sites; medium productivity for both white fir and ponderosa pine.

Palatability: Highly palatable to deer, elk, and livestock.

Fire Sensitivity: Mode – Basal stem sprouting.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Berries edible raw, cooked, dried, or made into wine. Indians made arrow shafts from the straight slender shoots. A solution made from boiled inner bark was used to treat snow blindness.

Saskatoon Serviceberry

Amelanchier alnifolia* var. *alnifolia **AMALA**

Description: *Large erect shrub to 15 feet in height. Young branches* reddish brown with gray wooly hairs; older bark turning gray.

Leaves: Alternate, thin, rounded at the base and coarsely toothed above the middle; sparsely hairy above, paler beneath; deciduous.

Flowers: (April - July.) White flowers with long narrow petals, borne in a raceme. Fruit a fleshy dark purple berry.

Pinemat Manzanita

Arctostaphylos nevadensis **ARNE**

Range: Cascades, east to Blue Mountains.

Indicator Value: Upper elevations; cool to cold and moist sites; often found on rocky soils. Moderate to severe clearcut regeneration problems; especially difficult to establish white fir.

Palatability: Foliage nonpalatable, berries eaten by bears and birds.

Fire Sensitivity: Mode – Stem buds and basal stem sprouts.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Berries edible raw, cooked, made into wine; makes a good ground cover in the garden.

Pinemat Manzanita

Arctostaphylos nevadensis **ARNE**

Description: Low growing shrub, often forming dense low cushions; reddish exfoliating bark.

Leaves: Alternate, thick, evergreen; smooth margins with a distinctly sharp-pointed tip (mucronate).

Flowers: (June - July.) Urn-shaped, pure white flowers borne in small terminal clusters. Light red berry-like fruit.

Greenleaf Manzanita

Arctostaphylos patula **ARPA**

Range: Oregon Cascades, south to California and east to Colorado; mostly absent in the Blue and Wallowa Mountains.

Indicator Value: Dry southerly slopes in both ponderosa pine and mixed conifer forest lands. Often forms extensive brush fields on old burns, especially on hot dry slopes, which can cause moderate to severe clearcut regeneration problems.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Heat scarified seed.
Regeneration Period – Moderate.
Resistance – Susceptible to very susceptible for old plants, seeds resistant.

Cultural Significance: Leaves grazed by goats; berries edible; makes attractive Christmas bows; establishes easily and grows well in the garden.

Greenleaf Manzanita

Arctostaphylos patula **ARPA**

Description: Erect rigid shrub to 6 feet in height; smooth reddish bark; wood very hard and dense.

Leaves: Alternate, evergreen, smooth margins; bright green and glossy with a blunt to rounded tip.

Flowers: (May - June.) Urn-shaped, pinkish flowers borne in clusters. Black berry-like fruit.

Bearberry

Arctostaphylos uva-ursi **ARUV**

Range: Coastal California, north to Alaska; then eastward to middle Atlantic states.

Indicator Value: Generally found below 5,000' elevation in lodgepole pine and mixed-conifer forest lands. Medium to high productivity lodgepole pine sites, close proximity to ground water; cool moist mixed conifer sites in the Blue and Wallowa Mountains.

Palatability: Foliage nonpalatable, berries eaten by bears and birds.

Fire Sensitivity: Mode – Stem buds.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Berries edible raw, (better cooked), made into wine, jam, and jelly. Leaves smoked by Indians; also a source of tannin; a very common commercial ground cover for the garden.

Bearberry

Arctostaphylos uva-ursi **ARUV**

Description: Prostrate trailing shrub to 6 inches in height; reddish-brown shredding bark.

Leaves: Alternate, evergreen; smooth margins with a rounded to slightly notched (retuse) tip.

Flowers: (April - June.) Urn-shaped pinkish flowers borne in short clusters. Red berry-like fruit.

Low Sagebrush

Artemisia arbuscula **ARAR**

Range: Eastern Oregon, eastward to Wyoming and Colorado.

Indicator Value: Shallow, nonforest soils (8" - 24" depth); often with gravel and boulders on surface. When juniper and/or ponderosa pine occur, the site potential limits crown cover to less than 10 percent.

Palatability: Moderate palatability for deer.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Slow.
Resistance – Very susceptible.

Cultural Significance: Leaves boiled for tea to treat colds, diarrhea, menstrual disorders, and swellings. Hot packets steeped in boiling water applied for relief from rheumatism. Whole plant burned and smoke and fumes inhaled for heavy colds and grippe.

Low Sagebrush

Artemisia arbuscula **ARAR**

Description: Low dense shrub to 2 feet in height; twigs covered with dense gray wooly hairs.

Leaves: Alternate; lower leaves wedge-shaped, usually 3-cleft; leaves on the flowering branches usually linear and entire; retained over winter.

Flowers: (August - October.) Flower clusters borne on stiffly erect branches.

Ridged Sagebrush

Artemisia rigida **ARRI**

Range: Western Montana, westward to Washington and central Oregon.

Indicator Value: Dry flat to convex nonforest lands, often with abundant surface rock. Shallow soils; generally on more severe sites than low sagebrush; juniper may be present.

Palatability: Moderate palatability for deer and elk.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Slow.
Resistance – Very susceptible.

Cultural Significance: Leaves boiled for tea to treat colds, diarrhea, menstrual disorders, and swellings. Hot packets steeped in boiling water applied for relief from rheumatism. Whole plant burned and smoke and fumes inhaled for heavy colds and grippe.

Ridged Sagebrush

Artemisia rigida **ARRI**

Description: Rigid densely branched shrub to 2 feet in height; the erect branches slender and covered with dense wooly hairs.

Leaves: Alternate, covered with dense wooly hairs; split half their lengths into 3 - 5 linear lobes; deciduous.

Flowers: (September - October.) Borne singly or in clusters in the axils of the erect stems.

Big Sagebrush

Artemisia tridentata **ARTR**

Range: British Columbia, south to California; east to North Dakota and New Mexico.

Indicator Value: Chiefly on shrub/steppe plains and hills where grass/shrub production is good; generally deep, well drained soils. Also found in low productivity savanna conditions with ponderosa pine; shallow to deep soils; extreme regeneration problems; juniper cover can exceed 10 percent.

Palatability: Low palatability to deer.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Slow.
Resistance – Very susceptible.

Cultural Significance: Indians used plants for covering their huts and made ropes and baskets from the bark. Seeds or fruits edible fresh, dried, or pounded into a meal. Other uses probably similar to low sagebrush.

Big Sagebrush

Artemisia tridentata **ARTR**

Description: Usually erect shrub to 10 feet in height; bark loosely shredded at base; all herbaceous parts covered with dense gray wooly hairs.

Leaves: Alternate, very variable; mostly triangle-shaped and cleft, or merely toothed into 3 - 5 shallow lobes; deciduous.

Flowers: (July - September.) Abundant flower clusters on stiff erect branches.

Subalpine Sagebrush

Artemisia tridentata* var. *vaseyana **ARTRV**

Range: British Columbia, south to California; eastward to North Dakota.

Indicator Value: Upper elevations; subalpine openings and windswept ridges; very severe sites not generally suited to artificial regeneration. May enter the edge of the upper forest zone with low productivity for subalpine fir, whitebark pine, and lodgepole pine; severe regeneration problems.

Palatability: Low.

Fire Sensitivity: Mode – Seed germination, can root at branch nodes.
Regeneration Period – Slow.
Resistance – Very susceptible.

Cultural Significance: No specific uses known. Probably similar to big and low sagebrush.

Subalpine Sagebrush

Artemisia tridentata* var. *vaseyana **ARTRV**

Description: Usually erect shrub to 5 feet in height, bark loosely shredded, herbaceous parts covered with dense gray wooly hairs, leaves generally larger than on big sagebrush; tends to root where branches touch the ground.

Leaves: Alternate, very variable, mostly triangle-shaped and cleft into three to five shallow lobes; comparatively larger than those on big sagebrush; deciduous.

Flowers: (August - September.) Abundant flower clusters on stiff erect branches.

Oregon Grape
Barberry Family

Berberis aquifolium **BEAQ**
Family Berberidaceae

Range: Widespread in the Pacific Northwest.

Habitat: Low to mid-elevations on sites ranging from warm and dry to cool and moist.

Similar Species: The separation between "tall" Oregon grape *(B. aquifolium)* and "creeping" Oregon grape *(B. repens)* is not clear in much of our material. So we lump them into just Oregon grape. Most plants tend to fit B. aquifolium best; although there is considerable variation from plant to plant.

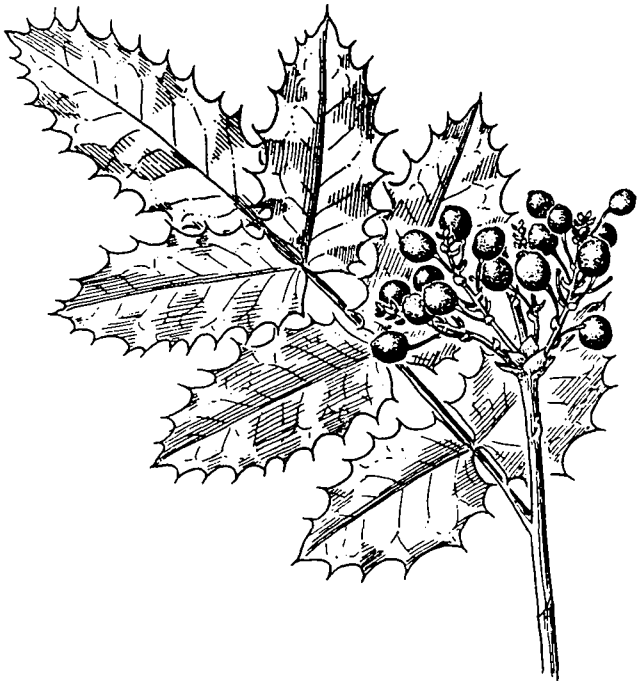
Remarks: The berries were eaten by the Indians, and the roots and bark were used for yellow dye and medicinal purposes. The berries make excellent jelly. Unpalatable. Early to mid successional.

Oregon Grape

Berberis aquifolium **BEAQ**

Habit: An evergreen, generally erect, holly-like shrub up to 3 feet tall.

Description: ***Leaves:*** evergreen, holly-like, usually shiny, with 5-9 leaflets that are twice as long as broad with spinulose-serrate to spinose margins turning shades of yellow and red before drying or in winter. ***Stems:*** stiff, with alternate branches; the inner bark is bright yellow in color. ***Flowers:*** (March-May) bright yellow and clustered. ***Fruits:*** deep blue, glaucous berries.



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Oregon Grape

Berberis nervosa **BENE**

Range: East slopes of Cascades, generally westward.

Indicator Value: Found generally on ponderosa pine to mixed conifer forest lands; mesic, well drained soils on warmer sites.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Rhizome buds.
Regeneration Period – Moderate.
Resistance – Moderate to very susceptible.

Cultural Significance: Berries edible raw, cooked, made into wine; young leaves edible; yellow dye made from roots. Tea made from the root bark used by Indians to cure stomach disorders.

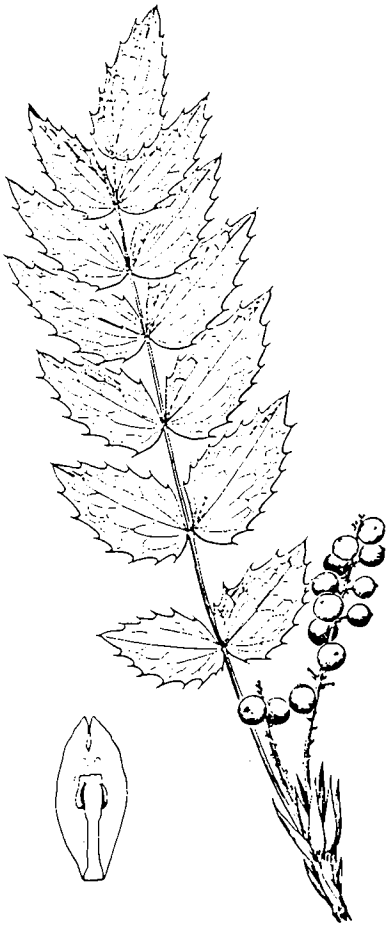
Oregon Grape

Berberis nervosa **BENE**

Description: Low, slow growing shrub to 2 feet in height with well developed rhizomes, wood yellowish.

Leaves: Evergreen, prickly, pinnately divided into 9 - 19 leaflets with well defined palmate veinations.

Flowers: (March - June.) Yellow, sometimes tinged with red. Blue berry-like fruit with a waxy white coating.



Creeping Hollygrape

Berberis repens **BERE**

Range: Eastern Washington southward, east of the Oregon Cascades; then east to Alberta, South Dakota, Texas, New Mexico, Utah, and Nevada.

Indicator Value: Widely ranging, from nonforested sites and low elevation dry ponderosa pine stands upslope to moderate elevation mixed conifer stands. Warm, dry, rocky environments with well drained soils.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Rhizome buds.
Regeneration Period – Moderate.
Resistance – Moderate to very susceptible.

Cultural Significance: Berries edible raw, cooked, made into wine; young leaves edible; yellow dye made from roots. Tea made from the root bark used by Indians to cure stomach disorders.

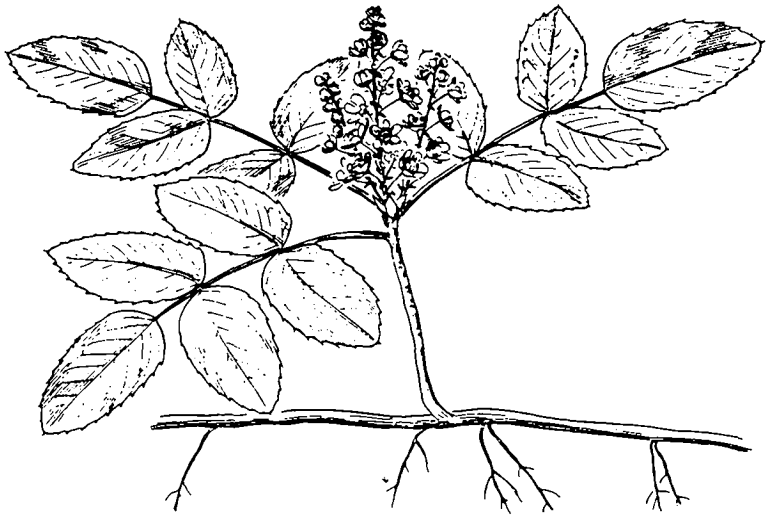
Creeping Hollygrape

Berberis repens **BERE**

Description: Low, slow-growing shrub up to 18 inches in height, with well developed rhizomes; wood yellowish.

Leaves: Evergreen, pinnately divided into 5 - 7 leaflets, with pinnate venations and 15 - 43 small inconspicuous teeth on the margins; glossy to dull on upper surface, always dull beneath.

Flowers: (March - June.) Bright yellow, borne in several clusters (racemes) 3 - 8 cm. long. Deep blue berries covered with a dusty-waxy coating.



Golden Chinquapin

Castanopsis chrysophylla **CACH**

Range: Midmountain elevations on eastern slopes of Cascades westward; but common in north central Oregon.

Indicator Value: Warm and dry forest lands, generally midelevation and higher on shallow or stony soils. Intolerant of sites where cold air accumulates. Increases with logging or burning; generally high productivity sites for ponderosa pine except at upper elevational range.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Stem sprouting and seed germination.
Regeneration Period – Rapid.
Resistance – Resistant, although the top kills easily.

Cultural Significance: Reaches commercial size in some areas. Fruits may be pounded into meal after boiling to leach out the tannin.

Golden Chinquapin

Castanopsis chrysophylla **CACH**

Description: Erect shrub, sometimes reaching tree size; bark gray and furrowed.

Leaves: Alternate, evergreen, lance-shaped; green above, golden-yellow and hairy below.

Flowers: (April - June.) Yellowish, borne in upright spikes at the apex of branches. Fruit a nut enclosed in a sharp spiny burr.

Squawcarpet

Ceanothus prostratus **CEPR**

Range: Mainly eastern slopes of the Cascades, extending westward in southern Oregon.

Indicator Value: Dry ponderosa pine to mixed conifer forest lands. Generally well-drained warm rocky sites, but may form large mats on pumice soils. Medium productivity for true fir.

Palatability: Deer graze buds and new growth. Sheep sometimes graze blossoms, fruit and new growth.

Fire Sensitivity: Mode – Regeneration from root caudex.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: Seed used as food; leaves used as tobacco and for tea. Bark and roots make an astringent and tonic.

Squawcarpet

Ceanothus prostratus **CEPR**

Description: Prostrate trailing shrub forming dark green mats.

Leaves: Opposite, evergreen with toothed margins.

Flowers: (May - July.) Bright blue to nearly white flowers borne in small clusters.

Snowbrush

Ceanothus velutinus **CEVE**

Range: Eastern slopes of Cascades and eastward.

Indicator Value: Slightly cooler sites than manzanita, grades from ponderosa pine to north slope ponderosa pine/fir forest lands. Ponderosa pine generally in succession to white fir climax; medium productivity for ponderosa pine. Indicates past fire history; able to fix nitrogen; often aggressively dominates a site after conflagration or clearcut burn treatment.

Palatability: Moderate palatability to deer and elk.

Fire Sensitivity: Mode – Both stem sprouts and heat scarified seed; seeds can remain viable for up to 120 years.
Regeneration Period – Rapid.
Resistance – Very resistant, although top kills easily.

Cultural Significance: Bark and roots make an astringent and tonic.

Snowbrush

Ceanothus velutinus **CEVE**

Description: Erect bushy shrub 6 to 12 feet in height.

Leaves: Alternate, evergreen; shiny and sticky above, velvety-hairy below; finely serrate margins, three prominent veins.

Flowers: (June - August.) Small, white, borne in large dense clusters.

Curlleaf Mountain-mahogany

Cercocarpus ledifolius **CELE**

Range: Dry hills east of the Cascades.

Indicator Value: Without trees: Generally big sagebrush/bunchgrass sites or merely bunchgrass sites. With trees: Upper slope positions where soils are either shallow or rocky; climax ponderosa pine sites of low productivity.

Palatability: Highly palatable to deer.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Slow.
Resistance – Very susceptible.

Cultural Significance: Leaves used as a tea laxative; inner bark scraped, dried, and boiled for lung trouble; all plant parts boiled to treat pneumonia; bark dried and applied (usually as a powder — sometimes as a paste) to wounds; wood very hard and used as arrow shafts and digging tools.

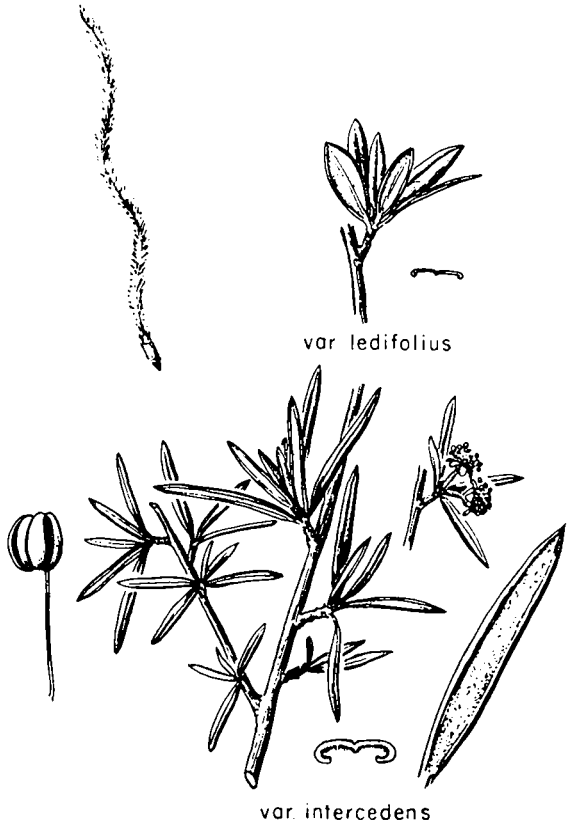
Curlleaf Mountain-mahogany

Cercocarpus ledifolius **CELE**

Description: Rigid shrub or stout tree to 8 inches in diameter; somewhat rough, furrowed bark; extremely hard, dense wood.

Leaves: Alternate, evergreen, with entire margins; stiff, shiny-green above and yellow-hairy below; edges of the leaves curl under slightly.

Flowers: (April - June.) Small greenish white axillary clusters borne on short lateral shoots. The dry fruit has a long soft hairy tail.



Prince's Pine

Chimaphila umbellata **CHUM**

Range: Alaska south to California; eastward to parts of the eastern U.S.

Indicator Value: Cool moist environments; generally mixed conifer and more mesic ponderosa pine sites; generally easy regeneration, except in upper elevation Pacific silver fir and Shasta red fir stands.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Rhizome resprouting.
Regeneration Period – Slow.
Resistance – Susceptible.

Cultural Significance: Roots and leaves boiled for drink; leaves used in medicine as an astringent; plant an ingredient in root beer.

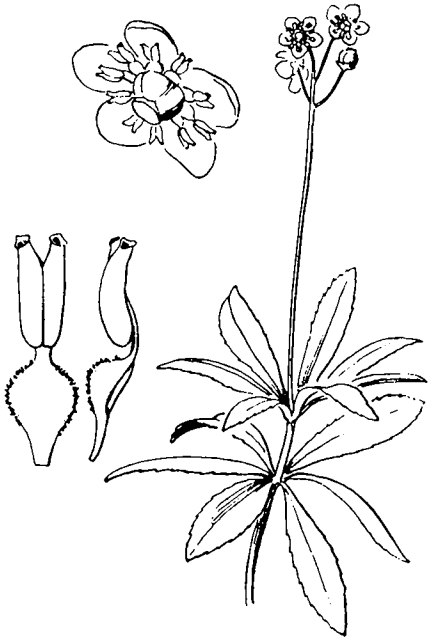
Prince's Pine

Chimaphila umbellata **CHUM**

Description: Small erect shrub, usually up to 6 inches in height.

Leaves: Evergreen, leathery, dark green; toothed margins, borne in false whorls around the stem.

Flowers: (June - August.) Pinkish, petals partly joined and spreading in a wheel-like fashion; borne in small clusters on the ends of the short upright stems.



Pacific Dogwood
Dogwood Family

Cornus nuttallii **CONU**
Family Cornaceae

Range: Coast to western slopes of the Cascades, from British Columbia south to California.

Indicator Value: Conifer forests or along forest margin; dry warm sites.

Cultural Significance: Bark boiled and used as a laxative or tonic tea; wood used for salmon harpoons. Prized ornamental, easily propagated from seed; floral emblem of British Columbia.

Pacific Dogwood

Cornus nuttallii **CONU**

Description: Small to medium sized tree, up to 60 feet in height, sometimes shrublike; smooth bark, gray to brown.

Leaves: Opposite, elliptic with abrupt sharp point; prominently veined, inconspicuous felt-like hairs on lower surface; deciduous.

Flowers: (April - June) Four to seven large white showy bracts surrounding tight clusters of small, inconspicuous flowers.

Fruit: Clusters of small, bright red fleshy fruits.

California Hazel
Birch Family

Corylus cornuta **COCO2**
Family Betulacaceae

Range: Occurs at lower elevations on both sides of the Cascades; British Columbia south to central California; widespread but sporadic distribution in North America.

Indicator Value: Low-elevation, warm sites with well-drained soils.

Cultural Significance: Nuts eaten whole or mashed with meat or berries and formed into cakes; long twigs twisted to make rope; sprouts used in basketry.

California Hazel

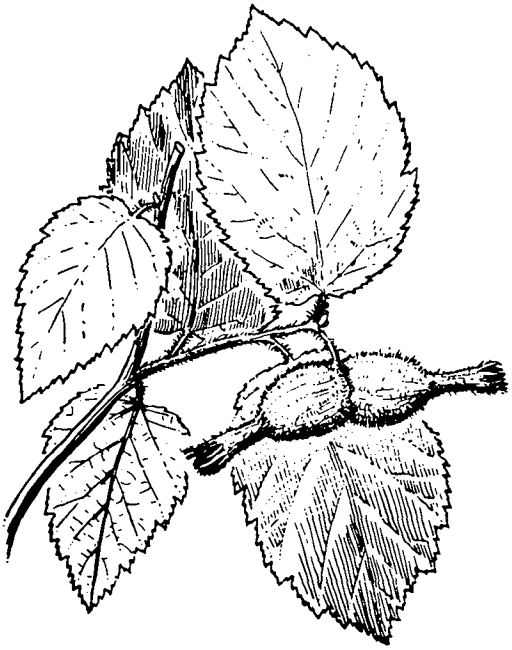
Corylus cornuta **COCO2**

Description: Tall shrub up to 15 feet in height.

Leaves: Alternate, ovate with acute tip; often soft-hairy; leaf margins jagged-toothed; deciduous.

Flowers: (January - March) Small, male and female flowers in separate drooping clusters, long and thin; wind pollinated.

Fruit: Edible nut with smooth shell (filbert or hazelnut), enclosed in sticky, hairy, green sheath, nuts often in pairs; harvested and dispersed by birds and small animals.



Rabbitbrush Goldenweed

Haplopappus bloomeri **HABL**

Range: East of the Cascades; more prevalent in southern Oregon and further south.

Indicator Value: Foothills to moderate elevations; warm dry environments. Generally associated with ponderosa and lodgepole pine forest lands of low to medium productivity; expands greatly with site disturbance from logging and burning.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Stem sprouts.
Regeneration Period – Rapid.
Resistance – Resistant.

Cultural Significance: Produces latex used by Indians as chewing gum. Leaves steeped for a tea to treat colds. Roots and tops used to treat diarrhea. Leaves, mashed minutely, were put in cavities to ease toothache.

Rabbitbrush Goldenweed

Haplopappus bloomeri **HABL**

Description: Erect or spreading shrub to 2 feet in height.

Leaves: Alternate, very numerous; narrow, linear, over 2 cm. long with gland tipped hairs; deciduous.

Flowers: (July - September.) Greenish yellow, clustered into one to several heads per branch.

Ocean-spray

Holodiscus discolor **HODI**

Range: Widespread, Oregon coast eastward to northeast Oregon.

Indicator Value: Variable, from rocky dry sites to upslope moist mixed conifer forest lands. Expands on disturbed sites. Generally associated with mixed conifer forest lands in eastern Oregon, also common with Douglas-fir/pine types in canyon lands at lower elevations in northeast Oregon.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Basal stem sprouts.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Fruit eaten raw, cooked, or dried; bark used as tea; young shoots used as arrow shafts. Indians made a tonic from the bark.

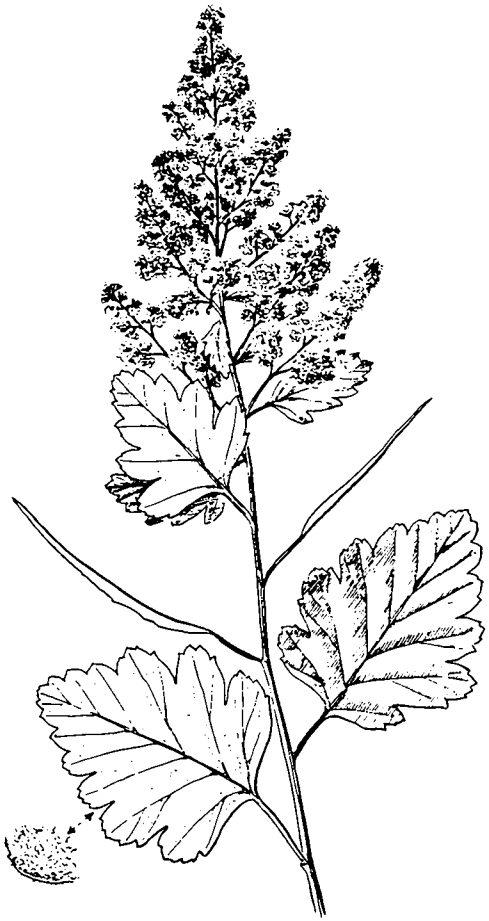
Ocean-spray

Holodiscus discolor **HODI**

Description: Erect, often clustered shrub to 9 feet in height; main stems usually small and slender.

Leaves: Alternate; toothed margins becoming almost lobed in appearance; green above, with fine whitish hairs below; deciduous.

Flowers: (June - August.) Very small, white, borne in large, dense, pyramid-shaped clusters (panicles.)



Fly Honeysuckle

Lonicera caerulea **LOCA3**

Range: Eastern slope of Cascades, eastward to Blue Mountains.

Indicator Value: Seasonally wet or imperfectly drained sites; seasonal ponding of water; often diverse site in terms of herbaceous vegetation; high productivity site for lodgepole pine.

Palatability: Moderate palatability.

Fire Sensitivity: Mode – Seed germination and root sprouts.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: Indians ate berries, although tough and tasteless. Leaves were decocted for sore throats and coughs, and also to wash sores. The oil was used for nerve spasms.

Fly Honeysuckle

Lonicera caerulea **LOCA3**

Description: Erect clustered shrub to 4 feet in height; brown shredding bark.

Leaves: Opposite; powdery appearing above, somewhat hairy below; borne on short petioles with rounded or obtuse tips; deciduous.

Flowers: (June - July.) Paired, pale yellowish, more or less joined at the base. Dark blue berries.

Purpleflower Honeysuckle

Lonicera conjugialis **LOCO**

Range: Southern Washington, south through Cascades.

Indicator Value: Imperfectly drained soils associated with either forest lands or meadow edges.

Palatability: Moderate palatability.

Fire Sensitivity: Mode – Seed germination and root sprouts.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: Indians ate berries, although tough and tasteless. Leaves were decocted for sore throats and coughs, and also to wash sores. The oil was used for nerve spasms.

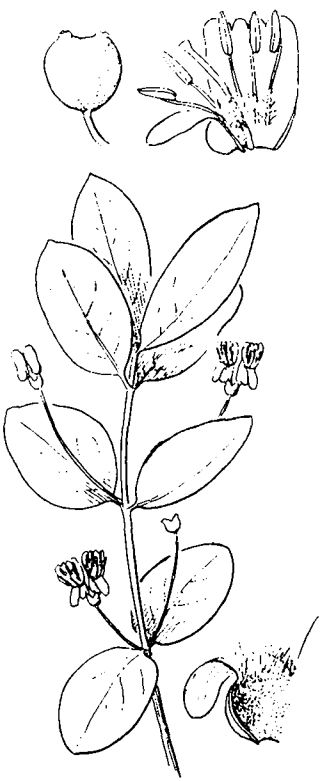
Purpleflower Honeysuckle

Lonicera conjugialis **LOCO**

Description: Bushy shrub to 5 feet in height; grayish brown bark with numerous persistent bud scales.

Leaves: Opposite, slightly hairy to smooth, borne on short petioles and coming to a slight point at the tip, deciduous.

Flowers: (June - July.) Dark red, more or less fused at the base. Dark red or blackish berries.



Bearberry Honeysuckle

Lonicera involucrata **LOIN**

Range: Alaska, south to California and eastward to Montana.

Indicator Value: Generally found on cool moist sites; edges of basalt flows.

Palatability: Foliage of moderate palatability to deer.

Fire Sensitivity: Mode – Seed germination and root sprouts.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: Indians ate berries, although tough and tasteless. Leaves were decocted for sore throats and coughs, and also to wash sores. The oil was used for nerve spasms.

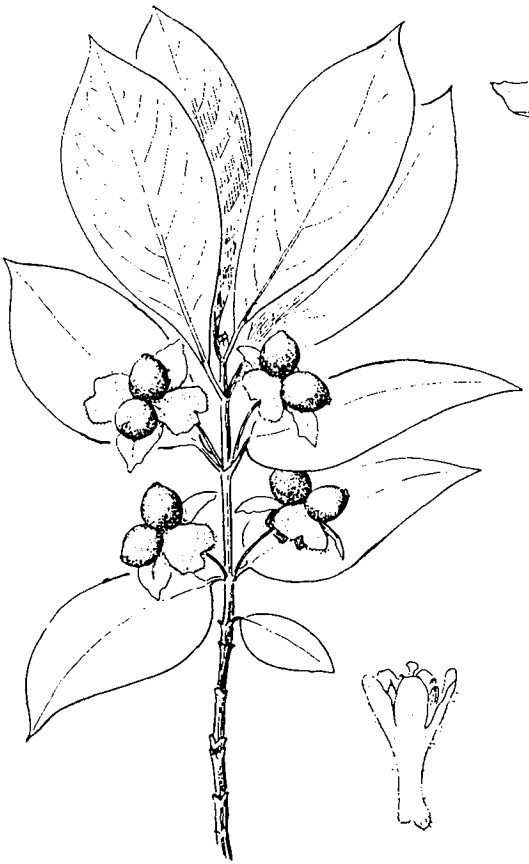
Bearberry Honeysuckle

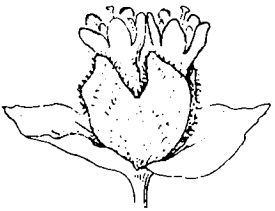
Lonicera involucrata **LOIN**

Description: Bushy shrub to 12 feet in height, tallest of the honeysuckles; peeling bark; young twigs 4-angled.

Leaves: Opposite; borne on short petioles, fairly pointed at the tips (acuminate); hairy below and on the margins; deciduous.

Flowers: (April - August.) Yellow or reddish with large red bracts at the base of each pair. Black single berries.





Oregon Boxwood

Pachistima myrsinites **PAMY**

Range: British Columbia, south to California; east to Rocky Mountains.

Indicator Value: Midelevations, found with true firs, Douglas-fir and in Englemann spruce belts; fairly moist to moist sandy or moist gravelly loams on northern slopes.

Palatability: Highly palatable to deer and elk.

Fire Sensitivity: Mode – Stem budding and seed germination. Seeds may remain viable for decades.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Reputed to be a remedy for kidney and rheumatic disorders. Excellent ornamental in the garden; source of boxwood hedges.

Oregon Boxwood

Pachistima myrsinites **PAMY**

Description: Small, shiny, abundantly branched shrub to 3 feet in height; twigs are distinctly 4-angled.

Leaves: Opposite, evergreen, glossy; very small, with abundantly serrated margins.

Flowers: (April - June.) Very small, reddish to purplish, borne in small clusters between the leaves and stem.

Mallow Ninebark

Physocarpus malvaceus **PHMA**

Range: Blue, Wallowa, and Steens Mountains to Washington and Rocky Mountains.

Indicator Value: Canyon bottoms and rocky hillsides to forest lands with ponderosa pine and/or Douglas-fir being dominant. Often found on non-forest sites; increases with ground disturbance; medium productivity for pine and east side Douglas-fir; regeneration problems associated with clearcuts.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Regenerates from basal sprouts.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Roots used in decoction employed for fomenting and poulticing.

Mallow Ninebark

Physocarpus malvaceus **PHMA**

Description: Erect shrub to 6 feet in height; grayish brown heavily exfoliating bark.

Leaves: Alternate, almost circular in outline, with three shallow palmate lobes, turns red in fall; deciduous.

Flowers: (June - July.) Small, white, borne in fairly flat-topped clusters (corymbs).

Bitterbrush

Purshia tridentata **PUTR**

Range: British Columbia, southward along eastern side of Cascades to Blue and Wallowa mountains.

Indicator Value: Without trees: Shrub/steppe to juniper/shrub/steppe. Good forage producing site for bunchgrass; often key big game winter range.

With trees: Low productivity ponderosa and lodgepole pine sites; often rather shallow stony soil; moderate to difficult regeneration problems; warm dry environments; intolerant of cold air accumulation or imperfectly drained soils.

Palatability: Moderately to highly palatable to livestock, deer, and elk.

Fire Sensitivity: Mode – Seed germination and root caudex regrowth.
Regeneration Period – Rapid to slow.
Resistance – Very susceptible to moderate.

Cultural Significance: Plant used as a remedy for a variety of disorders. Ripe seed coats can be cooked to make a violet dye.

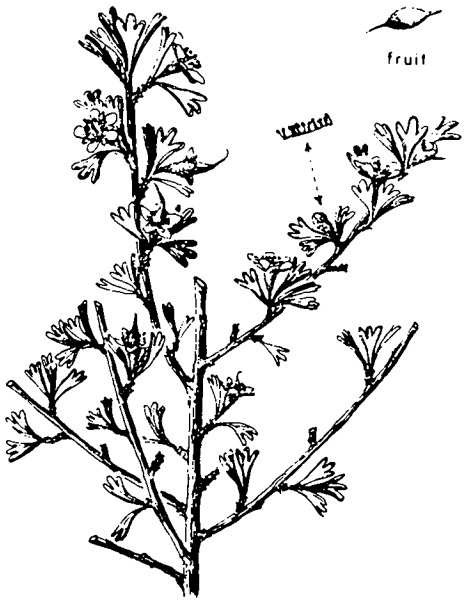
Bitterbrush

Purshia tridentata **PUTR**

Description: Erect, rigid, abundantly branched shrub to 6 feet in height; often grazed into a round compact shape; rough dark bark.

Leaves: Alternate; wedge-shaped with three deep lobes at the tip, the middle lobe rounded; white hairs below, slightly hairy or no hairs above; deciduous.

Flowers: (April - June.) Pale yellow, borne singly on very short lateral twigs.



Squaw Currant

Ribes cereum **RICE**

Range: Eastern slopes of Cascades, eastward to Montana.

Indicator Value: Widely ranging from deep flat soils to high elevation rocky sites. Medium productivity for ponderosa pine, only low to very low productivity for true fir; increases in clearcuts following burning.

Palatability: Foliage of low palatability.

Fire Sensitivity: Mode – Heat scarified seed; basal stem sprouts.
Regeneration Period – Rapid.
Resistance – Moderate.

Cultural Significance: Berries edible; used by some Indians for stomach problems; alternate host for white pine blister rust.

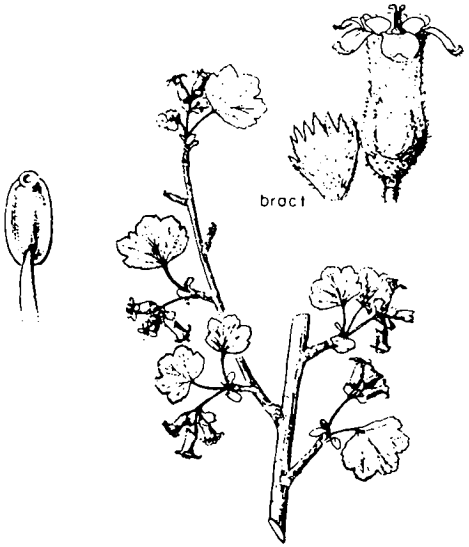
Squaw Currant

Ribes cereum **RICE**

Description: Stiff, erect shrub to 5 feet in height; light gray bark; not armed with spines.

Leaves: Alternate, small, with 3 - 5 palmate lobes; mostly hairy above, slightly hairy below; petioles almost as long as the leaf blades; deciduous.

Flowers: (April - June.) Bell-shaped, white or greenish, borne in drooping clusters. Bright red berries.



Prickly Currant

Currant or Gooseberry Family

Ribes lacustre **RILA**

Family Grossulariaceae

Range: Widespread in North America.

Habitat: Cool-cold and wet environments at upper elevations. Indicates moist to very wet sites.

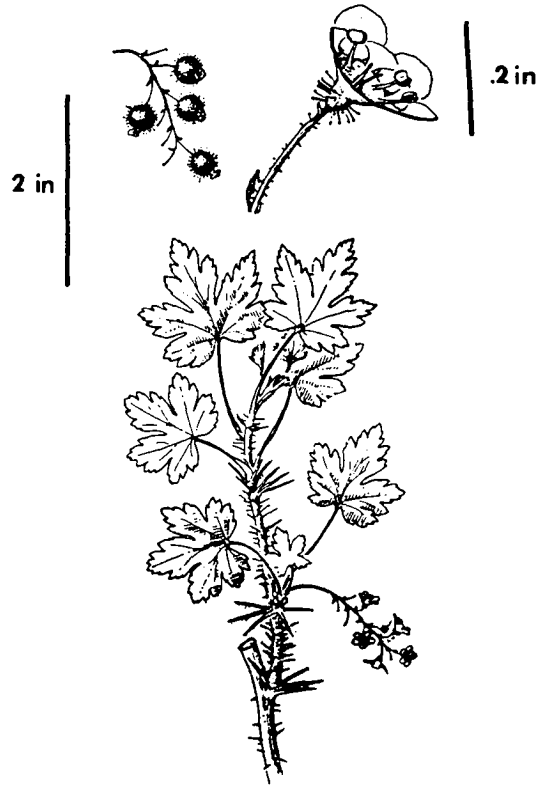
Remarks: Prickly currant is our most common currant but does not extend to lower elevation sites. An alternate host for white pine blister rust. The fruits are relatively palatable (?). Indians gathered the fruits and used the dried stems to make a peppermint flavored tea for colds and diarrhea. Another common name is swamp currant. Unpalatable. Mid to late successional.

Prickly Currant

Ribes lacustre **RILA**

Habit: An erect to spreading, prickly, deciduous shrub; 3 to 7 feet tall.

Description: ***Leaves:*** alternate, 1 to 2 inches wide, 5-lobed and maple-leaf shaped. ***Stems:*** with many sharp, slender prickles and larger nodal spines. ***Flowers:*** (April-July) with reddish petals. ***Fruits:*** small, dark purple berries covered with glandular hairs.



Sticky Currant

Ribes viscosissimum **RIVI**

Range: Midelevation Cascades and Blue Mountains.

Indicator Value: Mainly on upper elevation mixed conifer forest lands. Common invader in white fir clearcuts, tending to replace big huckleberry; may cause regeneration problems.

Palatability: Nonpalatable to livestock.

Fire Sensitivity: Mode – Basal stem sprouting; heat scarified seed, may remain viable in forest floor for many years.
Regeneration Period – Rapid.
Resistance – Moderate.

Cultural Significance: Berries edible raw or cooked; alternate host for white pine blister rust.

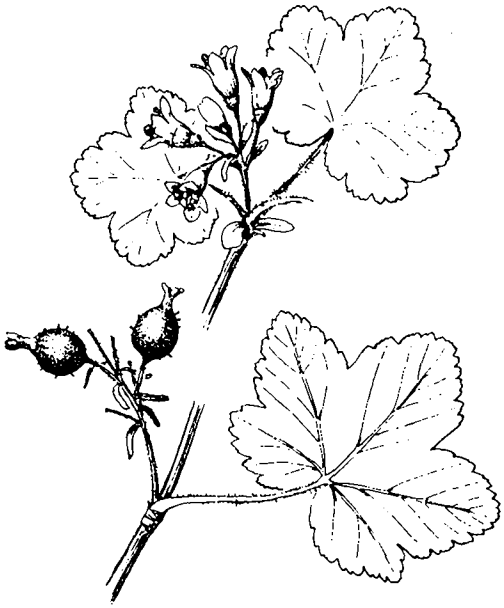
Sticky Currant

Ribes viscosissimum **RIVI**

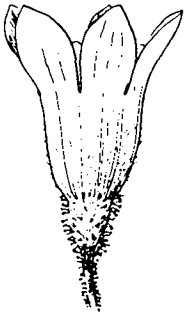
Description: Spreading bush to 5 feet in height; not armed with spines.

Leaves: Alternate, with 3 - 5 unevenly toothed palmate lobes; covered on both surfaces with gland-tipped hairs; paler below, petioles shorter than the leaf blades; deciduous.

Flowers: (May - June.) Bell-shaped, greenish white to pinkish, borne in erect clusters. Black glandular berries.



var. hallii



Baldhip Rose

Rosa gymnocarpa **ROGY**

Range: Southern British Columbia and northwest Montana to Cascades, then south to Sierra Nevada.

Indicator Value: Generally found on mixed conifer forest lands; moderate to easy regeneration; cool, moist environment.

Palatability: Low palatability for mule deer; used by sheep.

Fire Sensitivity: Mode – Basal stem sprouts.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Fruit edible raw or cooked; used as a flavoring in wine; important source of vitamin C; petals used in salads; leaves as tea; stems used for arrows and pipe stems by Indians.

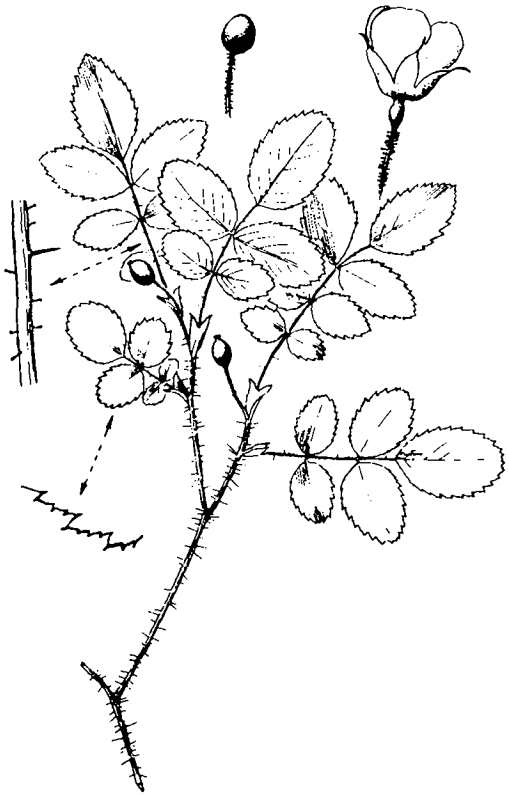
Baldhip Rose

Rosa gymnocarpa **ROGY**

Description: Erect, slender stemmed shrub to 5 feet in height; generally covered with single, straight, needle-like prickles.

Leaves: Alternate, pinnately divided into 5 - 9 small thin leaflets; deciduous.

Flowers: (June - July.) Small, usually solitary, pink with white bases. Smooth fruits, bright red, pear-shaped.



Thimbleberry
Rose Family

Rubus parviflorus **RUPA**
Family Rosaceae

Range: Alaska to California to the Great Lakes and New Mexico.

Habitat: Moist, warm to cool environments at mid elevations.

Similar Species: Not easily confused with any other species.

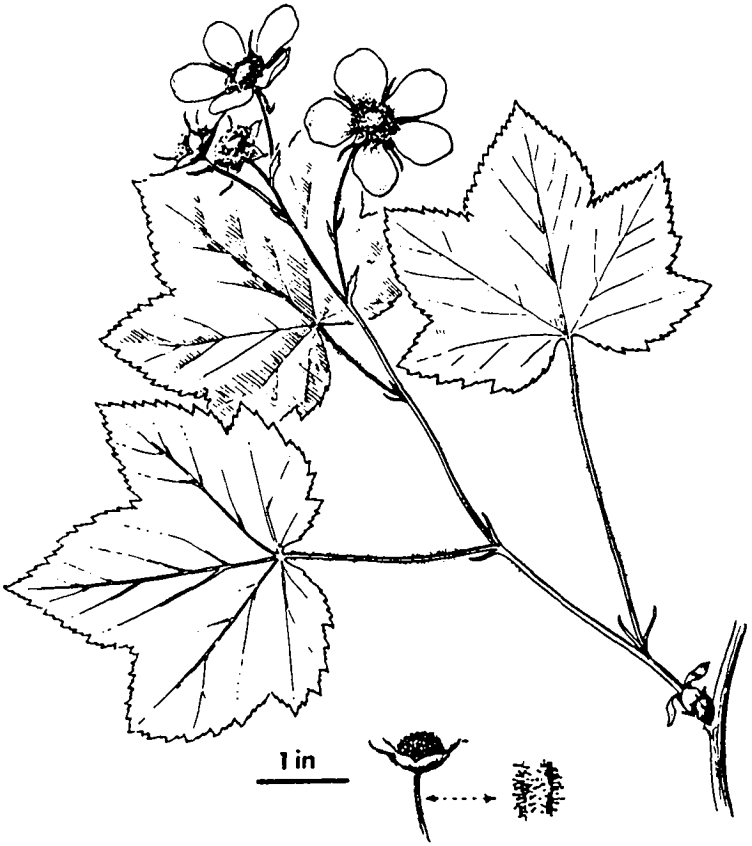
Remarks: Berries were eaten fresh by the Indians and the leaves and roots were used to treat acne. Low palatability. Early to mid successional.

Thimbleberry

Rubus parviflorus **RUPA**

Habit: An erect, deciduous shrub, 2 to 7 feet tall.

Description: ***Leaves:*** alternate, best described as large, soft, and fuzzy; 2 to 6 inches across, normally 5-lobed and doubly dentate-serrate. They may occasionally be glabrous. ***Stems:*** mature stems are gray-brown with shredding bark. ***Flowers:*** (May-July) large, white in terminal clusters of 3-11 on glandular-hairy stalks. ***Fruits:*** bright red, thimble-shaped "berries" (drupelets).



Scouler Willow
Willow Family

Salix scouleriana **SASC**
Family Salicaceae

Range: Widespread in western North America.

Habitat: A mid elevation species of all but the driest Douglas-fir sites. Found on open hillsides and not restricted to riparian or wet habitats.

Similar Species: Easily confused with other willow species but the spatula shaped leaves and upland environment make it easily recognized. Willows are exceedingly difficult to identify but most grow in much wetter environments than those typical of Scouler willow.

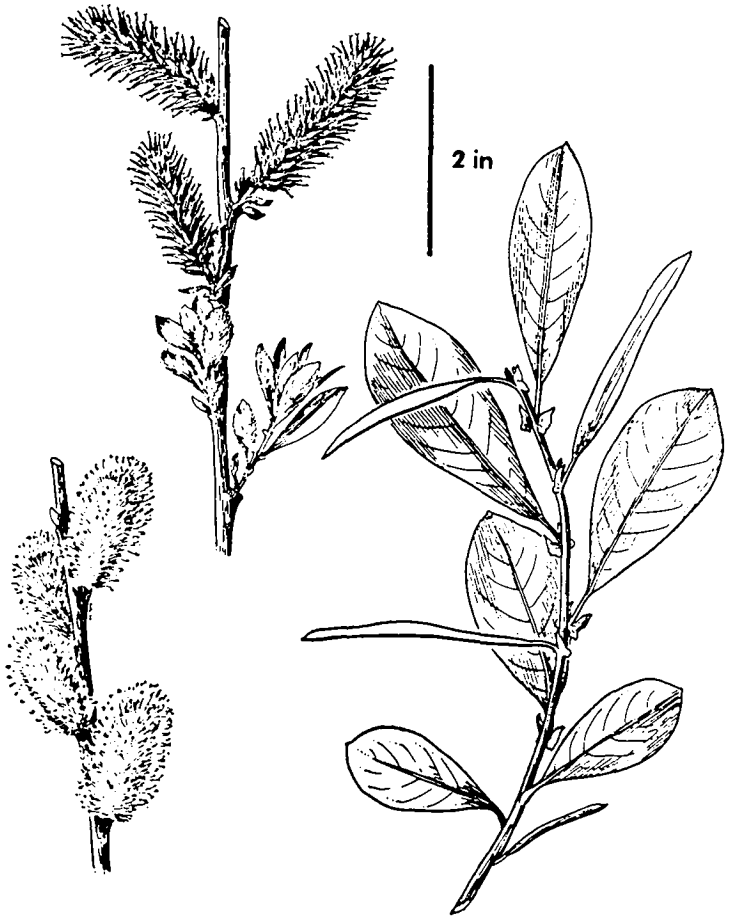
Remarks: Willow branches were commonly used by Indians for implements requiring flexible material (e.g. fish traps, basket hoops, canoe frames). The inner bark applied directly to injuries speeds healing. Willows contain salicylic acid which is used much like its derivative, aspirin (acetylsalicylic acid). Highly palatable, especially to deer. Early successional.

Scouler Willow

Salix scouleriana **SASC**

Habit: A tall, deciduous shrub or small tree; 7 to 30 feet tall.

Description: ***Leaves:*** alternate, entire and spatulate. Mature leaves are dark green and glabrous above while glaucous with reddish hairs below. They are pointed to blunt (most common). Younger leaves may be lighter in color and larger in size. ***Stems:*** twigs are sparsely to densely gray-hairy and the catkins appear before the leaves. Older bark on larger stems may be somewhat wrinkled and shredding. ***Flowers:*** (March-June) small, inconspicuous catkins and fuzzy "pussy willows". ***Fruits:*** capsules.



White Spirea

Spiraea betulifolia **SPBE**

Range: British Columbia southward to northeast Oregon.

Indicator Value: Stream banks and lake margins to open forest lands; often in rocky sites with Douglas-fir. Common in pinegrass types indicating better producing sites for ponderosa pine and fir; increases with heavy livestock use - tends to slow forage production.

Palatability: Low palatability.

Fire Sensitivity: Mode – Basal stem sprouts and rhizomes.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Flowers, stems, and leaves steeped for tea; roots boiled for diarrhea and venereal disease.

White Spirea

Spiraea betulifolia **SPBE**

Description: Low spreading shrub sending up erect leafy stems to 2 feet in height; long woody rootstocks are common.

Leaves: Alternate, smooth; dark green above, paler below; leaf base rounded, with entire margin; coarsely toothed (doubly serrate) margin above the middle; deciduous.

Flowers: (June - July.) Minute white flowers borne in an upright, flat-topped cluster (corymb).

Menzies Spirea

Spiraea douglasii* var. *menziesii **SPDOM**

Range: Eastern slopes of Cascades, eastward to Idaho.

Indicator Value: Wet bottom lands with lodgepole pine; close proximity of ground water; sites seasonally flooded; high productivity for lodgepole pine.

Palatability: Low palatability.

Fire Sensitivity: Mode – Basal stem sprouts and rhizomes.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Flowers, stems, and leaves steeped for tea; roots boiled for diarrhea and venereal disease.

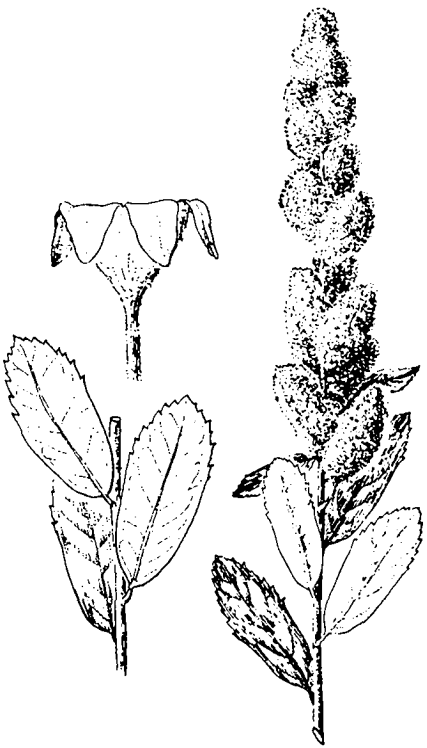
Menzies Spirea

Spiraea douglasii* var. *menziesii **SPDOM**

Description: Erect clustered stems to 6 feet in height; reddish bark; stems usually straight and slender.

Leaves: Alternate; smooth above, may be slightly hairy below; rounded base with a toothed (serrate) margin above the middle; deciduous.

Flowers: (June - August.) Minute, rose-colored flowers borne in dense, slender, erect clusters (corymbs).



Snowberry

Symphoricarpos albus **SYAL**

Range: Alaska south to California, widespread throughout eastern Oregon.

Indicator Value: A better forest site than the other herbaceous vegetation suggests, generally one productivity class above the average; moderate regeneration problems. In nonforest land suggests deep soils. Warm to cool dry environments.

Palatability: Moderate palatability to deer and sheep.

Fire Sensitivity: Mode – Basal stem sprouts.
Regeneration Period – Rapid.
Resistance – Resistant.

Cultural Significance: Berries edible raw or cooked; leaves contain saponin, a poisonous drug. Fruits used as a tonic. Steeped roots used to treat coughs.

Snowberry

Symphoricarpos albus **SYAL**

Description: Erect, branching shrub to 4 feet in height; slender smooth brownish stems; does not produce a milky latex when broken; stems hollow.

Leaves: Opposite, thin; paler below, varying in shape on the same plant from entire to deeply lobed; deciduous.

Flowers: (May - June.) White or pinkish, borne in small compact clusters on the ends or sides of the stems. White pulpy berries.

Trailing Snowberry/Snowberry
Honeysuckle Family

Symphoricarpos mollis/Symphoricarpos albus **SYMO/SYAL**
Family Caprifoliaceae

Range: Primarily in the western Cascades, coast ranges and western Sierra Nevada, from British Columbia to southern California, east to northern Idaho and southeastern Washington; snowberry has a wider distribution in North America, including Alaska, and extends east to the Atlantic as well.

Indicator Value: Both species occur on warm, dry slopes and in open forests, often with well-drained soils; trailing snowberry is generally low montane, snowberry is more common at lower elevations.

Cultural Significance: Snowberries were eaten but not favored; dried for winter use; used on hair as a soap; berries and leaves mashed and applied as poultice to cuts, skin sores or sore runny eyes; tea from bark used as a remedy for tuberculosis and venereal disease; brew made from boiling entire plant drunk as a physic; arrowshafts and pipestems made from stems.

(Photo shows snowberry)

Trailing Snowberry/Snowberry

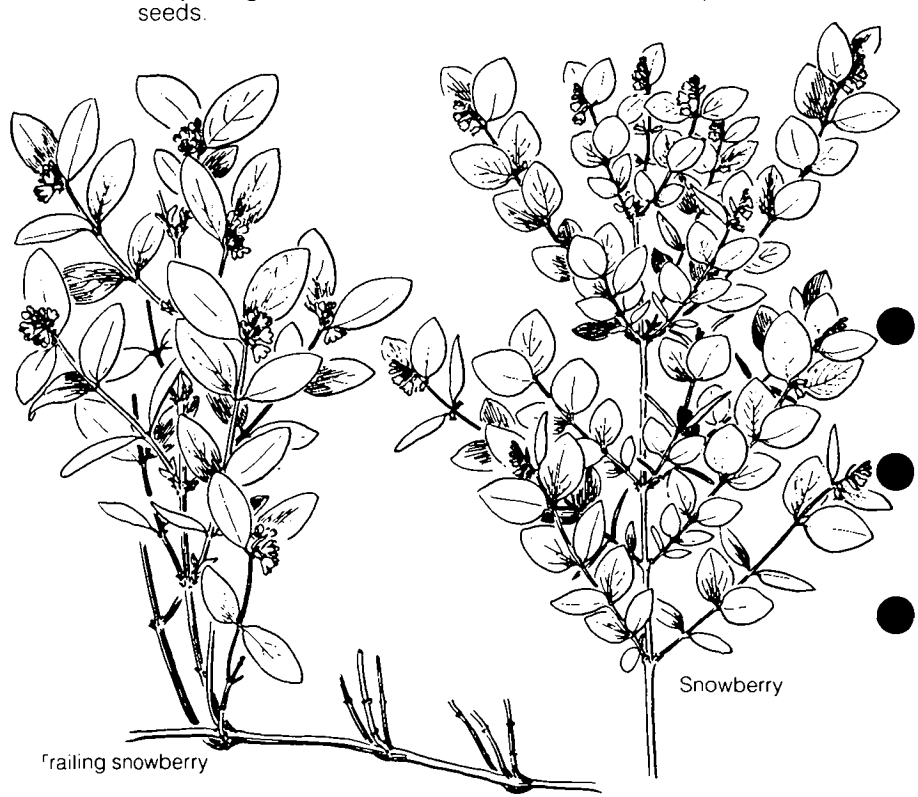
Symphoricarpos mollis/Symphoricarpos albus **SYMO/SYAL**

Description: Trailing snowberry is a trailing shrub, usually less than 2 feet in height; snowberry is very similar but is an erect shrub and up to 6 feet in height. Both species have grayish-brown, shredding bark, young stems that are reddish-brown, slender branches, and a hollow pith.

Leaves: Opposite, oval or elliptic, inconspicuously hairy on underside, margins usually entire, though often irregularly lobed; leaves of snowberry are generally larger (1 - 2½ inches) than trailing snowberry.

Flowers: (June - July for trailing snowberry, May - August for snowberry). Pink, bell-shaped, small (about ¼ inch for trailing snowberry, but larger -- ¼ to ½ inch in snowberry); five petals fused to form short tube; several borne in terminal cluster.

Fruit: Small, white berries (¼ to ½ inch for snowberry), round, waxy, in tight clusters; birds feed on berries and disperse the seeds.



Dwarf Huckleberry

Vaccinium caespitosum **VACA**

Range: Alaska to California, eastward to Rocky Mountains.

Indicator Value: Meadows and mountain slopes; common with lodgepole pine and Englemann spruce; imperfectly drained acid soils.

Palatability: Low palatability.

Fire Sensitivity: Mode – Basal stem sprouts, seed germination.
Regeneration Period – Moderate
Resistance – Resistant.

Cultural Significance: Berries edible raw, cooked, or made into wine.

Dwarf Huckleberry

Vaccinium caespitosum **VACA**

Description: Rigid, low, spreading shrub to 18 inches in height; young twigs green, older twigs gray with peeling bark; stems only slightly angled.

Leaves: Alternate, thin, bright green and shiny; finely toothed (serrulate) above the middle, stongly veined below; deciduous.

Flowers: (May - June.) Narrowly urn-shaped, white or pinkish, borne singly. Small dark purple berries with a waxy coating.

Big Huckleberry

Vaccinium membranaceum **VAME**

Range: British Columbia to Northern California on both sides of Cascades, and eastward to Montana.

Indicator Value: Upper elevation forested sites, composed of mountain hemlock and lodgepole pine in Oregon Cascades and white fir and subalpine fir in Blue and Wallowa Mountains. Cool, moist sites with acidity in soils. Defines sites for true fir potential in Blue and Wallowa Mountains.

Palatability: Nonpalatable to livestock.

Fire Sensitivity: Mode – Basal stem sprouts and seed germination.
Regeneration Period – Rapid.
Resistance – Resistant.

Cultural Significance: Berries excellent raw, cooked, or made into wine.

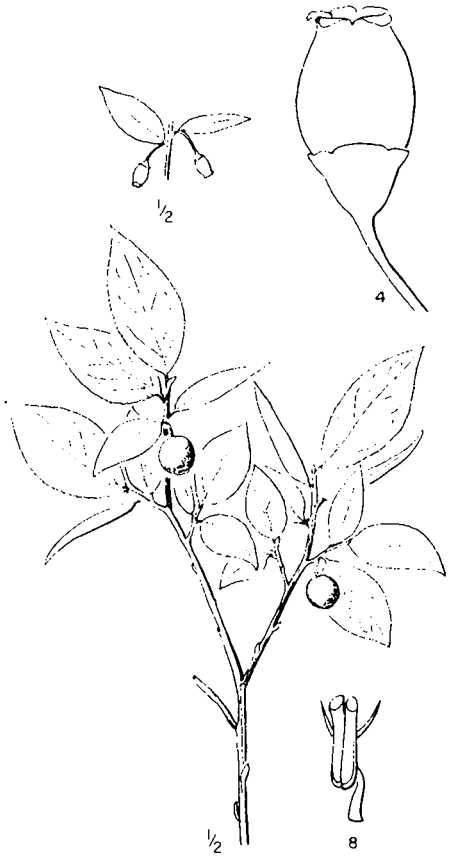
Big Huckleberry

Vaccinium membranaceum **VAME**

Description: Erect or spreading shrub to 30 inches in height; young twigs slightly angled, with greenish bark; older bark gray and shredding.

Leaves: Alternate, generally oval-shaped; paler below, somewhat long-pointed tips (acuminate); finely toothed (serrulate) for nearly the entire margin; deciduous.

Flowers: (April - June.) Urn-shaped, pinkish, nearly spherical in shape, borne singly from the leaf and stem junction. Fruit a rather large dark purplish berry.



Westernbog Blueberry

Vaccinium occidentale **VAOC2**

Range: British Columbia south, mostly on the east side of the Cascades, to Sierra Nevada.

Indicator Value: Generally found on wet sites with perennial water. Vegetationally diverse sites; tree growth better than average on higher microsites where the tree roots are out of water. Found in lodgepole pine stands on the periphery of wet meadows.

Palatability: Low palatability for wildlife.

Fire Sensitivity: Mode – Basal stem sprouts.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Berries edible raw, cooked, or made into wine.

Westernbog Blueberry

Vaccinium occidentale **VAOC2**

Description: Low erect shrub to 2 feet in height; branchlets are slightly angled.

Leaves: Alternate; thin with entire margins; somewhat covered with a dusty, waxy coating; deciduous.

Flowers: (June - July.) Urn-shaped, white to pinkish, usually solitary, sometimes in twos. Blue-black berries with a waxy coating.

Grouse Huckleberry

Vaccinium scoparium **VASC**

Range: British Columbia, south to California, then eastward to Idaho and the Rocky Mountains.

Indicator Value: Found with lodgepole pine, subalpine fir, Shasta red fir, and mountain hemlock at high elevations, or in areas of cold air accumulation; also found with white fir in the Blue and Wallowa Mountains; tree regeneration difficult; high snowpack areas.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Basal stem sprouts, seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Berries edible raw, cooked, or made into wine.

Grouse Huckleberry

Vaccinium scoparium **VASC**

Description: Low dwarf shrub to 10 inches in height; branches green and sharply angled.

Leaves: Alternate, very small and narrow; finely toothed (serrulate); deciduous.

Flowers: (May - August.) Urn-shaped, pinkish. Pale to deep red berries.

HERBS

Western Yarrow

Achillea millefolium **ACMI**

Range: Widespread in western U.S.

Indicator Value: Wide ranging species from grasslands through moderate elevation mixed conifer stands; often increases with site disturbance or overgrazing.

Palatability: Moderate palatability; flowering heads used by deer, elk and sheep.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate to resistant.

Cultural Significance: Entire plant dried, ground and decocted to make a remedy for run-down condition or to improve digestion; leaves used to stop bleeding and heal sores; also make a pleasant smoke.

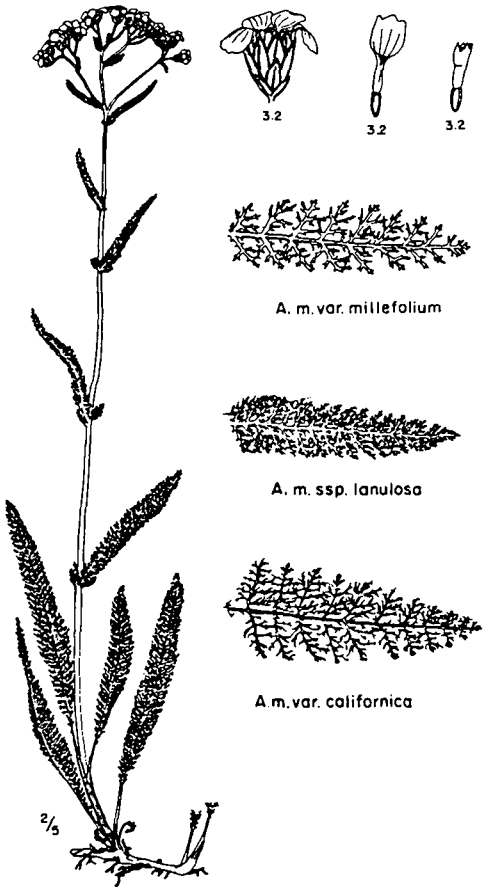
Western Yarrow

Achillea millefolium **ACMI**

Description: Perennial herb to 24 inches in height, often arising from well developed rhizomes; very aromatic.

Leaves: Alternate, fern-like (pinnately dissected); the lower leaves borne on petioles, the upper arising directly from the stem.

Flowers: (April - October.) White or occasionally pinkish, borne in numerous flat to round-topped, short, and broad clusters (paniculate - corymbiform).



Vanilla Leaf
Barberry Family

Achlys triphylla **ACTR**
Family Berberidaceae

Range: Cascade Mountains from British Columbia to northern California but east of the Cascades to northwest Oregon. Common on parts of the Wenatchee National Forest in our area; absent or uncommon elsewhere.

Habitat: Moist sites, often in areas where topographic moisture is available; most common in the western hemlock and silver fir series.

Similar Species: Not easily confused with any other species.

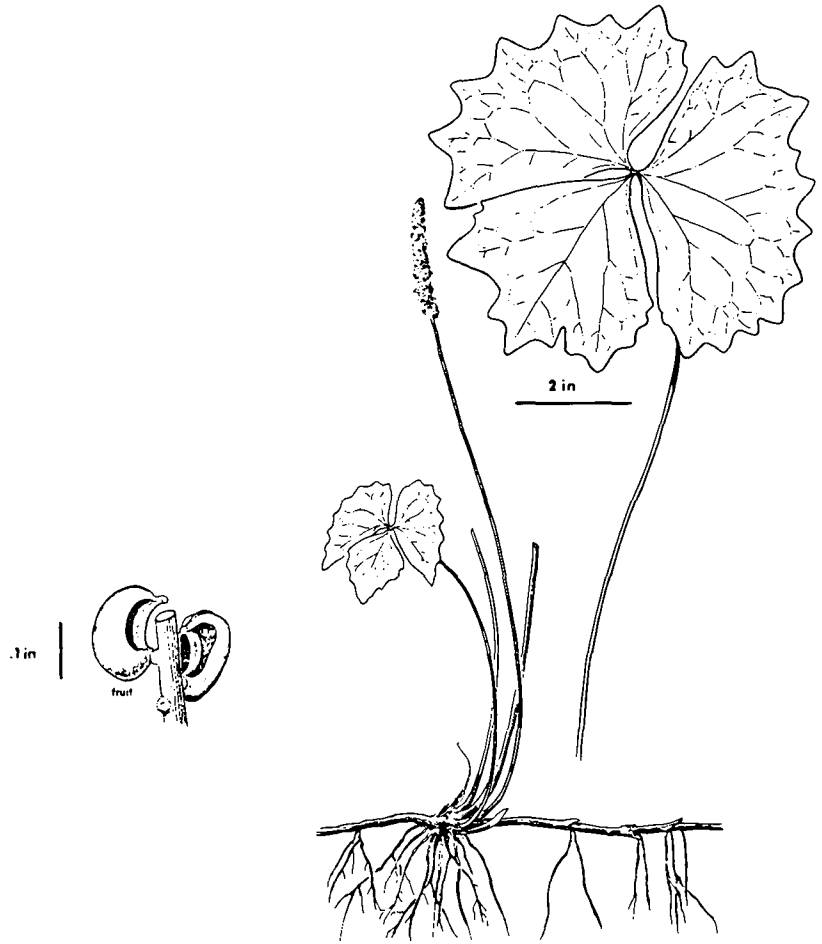
Remarks: The dried leaves have a pleasant scent. Excellent addition to the woodland garden. Indians used it for a variety of medicinal purposes and as a form of insect repellent. Palatable, elk seem to relish it. One of three genera within this family in the Northwest; the other two are Berberis and Vancouveria. Mid to late successional.

Vanilla Leaf

Achlys triphylla **ACTR**

Habit: A rhizomatous, spreading herb with horizonatally arranged leaves; to 12 inches tall.

Description: ***Leaves:*** glabrous, horizontally oriented, 3-foliate and up to 8 inches across. The petioles are 4 to 12 inches long. ***Flowers:*** (April-July) on slender scapes, 8 to 16 inches tall, and lack both calyx and corolla. ***Fruits:*** small, dry, reddish-purple, berries; clustered on the scape.



Oregon Anemone

Anemone oregana **ANOR**

Range: Washington southward, on east side of Cascades.

Indicator Value: Moist forest lands to open hillsides. High productivity site for true fir; usually vegetationally diverse; generally indicates mixed conifer sites.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Probably seeds.
Regeneration Period – Moderate.
Resistance – Very susceptible.

Cultural Significance: Roots considered of such powerful healing quality that they were used for lockjaw. Anemone ointment was also used for corroding or malignant skin ulcers.

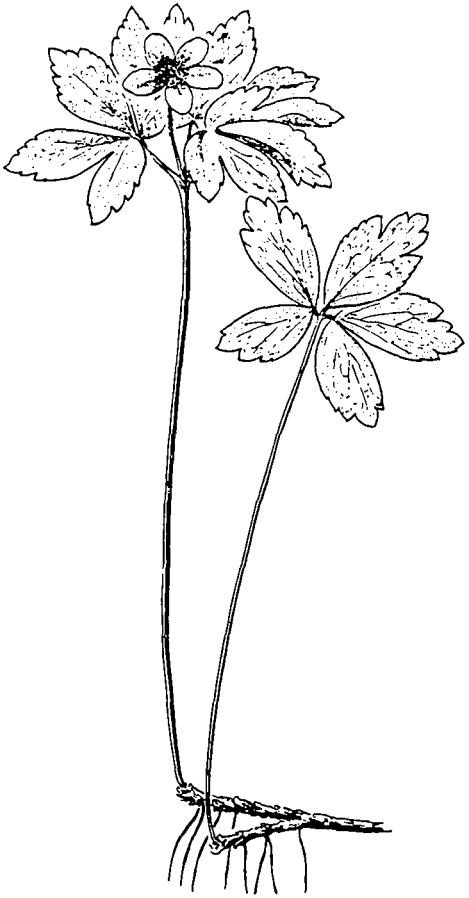
Oregon Anemone

Anemone oregana **ANOR**

Description: Perennial herb to 12 inches in height, arising from a brittle whitish horizontal rootstock.

Leaves: Basal leaves generally 2-lobed, may be lacking; upper leaves palmately 3-lobed. All are thin and soft; smooth below, hairy on the veins above, and on the margins.

Flowers: (March - June.) Solitary; petals absent; sepals petal-like, blue-purple to nearly white.



Piper's Anemone

Anemone piperi **ANPI**

Range: Blue and Wallowa Mountains in northeast Oregon.

Indicator Value: Mesic mixed conifer forest lands. Medium productivity true fir sites, easy to moderate regeneration.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Probably seeds.
Regeneration Period – Moderate.
Resistance – Very susceptible.

Cultural Significance: Roots considered of such powerful healing quality that they were used for lockjaw. Anemone ointment was also used in corroding or malignant ulcers.

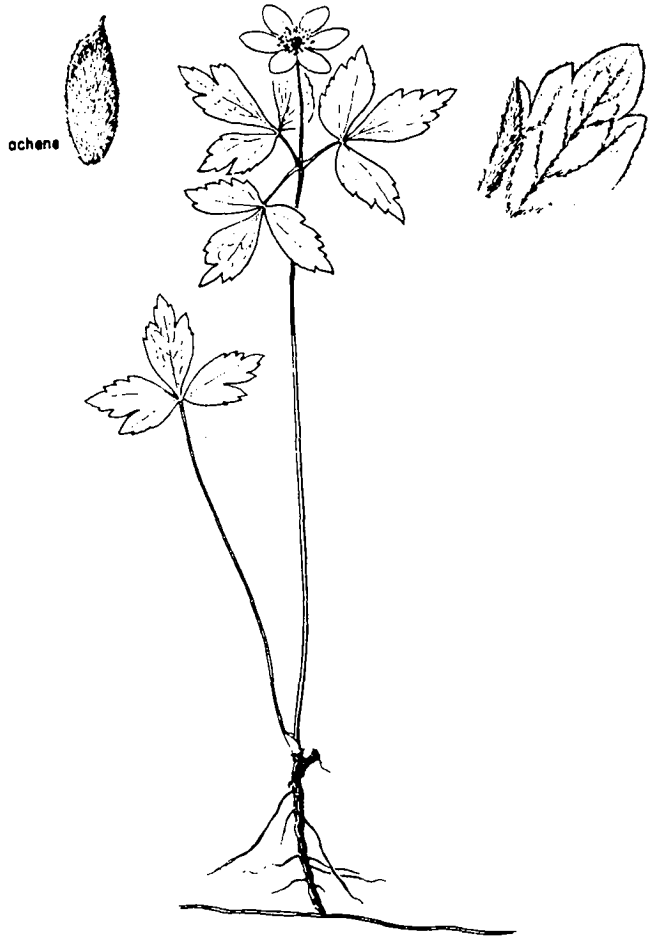
Piper's Anemone

Anemone piperi **ANPI**

Description: Perennial herb to 12 inches in height, arising from dark brown, often ascending rootstocks, which often bear whitish tubers.

Leaves: Basal leaves usually palmately 3-lobed, may be lacking; upper leaves also 3-lobed but larger. All are hairy, especially below and on the veins above; margins are coarsely serrate.

Flowers: (late April - early August.) Solitary, petals absent; sepals are petal-like, white to pinkish.



King's Sandwort

Arenaria kingii **ARKI**

Range: South central Oregon to California.

Indicator Value: High elevation (7000' +) grasslands and openings in lodgepole pine - whitebark pine stands. Usually young soils in zone of heavy snowfall; difficult regeneration.

Palatability: Flower heads only.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate
Resistance – Susceptible.

Cultural Significance: Powdered leaves make a mild smoke, also used whole plant; roots steeped and used as an eyewash and in hot poultices for swelling; whole plant steeped to treat gonorrhea.

King's Sandwort

Arenaria kingii **ARKI**

Description: Tufted perennial to 12 inches in height; usually hairy on the lower stem.

Leaves: Opposite, long and narrow, attached directly to the stem; somewhat hairy, especially on the lower leaves; strongly pungent.

Flowers: (June - August.) White to purplish-tinged, borne in open branched flower clusters (cymes).

Bigleaf Sandwort
Pink Family

Arenaria macrophylla **ARMA3**
Family Caryophyllaceae

Range: Widespread in North America.

Habitat: Most common on sites at the dry end of the grand fir series but may extend up to parts of the silver fir series.

Similar Species: May be confused with Menzies's silene *(Silene menziesii)* which has a calyx with the sepals joined into a tube and sticky starwort *(Stellaria jamesiana)* which has two-lobed petals, a glandular inflorescence and 4-angled stems.

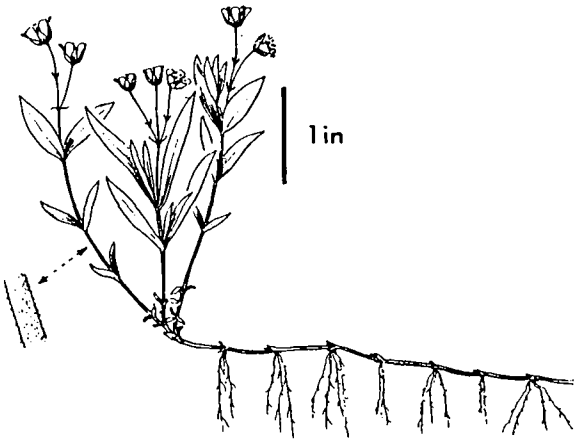
Remarks: Very common on the Wenatchee National Forest. Unpalatable. Early to mid successional.

Bigleaf Sandwort

Arenaria macrophylla **ARMA3**

Habit: A prostrate, perennial herb with slender rhizomes. Often forms loose mats.

Description: ***Leaves:*** simple, opposite, lanceolate, 1 to 2 inches long with swollen nodes. ***Stems:*** round to 4-angled, roughened, decumbent to erect and branched. ***Flowers:*** (May-August) white, 2-5, borne on long slender peduncles in terminal or lateral cymes. The sepals are pointed with roughened-ciliate margins. ***Fruits:*** round to egg-shaped 1-celled capsules.



Heartleaf Arnica

Arnica cordifolia **ARCO**

Range: Alaska to New Mexico and California, essentially east of the Cascades.

Indicator Value: Cool, dry to moist ponderosa pine and mixed conifer stands. True fir climax when found in mixed stands of ponderosa pine and true fir; increases with overgrazing; tolerant of crown closure.

Palatability: Low palatability.

Fire Sensitivity: Mode – Root stock sprouting and seed germination.
Regeneration Period – Rapid to moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Add two heaping teaspoons of flowers to a cup of boiling water, steep and apply as a cold salve to wounds or chapped lips.

Heartleaf Arnica

Arnica cordifolia **ARCO**

Description: Perennial to 1 foot in height, arising from long slender horizontal rootstocks; grows solitary or in small clusters, often found without flowers.

Leaves: Opposite; large basal leaves borne on long slender petioles; upper leaves gradually becoming attached directly to the stem. Coarsely toothed and heart-shaped (cordate), especially the lower leaves.

Flowers: (April - June.) 1 - 3 yellowish flower heads borne on long stalks.

Broadleaf Arnica
Aster Family

Arnica latifolia **ARLA**
Family Compositae

Range: Alaska to California and Colorado. A common and variable species with several varieties.

Habitat: Most often in the subalpine fir, silver fir and mountain hemlock series. Broadleaf arnica typifies cooler, more moist sites than heartleaf arnica *(A. cordifolia)*.

Similar Species: May be confused with heartleaf arnica which normally has single flower heads and small cauline leaves without petioles.

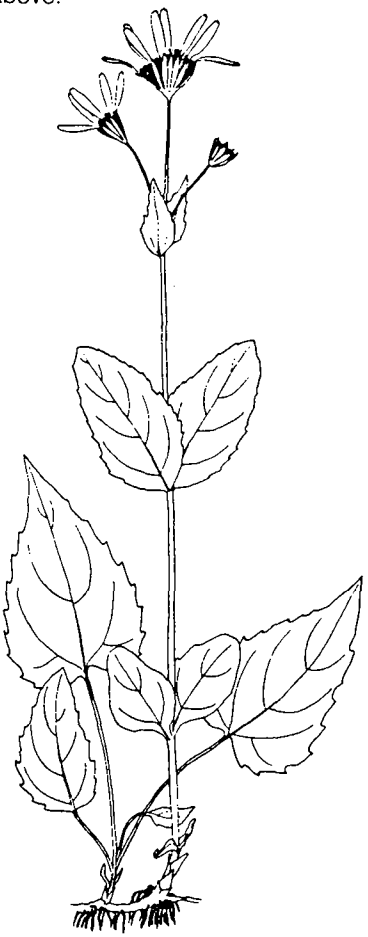
Remarks: Indians used arnica flowers for various medicinal purposes, one of which involved steeping the flower heads in water and applying the liquid to cuts and wounds. Low palatability. Mid to late successional.

Broadleaf Arnica

Arnica latifolia **ARLA**

Habit: A perennial herb; 4 to 24 inches tall from a fibrous rhizome.

Description: *Leaves:* opposite, normally glabrous to sometimes hairy, toothed, broadly lance-shaped (rarely cordate) and 1 to 6 inches long with inconspicuous venation. The middle stem leaves have no petioles but are as large as the basal leaves. *Flowers:* (June-July) yellow, usually several heads per stem, with slightly hairy to glabrous bracts. *Fruits:* achenes that are normally glabrous to slightly hairy above.



Showy Aster

Aster conspicuus **ASCO**

Range: Northeast Oregon, eastward to Wyoming and Colorado.

Indicator Value: Mostly open dry forest lands. Medium site productivity for true fir growth, moderate regeneration problems.

Palatability: Moderate palatability for deer and elk.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Stems and flowers steeped and used directly to treat rheumatism. Tea from boiled stems provides an excellent blood tonic.

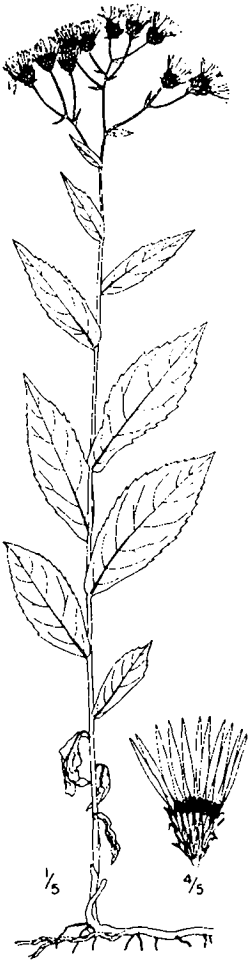
Showy Aster

Aster conspicuus **ASCO**

Description: Stout rigid perennial to 3 feet in height, arising from short woody horizontal rootstocks. Stems have minute glands and sometimes are sparsely hairy.

Leaves: Alternate, stiff, sharply toothed; attached almost directly to the stem; rough on both surfaces.

Flowers: (July - September.) Blue-violet, borne in abundant heads which are clustered into compact flat-topped groups (corymbs).



Arrowleaf Balsamroot
Aster Family

Balsamorhiza sagittata **BASA**
Family Compositae

Range: Widespread east of the Cascades to the Rocky Mountains.

Habitat: Characterizes relatively warm and dry sites on southerly aspects typically on rocky and coarse-textured soils. Found most commonly at or near the lower forest margin and indicates severe tree regeneration problems because of drought and excessive heat.

Similar Species: Easily confused with other less common balsamroots in our area; especially Carey's balsamroot *(B. careyana)*. Indicator values in forested environments are similar so the difficult taxonomic separation isn't necessary.

Remarks: The Indians used young shoots, roots and seeds for food. The seeds were ground for flour. Low in palatability: usually only the seed heads eaten. Early to mid successional.

Arrowleaf Balsamroot

Balsamorhiza sagittata **BASA**

Habit: A robust, perennial herb, 8 to 30 inches tall; with a deep-seated, woody taproot.

Description: *Leaves:* arrow-head shaped, very large, up to 12 inches long with a long petiole. They arise from a basal clump, are milky-green in color and are covered with whitish, felt-like hair. *Flowers:* (April-July) yellow, in showy, sunflower-like heads 2 to 3 inches in diameter. *Fruits:* sunflower-seed like achenes.

Bull Thistle

Cirsium vulgare **CIVU**

Range: Widely scattered in eastern Oregon.

Indicator Value: Highly variable, introduced species adapting to sites at low to midelevations. Successional species on disturbed sites; commonly dominates a site after clearcut-burn treatment; wet snow-laden leaves tend to crush young regeneration.

Palatability: Heads very palatable to game and livestock.

Fire Sensitivity: Mode – Resprout from roots, seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Roots edible cooked; peeled stems cooked as greens. Decocted roots used for diarrhea; roots mashed, boiled into a warm juice, then dropped into an aching ear. Hot, the juice was held in mouth for toothache. Powdered seed, soaked and decocted, was drunk to increase urine, and to break and expel kidney stones.

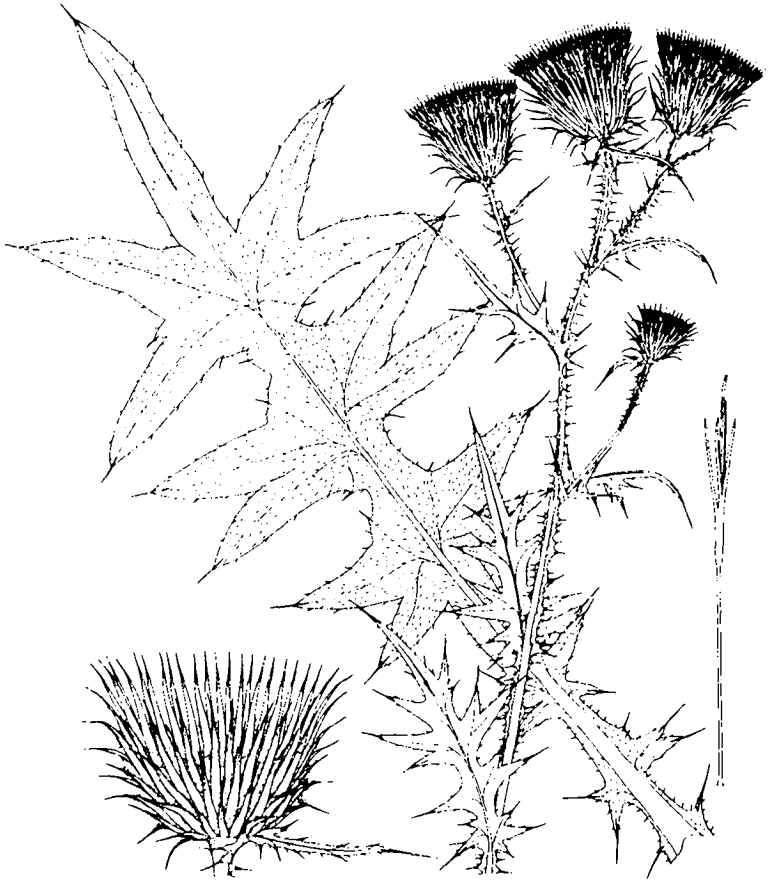
Bull Thistle

Cirsium vulgare **CIVU**

Description: Stout biennial herb to 4 feet tall; somewhat wooly; spiny stems.

Leaves: Alternate; long, hairy with deep irregular pinnate lobes, the lobes tipped with stout spines.

Flowers: (July - September.) Rose-colored, borne in large showy heads surrounded by sharp spines.



Queenscup Beadlily

Clintonia uniflora **CLUN**

Range: Alaska, south to California, eastward to Idaho.

Indicator Value: Cool moist to wet mixed conifer forest lands; high productivity true fir sites; highest productivity sites in Blue and Wallowa Mountains; usually associated with imperfectly drained soils in the Oregon Cascades.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: The berry may be poisonous; easily grown in the garden from rootstock.

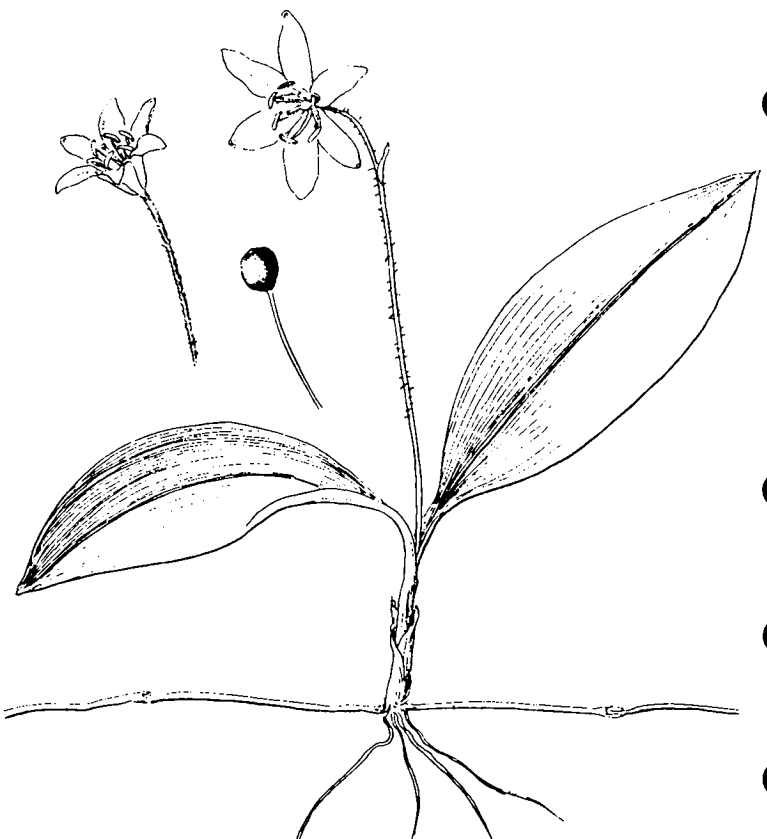
Queenscup Beadlily

Clintonia uniflora **CLUN**

Description: Perennial herb to 6 inches in height, arising from a creeping rootstock; produces a single flower stalk and two, sometimes three, basal leaves.

Leaves: Opposite, oblong-elliptic, coming to a short pointed tip (acute); prominent parallel veins.

Flowers: (June - July.) Solitary, white, bell-shaped, borne on a single stalk which is shorter than the leaves. Deep blue berry-like fruit.



Fairybells

Disporum trachycarpum **DITR**

Range: Central British Columbia to Washington; eastern Washington to Blue Mountains.

Indicator Value: Mesic mixed conifer forest lands; high to very high productivity sites for true fir.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – seed germination.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: No known use.

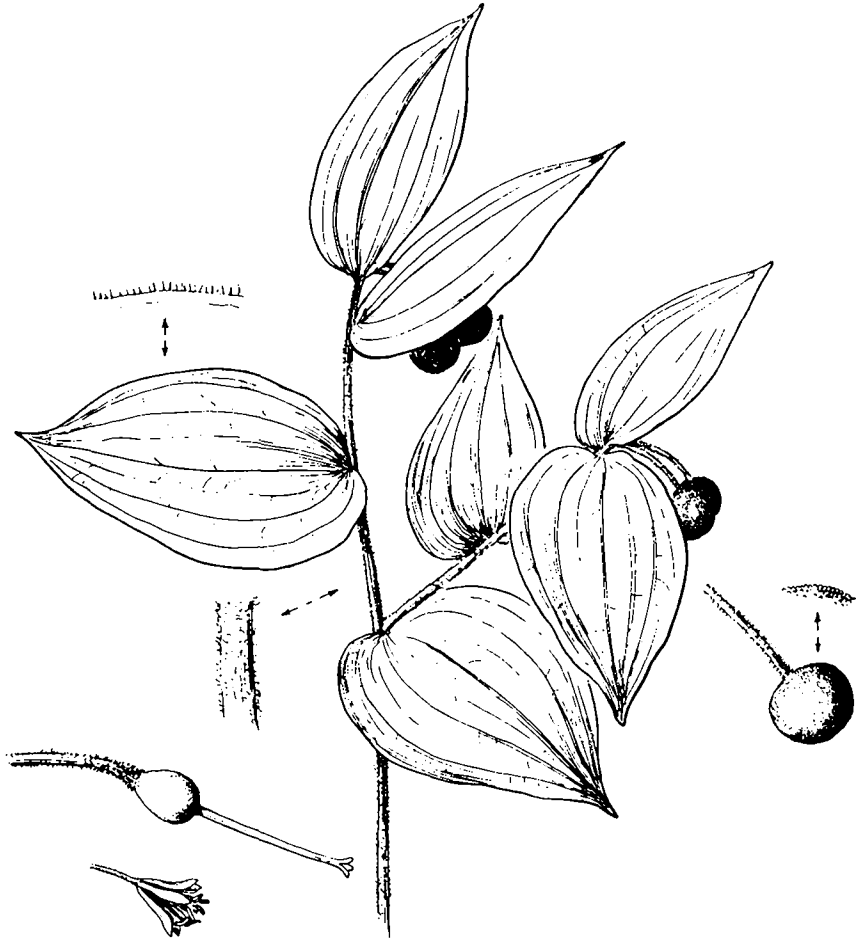
Fairybells

Disporum trachycarpum **DITR**

Description: Branching, leafy-stemed perennial up to 2 feet in height, arising from a horizontal rootstock; stems covered with fine hairs.

Leaves: Alternate, ovate to ovate-oblong; coming to a pointed tip, arise directly from the stem; often hairy below and smooth above, with minute hairs on the margins.

Flowers: (May - June.) Dull white, borne 1 - 3 to a group from the ends of the stems. Red berries with minute bumps on the surface.



Strawberry

Fragaria virginiana **FRVI**

Range: Alaska to California, eastward.

Indicator Value: Widely distributed from dry ponderosa pine and lodgepole pine forests to mixed conifer forest lands. Tends to increase with site disturbance and overgrazing in meadows; associated more commonly with ponderosa pine and Douglas-fir in the Blue and Wallowa Mountains.

Palatability: Low palatability to cattle; moderate palatability to sheep and deer.

Fire Sensitivity: Mode – Stolon budding.
Regeneration Period – Moderate to rapid.
Resistance – Moderate to susceptible.

Cultural Significance: Fruit edible raw, cooked, or made into wine; bitter tea made from fresh green leaves, reportedly good for stomach. Dried leaves used to treat diarrhea, dysentery, and dysuria. A strong infusion was prescribed for strangulated kidneys or liver pain, and for jaundice. Roots used to treat gonorrhea.

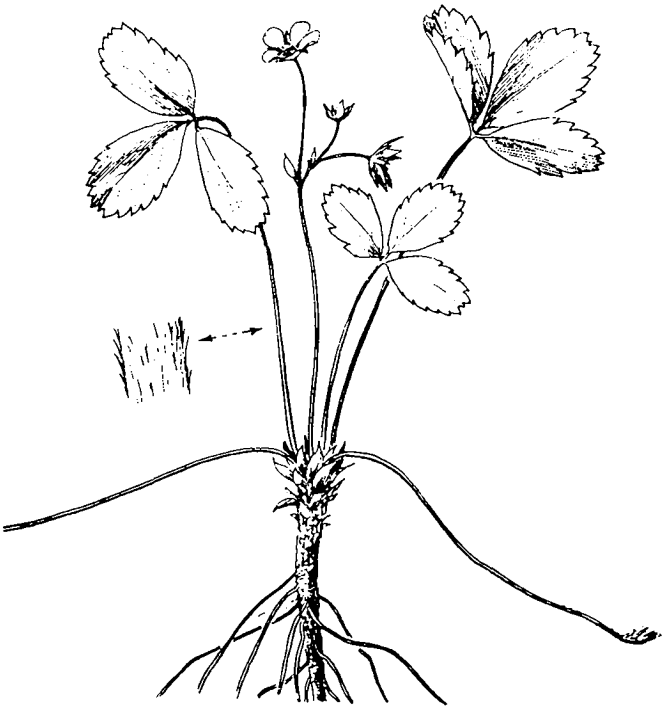
Strawberry

Fragaria virginiana **FRVI**

Description: Perennial herb to 4 inches in height, arising from a stout scaly rootstock; produces slender reddish runners (stolons) which root and form new plants.

Leaves: Borne on long, thin, hairy petioles; palmately divided into three leaflets; rather thick, with coarsely serrate margins (crenate-serrate); usually smooth and covered with a dusty powder above, hairy below.

Flowers: (May - August.) White or pinkish, borne on a mostly leafless stalk. Seldom flowers under dense to moderately dense forest cover.



Western Rattlesnake - plantain

Goodyera oblongifolia **GOOB**

Range: Alaska southward through most of western U.S.

Indicator Value: Mixed conifer forest lands. Very high productivity for white fir and Douglas-fir. Prefers cool, moist to wet environments; indicates white fir climax.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Seed germination; rhizome resprout.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Indians applied mashed leaves to prevent mouth infection in infants. Bulbs are edible but not savory, and used mostly as emergency food.

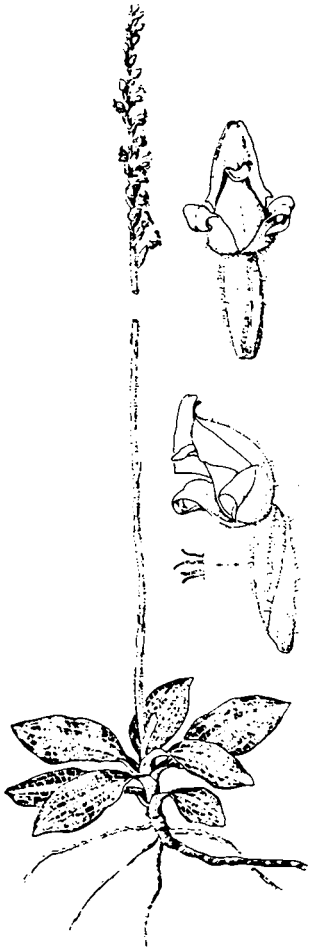
Western Rattlesnake - plantain

Goodyera oblongifolia **GOOB**

Description: Perennial herb to 12 inches in height, arising from a creeping, fairly stout rootstock; erect stems slender and hairy.

Leaves: All basal, fairly thick with prominent veins; dark green and striped or mottled with white; borne on broad petioles.

Flowers: (July - August) Inconspicuous, pale greenish white, borne in an erect, usually one-sided or spiraled cluster (raceme).



Yellow Hairy Hawkweed

Hieracium albertinum **HIAL2**

Range: Southern Alberta and British Columbia, south to eastern Oregon, central Idaho, and western Montana.

Indicator Value: Dry, open grasslands extending into ponderosa pine and mixed conifer stands. Medium to high productivity for ponderosa pine; very low for true fir. Decreases with sheep grazing; increases with cattle grazing.

Palatability: Moderate palatability for sheep.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Indians used the green plants and their coagulated juice as chewing gum.

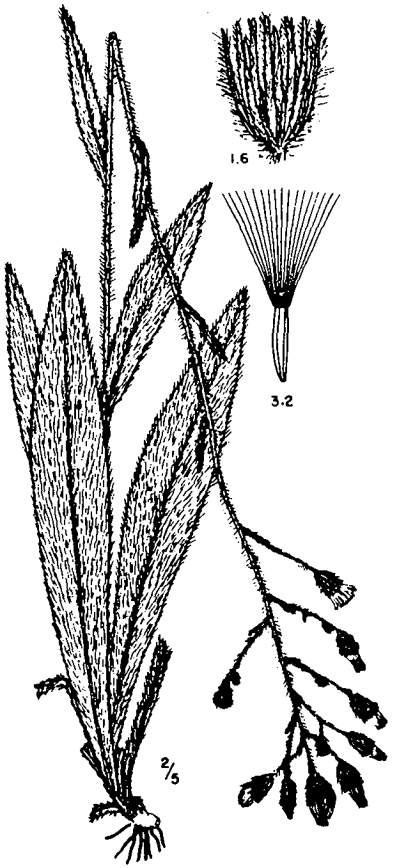
Yellow Hairy Hawkweed

Hieracium albertinum **HIAL2**

Description: Perennial, with a simple unbranched upright stem 10 - 16 inches in height, more or less densely covered with long coarse whitish hairs which become yellowish on drying. Produces a milky juice when broken.

Leaves: Alternate, entire margins; lower stem leaves very long, persistant, and somewhat crowded, borne on short petioles; middle and upper leaves much smaller and more spread apart.

Flowers: (July - August.) Yellow, very small, borne in few to many heads.



White Hawkweed

Hieracium albiflorum **HIAL**

Range: Widespread throughout eastern Oregon to California and Colorado.

Indicator Value: Present in most forest types containing Douglas-fir and true firs; found in climax true fir stands in the Blue and Wallowa Mountains.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Indians used the green plants and their coagulated juice as chewing gum.

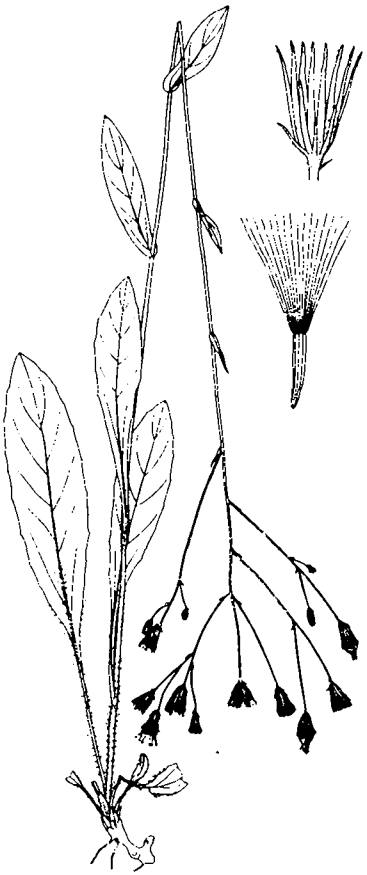
White Hawkweed

Hieracium albiflorum **HIAL**

Description: Perennial, with a simple unbranched upright stem to 30 inches in height, covered with long dense whitish hairs below the flower cluster. Produces a milky juice when broken.

Leaves: Alternate; slightly serrate margins; sparsely covered with coarse whitish hairs on both surfaces, denser below; basal leaves borne on long petioles; upper leaves smaller, becoming attached directly to the stem.

Flowers: (June - August.) White, very small, borne in several to many heads; seldom flowers under dense to moderately dense forest cover.



Thickleaf Peavine

Lathyrus lanszwertii **LALA2**

Range: Washington, south to Sierra Nevada, east to Idaho.

Indicator Value: Ponderosa pine to midslope mixed conifer forest lands. Increases with disturbance; fixes nitrogen; occurs in warm, dry environments, often with tree regeneration problems.

Palatability: Palatable to sheep, cattle, and deer.

Fire Sensitivity: Mode – Rhizome budding and seed germination.
Regeneration Period – Moderate to rapid.
Resistance – Moderate to resistant.

Cultural Significance: Seeds poisonous; contains alkaloids. A decoction made from vetch was drunk as a "sure cure" for cholera; however, no specific reference to peavine available.

Thickleaf Peavine

Lathyrus lanszwertii **LALA2**

Description: Erect to prostrate perennial up to 2 feet in height, with well developed rhizomes; sparsely hairy, angled stems.

Leaves: Alternate, pinnately compound leaves with 4 - 10 pairs of thick, linear, strongly veined, hairy leaflets; the leaves end in a small tendril.

Flowers: (May - June.) Purple and white, 3 - 8 borne on slender stalks which are shorter than the leaves. Fruit a pod 1½ to 2½ inches long.

Linanthastrum

Linanthastrum nuttallii **LINU**

Range: Washington, south to California, eastward to central Idaho, western Wyoming, and Colorado.

Indicator Value: Lodgepole pine, whitebark pine, and mixed conifer sites at upper elevations. Abundant on overgrazed green fescue sites in Blue and Wallowa Mountains. Occurs in dry environments within the forest zone.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Leaves of the closely related phlox were used for stomach disorder; roots of phlox used to treat venereal disease.

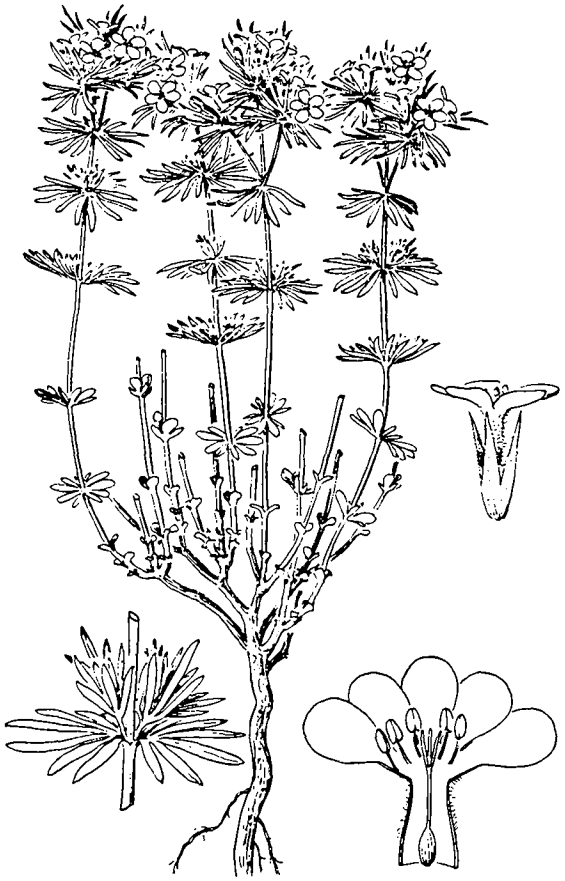
Linanthastrum

Linanthastrum nuttallii **LINU**

Description: Perennial to 18 inches in height, arising from a stout branching woody base; stems are clustered, pale green to whitish; sweetly aromatic.

Leaves: Opposite; cleft into 3 - 9 linear parts which form a whorl around the stem; smaller leaves often clustered between the stem and the longer leaves.

Flowers: (June - July.) White with yellow throat, borne in tight clusters at the ends of the stems.



Twinflower

Linnaea borealis **LIBO2**

Range: Circumpolar, extending south into the U.S.

Indicator Value: Midelevation in mixed conifer forest lands. Found in sites of high productivity for true firs; generally easy regeneration; sites have rather low forage production unless seeded to domestic grass following logging. Prefers dry, cool environments.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Stolon budding.
Regeneration Period – Moderate.
Resistance – Susceptible.

Cultural Significance: Indians boiled leaves for tea; makes an excellent ground cover in gardens.

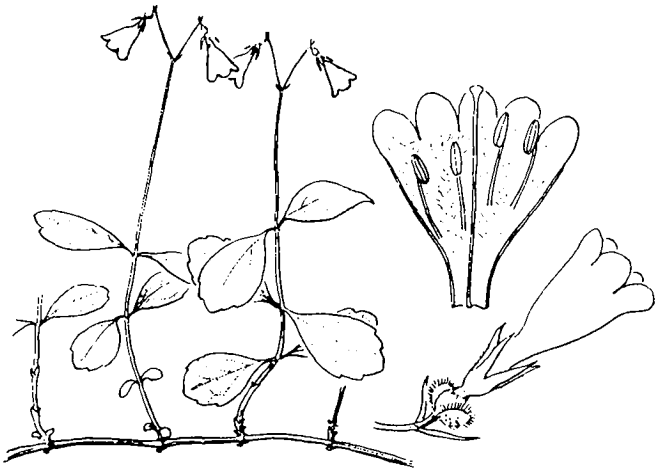
Twinflower

Linnaea borealis **LIBO2**

Description: Creeping perennial to 6 inches in height with somewhat woody, slender hairy stems.

Leaves: Opposite; somewhat leathery; shallowly toothed above the middle with conspicuous net-like veins; borne on short petioles.

Flowers: (June - September.) Pinkish, bell-shaped, borne in drooping pairs at the ends of the upright stems.



Pine Lupine

Lupinus albicaulis **LUAL**

Range: Western Washington, southward on the west side and eastern slope of the Cascades.

Indicator Value: Mid to high elevation lodgepole pine sites. Increases with disturbance and after burning; roots important forage for pocket gophers; fixes nitrogen.

Palatability: Moderate palatability to sheep and deer.

Fire Sensitivity: Mode – Caudex regrowth, heat scarified seeds.
Regeneration Period – Moderate.
Resistance – Resistant.

Cultural Significance: Seeds poisonous due to plant alkaloids. Indians used a tea made from the seeds to aid urination. Boiled leaves used to treat skin irritations; seeds used in a solution to treat black and blue marks. Fresh leaves steeped, the tea used to induce menstruation.

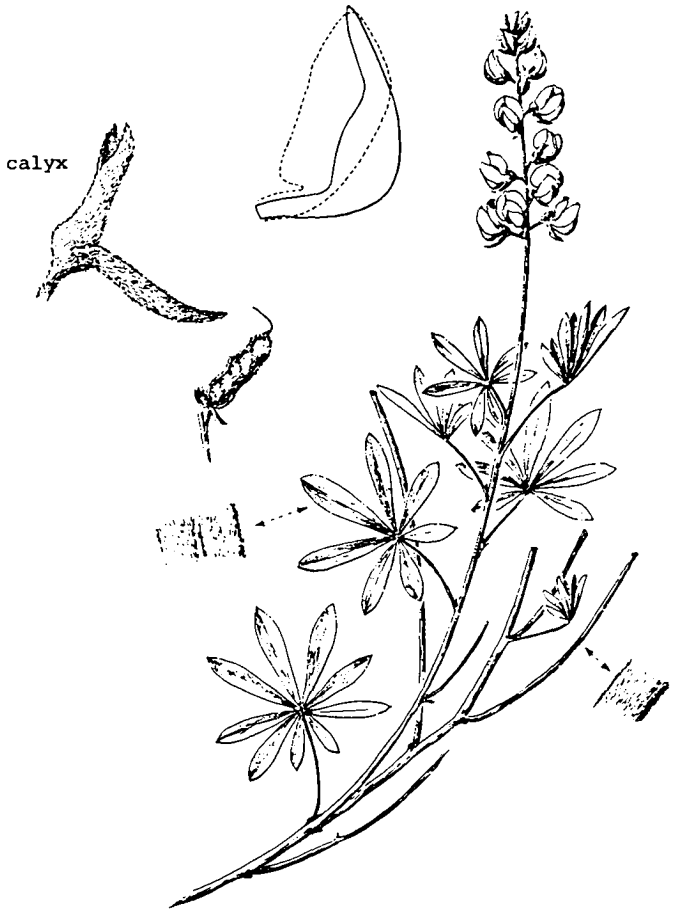
Pine Lupine

Lupinus albicaulis **LUAL**

Description: Perennial, to 40 inches in height, arising from a woody base and producing several hairy ascending stems.

Leaves: Alternate, divided into 6 - 10 palmate leaflets 1 to 1½ inches long; hairy on both surfaces; borne on rather short petioles.

Flowers: (June - July.) Bluish, fading to purplish, borne in upright clusters (racemes) 4 to 6 inches long, the calyx very hairy and strongly split into upper and lower lips. Fruit a hairy pod 3 to 4 cm. long.



Silvery Lupine

Lupinus argenteus **LUAR3**

Range: East-central Oregon, south to northeast California, east to Alberta, Montana, and South Dakota.

Indicator Value: Mainly dry ponderosa pine forest lands, but may range upward into mixed conifer forest lands. Dry, well-drained soils; sagebrush to open coniferous timber stands. Associated with fescue and bitterbrush. Roots important forage for pocket gophers.

Palatability: Livestock will graze plant, but it is poisonous.

Fire Sensitivity: Mode – Caudex regrowth, heat scarified seeds.
Regeneration Period – Moderate.
Resistance – Resistant.

Cultural Significance: Seeds poisonous because of alkaloids. Indians used a tea made from the seeds to aid urination. Boiled leaves used to treat skin irritations; seeds used in a solution to treat black and blue marks. Fresh leaves steeped, the tea used to induce menstruation.

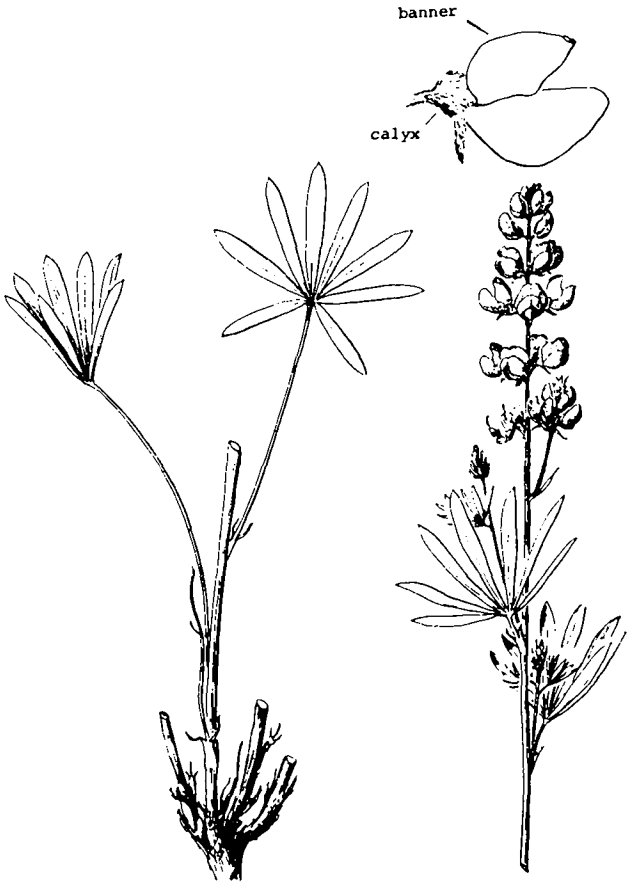
Silvery Lupine

Lupinus argenteus **LUAR3**

Description: Erect perennial to 2 feet in height, arising from a woody base; stems clustered, slightly hairy.

Leaves: Alternate, divided into 6 - 9 palmate leaflets ¾ to 1½ inches long; borne on a petiole that is up to twice as long as the blades.

Flowers: (May - June.) Bluish, borne in slender upright clusters (racemes) 4 to 6 inches long; the banner smooth, not hairy; the calyx sac-like, not spurred as in *L. caudatus*. Fruit a very hairy pod, ½ to 1 inch long.



Tailcup Lupine

Lupinus caudatus **LUCA**

Range: Eastern Oregon, south to California, east to Montana and Colorado.

Indicator Value: Associated with sites that are low to medium in productivity for ponderosa pine, medium to high for true fir. Often found on deep pumice soils with lodgepole pine. Generally dry, well-drained soils. Increases slightly with overgrazing. Roots important forage for pocket gophers. Dominance often strongly influenced by yearly growing conditions.

Palatability: Palatable to sheep. Particularly poisonous to cattle and horses.

Fire Sensitivity: Mode – Caudex regrowth, heat scarified seeds.
Regeneration Period – Moderate.
Resistance – Resistant.

Cultural Significance: Seeds poisonous (contains alkaloids); cattle and horses often affected. Indians used a tea made from the seeds to aid urination. Boiled leaves used to treat skin irritations; seeds used in a solution to treat black and blue marks. Fresh leaves steeped, the tea used to induce menstruation.

Tailcup Lupine

Lupinus caudatus **LUCA**

Description: Erect perennial to 2 feet in height, arising from a woody base; stems clustered, covered with fine silvery hairs.

Leaves: Alternate, divided into 7 - 9 palmate leaflets 1½ to 2 inches long; silvery-hairy on both surfaces. Basal leaves borne on petioles 2 to 2½ inches long; upper leaf petioles usually shorter than the blades.

Flowers: (May - June.) Light blue to violet, borne in upright clusters 2 to 12 inches long; calyx hairy and conspicuously spurred; the banner usually hairy on the upper surface.

Side-flowered Mitella

Mitella stauropetala **MIST2**

Range: Eastern Washington and Blue, Wallowa and Ochoco Mountains, east to Rockies.

Indicator Value: Moist mixed conifer forest lands. Generally high to very high productivity for true fir; mesic environment. Good indicator of white fir climax.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Root caudex resprout.
Regeneration Period – Rapid.
Resistance – Moderate.

Cultural Significance: No known use.

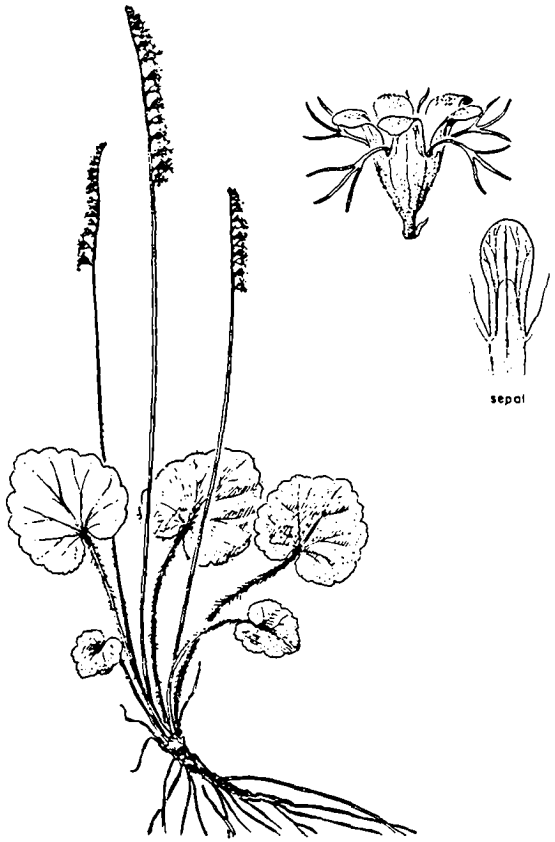
Side-flowered Mitella

Mitella stauropetala **MIST2**

Description: Perennial, producing slender leafless flowering stems to 20 inches in height which are often more or less coarsely hairy.

Leaves: Basal only; somewhat heart-shaped or circular in outline (cordate to reniform); very slightly to conspicuously 5 - 7 lobed, purplish-tinged; sparsely hairy above, smooth below; borne on long, hairy petioles.

Flowers: (May - June.) Whitish, sometimes purplish, borne in strongly one-sided clusters (racemes). The sepals are fused and surround the flower; the petals are cleft into three thread-like divisions. Often does not produce flowers under shaded conditions.



Mountain Sweetroot

Osmorhiza chilensis **OSCH**

Range: Southern Alaska to southern California; east to South Dakota, Colorado, and Arizona.

Indicator Value: Medium productivity for both ponderosa pine and and true fir; decreases with overgrazing; cool moist environment.

Palatability: Palatable to game and livestock.

Fire Sensitivity: Mode – Regrowth from roots.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Roots anise-flavored, makes good seasoning.

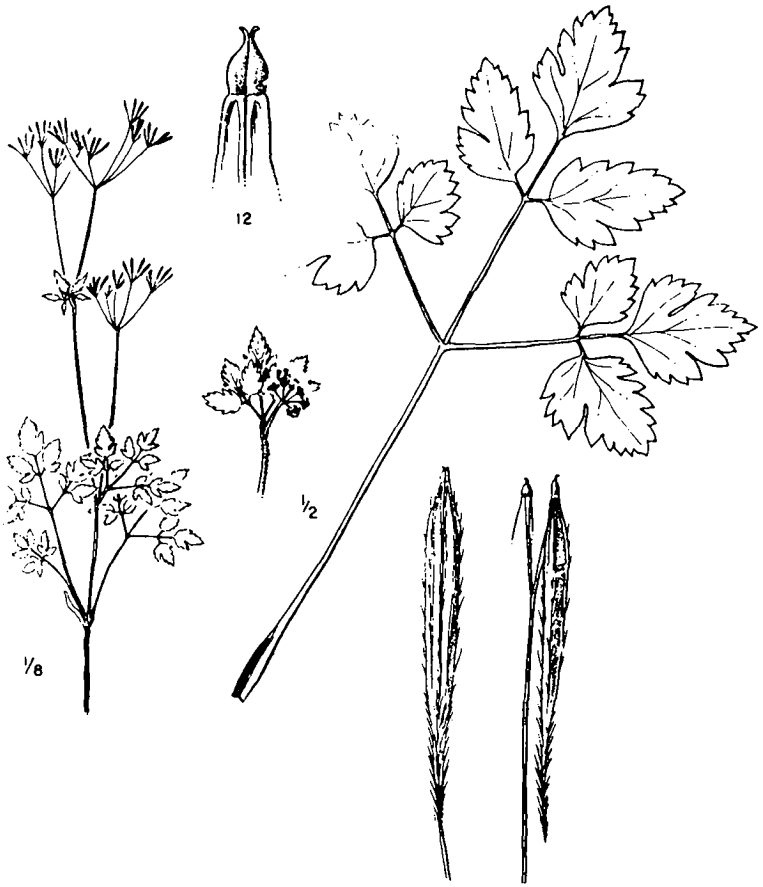
Mountain Sweetroot

Osmorhiza chilensis **OSCH**

Description: Perennial to 3 feet in height, arising from a well-developed taproot; slender, usually solitary; stems are nearly smooth or with some fine white hairs, usually branched.

Leaves: Mostly basal, borne on long petioles, separated into three divisions, each division composed of three coarsely toothed, slightly hairy leaflets; upper leaves with much shorter petioles.

Flowers: (April - June.) Greenish white, borne in small cylindrical clusters (umbels). Fruit adheres to cloth.



Glaucous Penstemon

Penstemon euglaucus **PEEU**

Range: Southern Washington to central Oregon, Cascades.

Indicator Value: Medium to high productivity for both ponderosa pine and true fir; may indicate regeneration problems due to the presence of associated sedge species. Prefers cool dry environments.

Palatability: Flower heads palatable.

Fire Sensitivity: Mode – Root caudex regrowth and seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Tea from boiled plant used to treat stomach and bowel disorders; also used to treat venereal disease. A poultice was made of green leaves but, more usually, pulverized leaves were used as a powder for sores associated with venereal disease.

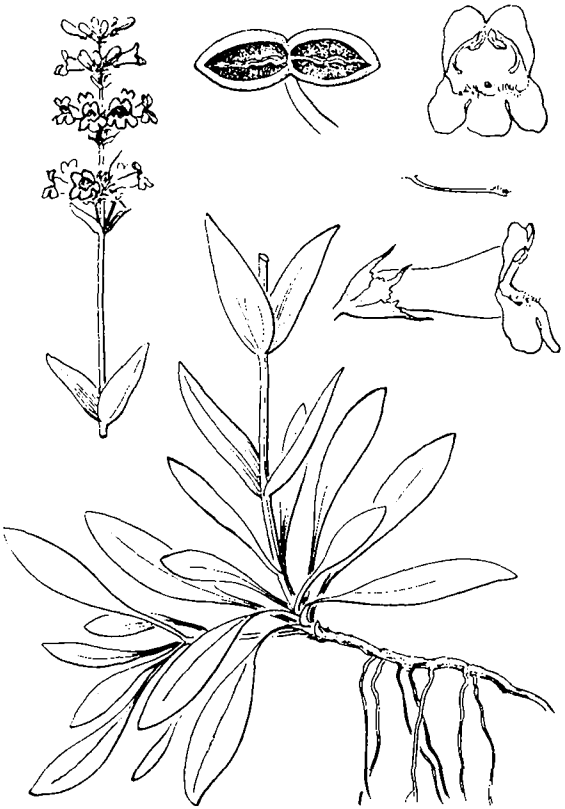
Glaucous Penstemon

Penstemon euglaucus **PEEU**

Description: Perennial to 16 inches in height, arising from a short woody base; entire plant is smooth and coated with a powdery waxy material.

Leaves: Opposite, thick, with entire margins; basal leaves borne on petioles, upper leaves attached directly to the stem.

Flowers: (July - August.) Deep blue, borne in 2 - 4 clusters that form whorls around the upper stem.



Gay Penstemon

Penstemon laetus **PELA**

Range: Central to southwest Oregon.

Indicator Value: Dry ponderosa pine and lodgepole pine forest lands. Sagebrush and ponderosa pine zones; dry, open, often rocky or gravelly slopes and flats.

Palatability: Flower heads palatable to deer.

Fire Sensitivity: Mode – Root caudex regrowth and seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Navajos applied a wet dressing of the pounded leaves to snake bite. Tea from boiled plant used to treat stomach and bowel disorders, also to treat venereal disease. A poultice was made of green leaves, but, more usually, pulverized leaves were used as a powder for sores associated with venereal disease.

Gay Penstemon

Penstemon laetus **PELA**

Description: Perennial to 20 inches in height, arising from a woody base; entire plant up to the flowers covered with fine dense hairs.

Leaves: Opposite, long and narrow; basal leaves borne on short petioles, upper leaves attached directly to the stem.

Flowers: (June - July.) Bluish purple, borne in open-branching arrangements (mixed panicle or almost a raceme) on the upper stem.

Skunk-leaved Polemonium
Phlox Family

Polemonium pulcherrimum **POPU**
Family Polemoniaceae

Range: In the mountains, Alaska to California and east to the Rockies.

Indicator Value: Moist, cool sites at high elevations and east of the Cascade crest.

Skunk-leaved Polemonium

Polemonium pulcherrimum **POPU**

Description: Taprooted perennial, usually 5 to 8 inches but sometimes up to 12 inches tall; stems in clusters, somewhat drooping.

Leaves: Pinnately compound, 11 to 25 leaflets; leaves sometimes have unpleasant odor when crushed.

Flowers: Borne in loose clusters above the leaves; bell-shaped, ½ to ¾ inches long; blue, may have a yellow center.

Fruit: A capsule.

Bracken Fern

Pteridium aquilinum **PTAQ**

Range: Widespread throughout eastern and western Oregon.

Indicator Value: Generally found with mixed conifer forest lands; increases rapidly following logging and soil displacement; snow laden fronds may crush regeneration. Prefers warm dry environments at midelevations.

Palatability: Young shoots highly palatable to game. Mature leaves are nonpalatable, poisonous, and have caused the death of livestock.

Fire Sensitivity: Mode – Rhizome extension.
Regeneration Period – Very rapid.
Resistance – Very resistant.

Cultural Significance: Underground rootstocks ground and made into bread; coiled-up stems first boiled and then eaten. Also used for bedding; roots will lather with water for use as soap.

Bracken Fern

Pteridium aquilinum **PTAQ**

Description: Large fern to 4 feet in height, arising from a thick rootstock.

Leaves: Solitary fronds supported by shiny, straw-colored stalks, triangular in outline; hairy on lower surface, smooth or very slightly hairy above.

Sori: Spore-producing organs found near margins on underside of fronds.

Sidebells Pyrola

Pyrola secunda **PYSE**

Range: Alaska to southern California; east to Atlantic coast.

Indicator Value: Generally mid to high elevations in either fir, lodgepole pine or mixed conifer forest lands. Mesic cool sites; moderate regeneration difficulty.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Slow.
Resistance – Susceptible.

Cultural Significance: Reference is made to steeped "winter green" used as an eyewash; however, both the above plant and the genus *Gaultheria* have been referred to as winter green. Both are members of the *Ericaceae* family.

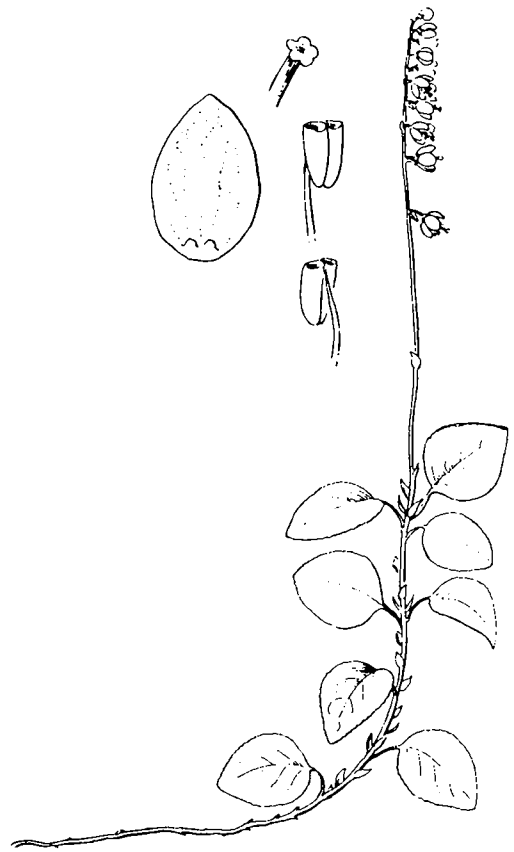
Sidebells Pyrola

Pyrola secunda **PYSE**

Description: Perennial to 8 inches in height, arising from slender rhizomes.

Leaves: Alternate, thin, more abundant towards the base; leaf margins finely scalloped (crenulate to serrulate); not white-veined or mottled; retained over winter.

Flowers: (June - August.) Greenish, borne in a stongly 1-sided cluster (raceme) on the upper stem. Often does not flower under dense shade.



Feather Solomonplume

Smilacina racemosa **SMRA**

Range: Alaska to California, eastward.

Indicator Value: Mesic forest lands. Good forest sites for all coniferous species; usually floristically diverse.

Palatability: Nonpalatable to big game and livestock. Berries eaten by both ruffed and blue grouse.

Fire Sensitivity: Mode – Rhizome sprouting.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Berries eaten by Indians to prevent scurvy; too many berries act as a laxative. Indians applied the dried powdered roots to stop bleeding.

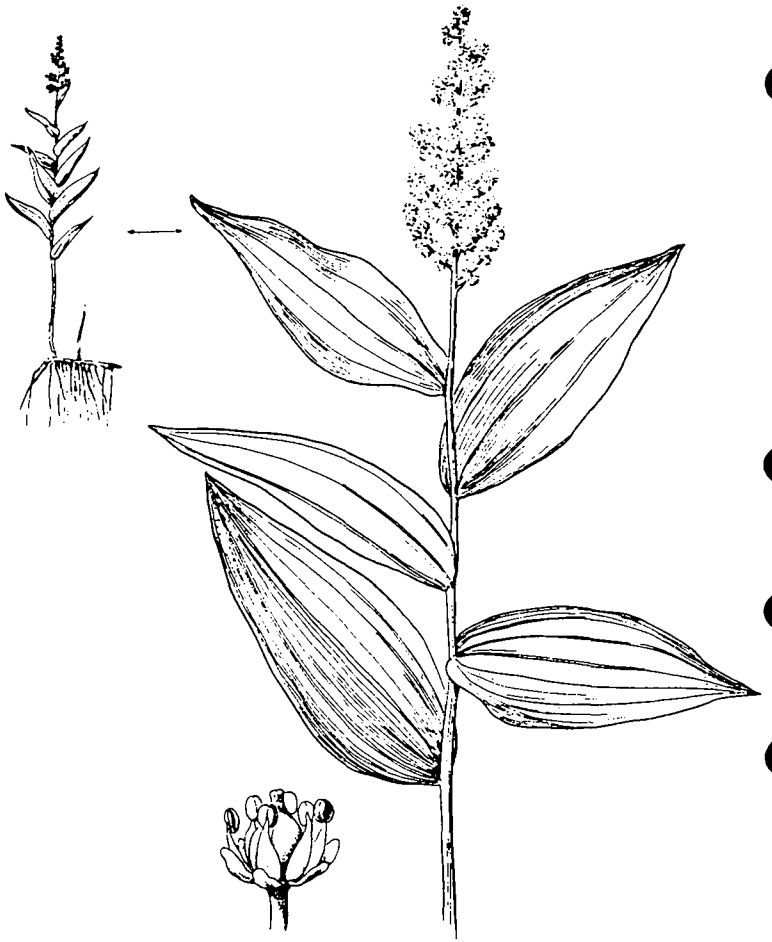
Feather Solomonplume

Smilacina racemosa **SMRA**

Description: Perennial to 40 inches in height, arising from well-developed horizontal rootstocks with conspicuous stem scars; unbranched upright stems usually curved and covered with fine hair.

Leaves: Alternate; borne directly from and slightly clasping the stem; slightly hairy, at least below.

Flowers: (May - June.) Abundant, small, white, borne in a dense, short-branched flower cluster (panicle). Fruit a small greenish to blackish berry.



Starry Solomonplume

Smilacina stellata **SMST**

Range: Alaska to California, east to Atlantic coast.

Indicator Value: Mixed conifer forest lands; generally in shaded microsites. Moist, medium to high productivity for true fir; indicates fir climax; easy regeneration.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Rhizome resprout.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: Berries edible cooked, but tend to act as a laxative. Cooking improves flavor and reduces the purgative. Liquid made from pulped roots placed in aching ear, also used for inflamed eyes. Tea from roots said to regulate menstrual disorder; also used to prevent conception by drinking half a cup of boiled leaf daily for a week.

Starry Solomonplume

Smilacina stellata **SMST**

Description: Unbranched perennial to 2 feet in height,arising from a thick horizontal rootstock.

Leaves: Alternate, strongly veined, arising directly from and clasping the stem.

Flowers: (May - June.) Small, white, borne in a zigzag shaped flower cluster (raceme). Fruit a greenish yellow to blackish berry.

Tuber Starwort

Stellaria jamesiana **STJA**

Range: Washington Cascades, south to southern Sierra Nevada, east to Utah, Idaho, Wyoming, and New Mexico.

Indicator Value: Dry tending to moist forest lands; generally mixed conifer, but may be present in ponderosa pine stands. Prefers sandy to gravelly soils; more common on sites where ponderosa pine is being replaced by Douglas-fir.

Palatability: Good for sheep, fair for cattle; flower heads eaten.

Fire Sensitivity: Mode – Probably seed germination.
Regeneration Period – Moderate to rapid.
Resistance – Moderate.

Cultural Significance: Tuberous rootstocks when fresh and fleshy were an important source of food for Indians.

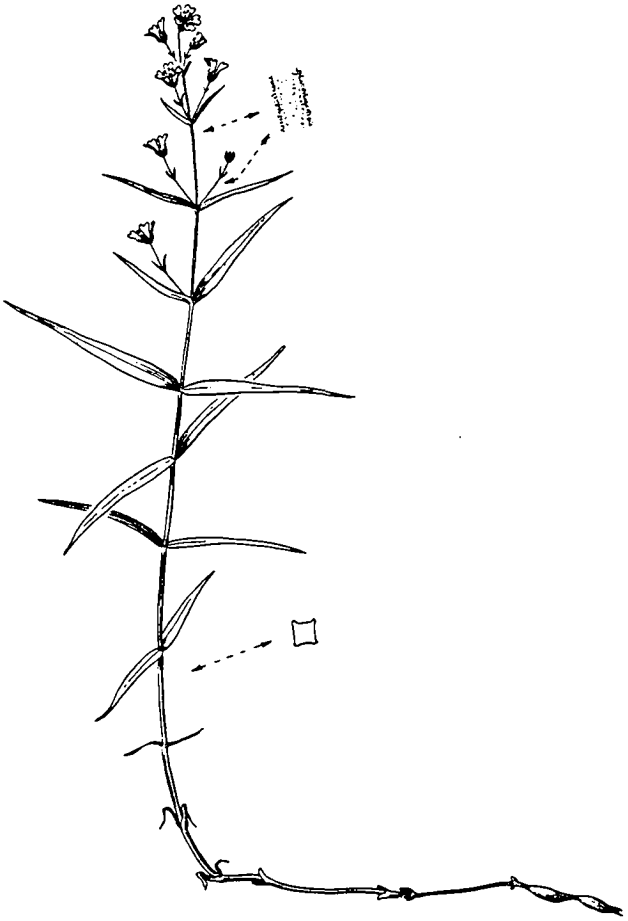
Tuber Starwort

Stellaria jamesiana **STJA**

Description: Perennial to 20 inches in height, arising from a thick, fleshy rootstock which may produce whitish tubers; stems strongly 4-angled, weak; usually smooth below and glandular-hairy above.

Leaves: Opposite, linear; over four times as long as broad, coming to a sharp point (acuminate); more or less glandular-hairy; arise directly from the stem.

Flowers: (May - June.) Few, small white flowers borne in very open clusters (cymes) at the ends of the upright stems.



Western Meadowrue

Thalictrum occidentale **THOC**

Range: British Columbia, south on both sides of Oregon Cascades to northern California; east to Montana, Wyoming, Colorado, and Utah.

Indicator Value: Generally mid to lower slope positions in mixed conifer forest lands. Moist to wet sites; medium productivity for true fir.

Palatability: Nonpalatable.

Fire Sensitivity: Mode – Probably seed germination.
Regeneration Period – Slow to moderate.
Resistance – Susceptible.

Cultural Significance: No known use.

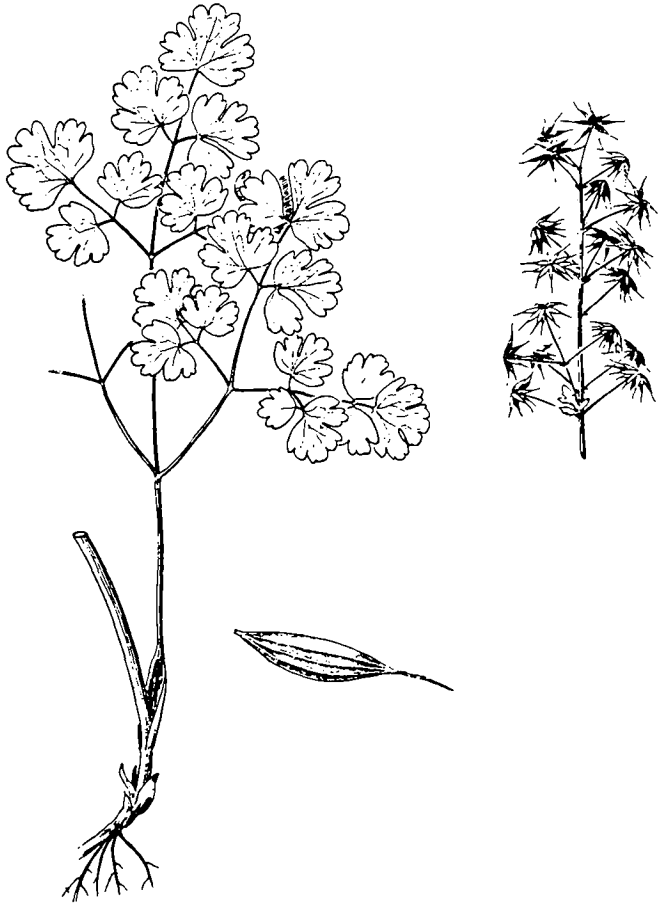
Western Meadowrue

Thalictrum occidentale **THOC**

Description: Perennial to 4 feet in height, arising from well-developed rootstocks; smooth slender stems.

Leaves: Separated into three divisions, each division having 3 - 5 thin leaflets; leaflets dark green, smooth above, paler below; more or less divided into three lobes with rounded toothed margins.

Flowers: (May - June.) Greenish white to purplish, borne in open, branched clusters (panicles). Small dry one seeded fruits with three prominent lateral ribs on each side.



Western Starflower
Primrose Family

Trientalis latifolia **TRLA2**
Family Primulaceae

Range: Southern British Columbia to California; east to Alberta and northern Idaho. Scarce in our area except south of the Entiat River.

Habitat: Moderately dry to moist sites at middle elevations; mainly within the grand fir series.

Similar Species: Not easily confused with any other species.

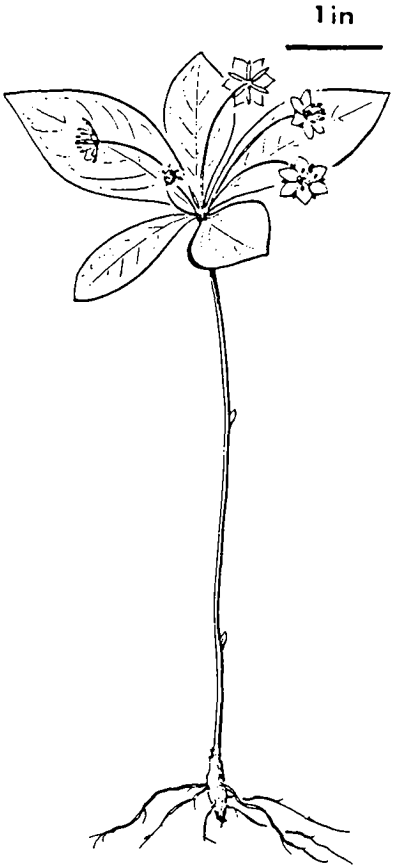
Remarks: The other common name, Indian potato, suggests this species may have an edible tuber. Also known as broad-leaved starflower. Unpalatable. Mid successional.

Western Starflower

Trientalis latifolia **TRLA2**

Habit: A rhizomatous, perennial herb; to 10 inches tall with leaves in a single whorl.

Description: ***Leaves:*** 4-8, 1 to 4 inches long, entire and occur in a single terminal whorl. ***Flowers:*** (April-July) rose to pink, up to ½ inch across with 6-7 petals borne on slender pedicels. The plant emerges from an erect tuber up to 1 inch long. ***Fruits:*** valved capsules with numerous seeds.



Mules Ear Wyethia

Wyethia amplexicaulis **WYAM**

Range: Central Washington to western Montana, south to Nevada and California.

Indicator Value: Generally nonforest or pine savanna; very low site productivity for ponderosa pine.

Palatability: Low palatability; heads often eaten by game animals.

Fire Sensitivity: Mode – Resprout from taproot.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: Indians chopped and boiled roots for medicinal qualities; also used as an emergency food, first processing it by boiling and fermenting.

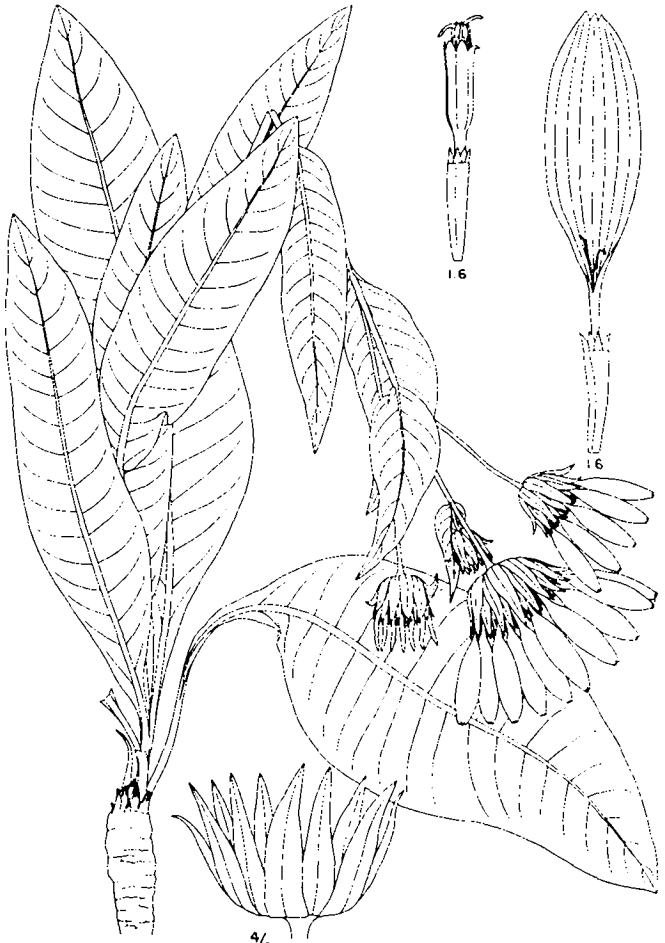
Mules Ear Wyethia

Wyethia amplexicaulis **WYAM**

Description: Perennial to 20 inches in height arising from a large fleshy taproot; entire plant very smooth and varnished-appearing.

Leaves: Mule-ear shaped; basal leaves large, firm and elongated, borne on short petioles; upper leaves smaller and shorter, becoming directly attached to the stem near the tip.

Flowers: (May - June.) Deep yellow to nearly white, borne in two or more heads, the terminal head being the largest.



White-head Wyethia

Wyethia helianthoides **WYHE**

Range: Mountains of central and eastern Oregon to southwest Montana and northern Nevada.

Indicator Value: Moist to wet meadowlands at midelevations; may invade into the edge of forest lands following disturbance.

Palatability: Low palatability; heads often eaten by game and livestock.

Fire Sensitivity: Mode – Resprout from taproot.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: Indians chopped and boiled roots for medicinal qualities; also used as an emergency food after processing by boiling and fermenting.

White-head Wyethia

Wyethia helianthoides **WYHE**

Description: Perennial to 20 inches in height, arising from a fleshy taproot; herbage sparsely hairy throughout.

Leaves: Enlarged basal leaves attached by short, flattened petioles; upper leaves smaller, becoming directly attached to the stem near the top.

Flowers: (May - June.) Solitary whitish heads borne at the apex of the stems.

Wooly Wyethia

Wyethia mollis **WYMO**

Range: Fremont National Forest, south to both sides of Sierra Nevada mountains to Siskiyou and Modoc counties.

Indicator Value: Well drained soils; exposed ridges, dry open slopes and flats in ponderosa pine types. Increases on logged or overgrazed sites.

Palatability: Low palatability, flower heads used by livestock and game.

Fire Sensitivity: Mode – Resprout from taproot.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: Seeds used as food by Indians. Indians chopped and boiled roots for medicinal qualities; also used as an emergency food, first processing it by boiling and fermenting.

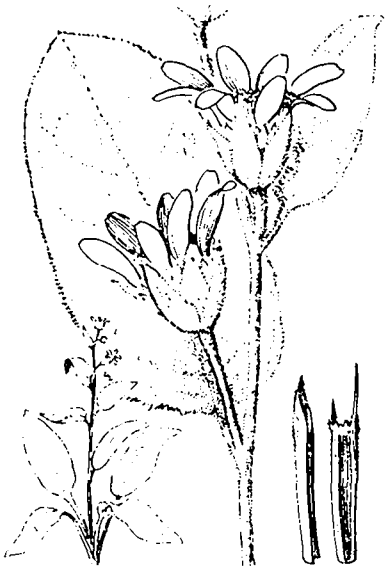
Wooly Wyethia

Wyethia mollis **WYMO**

Description: Coarse perennial up to 2 feet in height, arising from a thick taproot; herbage covered with soft, dense wooly hairs throughout.

Leaves: Covered with wooly hairs; basal leaves large, mule-ear shaped, upper leaves smaller.

Flowers: (May - August.) Two or more yellow flower heads borne on short terminal stalks.



Beargrass

Xerophyllum tenax **XETE**

Range: British Columbia south to California, east to Rocky Mountains; mostly absent in Blue and Wallowa Mountains.

Indicator Value: Wide ranging; in eastern Oregon found at high elevations associated with lodgepole pine, subalpine fir and mountain hemlock. Cold xeric sites with short summers; difficult regeneration from either planting or naturals.

Palatability: Nonpalatable, except for flowering heads.

Fire Sensitivity: Mode – Corm budding.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Leaves woven into mats and baskets.

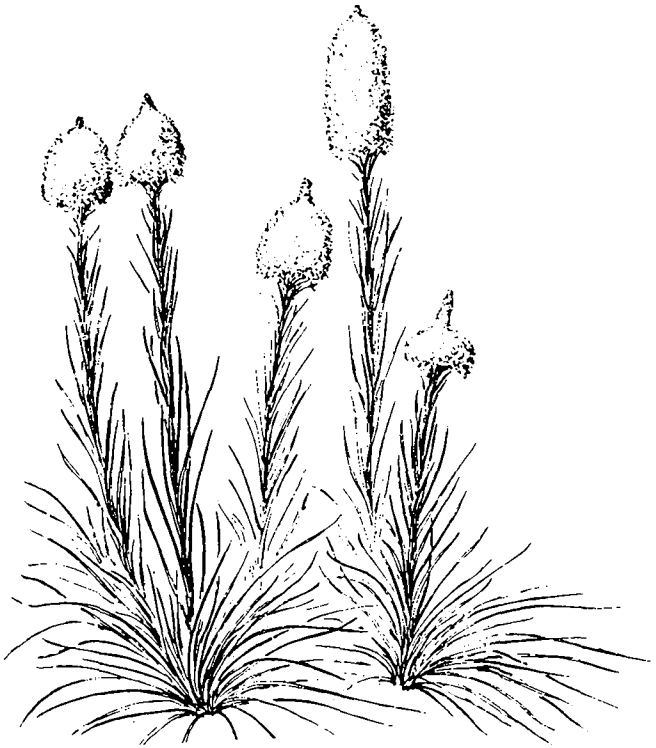
Beargrass

Xerophyllum tenax **XETE**

Description: Stout perennial to 3 feet in height, arising from a dense cluster of basal leaves.

Leaves: Grass-like, stiff and wiry with finely toothed margins, becoming shorter near the upper part of the stem.

Flowers: (May - August.) White, very small and numerous, borne in a large dense pyramid of blossoms.



GRASSES

Bluebunch Wheatgrass

Agropyron spicatum **AGSP**

Range: East of the crests of the Cascades and coastal mountains; Alaska to California, east to Alberta, Dakotas, and New Mexico.

Indicator Value: Nonforest or southerly aspect ponderosa pine dominated slopes. Moderate to deep soils on sage and bunchgrass sites; fair to good forage productivity on most sites; decreases with overgrazing; indicates ponderosa pine savanna (transition from steppe to forest); extreme regeneration problems.

Palatability: Very palatable for wildlife and livestock.

Fire Sensitivity: Mode – Seed germination or weakly rhizomatous.
Regeneration Period – Moderate to rapid.
Resistance – Moderate.

Cultural Significance: No known use follows the admonition given to every tenderfoot going west, "Never eat grass. You will die in agony."

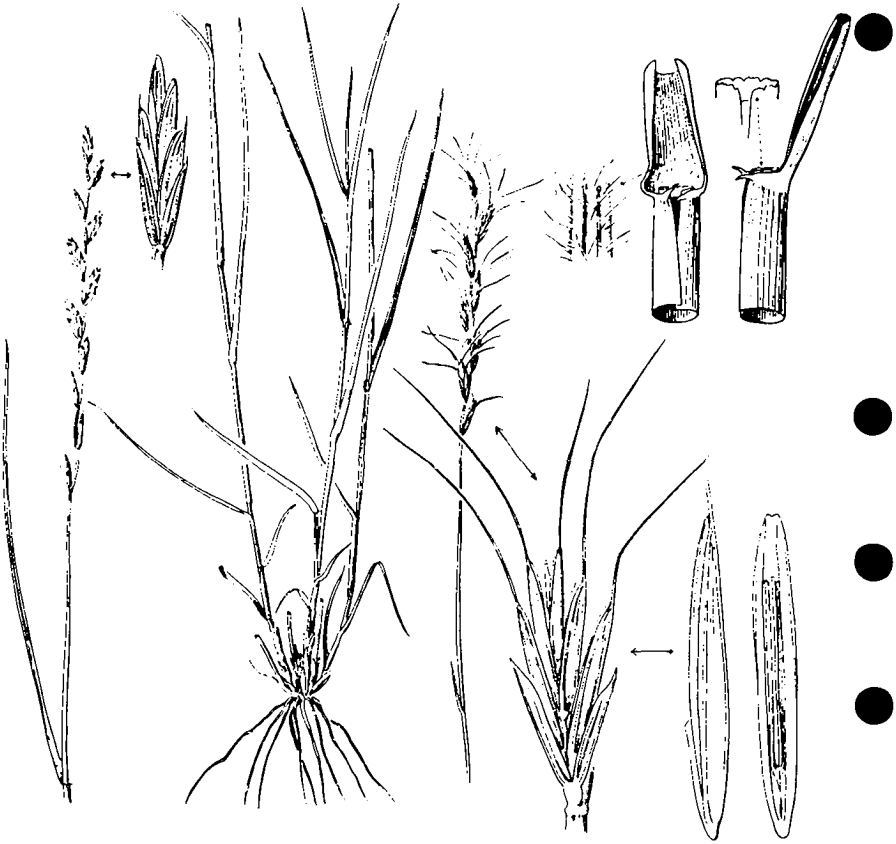
Bluebunch Wheatgrass

Agropyron spicatum **AGSP**

Description: Tufted perennial to 3 feet in height; without well-developed rhizomes; sheaths mostly smooth or sometimes having a light covering of soft hairs; auricles well developed; ligules less than 1 mm. long with ragged margins having very fine hairs.

Leaves: Mostly basal, flat or slightly rolled in, usually smooth above and slightly hairy below.

Flowers: (June - August.) Open, loose spikes; usually with long, widely spread awns which can be absent.



California Brome

Bromus carinatus **BRCA**

Range: Alaska to Baja California; east to Alberta, the Dakotas, Wyoming, Colorado, and New Mexico.

Indicator Value: Ponderosa pine forest lands associated with big sagebrush. Very low to low productivity for ponderosa pine; ranging from ponderosa pine savanna to edge of mixed conifer forest lands east of the main Cascade range.

Palatability: Palatable to livestock and deer. Preferred forage for pocket gophers.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate.

Cultural Significance: Indians parched and ground large heavy seeds of the bromes into meal or pinole.

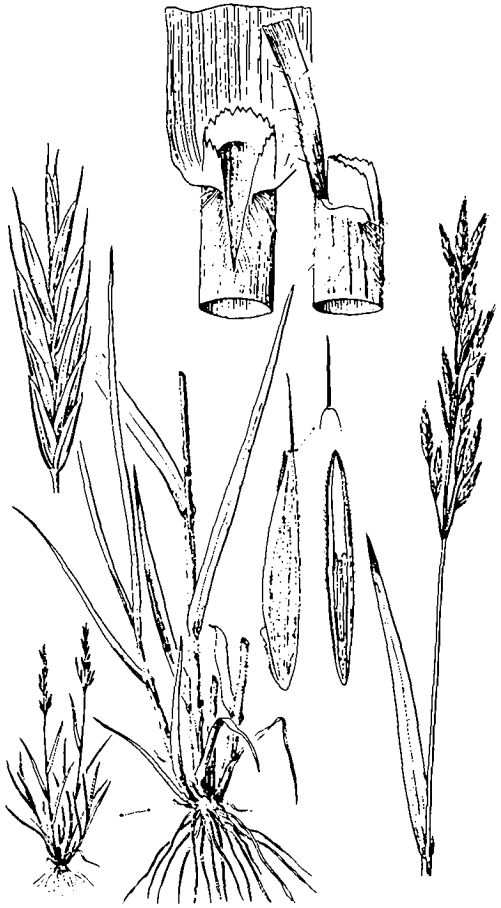
California Brome

Bromus carinatus **BRCA**

Description: Short-lived perennial up to 3 feet in height; without a well-developed horizontal rootstock; erect stems often hairy; sheaths usually hairy and closed to near the top; very small auricles less than 0.5 mm. long; ligules 1 - 3 mm. long with toothed margins; smooth to short hairy.

Leaves: Flat to slightly rolled in, smooth to somewhat hairy.

Flowers: (May - August.) Rather narrow, loosely packed panicles of strongly compressed spikelets; straight awns 3 - 15 mm. long.



Cheatgrass Brome

Bromus tectorum **BRTE**

Range: Common in much of the western U.S.; only occasionally west of the Cascades.

Indicator Value: Mainly found on highly disturbed nonforest sites, however may enter the edge of the forest zone where disturbed. Abundance associated with severe overgrazing and/or site disturbance; present in most moderate to good shrub/steppe sites; tends to indicate fair to good soil depth.

Palatability: Moderate palatability only in spring when young; very dry later in season, and the long awns can cause sores in animal eyes, mouths, and other places where the seed can lodge.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Very rapid.
Resistance – Very resistant.

Cultural Significance: Indians parched and ground large heavy seeds of bromes into meal or pinole.

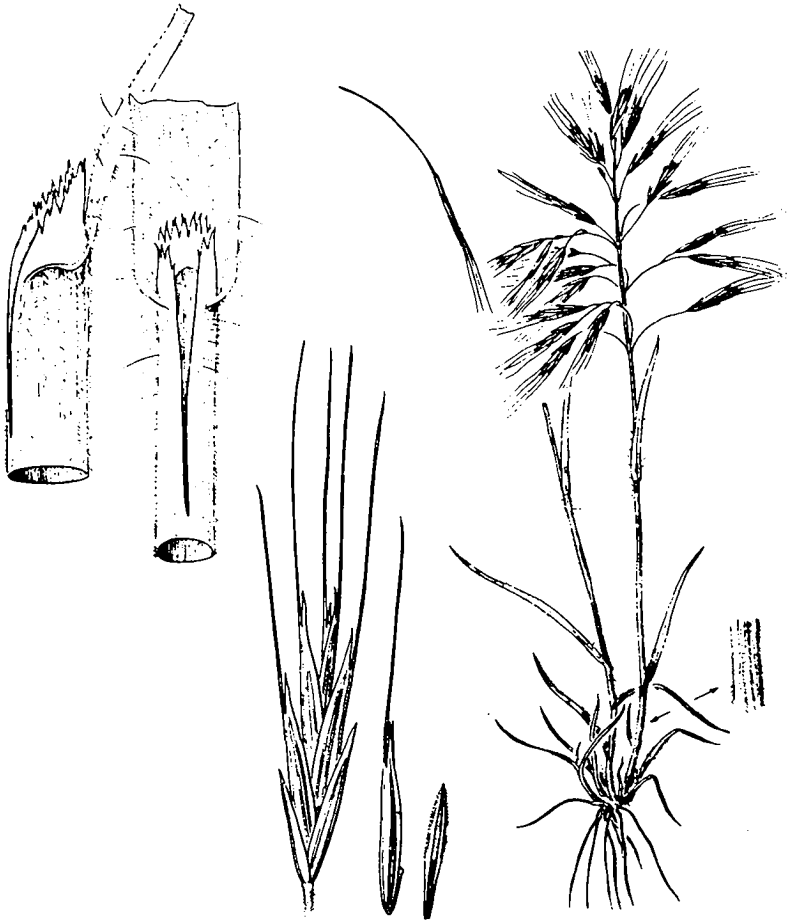
Cheatgrass Brome

Bromus tectorum **BRTE**

Description: Annual 8 - 20 inches in height; more or less densely covered with fine soft hairs on the stems and leaves; auricles lacking; ligules about 2 mm. long with a jagged or torn-appearing margin.

Leaves: Flat, 2 - 3 mm. broad, more or less hairy.

Flowers: (April - June.) Panicle somewhat compact with slender branches, the lower ones drooping; awns straight or very slightly bent.



Columbia Brome

Bromus vulgaris **BRVU**

Range: British Columbia south along coast to northwest and middle Sierra Nevada; east to southwest Alberta, Montana, and Wyoming.

Indicator Value: Found in mixed conifer and true fir forest lands; cool, moist environments; well drained soils.

Palatability: Moderate palatability.

Fire Sensitivity: Mode – Rhizome budding.
Regeneration Period – Moderate.
Resistance – Moderate to resistant.

Cultural Significance: Indians parched and ground large heavy seeds of bromes into meal or pinole.

Columbia Brome

Bromus vulgaris **BRVU**

Description: Perennial to 3 feet in height; without well-developed horizontal rootstocks; erect stems usually hairy at the nodes; sheaths commonly hairy but may be smooth; auricles lacking; ligules 3 to 5 mm. long, finely to coarsely uneven.

Leaves: Soft, flat, drooping, often covered with a dusty waxy coating.

Flowers: (June - August.) Pale green, borne in rather small open panicles with open, nodding spikes; awns 3 - 8 mm. long.

Northern Reedgrass

Calamagrostis inexpansa **CAIN**

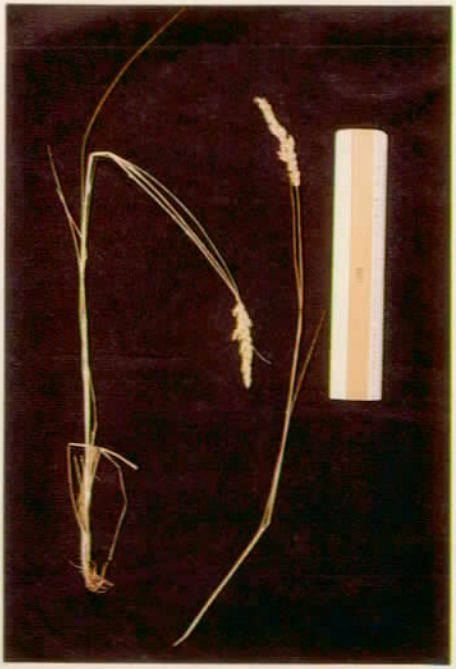
Range: Alaska to Newfoundland; all of western U.S.

Indicator Value: Meadowlands along streams, lake margins, and lodgepole pine. High productivity for ponderosa pine. Seasonally high water tables.

Palatability: Palatable.

Fire Sensitivity: Mode – Regrowth from large rootstock.
Regeneration Period – Rapid.
Resistance – Moderate to resistant.

Cultural Significance: No known use.



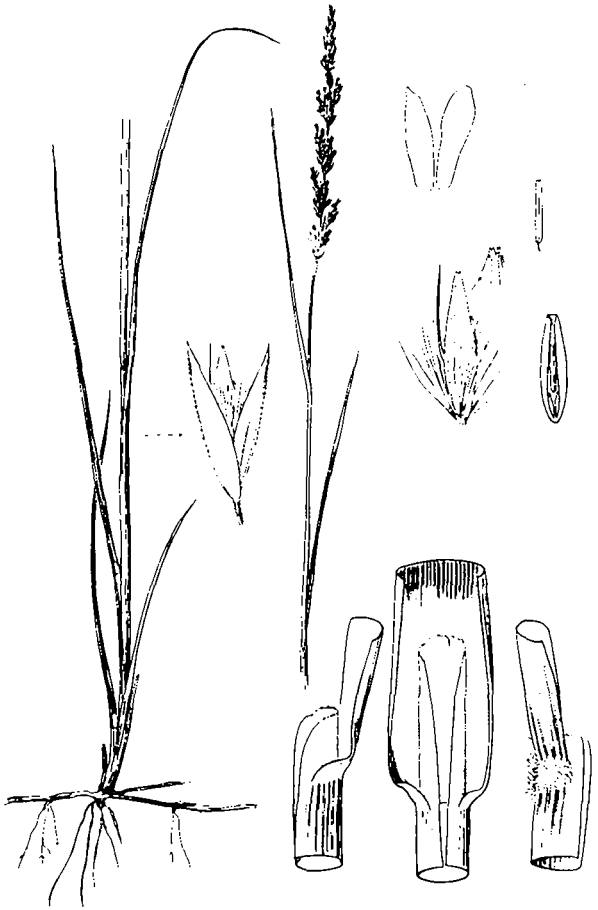
Northern Reedgrass

Calamagrostis inexpansa **CAIN**

Description: More or less clustered perennial to 4 feet in height, arising from a well-developed horizontal rootstock; erect stems more or less rough to the touch; sheaths smooth; auricles lacking; lower ligules 1.5 to 3.5 mm. long with blunt to nearly straight margins; upper ligules 4 - 10 mm. long.

Leaves: Long, tough, usually rolled in; often rough-feeling below and on the margins.

Flowers: (June - August.) Pale green, often purplish, borne in more or less congested panicles; awns very short.



Pinegrass

Calamagrostis rubescens **CARU**

Range: British Columbia to southeast Alberta; south in Cascades to southern California; eastward through Washington, Oregon, and Idaho.

Indicator Value: Ponderosa pine, lodgepole pine, and mixed conifer forest lands. Medium productivity for pine; high productivity for true fir; increases with disturbance, creating regeneration problems. Prefers warm dry environments at midelevations.

Palatability: Moderate palatability.

Fire Sensitivity: Mode – Rhizomes and seed germination after burning.
Regeneration Period – Very rapid.
Resistance – Resistant to moderate.

Cultural Significance: No known use.

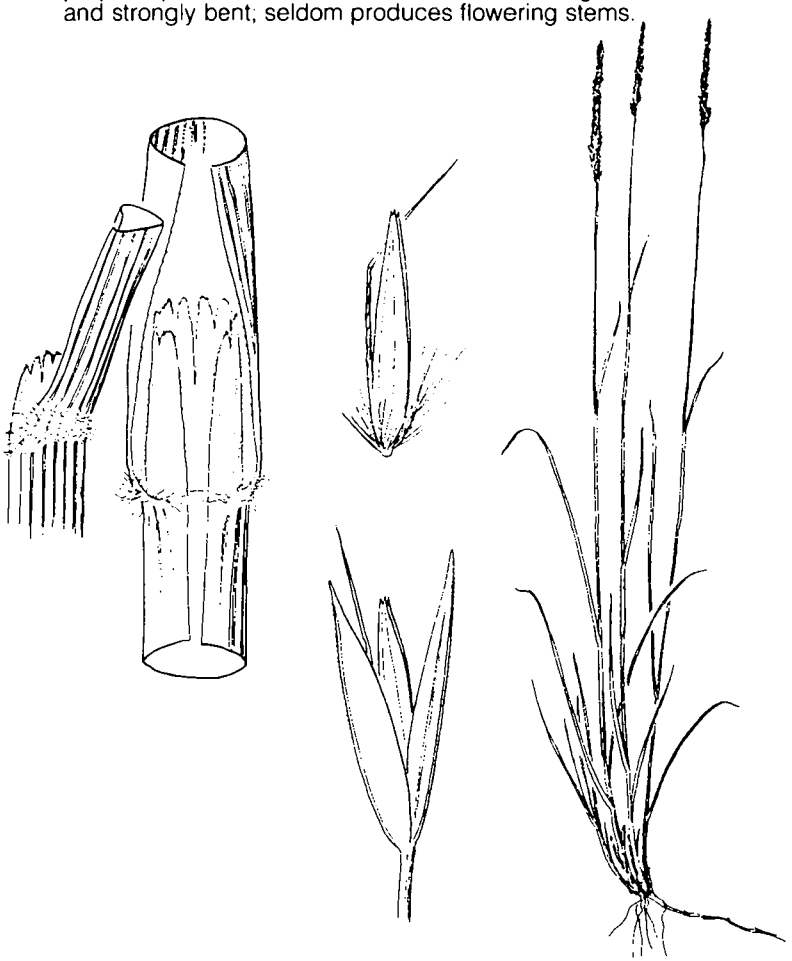
Pinegrass

Calamagrostis rubescens **CARU**

Description: Perennial to 3 feet in height, arising from a well-developed horizontal rootstock; erect stems mostly smooth; sheaths smooth except for a ring of hairs at the collar; auricles lacking; ligules 1 to 5 mm. long, with mostly blunt to jagged margins with fine hairs.

Leaves: Flat or sometimes slightly rolled in; smooth-feeling, rather long.

Flowers: (June - August.) Mostly greenish-white, sometimes purplish; panicles somewhat loose, 4 - 15 cm. long; awns twisted and strongly bent; seldom produces flowering stems.



Northwestern Sedge

Carex concinnoides **CACO**

Range: British Columbia to northern California; east to northeastern Oregon and western Montana and Alberta.

Indicator Value: Dry to moist forest lands; generally mixed conifer extending downslope into both ponderosa pine lodgepole pine forest lands. High productivity for true fir; increases with site disturbance.

Palatability: Low palatability.

Fire Sensitivity: Mode – Rhizome elongation.
Regeneration Period – Moderate.
Resistance – Moderate to resistant.

Cultural Significance: Reference only to the general group of sedges. Indians used young shoots and leaves as gum. "Today, hunters value sedge as an emergency food and a comfortable and insulated bed can be made of (tau) sedge leaves".

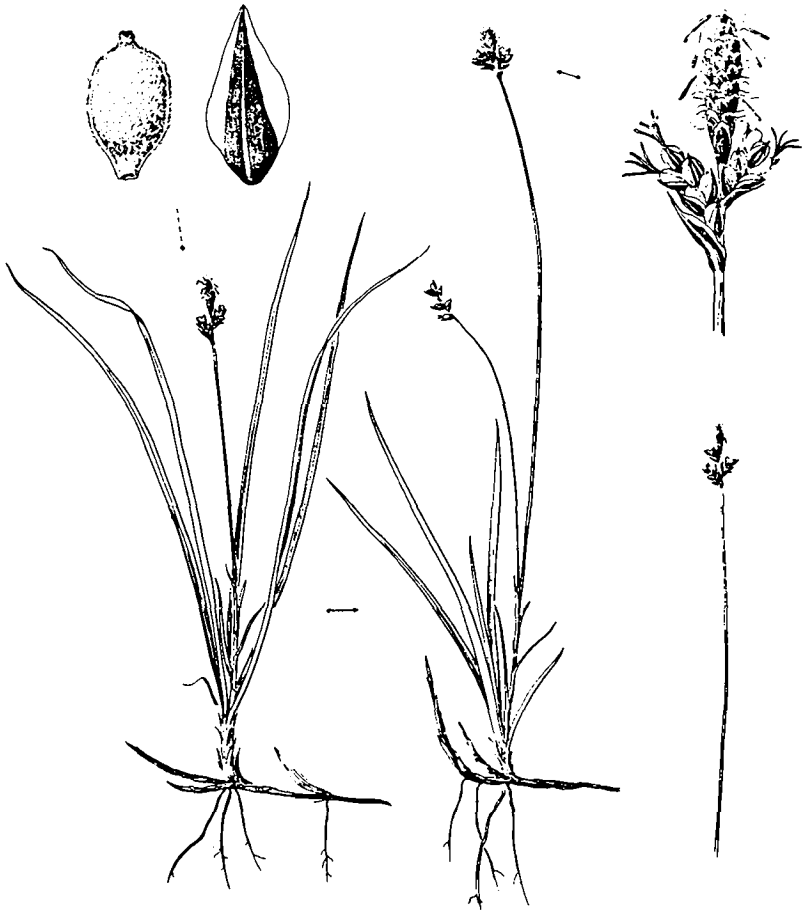
Northwestern Sedge

Carex concinnoides **CACO**

Description: Perennial to 16 inches in height, arising from slender horizontal rootstocks; erect stems triangular, smooth, usually singular and longer than the leaves.

Leaves: Slightly rough, firm; may be erect, but more commonly prostrate; blades becoming purplish at the base.

Flowers: (April - July.) Staminate spike, solitary, terminal, 8 to 20 mm. long; seeds 2.5 - 3 mm. long, plump, prominently 2-ribbed. Seldom flowers under forest conditions.



Elk Sedge

Carex geyeri **CAGE**

Range: Alberta to British Columbia and Washington; eastern Oregon and northern California to Utah and Colorado.

Indicator Value: Medium productivity ponderosa pine site with limited opportunity for true fir; Douglas-fir potential equal to ponderosa pine. In subalpine conditions in Blue Mountains often associated with subalpine sagebrush, subalpine fir, whitebark pine, and ridgetop openings.

Palatability: High palatability.

Fire Sensitivity: Mode – Rhizome extension.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: Reference only to the general group of sedges. Indians used young shoots and leaves as gum. "Today, hunters value sedge as an emergency food and a comfortable and insulated bed can be made of (tau) sedge leaves".

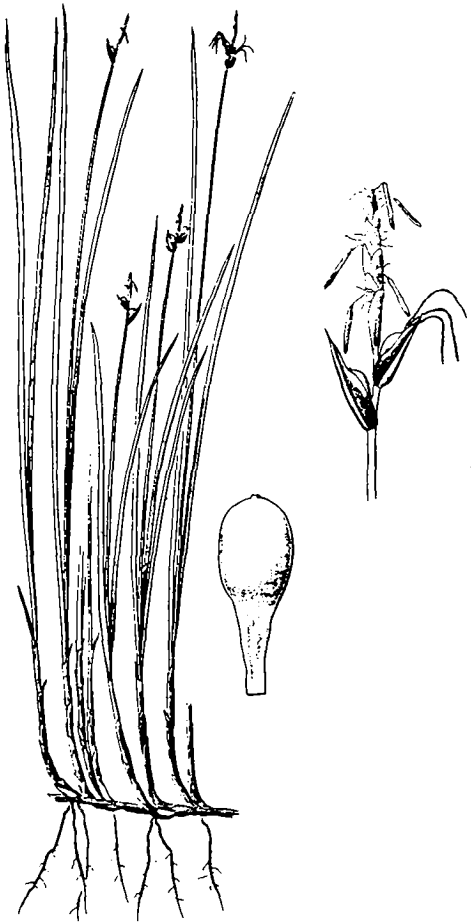
Elk Sedge

Carex geyeri **CAGE**

Description: Rather clustered perennial to 16 inches in height, arising from woody horizontal rootstocks; erect stems usually slender, rough, and usually no longer than the leaves.

Leaves: Stiff, flat, with rough margins; somewhat evergreen; as long or almost as long as the erect stems. The very lowest leaves are reduced to small scales.

Flowers: (April - July.) Staminate spike solitary, terminal with 1 - 3 inflated seeds.



Nebraska Sedge

Carex nebraskensis **CANE**

Range: Washington, Oregon, California, Arizona and New Mexico eastern. Wholly east of the Cascades.

Indicator Value: Wet to moist meadows in good to fair condition, also in lodgepole pine stands; one of the more common wet meadow indicators; decreases with heavy grazing; seasonally moist sites in the pumice zone.

Palatability: Good palatability.

Fire Sensitivity: Mode – Rhizome extension.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: Important component of wild hay.

Nebraska Sedge

Carex nebraskensis **CANE**

Description: Coarse stout perennial to 3 feet in height, arising from long scaly horizontal rootstocks; erect stems fairly leafy, sharply triangular; usually as long or longer than the basal leaves.

Leaves: Somewhat stiff, flat, pale bluish-green with a rough upper surface.

Flowers: (May - July.) Borne in 3 - 6 long cylindrical spikes per stem, the terminal 1 or 3 usually staminate.

Long-stolon Sedge

Carex pensylvanica **CAPE5**

Range: Widespread in eastern U.S., uncommon in Rocky Mountains, common again west of Cascades; uncommon in Blue Mountains.

Indicator Value: Generally mid to high elevation forest stands dominated by ponderosa pine, Douglas-fir, mountain hemlock and lodgepole pine. Increases with disturbance; rhizomes are important pocket gopher forage. Prefers well drained, warm environments; often in areas with regeneration problems.

Palatability: Moderate palatability, somewhat coarse.

Fire Sensitivity: Mode – Rhizome extension.
Regeneration Period – Very rapid.
Resistance – Resistant.

Cultural Significance: No known specific uses. Reference only to the general group of sedges. Indians used young shoots and leaves as gum. "Today, hunters value sedge as an emergency food and a comfortable and insulated bed can be made of (tau) sedge leaves".

Long-stolon Sedge

Carex pensylvanica **CAPE5**

Description: Tufted perennial to 20 inches in height, arising from well-developed creeping rootstocks; abundant clustered stems originate from short basal offsets; often appears to be growing in a line when viewed from above.

Leaves: Flat, rather soft; shorter or taller than the erect stems.

Flowers: (April - July.) Staminate spike terminal, solitary, many-flowered, 1 - 2.5 cm. long; pistillate spikes 1 - 3, borne fairly close to each other and the staminate spike.

Ross Sedge

Carex rossii **CARO**

Range: Widespread in the mountainous region of the western U.S.

Indicator Value: Ranging from nonforest to lodgepole pine, ponderosa pine, and white fir forest lands; prevalent on sites of subalpine fir climax. Increases very slightly after logging and overgrazing on all types. In undisturbed settings indicates shallow, low fertility soils or warm dry environments.

Palatability: Moderate palatability due to growth form, but deer, sheep, cattle, and elk will use it.

Fire Sensitivity: Mode – Rhizome extension.
Regeneration Period – Moderate to rapid.
Resistance – Resistant.

Cultural Significance: No known specific uses. Reference only to the general group of sedges. Indians used young shoots and leaves as gum. "Today, hunters value sedge as an emergency food and a comfortable and insulated bed can be made of (tau) sedge leaves".

Ross Sedge

Carex rossii **CARO**

Description: Densely clustered perennial 4 - 8 inches in height, does not produce a very well developed creeping rootstock; erect stems very slender and often enclosed with old sheaths.

Leaves: Long, rather soft, often taller than the erect stems; rough margins, the basal sheaths turn a dark red.

Flowers: (May - August.) Staminate spike terminal, short and slender 5 - 12 mm. long; pistillate spikes often borne on slender stalks from near the base of the upright stem.

Blue Wildrye

Elymus glaucus **ELGL**

Range: Widespread in the western U.S.

Indicator Value: Variable, ranging from meadowlands to mesic conifer sites; low to high elevation. Seasonally high water tables if found in meadows and lodgepole pine stands, but may enter the edge of ponderosa pine and Douglas-fir types.

Palatability: Moderate palatability to cattle.

Fire Sensitivity: Mode – Rootstock regrowth.
Regeneration Period – Moderate to rapid.
Resistance – Moderate.

Cultural Significance: Grain pounded or ground into a flour.

Blue Wildrye

Elymus glaucus **ELGL**

Description: Tufted perennial to 4 feet in height forming small clumps; erect stems usually slightly hairy; sheaths short, hairy or smooth, often purple at the collar; auricles well developed, obvious; ligules about 1 mm. long; jagged margins, slightly hairy.

Leaves: Flat, thin; smooth or thinly hairy above.

Flowers: (June - August.) Borne in an erect stiff spike usually with two spikelets per node; awns usually 1 - 2 cm. long and straight.

Idaho Fescue

Festuca idahoensis **FEID**

Range: British Columbia to Alberta; southward in Cascades and Olympic Mountains through Oregon to California.

Indicator Value: Variable, ranging from shrub/steppe through ponderosa pine and lodgepole pine forest lands; uncommon in mixed conifer forest lands.

Without trees: Moderate to deep (24") nonforested soils; good range seeding potential; decreases with overgrazing.

With trees: Low to medium palatability for ponderosa pine; usually found with bitterbrush and/or manzanita; decreases under grazing. Severe competitor for soil moisture.

Palatability: Fair to good, must force livestock use. Enhanced by burning.

Fire Sensitivity: Mode – Seed germination; root regrowth.
Regeneration Period – Moderate to slow.
Resistance – Susceptible to moderate.

Cultural Significance: No known use.

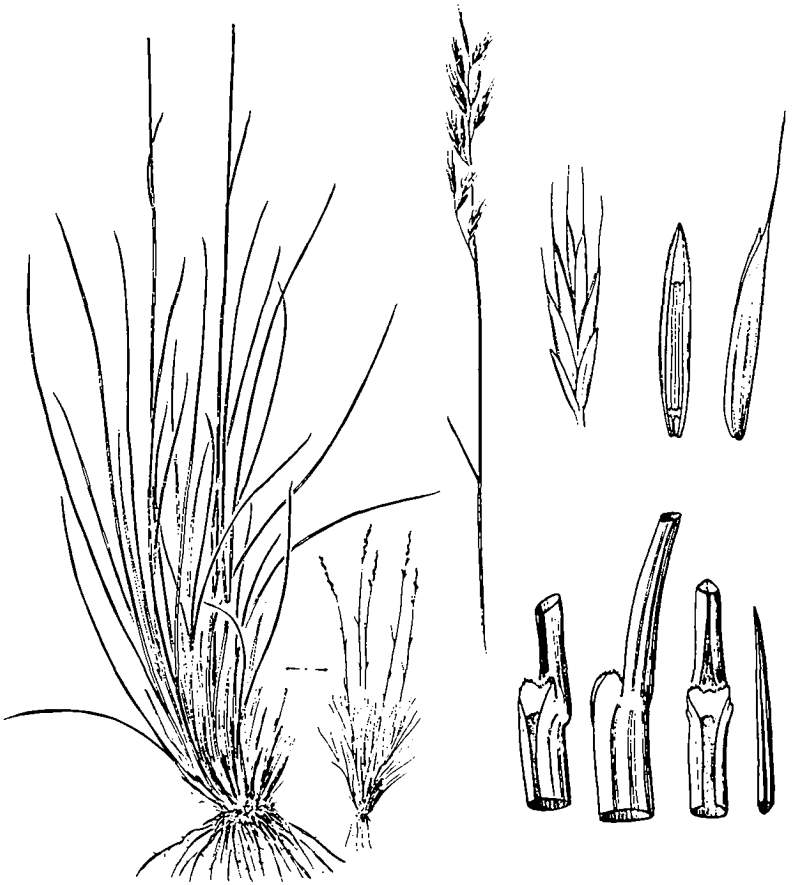
Idaho Fescue

Festuca idahoensis **FEID**

Description: Densely tufted perennial to 40 inches in height; erect stems, smooth to very slightly hairy; sheaths mostly without hairs; auricles lacking; ligules less than 0.6 mm. long, roughened, higher on the sides, slightly hairy.

Leaves: Very slender, basal leaves very abundant; slightly rough and rolled in.

Flowers: (May - July.) Panicle narrow with branches ascending to erect, 7 - 15 cm. long; awns rather stout, about 3 mm. long; flowering quite variable between seasons; often found without stalks, particularly in forest stands.



Bearded Fescue/Western Fescue

Grass Family

Festuca subulata*/*Festuca occidentalis **FESU/FEOC**

Family Gramineae

Range: Western fescue occurs from British Columbia south along the coast and in the mountains to central California, across Canada to Ontario, and south to Michigan; bearded fescue has a similar distribution, but extends north to southern Alaska, and south into northern California and Utah; both species occur east to Montana and Wyoming.

Indicator Value: Dry woods and meadows, lowland to montane.

(Photo shows western fescue)

Bearded Fescue/Western Fescue

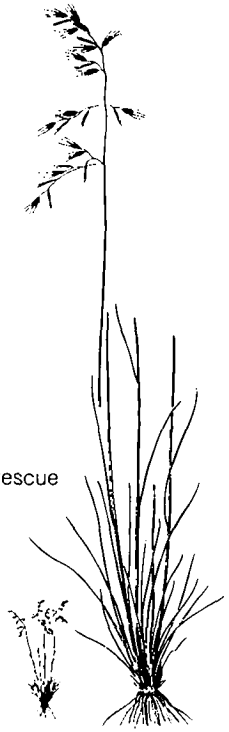
Festuca subulata/Festuca occidentalis **FESU/FEOC**

Description: Perennial grass, generally less than 3 feet in height, hollow stems, open sheaths, no auricles, open panicle; membranous ligules up to 3/10 inch long, highest on the sides, upper margin with short inconspicuous fringe of hairs. Western fescue has dense tufts of basal leaves with few leaves on the stem; bearded fescue has several leafy stems in an open clump, but few basal leaves.

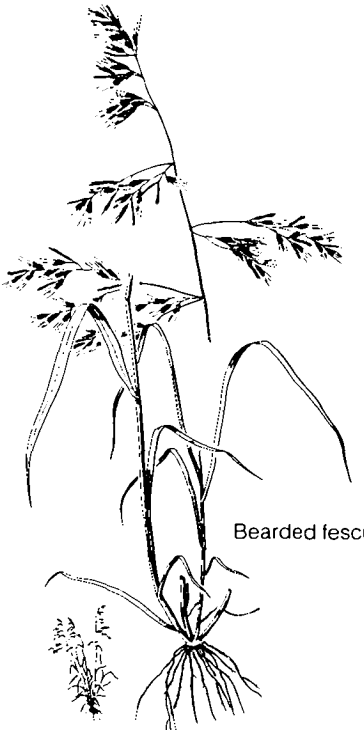
Leaves: Bearded fescue has lax, flat blades, 1/4 to 1/2 inch broad; blades of western fescue are very slender and with rolled margins.

Flowers: (May - July for western fescue; May - June for bearded fescue) Large, open, usually drooping panicle; spikelets with three to seven flowers, floral bract (lemma) with bristle tip (awn), 1/4 to 5/8 inch long in western fescue, awn 1/4 to 1/2 inch in bearded fescue.

Fruit: Hard, dry, one-seeded fruit.



Western fescue



Bearded fescue

Common Woodrush

Luzula campestris* var. *multiflora **LUCAM**

Range: Alaska to southern California, east through most of North America.

Indicator Value: Variable, ranging from grasslands to deeply shaded mixed conifer forest lands. Very common in Douglas-fir canyon lands of northeast Oregon. Low to medium productivity for both ponderosa pine and Douglas-fir; cold, xeric environments.

Palatability: Palatable.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate.
Resistance – Moderate to susceptible.

Cultural Significance: No known use.

Common Woodrush

Luzula campestris* var. *multiflora **LUCAM**

Description: Tufted perennial 8 - 12 inches in height; without a well developed horizontal root system.

Leaves: Mostly basal with 2 - 4 leaves arising from the upright stem; generally hairy, especially at the junction with the stem.

Flowers: (April - July.) Flowers congested into small stiffly erect clusters of 8 - 15.

Smooth Woodrush
Rush Family

Luzula hitchcockii **LUHI**
Family Juncaceae

Range: From southern British Columbia south to southern Oregon and east to northern Wyoming.

Habitat: Cold environments with a heavy, persistent snowpack. Indicates sites with severe reforestation problems from snow and frost damage.

Similar Species: Easily confused with other woodrushes except that smooth woodrush is the only one with no hairs on the upper leaf blades. It grows at higher elevations than the others. Woodrushes are neither grasses or sedges but are in a separate family. They resemble sedges more than grasses but their floral parts are different.

Remarks: It often appears without seed heads; forming a rusty-brown to light greenish, coarse carpet in high elevation forests and openings. Unpalatable. Early to late successional.

Smooth Woodrush

Luzula hitchcockii **LUHI**

Habit: A strongly rhizomatous, perennial woodrush; 6 to 20 inches tall.

Description: ***Leaves:*** wide and commonly brown to reddish spotted with reddish-brown tips. The bases are often long-hairy while the upper blades are smooth, hairless and somewhat "fleshy". ***Flowers:*** (July-September) the seed-head is open, 1 to 3 inches long, generally nodding with solitary, brown to purplish-brown flowers. ***Fruits:*** small capsules.

Wheeler's Bluegrass

Poa nervosa **PONE**

Range: British Columbia to Alberta; south to California, Nevada, Colorado, and New Mexico.

Indicator Value: Primarily found on forested sites ranging between ponderosa pine and mixed conifer forest lands. Increases with site disturbance, decreases with overgrazing except in Blue Mountains, where it increases; occasional regeneration problems.

Palatability: Palatable to cattle and sheep.

Fire Sensitivity: Mode – Residual plant survival; seed germination.
Regeneration Period – Moderate to rapid.
Resistance – Moderate.

Cultural Significance: No known use.

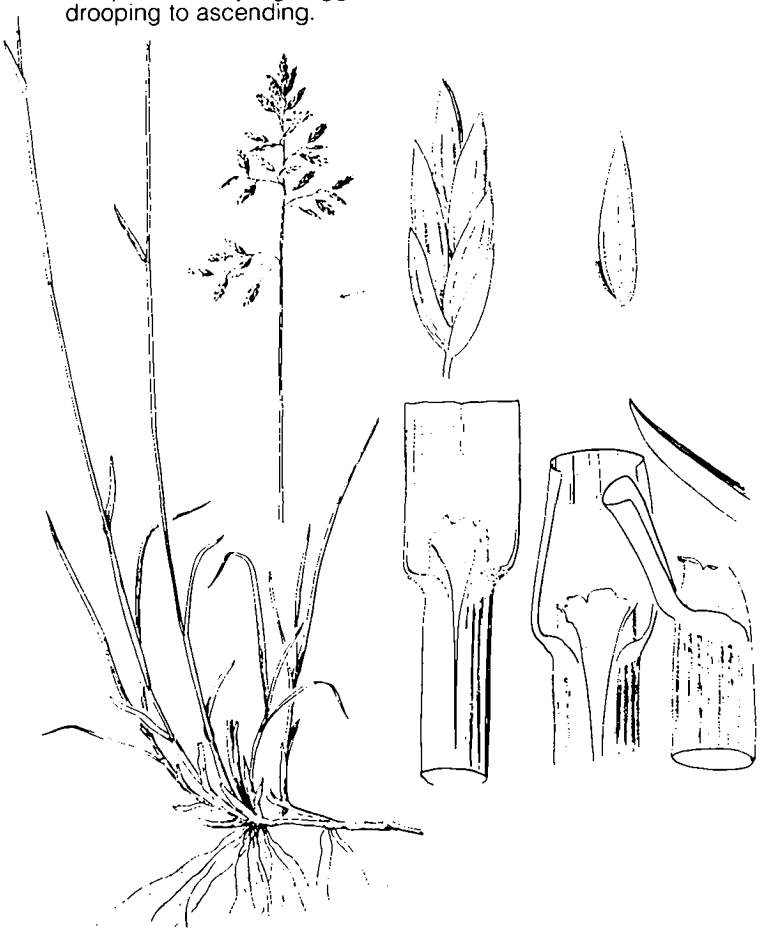
Wheeler's Bluegrass

Poa nervosa **PONE**

Description: Closely tufted perennial to 30 inches in height, arising from slender horizontal rootstocks; lower sheaths usually hairy and purple, upper sheaths usually smooth or slightly rough, all generally closed for at least half their length; ligule 0.5 - 2 mm. long and rounded or nearly straight, minutely hairy.

Leaves: Flat, nearly smooth above; often finely hairy and paler beneath; leaf tip shaped like the prow of a boat.

Flowers: (April - August.) Panicle 5 - 10 cm. long, loose to rather compact, usually zig-zagged at the end, slender branches drooping to ascending.



Sandberg's Bluegrass

Poa sandbergii **POSA3**

Range: Yukon and British Columbia, mostly east of the Cascades; south to California, then eastward into the middle U.S.

Indicator Value: Very widespread plant, from shallow soil scablands to ponderosa pine/fescue and ponderosa pine/bitterbrush types in the Blue and Wallowa Mountains, nonforest elsewhere; tends to increase with livestock overgrazing, decrease with wildlife overgrazing; warm dry environments.

Palatability: Highly palatable to deer and elk in the spring.

Fire Sensitivity: Mode – Residual plant survival.
Regeneration Period – Rapid.
Resistance – Moderate to resistant.

Cultural Significance: No known use.

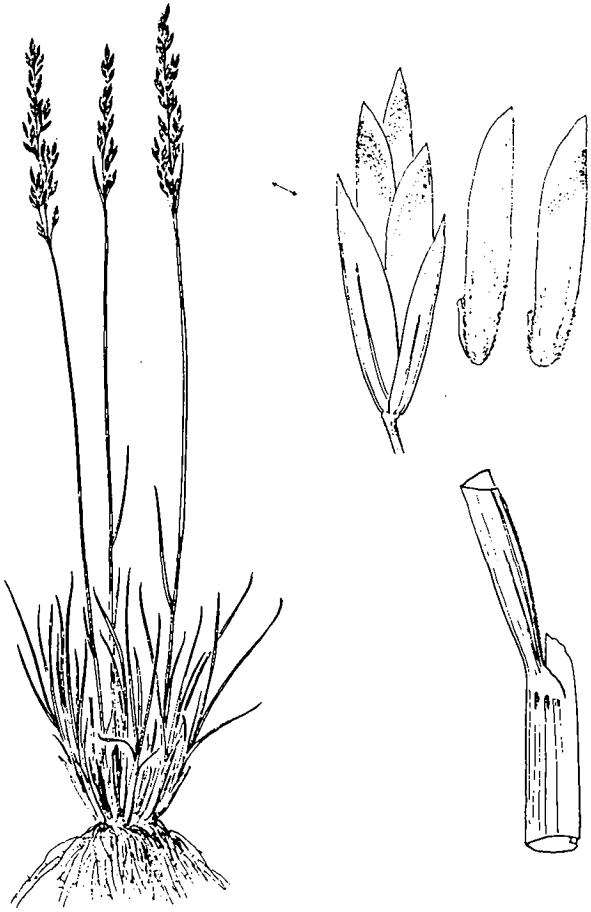
Sandberg's Bluegrass

Poa sandbergii **POSA3**

Description: Strongly tufted perennial 4 - 12 inches in height; usually more or less purplish-tinged all over, especially the erect stems and panicles; without well developed horizontal rootstocks; sheaths usually smooth or slightly rough, generally closed for about 1/6 their length; ligules very thin, sharp pointed, slightly hairy, lower ones about 1 mm. long, upper ones up to 5 mm. long.

Leaves: Numerous, mostly basal; very thin and slightly rolled under, generally somewhat curled.

Flowers: (April - late June.) Dense to rather open panicles with ascending to erect branches, spikelets usually purplish-tinged.



Bottlebrush Squirreltail

Sitanion hystrix **SIHY**

Range: British Columbia to Alberta; south to California, Arizona, Texas, Nebraska, Oklahoma, and New Mexico.

Indicator Value: Non-forest to either ponderosa pine or lodgepole pine forest lands; prefers hot dry environments east of the Cascades or cold dry environments in the Cascades.

Without trees: Increases with overgrazing; abundance indicates fair to poor range condition; fair to good sage and bunchgrass sites.

With trees: Tends to increase with overgrazing and site disturbance; tends to indicate low to very low productivity sites for ponderosa pine.

Palatability: Moderate palatability early in the season.

Fire Sensitivity: Mode – Seed germination; residual plant survival.
Regeneration Period – Rapid.
Resistance – Resistant.

Cultural Significance: No known use.

Bottlebrush Squirreltail

Sitanion hystrix **SIHY**

Description: Closely clustered perennial to 20 inches in height; bright green to very dusty-appearing, with hollow upright stems; sheaths open, slightly hairy to smooth; auricles very short (less than 1 mm. long), often lacking; ligules very short and thin, with finely hairy margins.

Leaves: Flat to rolled under, hairy above and sometimes below.

Flowers: (May - July.) Spike exserted to partially included in upper sheath; 3 - 15 cm. long; from very compact to rather loose, pulls apart in sections easily when mature; very long slender awns.

Western Needlegrass

Stipa occidentalis **STOC**

Range: Yukon and British Columbia to southern California; east to Saskatchewan, the Dakotas, southwestern Texas, and New Mexico.

Indicator Value: Dry nonforest to dry ponderosa pine and lodgepole pine forest lands. Tends to decrease with overgrazing and site disturbance; moderate to deep soils in sage, bunchgrass and forest types. Hot dry forest savanna and low to very low productivity for ponderosa pine.

Palatability: Moderate palatability for livestock and deer.

Fire Sensitivity: Mode – Seed germination.
Regeneration Period – Moderate to rapid.
Resistance – Susceptible.

Cultural Significance: No known use.

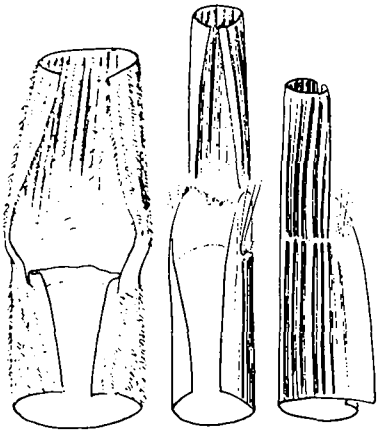
Western Needlegrass

Stipa occidentalis **STOC**

Description: Strongly clustered perennial to 2 feet in height; sheaths slightly hairy to smooth; auricles lacking; ligules very short (± 1 mm. long), slightly hairy.

Leaves: Mostly rolled under, with very slender hairs; or rough above.

Flowers: (May - August.) Panicle narrow with erect branches, 5 - 30 cm. long; awns bent twice, generally hairy below first bend.



GLOSSARY

GLOSSARY

Acuminate. Tapering at the end into a long point with somewhat concave sides.

Alkaloids. Any of the usually colorless, complex, and bitter organic bases containing nitrogen and usually oxygen that occur especially in seed plants.

Astringent. Able to draw together soft organic tissues.

Auricle. A small projecting lobe or appendage at the base of a leaf.

Awn. One of the slender bristles that terminate the husk of grass seeds.

Axil. The angle between the leaf and the stem.

Caudex. A short persistant stem at or just below the ground surface.

Cordate. Heart-shaped; usually referring to the base of a leaf.

Corm. A thickened underground stem base modified for food storage and/or plant propagation.

Decoct. To extract by boiling (coffee making).

Dysuria. Difficult or painful discharge of urine.

Exfoliating. Peeling off in layers.

Foment. To treat with moist heat.

Glabrous. Smooth, without hairs or glands.

Grippe. A contagious virus identical or similar to influenza.

Infusion. To steep or soak in water or other fluid without boiling (tea making).

Ligule. The projection on the inner (upper) side of a leaf at the junction of the blade and sheath.

Mesic. Moderately moist.

Mucronate. With a short abrupt tip.

Palmate. Radially lobed, divided, or ribbed in a palm-like or hand-like fashion.

Petiole. The stalk of a leaf.

Pinole. A finely ground flour made from parched corn, grain, or seeds.

Purgative. To cause evacuation of the bowels.

Reniform. Kidney-shaped.

Rhizome. An underground stem.

Saponin. Any of the various glucosides found in plants marked by the property of producing a soapy lather.

Sepal. One of the outermost set of flower leaves, typically greenish and leaf-like.

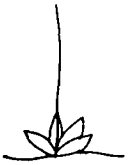
Sheath. The portion of a leaf which surrounds the stalk.

Stolon. A long creeping stem which roots at the nodes.

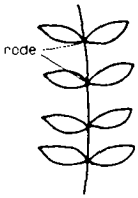
Xeric. Low or deficient in available moisture.

Terms of Vegetative Structures

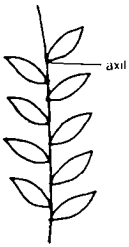
Leaf Arrangement



basal



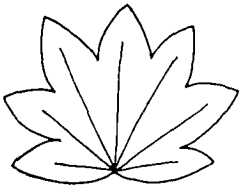
opposite



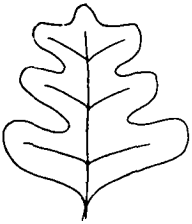
alternate

whorled

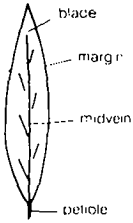
Leaf Shape



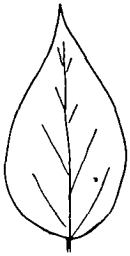
palmately lobed



pinnately lobed



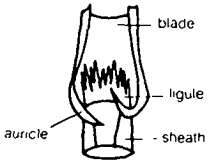
lanceolate



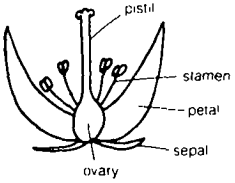
ovate

elliptic

Grass Parts



Flower Parts



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