SELECTED COMMENTS ON THE VEGETATION AND FLORA OF MARYS PEAK, BENTON COUNTY

by

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Introduction

Marys Peak (4,097 ft) is the highest point in the Oregon Coast Range. Situated in Benton County 15 mi. southwest of Corvallis and 25 mi. from the Pacific Ocean, the peak is a prominent landmark for the central Willamette Valley. A road, initiated in 1938 by WPA and CCC crews, was completed in 1941 and provides public access to a campground, a trail complex and parking area a few hundred feet below the summit. One can climb the north slope of the peak 2,300 ft. by trail from the Woods Creek road head, or 1,600 ft. across the east slope accessed about 5.6 miles from Hwy 34 on the Marys Peak road.

In 1987, the Forest Service established the Marys Peak Scenic Botanical Special Interest Area. The 1,300 acre area features an outstanding scenic and botanical complex embracing an extensive grassland, xeric "rock garden", noble fir forest, and panoramic view of the Cascades, Coast Range and Willamette Valley. The summit has long been a lodestone for botanists because of its diverse flora and distinctive vegetation.

A fire lookout was formerly located at the summit. Today, microwave installations are sited on several high points. Heavy logging has taken place on lower slopes on private, City of Corvallis, BLM, and Forest Service lands. On the summit area, general recreational activity, including mountain bike use, unauthorized ATV trespass and vandalism, today constitute major disturbances.

Geology and Climate

An erosion resistant Mid-Tertiary sill intruding Eocene sandstones, which overlie early Eocene Siletz River Volcanics, caps Marys Peak. The peak is bounded by several northeast and southeast trending faults. One can observe the volcanic basement rocks in cuts along the first few miles of the Marys Peak road. An exemplary exposure of fine textured sandstone (Eocene Flournoy Formation [formerly the Tyee]) is 6.5 mi. from the beginning of the Marys Peak Road on the north side. Parker Creek waterfall (at 6.1 mi.) displays the erosion resistant gabbro forming the Marys Peak sill. The intrusive gabbro elsewhere grades into a granophyric diorite making up the coarse parent material for the grassland and rock garden (Lawrence et al. 1980).

Climate is maritime with heavy precipitation (123 in. annually) concentrated from October to May. Less than 5% of the yearly precipitation falls in summer. Snowpack above 3,700 ft. is deep, but seldom remains past mid-May. Powerful winds and periods of winter thaw prevent appreciable snow accumulation on the south and west slopes, but drifts pile up on sheltered north and east slopes. Gale-force winds and thick rime accumulations characterize summit winter conditions.

Vegetation

Extending in elevation slightly above the Western Hemlock Zone, the summit area embraces several vegetation types that were first described by Merkle (1951). The peak's north slopes are dominated by western hemlock, noble fir and Douglas fir; east slopes by noble fir and at lower elevations by Douglas fir; south slopes by Douglas fir; and west slopes by hemlock and Douglas fir. An almost pure noble fir forest, the most extensive stand in the Coast Range, surrounds the prominent grassland, occupying elevations above 3,500 ft.. Bordering the meadow on the south is a precipitous apron of vine maple. A narrow riparian strip lines Parker Creek, which plunges southward in a series of cascades from the summit. One of the most botanically interesting vegetation types on the peak is the summit "rock garden", a lithosolic (thin soil) community with a south to southwestern exposure.

The area has occasionally been burned as evidenced by tree age structure, snags, and fire scars. Burns in 1908 on the north slope and in 1932 on the south slope, did not reach the summit (Merkle 1951). Noble fir forest age is about 120-150 years with only a few sentinels of 225 years. However, the forest reflects wind damage, especially though the creation of gaps and at the forest-meadow edge where the forest is encroaching on the meadow relatively rapidly at 0.1-0.5 m/yr (Hadley and Savage 1996). Abetted by forest canopy openings for the road and an historic campground, recent wind damage has been severe. The apparent logging in the summit area has been strictly a salvage operation to remove timber from two recent blowdowns.

Two additional studies have documented significant features in the summit area. Teresa Magee and Joe Antos (1992) analyzed the stability of the boundary (ecotone) between the noble fir forest and meadow with specific reference to tree invasion. Tree invasion into the meadow is occurring at meadow margins. They recognized four boundary types within which active noble fir tree invasion is progressing. Tree invasion is controlled by such environmental factors as light and moisture as well as by competitive factors. Deep graminoid litter accumulation in the meadow, limits tree seedling establishment. Mineral soil exposure, deep snow, reduced meadow vegetation and proximity to already established trees, encourage seedling establishment. Peak years in which tree seedlings established coincide with abundant rain during the growing season. The role of fire in maintaining the distinctiveness of the grassland is unclear, but it is believed that "even infrequent fires . . . could maintain the meadow" (Magee and Antos 1992). In the short term, in the face of human disturbance and fire exclusion, the grassland appears stable; but stability is problematic in the longer term (>100 years).

In still another study, Billy Snow (1984) identified four grassland plant communities including three community phases:

1. *Festuca rubra-Agrostis diegoensis-Carex californica* community dominating the grassland with three phases:
    a. Dry Phase, a species-poor assemblage on south slopes
    b. Forb Phase, a forb-rich assemblage on west slopes dominated by *Pteridium aquilinum*
    c. Disturbed Phase, with combinations of forbs, grasses and some ruderals

2. *Senecio triangularis* community on north slopes including a snowbed assemblage with *Erythronium grandiflorum* and *Anemone lyallii*
3. *Iris tenax* community, a species-rich inclusion in an otherwise species-poor grass and sedge meadow
4. Xerophytic rock garden community, a lithosolic community on the southwest slope with many spring-flowering forbs

Flora

Marys Peak is of special floristic interest because of its isolation and elevation in the Coast Range. In a study of disjunct species with xeric affinities west of the Cascades Detling (1953) examined several Coast Range and Western Cascades mountains including Marys Peak. He hypothesized that during the warm dry period that prevailed between 6,000 and 4,000 years before the present, a xeric flora advanced from southern and eastern Oregon into more mesic northwestern Oregon. Subsequently, with the advance of moister and cooler conditions, these xeric species persisted in thin-soil habitats on mountain tops. For example, *Lupinus lepidus* was thought to have come from central Oregon, and *Eriogonum umbellatum* from the Rogue area. The affinities of the flora with more northern and more montane elements is suggested by the dominance of noble fir (*Abies procera)* and such small assemblages as a snowbed ~~community characterized by~~ *Erythronium grandiflorum*.

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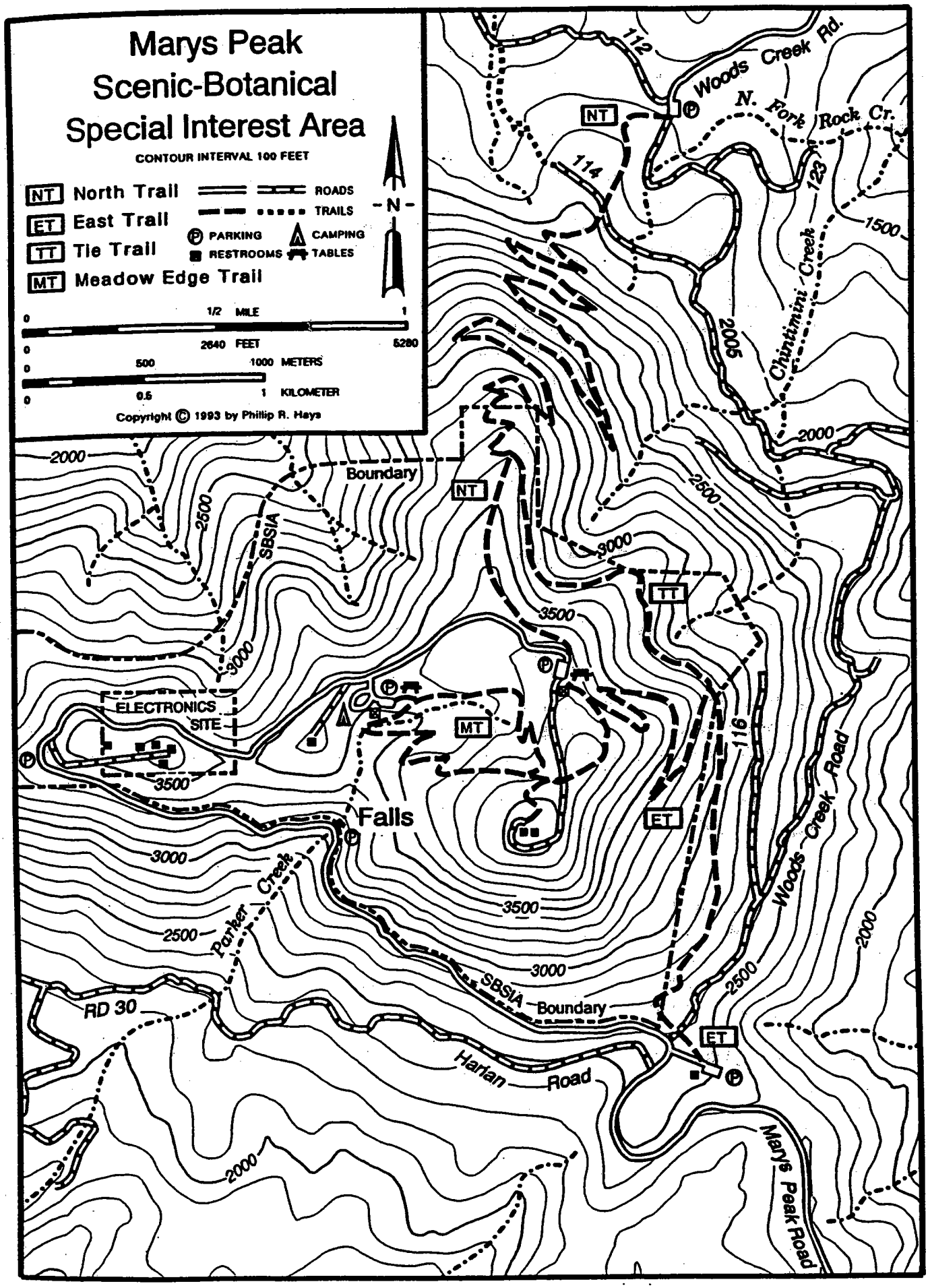
6/2005


Marys Peak
Scenic-Botanical
Special Interest Area
CONTOUR INTERVAL 100 FEET
NT North Trail
ET East Trail
TT Tie Trail
MT Meadow Edge Trail
ROADS
TRAILS
PARKING
CAMPING
RESTROOMS
TABLES
N
0 1/2 MILE 1
0 2640 FEET 5280
0 500 1000 METERS
0 0.5 1 KILOMETER
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Woods Creek Rd.
N. Fork Rock Cr.
Chintimini Creek
Boundary
SBSIA
ELECTRONICS SITE
Falls
Parker Creek
RD 30
Harlan Road
Woods Creek Road
Marys Peak Road
112
114
116
123
2000
2500
3000
3500
1500

Marys Peak Scenic Botanical Area Plant Species List

2005 update by Esther

This plant list was compiled from lists of Teresa Magee and Billy Snow, Dave Danley, and Alcetta Campbell. Bob Frenkel, Phil Hays, and Esther Guber McEvoy have been annotating the list over the past years. Plant list was annotated by Rhoda Love with the Oregon check list to reflect modern usage

Scientific Name	Common Name	Family
Acer circinatum	vine maple	**Aceraceae**
Ligusticum apiifolium	celery leaved lovage	**Apiaceae**
Lomatium martindalei	Martindale's lomatium	**Umbelliferae**
Lomatium utriculatum	common lomatium	Umbelliferae
Osmorhiza purpurea	purple sweet cicely	Umbelliferae
Apocynum androsaemifolium	spreading dogbane	**Apocynaceae**
Oplopanax horridum	devils club	**Araliaceae**
Ascarum caudatum	wild ginger	**Aristolochiaceae**
Achillea millefolium	yarrow	**Asteraceae**
Adenocaulon bicolor	pathfinder	Asteraceae
Anaphalis margaritacea	common pearly everlasting	Asteraceae
Arnica amplexicaulis	clasping Arnica	Asteraceae
Aster radulinus	rough leaved aster	Asteraceae
Bellis perennis	English daisy	Asteraceae
Leucanthemum vulgare=		
(Chrysanthemum leucanthemum)	oxeye daisy	Asteraceae
Cirsium edule	edible thistle	Asteraceae
Cirsium hallii	Hall's thistle	Asteraceae
Cirsium vulgare	bull thistle	Asteraceae
Crepis capillaris	smooth hawksbeard	Asteraceae
Eriophyllum lanatum	woolly sunflower	Asteraceae
Hieracium albiflorum	white flowered hawksweed	Asteraceae
Hypochaeris radicata	spotted cats-ear	Asteraceae
Lactuca biennis	tall blue lettuce	Asteraceae
Lapsana communis	nipplewort	Asteraceae
Madia madioides	woodland tarweed	Asteraceae
Matricaria discoidea	pineapple weed	Asteraceae
Senecio integerrimus var. exaltatus	western groundsel	Asteraceae
Senecio jacobea	tansy ragwort	Asteraceae
Senecio sylvaticus	wood groudsel	Asteraceae
Senecio triangularis	arrow leaf grounsel	Asteraceae
Tanacetum vulgare	common dandelion	Asteraceae
Taraxacum officinale	common dandelion	Asteraceae
Achlys triphylla	vanilla leaf	**Berberidaceae**
Berberis aquifolium	shining Oregongrape	Berberidaceae
Berberis nervosa	dull Oregongrape	Berberidaceae
Vancouveria hexandra	white inside-out-flower	Berberidaceae
Alnus rubra	red alder	Betulaceae
Corylus cornuta var. *californica*	hazelnut	**Betulaceae**
Arabis glabra	tower mustard	**Brassicaceae**
Cardamine pulcherrima var.pulcherima	spring beauty	Brassicaceae
Draba verna	spring Whitlow grass	Brassicaceae
Erysimum asperum	rough wallflower	Brassicaceae
Streptanthus cordatus	heart shaped streptanthus	Brassicaceae
Campanula scouleri	Scouler's harebell	**Campanulaceae**

Linnaea borealis	twinflower	**Caprifoliaceae**
Sambucus mexicana	blue elderberry	Caprifoliaceae
Sambucus racemosa var. arborescens	coast red elderberry	Caprifoliaceae
Symphoricarpos albus	creeping snowberry	Caprifoliaceae
Symphoricarpos mollis	common snowberry	Caprifoliaceae
Arenaria macrophylla	common snowberry	**Caryophyllaceae**
Cerastium arvense	bigleaf sandwort	Caryophyllaceae
Cerastium fonatanum spp vulgare	common mouse ear	Caryophyllaceae
Silene douglasii	Douglas silene	Caryophyllaceae
Spergularia rubra	red sandspurry	Caryophyllaceae
Stellaria crispa	crisped starwort	Caryophyllaceae
Thuja plicata	western red ceder	**Cupressaceace**
Carex californica	California sedge	**Cyperaceae**
Carex fracta	fragile sheathed sedge	Cyperaceae
Carex hoodii	Hood's sedge	Cyperaceae
Carex mertensii	Mertens' sedge	Cyperaceae
Carex rossii	Ross' sedge	Cyperaceae
Carex aquatilis var. dives=		
Carex sitchensis	Sitka sedge	Cyperaceae
Arctostaphylos uva-ursi	kinnikinnick	**Ericaceae**
Chimaphila umbellata	prince's pine	Ericaceae
Gaultheria shallon	salal	Ericaceae
Monotropa hypopitys =	pinesap	Ericaceae
Hypopitys monotropa	pinesap	Ericaceae
Monotropa uniflora	Indian pipe	Ericaceae
Pyrola aphylla	leafless pyrola	Ericaceae
Pyrola picta	white veined pyrola	Ericaceae
Vaccinium membranaceum	big huckleberry	Ericaceae
Vaccinium parvifolium	red huckleberry	Ericaceae
Vaccinium scoparium	grouseberry	Ericaceae
Cytisus scoparius	Scotch broom	**Fabaceae**
Lathyrus polyphyllus	leafy peavine	Fabaceae
Lathyrus nevadensis	sweetpea	Fabaceae
Lotus crassifolius	big deervetch	Fabaceae
Lotus micranthus	small flowered lotus	Fabaceae
Lupinus albicaulis	sickle keeled lupine	Fabaceae
Lupinus lepidus var. lobbii	prostrate lupine	Fabaceae
Lupinus rivularis	riverbank lupine	Fabaceae
Melilotus officinalis	yellow sweet clover	Fabaceae
Trifolium dubium	least hop clover	Fabaceae
Trifolium pratense	red clover	Fabaceae
Trifolium repens	white clover	Fabaceae
Trifolium subterraneum	subterraneum clover	Fabaceae
Vicia americana var. *truncata*	smoothpod American vetch	Fabaceae
Chrysolepis chrysophylla var. chrysophylla		**Fagaceae**
Castanopsis chrysophylla	golden chinquapin	Fagaceae
Dicentra formosa	Pacific bleedingheart	**Fumariaceae**
Ribes sangineum	red flowering currant	**Grossulariaceae**
Hydrophyllum capitatum	ballhead waterleaf	**Hydrophyllaceae**
Hydrophyllum occidentale	western waterleaf	Hydrophyllaceae
Hydrophyllum tenuipes	slender stem waterleaf	Hydrophyllaceae
Nemophila parviflora var. parviflora	wood nemophila	Hydrophyllaceae
Phacelia heterophylla	varileaf phacelia	Hydrophyllaceae
Phaceilia nemoralis	woodland phacelia	Hydrophyllaceae
Romanzoffia sitchensis	Sitka mistmaiden	Hydrophyllaceae

Iris tenax	Oregon iris	**Iridaceae**
Luzula campestris	field wood rush	**Juncaceae**
Luzula parviflora	small flowered wood rush	Juncaceae
Prunella vulgaris var. lanceolata	native heal all	**Lamiaceae**
Satureja douglasii	yerba buena	Lamiaceae
Stachys mexicana	Mexican betony	Lamiaceae
Stachys rigida	rigid betony	Lamiaceae
Allium crenulatum	scalloped onion	**Liliaceae**
Calochortus tolmiei	Tolmie's mariposa	Liliaceae
Clintonia uniflora	Queen's cup	Liliaceae
Prosartes hookeri		
Disporum smithii	fairy bells	Liliaceae
Prosartes smithii		
Disporum smithii	fairy lanterns	
Erthyronium grandiflorum var. grandiflorum	yellow avalanche lily	Liliaceae
Erthyronium oregonum sp oregonum	giant fawn lily	Liliaceae
Fritillaria affinis var. affinis		
Fritillaria lanceolata	choclatae lily	Liliaceae
Lilium columbianum	columbia lily	Liliaceae
Maianthemum dilatatum	flase lily-of-the-valley	Liliaceae
Maianthemum racemosus subsp. amplexicaule		
Smilacina racemosa	large false solomon's seal	Liliaceae
Maianthemum stellatum		
Smilacina stellata	star-flowered solomon's seal	Liliaceae
Stenanthium occidentale	western stenanthium	Liliaceae
Streptopus amplexifolius	twisted stalk	Liliaceae
Trillium ovatum	western trillium	Liliaceae
Xerophyllum tenax	beargrass	Liliaceae
Lycopodium clavatum	common clubmoss	**Lycopodiaceae**
Epilobium angustifolium	fireweed	**Onagraceae**
Botrychium multifidum	leathery grape fern	**Ophioglossaceae**
Corallorhiza maculata	spotted coralroot	**Orchidaceae**
Goodyera oblongifolia	western rattlesnake plaintain	Orchidaceae
Platanthera stricta		
Habenaria saccata	slender bog orchid	Orchidaceae
Listera cordata	northwestern twayblade	Orchidaceae
Oxalis oregana	Oregon wood sorrel	**Oxalidaceae**
Oxalis trilliifolia	trillium leaved wood sorrel	Oxalidaceae
Abies grandis	grand fir	**Pinaceae**
Abies procera	noble fir	Pinaceae
Pseudotsuga menziesii	Douglas fir	Pinaceae
Thuja plicata	western red cedar	Pinaceae
Tsuga heterophylla	western hemlock	Pinaceae
Plantago lanceolata	English plantain	**Plantaginaceae**
Plantago major	common plantain	**Plantaginaceae**
Name change		
Agrostis diegoensis	thin bentgrass	**Poaceae**
Agrostis hallii	Hall's bentgrass	Poaceae
Aira caryophyllea	silver hairgrass	Poaceae
Aira praecox	early hairgrass	Poaceae
Bromus carinatus	California brome	Poaceae
Bromus mollis	soft bromus	Poaceae
Bromus sitchensis	Alaska brome	Poaceae
Bromus vulgaris var. vulgaris?	narrow-leaved brome	Poaceae

Cynosurus echinatus	hedgehog dogtail	Poaceae
Dactylis glomerata	orchard grass	Poaceae
Danthonia californica	California oatgrass	Poaceae
Elymus glaucus var?	blue wildrye	Poaceae
Festuca occidentalis	western fescue	Poaceae
Festuca roemeri	Romer's fescue	Poaceae
Festuca subulata	bearded fescue	Poaceae
Koeleria cristata	prairie Junegrass	Poaceae
Lolium perenne	English ryegrass	Poaceae
Melica bulbosa	oniongrass	Poaceae
Melica spectabilis	oniongrass	Poaceae
Melica subulata	oniongrass	Poaceae
Phleum alpinum	alpine timothy	Poaceae
Poa annua	annual bluegrass	Poaceae
Poa laxiflora	loose-flowered bluegrass	Poaceae
Poa pratensis	Kentucky bluegrass	Poaceae
name change		
Sitanion hystrix	bottlebrush squirreltail	Poaceae
Collomia heterophylla	varied leaf collomia	**Polemoniaceae**
Gilia capitata	bluefield gilia	Polemoniaceae
Linanthes sp.	linanthus	Polemoniaceae
Phlox gracilis		
Microsteris gracilis	slender phlox	Polemoniaceae
Phlox diffusa	spreading phlox	Polemoniaceae
Eriogonum nudum	barestem buckwheat	**Polygonaceae**
Eriogonum umbellatum	sulfur buckwheat	Polygonaceae
Polygonum aviculare	doorweed	Polygonaceae
Polygonum minimum	broadleaf knotweed	Polygonaceae
Rumex acetosella	sourweeed	Polygonaceae
Adiantum pedatum	maidenhair fern	**Polypodiaceae**
Athyrium filix-femina	ladyfern	Polypodiaceae
Cryptogramma crispa	rock-brake	Polypodiaceae
Polystichum munitum	sword fern	Polypodiaceae
Pteridium aquilinum	bracken fern	**Polypodiaceae**
Claytonia perfoliata	Miner's lettuce	**Portulacaceae**
Montia perfoliata		Portulacaceae
Claytonia sibirica var. sibirica	candy flower	Portulacaceae
Montia sibirica	candy flower	Portulacaceae
Trientalis latifolia	western starflower	**Primulaceae**
Anemone deltoidea	three leaf anemone	**Ranunculaceae**
Anemone lyallii	Lyall's anemone	Ranunculaceae
Anemone oregana	Oregon anemone	Ranunculaceae
Aquilegia formosa	red columbine	Ranunculaceae
Coptis laciniata	Oregon goldthread	Ranunculaceae
Delphinium menziesii var. *pyramidale*	Valley larkspur	Ranunculaceae
Ranunculus occidentalis	western buttercup	Ranunculaceae
Ranunculus uncinatus var. uncinatus	little buttercup	Ranunculaceae
Thalictrum sp	meadowrue	Ranunculaceae
Rhamnus purshiana	cascara	**Rhamnaceae**
Amelanchier alnifolia	Pacific serviceberry	**Rosaceae**
Fragaria vesca	woods strawberry	Rosaceae
Fragaria virginiana var. *platypetala*	strawberry	Rosaceae
Holodiscus discolor	creambush ocean-spray	Rosaceae
Prunus emarginata	bittercherry	Rosaceae
Rosa gymnocarpa	little wild rose	Rosaceae

Rubus laciniatus	evergreen blackberry	Rosaceae
Rubus parviflorus	thimbleberry	Rosaceae
Rubus pedatus	dwarf bramble	Rosaceae
Rubus spectabilis	salmonberry	Rosaceae
Rubus ursinus	Pacific blackberry	Rosaceae
Galium aparine var. aparine	bedstraw	**Rubiaceae**
Galium oreganum	Oregon bedstraw	Rubiaceae
Galium triflorum	fragrant bedstraw	Rubiaceae
Chrysosplenium glechomifolium	western golden carpet	**Saxifragaceae**
Heuchera sp.	alumroot	Saxifragaceae
Lithophragma parviflorum	small flowered prairie star	Saxifragaceae
Mitella breweri	Brewer's mitrewort	Saxifragaceae
Tellima grandiflora	fringecup	Saxifragaceae
Tiarella trifoliata	foamflower	Saxifragaceae
Castilleja hispida	harsh paintbrush	**Scrophulariaceae**
Collinsia grandiflora	large flowered blue-eyed Mary	Scrophulariaceae
Collinsia parviflora	small flowered blue-eyed Mary	Scrophulariaceae
Digitalis purpurea	foxglove	Scrophulariaceae
Mimulus dentatus	toothleaved monkey flower	Scrophulariaceae
Nothochelone nemorosa	woodland beard tongue	Scrophulariaceae
Penstemon cardwellii	Cardwell's penstemon	Scrophulariaceae
Penstemon ovatus	broad-leaved penstemon	Scrophulariaceae
Scrophularia californica ssp. Californica	Callifornia figwort	Scrophulariaceae
Synthyris reniformis	snow-queen	Scrophulariaceae
Veronica serpyllifolia var. *humifusa*	thyme-leaveä speedwell	Scrophulariaceae
Selaginella densa var. *scopulorum*	selaginella	**Selaginellacae**
Taxus brevifolia	western yew	**Taxaceae**
Viola adunca	western blue violet	**Violaceae**
Viola glabella	stream violet	Violaceae
Viola sempervirens	evergreen violet	Violaceae