



United States  
Department of  
Agriculture

**Forest Service**

Pacific Northwest  
Research Station

General Technical  
Report  
PNW-GTR-507  
March 2001

# Botanical Survey of Myrtle Island Research Natural Area, Oregon

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**Cover Photo**

Winter view of Myrtle Island Research Natural Area, Oregon.

## Abstract

**Thompson, Ralph L. 2001.** Botanical survey of Myrtle Island Research Natural Area, Oregon. Gen. Tech. Rep. PNW-GTR-507. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 27 p.

Myrtle Island Research Natural Area, an 11.3-ha island in the Umpqua River Valley of the Oregon Coast Range, was established in 1951 to preserve an old-growth stand of *Umbellularia californica* and scattered old-growth *Pseudotsuga menziesii*. This floristic study documented 363 specific and infraspecific taxa in 237 genera and 78 families. Of these species, 155 (42.7 percent) are naturalized exotics. Seventeen exotic or native species are listed as noxious weeds in Oregon. Vascular plants include 4 Equisetophyta, 8 Polypodiophyta, 2 Pinophyta, and 349 Magnoliophyta; 328 are annual, biennial, and perennial herbs, and 35 are woody vines, shrubs, and trees. The largest families in species richness are the Poaceae (50), Asteraceae (43), Fabaceae (29), Rosaceae (17), Cyperaceae (16), Scrophulariaceae (14), Caryophyllaceae (13), and Brassicaceae (13). This vascular plant survey provides a baseline reference for species richness, plant communities, generalized life forms, and relative abundance within Myrtle Island Research Natural Area.

Keywords: Vascular plants, plant communities, species richness, exotics, noxious weeds, old-growth forests, riparian forests, research natural areas.

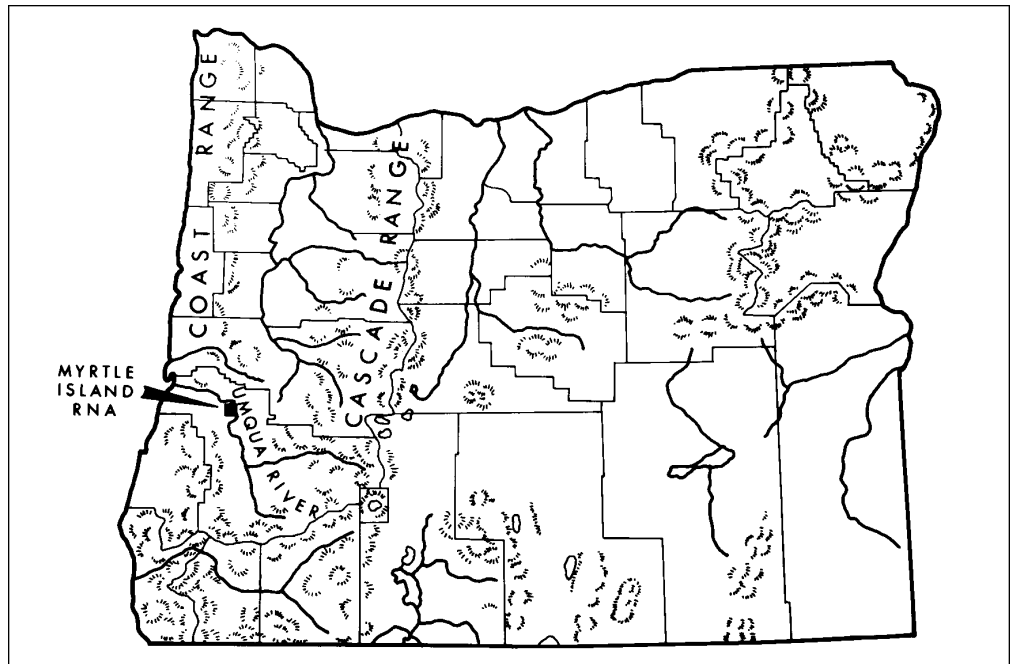


Figure 1—Myrtle Island Research Natural Area in the Umpqua River, Douglas County within the Oregon Coast Range.

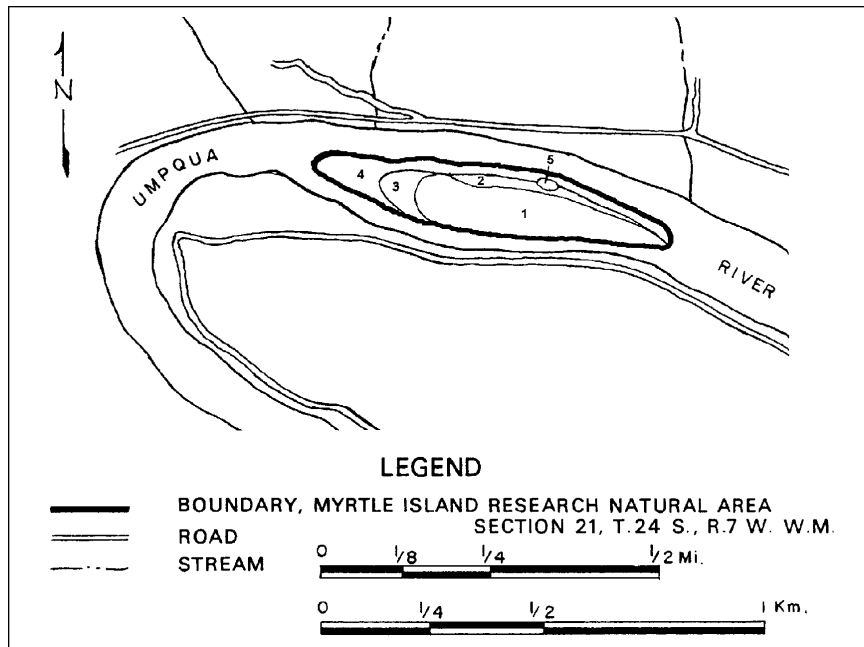


Figure 2— Myrtle Island Research Natural Area and plant communities:  
 1=*Umbellularia californica*-*Pseudotsuga menziesii*/*Acer circinatum*/*Polystichum munitum*;  
 2=*Alnus rubra*-*Fraxinus latifolia*/*Rubus discolor*/*Phalaris arundinacea*;  
 3=*Quercus garryana*/*Cytisus scoparius*/*Agrostis stolonifera*;  
 4=*Salix* spp./*Equisetum arvense*; and  
 5=seasonal pool.

## The Study Site

Myrtle Island Research Natural Area (MIRNA) was established on September 24, 1951, in the Oregon Coast Range to preserve an old-growth stand of California-laurel (*Umbellularia californica*) and scattered old-growth Douglas-fir (*Pseudotsuga menziesii*) according to Franklin et al. (1972). As the only island research natural area in the Pacific Northwest, MIRNA is an excellent example of a riparian hardwood forest within the Umpqua River Valley of the Interior Valley Zone (*Pinus-Quercus-Pseudotsuga*) of western Oregon (Dyrness et al. 1975, Franklin et al. 1972, Franklin and Dyrness 1973, Oregon Natural Heritage Advisory Council 1998). The northernmost distribution of California-laurel lies directly below the 44<sup>th</sup> parallel along the Umpqua River in Douglas County, Oregon (Stein 1990).

Myrtle Island, the smallest federal research natural area (RNA) in the Pacific Northwest, is an 11.3-ha island in the Umpqua River of the Oregon Coast Range Physiographic Province (fig. 1). The site is about 32 km northwest of Roseburg at 43° 29' N. latitude and 123° 34' W. longitude (Franklin et al. 1972). It occupies the NE1/4 NE1/4 NE1/4 portion of section 20, and the NW1/4 NW1/4 NW1/4 of section 21, T. 24 S., R. 7 W. of the Tye Quadrangle (fig. 2). Myrtle Island RNA is administered by the Roseburg District, Bureau of Land Management (Franklin et al. 1972), and is managed as an area of critical environmental concern (USDI, BLM 1995). This vascular plant survey is the first comprehensive report of the vascular plants within MIRNA.

Myrtle Island is situated within a narrow alluvial valley of the Oregon Coast Range Mid-Coastal Sedimentary Ecoregion and the Umpqua Interior Foothills Ecoregion (Thiele et al. 1996). Elevation of the island is about 97 m with the surface varying from 1.5 to 12.0 m above water level during the summer months (Franklin et al. 1972). Elevation of the surrounding environs ranges from 74 to 540 m. The spindle-shaped island was formed from a northern foothill by the division of the Umpqua River sometime in the past (fig. 2). The island surface consists of a series of discernable terraces composed of sandy alluvial soils intermixed with sandstone gravels, cobbles, and stones. Island land surface is constantly changing because of the deposition and erosion of fluvial materials during seasonally high floodwater levels.

## Geology, Soils, and Climate

The sedimentary bedrock along the Umpqua River belongs to the marine-deposited Tye Formation of the Middle Eocene Period, the most extensive formation in the Oregon Coast Range (Baldwin 1981). The bedrock is composed of gray to grayish-blue, rhythmically bedded, micaceous sandstones and siltstones. Concordant surface sandstones are typically ripple marked and cut by numerous small scour channels into the underlying Elkton Siltstone Member (Wells and Peck 1961). Recent and Pleistocene deposits are unconsolidated and semiconsolidated fluvial silt, sand, gravel, and cobbles.

Three soil series have been identified and mapped for MIRNA as part of a regional survey completed in 1993 (USDA, NRCS, in press). Riverwash soils are highly stratified alluvial sands and gravels to 152 cm deep, excessively to poorly drained with very rapid permeability on low flood plains. Camas-Newberg complex soils are alluvial, very gravelly sandy loams to fine sandy loams to 160 cm deep, excessively to somewhat excessively drained with rapid to moderately rapid permeability, and acid

in reaction (5.6 to 6.5 pH) on low flood plains. Newberg soils are mixed alluvium of fine sandy loams to loamy fine sands to 160 cm deep, somewhat excessively drained with moderately rapid permeability, and acid in reaction (5.6 to 6.5 pH) on low flood plains.

The climactic scheme of MIRNA and environs is classified as a humid microthermal climate with high winter precipitation, a deficiency of summer precipitation, mild winters, and hot summer temperatures (Thorntwaite 1931). Modified maritime climate data are from the Roseburg weather station. Annual precipitation ranges from 800 to 900 mm with 90 percent falling as rain between October and May. Mean minimum monthly precipitation of 13 mm occurs in July and August. Mean annual temperature is 12.0 °C with the mean minimum temperature, 4.6 °C, in January, and the mean maximum temperature, 19.9 °C, during July and August. The mean growing season is 219 days from the last freeze in April until the first freeze in November (Sternes 1967).

## **Ecoregion and Vegetation Types**

The Umpqua River Valley is a major unit of the western Oregon Interior Valleys (*Pinus-Quercus-Pseudotsuga*) Zone and Oregon Oakwoods (*Quercus*) Zone (Franklin and Dyrness 1973). The Oregon Interior Valleys consist of typological vegetational mosaic units rather than a single climax-based type, in part because of human disturbances (Franklin and Dyrness 1973). Detling (1968) recognized the area in the Umpqua River basin dominated by Douglas-fir as the Mixed Conifer Forest. K uchler (1964) classified the vegetation types in the Umpqua River Valley as a mosaic of the Cedar-Hemlock-Douglas-fir (*Thuja-Tsuga-Pseudotsuga*) Forest and the Oregon Oakwoods (*Quercus*), with scattered tracts of California Mixed Evergreen Forest (*Quercus-Arbutus-Pseudotsuga*) occurring along certain riparian habitats. Smith (1985) states the Interior Valley Zone of western Oregon represents a botanical and climactic transition zone between the mesic Willamette Valley in north-central Oregon and the xeric lowlands within the interior valleys of northern California.

## **The Survey**

A descriptive survey of vascular plants in MIRNA was conducted. Vascular plants were collected about every 2 weeks from June through August 1978, 1980, 1988, and 1990, and monthly from August to November 1996 and March to May 1997. Plants were processed and prepared according to standard field and herbarium procedures. Representative voucher specimens of all taxa are deposited in the Oregon State University Herbarium (OSC), Corvallis.



Figure 3—Sapling and pole-sized *Umbellularia californica* at the western portion of Myrtle Island Research Natural Area. Relict *Pseudotsuga menziesii* is in the background. *Polystichum munitum* forms a sparse ground cover.

## Plant Communities

Thilenius (1968) defines the plant community as a geographically repeated assemblage of plants of relatively uniform species composition, structural characteristics, and physiognomy. Plant community types at MIRNA were delineated from habitat diversity (topography, exposure, elevation, soils), forest physiognomy, and repetitious floristic composition of the canopy, subcanopy, shrub, and herb layers through field reconnaissance and field collections. Thompson (1990) delineated four plant community types at MIRNA from data gathered in 1988 at 20 (15 by 25 m) plots and following Daubenmire (1959, 1968). I recognized a fifth community, the seasonal pool community, because of its unique habitat and herbaceous floristic composition.

***Umbellularia californica*-*Pseudotsuga menziesii*/*Acer circinatum*/*Polystichum munitum* community**—An old-growth stand of California-laurel and Douglas-fir comprises about 8.1 ha of the highest flood-plain terrace at MIRNA. In the eastern two-thirds of the closed stand, mature and relict California-laurel are interspersed among several relict Douglas-fir. Newberg soils in this part of the stand are rarely flooded completely for any duration. The western one-third of the stand, in Camas-Newberg soils, is composed of saplings and pole-sized California-laurel with very few Douglas-fir (fig. 3). These alluvial soils the Camas-Newberg complex, are subject to frequent flooding. California-laurel, a shade-tolerant climax species,



Figure 4—The largest *Umbellularia californica* at Myrtle Island Research Natural Area. Three boles measured 74, 117, and 154 cm.

is present in all size classes: seedlings, saplings, poles, mature, and relict. A relict three-boled California-laurel measured 74, 117, and 154 cm in diameter at breast height (d.b.h.) (fig. 4), and a two-boled tree measured 87 and 101 cm d.b.h. Among the random single-boled trees measured, 14 were in the 70- to 90-cm d.b.h. class. Franklin et al. (1972) report the largest California-laurel at MIRNA was 50 to 60 cm d.b.h. and 15 to 21 m tall.

Franklin et al. (1972) report that Douglas-fir averaged 100 cm d.b.h. and 38 to 46 m tall at MIRNA. Five fire-scarred Douglas-firs measured 141, 147, 154, 165, and 173 cm d.b.h. There is no evidence of any Douglas-fir reproduction in this community. Flooding, siltation, low shade tolerance, and possibly allelopathy contribute to poor recruitment of Douglas-fir seedlings. Stone and Vasey (1968) found inundation and flooding to be highly detrimental to Douglas-fir in all size classes, but California-laurel survived well under the same conditions in northern California. Minore (1968) reports Douglas-fir seedlings as extremely intolerant of summer and winter flooding conditions. In contrast, the best drupe germination of California-laurel occurs under silt deposition accompanied by high floodwaters (Stein 1990). Allelopathy from California-laurel leaf litter inhibits germination and growth of Douglas-fir seedlings (Tinnin and Kirkpatrick 1985).



A few bigleaf maple (*Acer macrophyllum*), Oregon ash (*Fraxinus latifolia*), and one western redcedar (*Thuja plicata*) are other canopy species scattered among the dense shade of the California-laurel. Understory woody vegetation is typically sparse with few species under the closed canopy. Vine maple (*Acer circinatum*) is the most important tall shrub. Other indicator shrubs are California hazelnut (*Corylus cornuta* var. *californica*), western poison oak (*Toxicodendron diversiloba*), and trailing blackberry (*Rubus ursinus*).

Western sword-fern (*Polystichum munitum*) is the most important diagnostic herbaceous species. Other characteristic native perennials include western bracken (*Pteridium aquilinum* var. *pubescens*), Henderson's sedge (*Carex hendersonii*), Dewey's sedge (*C. deweyana*), stinging nettle (*Urtica dioica* ssp. *gracilis*), western bluebells (*Mertensia platyphylla*), Suksdorf's sorrel (*Oxalis suksdorfii*), Oregon sorrel (*O. oregana*), western bittercress (*Cardamine oligosperma*), fragrant bedstraw (*Galium triflorum*), western starflower (*Trientalis latifolia*), western bleedingheart (*Dicentra formosa*), white inside-out-flower (*Vancouveria hexandra*), and mountain sweet-root (*Osmorhiza chilensis*).

***Alnus rubra*-*Fraxinus latifolia*/*Rubus discolor*/*Phalaris arundinacea* community**—This 0.6-ha stand is on an alluvial secondary flood-plain terrace composed of Riverwash soils and the Camas-Newberg soil complex along the northern side of the island where it is contiguous with the California-laurel—Douglas-fir stand. This alluvial flood plain has finer sands and silts deposited from the effects of annual flooding. Red alder (*Alnus rubra*) and Oregon ash are codominant trees in this stand. Red alders were found in seedling, sapling, and pole-sized classes with four selected mature trees measuring 40 to 50 cm d.b.h. Oregon ash also was present in the seedling, sapling, and pole-sized classes. Six random trees measured 20 to 40 cm d.b.h. Bigleaf maple was present in the sapling and pole-size classes, and one mature tree on the periphery of the stand measured 79 cm d.b.h. Tall shrubs and subordinate trees are western hazelnut, red willow (*Salix lucida* var. *lasiandra*), western chokecherry (*Prunus virginiana* var. *demissa*), osoberry (*Oemleria cerasiformis*), cascara (*Rhamnus purshiana*), and blue elderberry (*Sambucus mexicana*). The noxious exotic Himalayan blackberry (*Rubus discolor*) is the dominant low shrub and forms nearly impenetrable thickets. Western poison oak and trailing blackberry are two other important species.

A rich, diverse herbaceous layer is present in the red alder-Oregon ash stand. Important herbs are exotic reed canary grass (*Phalaris arundinacea*), common scouring rush (*Equisetum hyemale* var. *affine*), Douglas's mugwort (*Artemisia douglasiana*), blue wildrye (*Elymus glaucus*), western bracken, naturalized velvet grass (*Holcus lanatus*), silver hairgrass (*Aira caryophyllea*), beard grass (*Polypogon monospermiensis*), and flat peavine (*Lathyrus sylvestris*).



Figure 5—Scrubby *Quercus/Cytisus/Agrostis* community on stony and cobbly Riverwash soils contiguous to the *Umbellularia-Pseudotsuga/Acer/Polystichum* community.

***Quercus garryana/Cytisus scoparius/Agrostis stolonifera* community**—A scrubby, subxeric, open-canopied woodland of Oregon white oak (*Quercus garryana*) and the naturalized noxious weed, Scot's broom (*Cytisus scoparius*), encompasses about 0.7 ha on a low flood-plain terrace at the western end of MIRNA (fig. 5). Riverwash and Camas-Newberg complex soils are the representative soil series in the Oregon white oak/Scot's broom community. This gnarled Oregon white oak stand has severe mechanical damage effects from fluvial debris conveyed and deposited during annual winter flooding. Oregon white oak has seedling, sapling, and pole-size trees with many saplings originating from stump and root collar sprouts. In a sample, 17 pole-sized trees were measured in the 20- to 40-cm d.b.h. size class.

Oregon white oak is the preeminent canopy tree, with Oregon ash of secondary importance. The tall shrub layer includes ocean-spray (*Holodiscus discolor*) and western serviceberry (*Amelanchier alnifolia* var. *semiintergrifolia*). Scot's broom is the predominant low shrub in the stand with western poison oak, trailing blackberry, California wild grape (*Vitis californica*), and other characteristic species.

Many native and exotic weedy grasses and forbs are found in this community, which includes several classified as noxious weeds by the Oregon Department of Agriculture. Characteristic naturalized herbs include redtop (*Agrostis stolonifera*), hedgehog-grass (*Cynosurus echinatus*), nitgrass (*Gastridium ventricosum*), silver hairgrass, wild carrot (*Daucus carota*), white sweet clover (*Melilotus alba*), the noxious medusahead wildrye (*Taeniatherum caput-medusae*), quackgrass (*Elytrigia repens*), field knapweed (*Centaurea xpratensis*), and common St.-John's wort (*Hypericum perforatum*). Douglas's mugwort, Indian hemp (*Apocynum cannabinum* var. *glaberrimum*), western bracken, and western goldenrod (*Euthamia occidentalis*) are important native species.



Figure 6—The *Salix* spp./*Equisetum* community from the northern branch of the Umpqua River. Trees and shrubs include *Salix lucida* and *Alnus rhombifolia* with sedge tussocks of *Carex nudata* on exposed sandstone bedrock.

***Salix* spp./*Equisetum arvense* community**—The shrubby willow (*Salix* spp.)-dominated community is the first seral stage to become established at MIRNA. The mixed willow zone forms on the lowest flood-plain band along the southern, western, and northern 1.9 ha of MIRNA. This community is contiguous with the drier Oregon white oak stand at the western end and the more elevated red alder-Oregon ash stand on the northern end (fig. 6). Riverwash soils are the principal soil series in this community. The habitat ranges from very wet at the Umpqua River streambank to dry in exposed areas away from the water. This community is frequently flooded for indefinite periods during winter and spring.

The tall shrub strata is dominated by a mixture of red willow, Hooker's willow (*Salix hookeriana*), Sitka willow (*S. sitchensis*), and narrow-leaved willow (*S. exigua*). White alder (*Alnus rhombifolia*), red alder, American dogwood (*Cornus sericea* ssp. *occidentalis*), western azalea (*Rhododendron occidentale*), and Pacific ninebark (*Physocarpus capitatus*) also are indicator tall shrub species. Western hardtack (*Spiraea douglasii*) and the exotic Himalayan blackberry and sweetbrier (*Rosa eglantheria*) are significant low shrubs.

A rich herbaceous layer is composed of numerous ubiquitous native and exotic species along a soil moisture-topographic gradient. Characteristic native herbs along the riverbank and exposed boulders include common horsetail (*Equisetum arvense*), torrent sedge (*Carex nudata*), Indian hemp, common monkey-flower (*Mimulus guttatus*),



Figure 7—The seasonal pool community in Riverwash soils. The emergent and sedge-grass zones are well-developed. *Alnus rubra* stand is in the background.

American bugleweed (*Lycopus americanus*), autumn willow-weed (*Epilobium brachycarpum*), stream orchid (*Epipactis gigantea*), hooded ladies tresses (*Spiranthes romanzoffiana*), flatsedges (*Cyperus* spp.), spikerushes (*Eleocharis* spp.), and rushes (*Juncus* spp.). Important exotic herbs of drier habitats are reed canary grass, white sweet clover, common St.-John's wort, redtop, tall fescue (*Festuca arundinacea*), orchard grass (*Dactylis glomerata*), and the native Canada goldenrod (*Solidago canadensis* ssp. *elongata*).

**Seasonal pool community**—A small open body of water is located at the northern side of MIRNA between the willow community and the alder-ash stand (fig. 7). The bedrock pool, enclosed except for a small outlet to the Umpqua River, typically dries up during the late summer months. Several aquatic plants are present in the pool, and a sedge-grass marsh is well developed. Riverwash and Camas-Newberg complex soils surround the pool.

Floating-leaved and submerged aquatic plants found are water lentil (*Lemna minor*), mosquito-fern (*Azolla filiculoides*), water clover (*Marsilea vestita* ssp. *vestita*), common bladderwort (*Urtricularia vulgaris*), common waterweed (*Elodea canadensis*), hornwort (*Ceratophyllum demersum*), parrot's feather (*Myriophyllum aquaticum*), curly pondweed (*Potamogeton crispus*), and floating smartweed (*Polygonum amphibium* var. *emersum*).

**Table 1—Classification of vascular plants at Myrtle Island RNA**

Division	Family	Genera	Species	Native	Exotic	Composition
	----- Number -----					Percent
Equisetophyta	1	1	4	4	0	1.2
Polypodiophyta	6	8	8	8	0	2.2
Pinophyta	2	2	2	2	0	0.6
Magnoliophyta:	69	226	349	194	155	96.0
Magnoliopsida	58	173	255	135	120	70.2
Liliopsida	11	53	94	59	35	25.8
Total	78	237	363	208	155	100.0

Wetland plants in the emergent and sedge-grass zones include water plantain (*Alisma triviale*), broad-fruited bur-reed (*Sparganium eurycarpum* ssp. *eurycarpum*), slough sedge (*Carex obnupta*), thick-headed sedge (*C. pachystachya*), needle spike-rush (*Eleocharis acicularis*), ovoid spike-rush (*E. obtusa*), jointed rush (*Juncus articulatus*), toad rush (*J. bufonius*), swordleaf rush (*J. ensifolius*), spreading rush (*J. patens*), reed canary grass, rice cutgrass (*Leersia oryzoides*), barnyard grass (*Echinochloa crusgalli*), false loosestrife (*Ludwigia palustris*), American bugleweed, false-pimpernal, and several smartweeds (*Polygonum* spp.).

## Results and Discussion

The vascular flora consists of 363 specific and infraspecific taxa in 237 genera from 78 families. A total of 155 (42.7 percent) are naturalized (table 1). Seventeen exotic and native species are listed as noxious weeds in Oregon by the Oregon Department of Agriculture (appendix). Vascular plant species include 4 Equisetophyta, 8 Polypodiophyta, 2 Pinophyta, and 349 Magnoliophyta (table 1). A total of 328 are annual, biennial, and perennial herbs and 35 are woody vines, shrubs, and trees (table 2). The Poaceae (50), Asteraceae (43), Fabaceae (29), Rosaceae (17), Cyperaceae (16), Scrophulariaceae (14), Caryophyllaceae (13), and Brassicaceae (13) are the largest families in species richness (table 3). Two hundred and twenty-six taxa (62.2 percent) of the total species and 121 (78.6 percent) of the exotics are from the largest 11 families at MIRNA (table 3).

The herbaceous species richness documented at MIRNA may be partly explained by the presence of many native and exotic weedy species. At MIRNA, these weedy species are opportunistic, aggressive colonizers of fluvial habitats. They possess a high reproductive capacity and light diaspores easily dispersed by water and wind. The seasonally high winter and spring flood waters of the Umpqua River initially disseminate these seeds, which germinate and become established during a long growing season in the moist, sandy alluvial soils.

## Appendix

Manuals used for plant identification were Hickman (1993) and Hitchcock and Cronquist (1973). The annotated plant list is arranged alphabetically by family and species. An asterisk (\*) precedes a naturalized nonindigenous taxon and a dagger (†) precedes a noxious weed listed in Oregon by the Oregon Department of Agriculture (2000). Classification and nomenclature for taxa follow Hickman (1993). Scientific names are followed by a selected vernacular name, and where appropriate, selected synonymy from Hitchcock and Cronquist (1973) is listed in brackets. Categories for generalized life forms (annuals, biennials, perennials, woody vines, shrubs, and trees) occur after the vernacular name.

Relative abundance categories (frequency of occurrence) in MIRNA are modified from Thompson et al. (2000) and occur after the generalized life form character. Relative abundance refers to the overall distribution of each taxon inclusive of all specific communities within MIRNA and was determined from field observations and field collections. Categories are as follows:

- Abundant (A)**—Dominant, codominant, or characteristic (thousands of individuals or colonies).
- Frequent (F)**—Easily or generally encountered but not dominant (hundreds of individuals or colonies).
- Occasional (O)**—Widely scattered throughout the survey area (26 to 100 individuals or colonies).
- Infrequent (I)**—Found in several locations but difficult to locate (5 to 25 individuals or colonies).
- Rare (R)**—Difficult to find and limited to one or two localities (1 to 5 individuals or colonies).

A numbered code is assigned for the five plant community types and follows the relative abundance category of each species. These five plant communities are as follows:

- 1=*Umbellularia californica*-*Pseudotsuga menziesii*/*Acer circinatum*/*Polystichum munitum*.
- 2=*Alnus rubra*-*Fraxinus latifolia*/*Rubus discolor*/*Phalaris arundinacea*.
- 3=*Quercus garryana*/*Cytisus scoparius*/*Agrostis stolonifera*.
- 4=*Salix* spp./*Equisetum arvense*.
- 5=seasonal pool (fig. 2).

Small ecotone areas are created because of the considerable intergrading of these five plant communities in the small study area.

The author's collection numbers follow the plant communities in the annotated list of species.

**Table 3—Eleven largest plant families at the Myrtle Island RNA**

Family	Genera	Species	Native	Exotic
<i>Number</i>				
Poaceae	32	50	17	33
Asteraceae	32	43	19	24
Fabaceae	8	29	8	21
Rosaceae	10	17	14	3
Cyperaceae	4	16	16	0
Scrophulariaceae	10	14	8	6
Caryophyllaceae	8	13	2	11
Brassicaceae	10	13	4	9
Lamiaceae	8	11	4	7
Polygonaceae	3	10	3	7
Juncaceae	2	10	10	0
<b>Total</b>	<b>127</b>	<b>226</b>	<b>105</b>	<b>121</b>

The Riparian Hardwood Forest at MIRNA has high floristic affinities with the Alder-Ash (*Alnus-Fraxinus*) Forest and the California Mixed Evergreen (*Quercus-Arbutus-Pseudotsuga*) Forest of K uchler (1964). The *Umbellularia-Pseudotsuga/Acer/Polystichum* community at MIRNA in the Interior Valleys Zone of the Umpqua River Valley, may be classified as a climax Riparian Hardwood Forest at the northernmost extension of the California Mixed Evergreen Forest.

**English  
Equivalents**

<b>When you know:</b>	<b>Multiply by:</b>	<b>To find:</b>
hectares (ha)	2.4710	acres
kilometers (km)	0.6214	miles
meters (m)	3.2808	feet
centimeters (cm)	0.3937	inches
millimeters (mm)	0.0394	inches
Celsius (�C)	1.8 and add 32	Fahrenheit

**Acknowledgments**

I thank Sarah Greene, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, for her support and review of an earlier draft of this paper; Russ Holmes, U.S. Department of the Interior, Bureau of Land Management, Roseburg District, for his permission to conduct the study and review of an earlier draft of this report; and Richard R. Halse, curator of the Oregon State Herbarium, Department of Botany and Plant Pathology, Oregon State University, for identification of several difficult taxa, verification of all taxa from MIRNA, and review of an earlier draft of this report.

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## Appendix

Manuals used for plant identification were Hickman (1993) and Hitchcock and Cronquist (1973). The annotated plant list is arranged alphabetically by family and species. An asterisk (\*) precedes a naturalized nonindigenous taxon and a dagger (†) precedes a noxious weed listed in Oregon by the Oregon Department of Agriculture (2000). Classification and nomenclature for taxa follow Hickman (1993). Scientific names are followed by a selected vernacular name, and where appropriate, selected synonymy from Hitchcock and Cronquist (1973) is listed in brackets. Categories for generalized life forms (annuals, biennials, perennials, woody vines, shrubs, and trees) occur after the vernacular name.

Relative abundance categories (frequency of occurrence) in MIRNA are modified from Thompson et al. (2000) and occur after the generalized life form character. Relative abundance refers to the overall distribution of each taxon inclusive of all specific communities within MIRNA and was determined from field observations and field collections. Categories are as follows:

- Abundant**—Dominant, codominant, or characteristic (thousands of individuals or colonies).
- Frequent**—Easily or generally encountered but not dominant (hundreds of individuals or colonies).
- Infrequent**—Found in several locations but difficult to locate (5 to 25 individuals or colonies).
- Occasional**—Widely scattered throughout the survey area (26 to 100 individuals or colonies).
- Rare**—Difficult to find and limited to one or two localities (1 to 5 individuals or colonies).

A numbered code is assigned for the five plant community types and follows the relative abundance category of each species. These five plant communities are as follows:

- 1=*Umbellularia californica*-*Pseudotsuga menziesii*/*Acer circinatum*/*Polystichum munitum*.
- 2=*Alnus rubra*-*Fraxinus latifolia*/*Rubus discolor*/*Phalaris arundinacea*.
- 3=*Quercus garryana*/*Cytisus scoparius*/*Agrostis stolonifera*.
- 4=*Salix* spp./*Equisetum arvense*.
- 5=seasonal pool (fig. 2).

Small ecotone areas are created because of the considerable intergrading of these five plant communities in the small study area.

The author's collection numbers follow the plant communities in the annotated list of species.

## Vascular Flora of Myrtle Island Research Natural Area, Oregon

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### **EQUISETOPHYTA (Horsetails)**

#### **Equisetaceae (Horsetail Family)**

*Equisetum arvense* L. (Common Horsetail). Perennial; 4, 5=F. [5136, 5330].

*Equisetum hyemale* L. ssp. *affine* (Engelm.) Calder & R. H. Taylor (Common Scouring Rush). Perennial; 2, 4=F. [6516, 88-1038].

*Equisetum laevigatum* A. Braun. (Smooth Scouring Rush). Perennial; 4=l. [5331].

†*Equisetum telmateia* Ehrh. ssp. *braunii* (Milde) R. L. Hauke (Giant Horsetail). Perennial; 4, 5=l. [5361, 5947].

### **POLYPODIOPHYTA (True Ferns)**

#### **Azollaceae (Floating Fern Family)**

*Azolla filiculoides* Lam. (Mosquito-fern). Annual; 5=R. [5220].

#### **Dennstaedtiaceae (Bracken Family)**

*Pteridium aquilinum* (L.) Kuhn. var. *pubescens* Underw. (Western Bracken).

Perennial; 1, 2=O. [6590, 88-1065].

#### **Dryopteridaceae (Wood Fern Family)**

*Athyrium filix-femina* (L.) Roth var. *cyclosorum* Rupr. (Lady Fern). Perennial; 1=l. [90-655].

*Dryopteris arguta* (Kaulf.) Watt. (Coastal Woodfern). Perennial; 1=R. [5312, 6601].

*Polystichum munitum* (Kaulf.) Presl. (Western Sword-fern). Perennial; 1, 2=A. [6612].

#### **Marsileaceae (Water-clover Family)**

*Marsilea vestita* Hook. & Grev. ssp. *vestita* (Water Clover). Perennial; 5=O. [88-1304].

#### **Polypodiaceae (Polypody Family)**

*Polypodium glycyrrhiza* D. C. Eaton (Licorice Fern). Perennial; 1=F. [5249, 5990].

#### **Pteridaceae (Gold-back Fern Family)**

*Pentagramma triangularis* (Kauf.) Yatskievych, Windham & Wollenweber ssp. *triangularis* [Synonym: *Pityrogramma triangularis* (Kaulf.) Maxon.] (California Gold-backed Fern). Perennial; 2=R. [5246, 6627].

### **PINOPHYTA (Conifers)**

#### **Cupressaceae (Cypress Family)**

*Thuja plicata* D. Don. (Western Redcedar). Canopy Tree; 1=R. [5344, 5611].

#### **Pinaceae (Pine Family)**

*Pseudotsuga menziesii* (Mirbel) Franco var. *menziesii* (Douglas-fir). Canopy Tree; 1=F. [5165, 5271].

### **MAGNOLIOPHYTA—MAGNOLIOPSIDA**

#### **Aceraceae (Maple Family)**

*Acer circinatum* Pursh (Vine Maple). Small Tree; 1=F. [5093, 5388].

*Acer macrophyllum* Pursh (Bigleaf Maple). Canopy Tree; 1, 2=F. [5333, 5930].

### **Amaranthaceae (Amaranth Family)**

- \* *Amaranthus powellii* S. Wats. (Powell's Pigweed). Annual; 3=l. [5088].

### **Anacardiaceae (Cashew Family)**

- Toxicodendron diversilobum* (Torr. & A. Gray) E. Greene [Synonym: *Rhus diversiloba* Torr. & A. Gray]. (Western Poison Oak). Shrub; 3=F. [88-1730].

### **Apiaceae (Carrot Family)**

- \* *Anthriscus caucalis* M. Bieb. [Synonym: *Anthriscus scandicina* (Weber) Mansfield]. (Bur-chervil). Annual; 1=R. [5427].
- \*† *Conium maculatum* L. (Poison Hemlock). Biennial; 2, 4=l. [6540, 90-666].
- \* *Daucus carota* L. (Wild Carrot). Biennial; 2, 3, 4=O. [5364, 88-1257].
- \* *Foeniculum vulgare* Miller (Common Fennel). Perennial; 3=R. [6635, 88-1749].
- Heracleum lanatum* Michx. (Cow Parsnip). Perennial; 2=l. [5806, 88-1061].
- Osmorhiza chilensis* Hook.& Arn. (Mountain Sweetroot). Perennial; 1=R. [5802].
- \* *Torilis arvensis* (Hudson) Link. (Common Hedge-parsley). Annual; 3, 4=O. [6632].

### **Apocynaceae (Dogbane Family)**

- Apocynum cannabinum* L. (Indian Hemp). Perennial; 3, 4, 5=F. [6583, 88-1253].
- \* *Vinca major* L. (Greater Periwinkle). Woody Vine; 1=R. [5223].

### **Asteraceae (Aster Family)**

- Achillea millefolium* L. (Common Yarrow). Perennial; 2, 3=R. [5990, 88-1238].
- Ageratina occidentale* (Hook.) R. King & H. Robinson [Synonym: *Eupatorium occidentale* Hook.]. (Western Boneset). Perennial; 3=R. [88-1299, 90-659].
- Anaphalis margaritacea* (L.) Benth. & Hook. (Pearly Everlasting). Perennial; 2, 3=l. [5188].
- \* *Anthemis cotula* L. (Mayweed). Annual; 3, 4=l. [6604; 88-1065].
- Artemisia douglasiana* Besser. (Douglas's Mugwort). Perennial; 2=F. [5113, 88-1708].
- Aster modestus* Lindl. (Few-flowered Aster). Perennial; 2=R. [6631].
- Aster radulinus* A. Gray. (Broadleaf Aster). Perennial; 2=R. [6570].
- \* *Bellis perennis* L. (English Daisy). Perennial; 4=R. [5319].
- Bidens frondosa* L. (Beggars-ticks). Annual; 5=l. [5075].
- \*† *Centaurea xpratensis* Thuill. (Field Knapweed). Perennial; 3, 4=O. [6575, 88-1042].
- \*† *Centaurea solstitialis* L. (Yellow Star-thistle). Annual; 3=R. [5196].
- \*† *Chondrilla juncea* L. (Skeleton Weed). Perennial; 3=R. [5166].
- \* *Cichorium intybus* L. (Blue-sailors). Perennial; 3, 4=l. [5004, 6579].
- \*† *Cirsium arvense* (L.) Scop. (Canada Thistle). Perennial; 2, 3=O. [5001, 88-1254].
- \* *Cirsium vulgare* (Savi.) Ten. (Bull Thistle). Biennial; 2, 3=l. [5105, 5807].
- Conyza canadensis* (L.) Cronq. (Horseweed). Annual; 3=l. [5015, 90-661].
- \* *Crepis capillaris* (L.) Wallr. (Smooth Hawksbeard). Annual/Biennial; 2, 3, 4=O. [88-1729].
- \* *Crepis setosa* Haller f. (Bristly Hawksbeard). Annual; 3, 4=l. [5023].
- Erigeron philadelphicus* L. (Philadelphia Fleabane). Biennial/Perennial; 4=l. [88-1063].
- Euthamia occidentalis* Nutt. [Synonym: *Solidago occidentalis* (Nutt.) Torr. & A. Gray]. (Western Goldenrod). Perennial; 3=F. [5148, 6636].

- Gnaphalium palustre* Nutt. (Lowland Cudweed). Annual; 2, 4, 5=F. [6529, 88-1048].  
*Gnaphalium purpureum* L. (Purple Cudweed). Annual/Biennial; 4=I. [88-1288].  
*Gnaphalium stramineum* Kunth. [Synonym: *Gnaphalium chilense* Sprengel].  
 (Straw-colored Cudweed). Annual/Biennial; 3, 4=I. [6593].  
*Helianthus annuus* L. (Common Sunflower). Annual; 4=R. [5116, 6621].  
*Heterotheca oregona* (Nutt.) Shinners. [Synonym: *Chrysopsis oregona* (Nutt.) Gray]. (Oregon Golden Aster). Perennial; 3-R. [5170].  
 \* *Hypochaeris glabra* L. (Smooth Cat's Ear). Annual; 3=R. [5997].  
 \* *Hypochaeris radicata* L. (Rough Cat's Ear). Perennial; 3, 4=F. [5056, 5983].  
 \* *Lactuca serriola* L. (Prickly Lettuce). Annual; 4=R. [5052].  
 \* *Lapsana communis* L. (Nipplewort). Annual; 1, 2=I. [88-1082, 90-658].  
 \* *Leontodon taraxacoides* (Villars) Mérat ssp. *taraxacoides*. [Synonym: *Leontodon nudicaulis* (L.) Mérat]. (Hairy Hawkbit). Perennial; 3=R. [5145].  
 \* *Leucanthemum vulgare* Lam. (Ox-eye Daisy). [Synonym: *Chrysanthemum leucanthemum* L.]. Perennial; 2, 3=O. [5560, 5819].  
*Machaeranthera canescens* (Pursh) A. Gray (Hoary-Aster). Annual/Perennial; 3=R. [6623].  
 \* *Madia sativa* Molina. (Coast Tarweed). Annual; 3=R. [5146].  
*Petasites frigidus* (L.) Fries var. *palmatus* (Aiton) Cronq. (Sweet Coltsfoot).  
 Perennial; 2= R. [5239].  
 \* † *Senecio jacobaea* L. (Tansy Ragwort). Perennial; 2, 3=I. [5060, 6519].  
 \* *Senecio sylvaticus* L. (Woodland Groundsel). Annual; 2, 3=R. [5147].  
 \* *Senecio vulgaris* L. (Common Groundsel). Annual; 2, 4=F. [5297].  
*Solidago canadensis* L. ssp. *elongata* (Nutt.) Keck [Synonym: *Solidago canadensis* L. var. *salebrosa* (Piper) Jones]. (Canada Goldenrod). Perennial; 2, 3=F. [6577, 88-1709].  
 \* *Sonchus asper* (L.) Hill ssp. *asper* (Prickly Sow Thistle). Annual; 3=R. [5065].  
 \* *Sonchus oleraceus* L. (Common Sow Thistle). Annual; 4=R. [5192].  
 \* *Tanacetum vulgare* L. (Common Tansy). Perennial; 2, 3=I. [5068, 6674].  
 \* *Taraxacum officinale* Wigg. (Common Dandelion). Perennial; 4=R. [5235].  
*Xanthium strumarium* L. (Cocklebur). Annual; 4, 5=F. [5071, 88-1270].

#### **Berberidaceae (Barberry Family)**

- Vancouveria hexandra* (Hook.) Morren & Decne. (White Inside-out-flower).  
 Perennial; 1=O. [5428; 5946].

#### **Betulaceae (Birch Family)**

- Alnus rhombifolia* Nutt. (White Alder). Small Tree; 4=O. [5143].  
*Alnus rubra* Bong. (Red Alder). Canopy Tree; 2, 4=F. [6532, 88-1060].  
*Corylus cornuta* Marsh var. *californica* (A. DC.) Sharp. (California Hazelnut).  
 Tall Shrub; 1=F. [6658, 88-1413].

#### **Bignoniaceae (Trumpet-creeper Family)**

- Catalpa bignonioides* Walt. (Common Catalpa). Tree; 4=R. [6618, 88-1719].

#### **Boraginaceae (Borage Family)**

- Amsinckia menziesii* (Lehm.) Nelson & Macbr. (Rancher's Fireweed). Annual;  
 3=R. [5925].  
*Mertensia platyphylla* Heller. (Western Bluebells). Perennial; 1=O. [5342, 5920].  
 \* *Myosotis discolor* Pers. (Forget-me-not). Annual/Biennial; 4=R. [5397, 5441].  
*Plagiobothrys figuratus* (Piper) I. M. Johnst. (Fragrant Popcornflower).  
 Annual; 4=R. [5972].  
*Plagiobothrys scouleri* (Hook. & Arn.) I. M. Johnst. (Scouler's Popcornflower).  
 Annual; 4=R. [5912].

### **Brassicaceae (Mustard Family)**

- \* *Arabidopsis thaliana* (L.) Heynh. (Thale Cress). Annual; 4=l. [5289, 5816].
- \* *Barbarea orthoceras* Ledeb. (Winter Cress). Biennial; 2=R. [5553].
- \* *Brassica nigra* (L.) Koch (Black Mustard). Annual; 4=l. [5058, 88-1047].
- \* *Brassica rapa* L. [Synonym: *Brassica campestris* L.]. (Turnip). Annual; 3, 4=l. [5994].
- \* *Capsella bursa-pastoris* (L.) Medikus. (Shepherd's Purse). Annual; 3, 4=R. [5299, 5444].
- Cardamine californica* (Torr. & A. Gray) E. Greene var. *sinuata* (E. Greene) O. Schulz. (California Toothwort). Perennial; 1=l. [5266].
- Cardamine oligosperma* Torr. & A. Gray (Western Bittercress). Annual/Biennial; 1, 2, 3=F. [5311, 5346].
- \* *Draba verna* L. (Whitlow Grass). Annual; 4=R. [5258].
- \* *Lepidium campestre* (L.) R. Br. Field Peppergrass. Annual/Biennial; 3, 4=R. [5338].
- Lepidium virginicum* L. (Tall Peppergrass). Annual; 3=l. [6527]
- \* *Raphanus raphanistrum* L. (Jointed Charlock). Annual/Biennial; 4=R. [5178, 5322].
- Rorippa curvisiliqua* (Hook.) Britt. (Western Yellowcress). Annual/Biennial; 4, 5=F. [5403, 88-1063].
- \* *Sisymbrium officinale* (L.) Scop. (Tumble Mustard). Annual; 4=F. [5944, 90-664].

### **Campanulaceae (Bellflower Family)**

- Porterella carnulosa* (Hook. & Arn.) Torr. (Meadow Porterella). Annual; 5=R. [88-1500].

### **Caprifoliaceae (Honeysuckle Family)**

- Sambucus mexicana* C. Presl. [Synonym: *Sambucus cerulea* Raf.]. (Blue Elderberry). Tall Shrub; 2=l. [90-684].

### **Caryophyllaceae (Pink Family)**

- \* *Cerastium glomeratum* Thuill. [Synonym: *Cerastium viscosum* L.]. (Mouse-ear Chickweed). Annual; 3, 4=F. [5407, 88-1308].
- \* *Dianthus armeria* L. ssp. *armeria* (Deptford Pink). Annual/Biennial; 3=R. [6640].
- \* *Saponaria officinalis* L. (Bouncing Bet). Perennial; 2, 4=l. [5014, 90-656].
- \* *Scleranthus annuus* L. (Knewel). Annual; 4=R. [5970].
- \* *Silene coronaria* (L.) Clairv. [Synonym: *Lychnis coronaria* (L.) Desr.]. (Rose Champion). Biennial/Perennial; 3=R. [6656].
- \* *Silene gallica* L. (French Champion). Annual; 3, 4=R. [5832, 88-1306].
- Silene hookeri* Nutt. (Hooker's Glandular Champion). Perennial; 4=R. [5900].
- \* *Silene latifolia* Poir. ssp. *alba* (Miller) Greuter & Burdet. [Synonym: *Lychnis alba* Miller]. (White Champion). Biennial/Perennial; 3, 4=l. [5814, 88-1293].
- Silene menziesii* Hook. (Menzie's Silene). Perennial; 3=R. [5804].
- \* *Silene vulgaris* (Moench.) Garcke. [Synonym: *Silene cucubalus* Wibel]. (Bladder Champion). Perennial; 3=R. [88-1307].
- \* *Spergula arvensis* L. (Sandspurry). Annual; 4=l. [5432].
- \* *Spergularia rubra* (L.) J. S. Presl. & C. Presl. (Red Sandspurry). Annual; 3, 4=O. [5421].
- \* *Stellaria media* (L.) Villars. (Common Chickweed). Annual; 2, 4=O. [5264].

**Ceratophyllaceae (Hornwort Family)**

*Ceratophyllum demersum* L. (Hornwort). Annual/Perennial; 5=l. [5901, 88-1736].

**Chenopodiaceae (Goosefoot Family)**

\* *Chenopodium album* L. (Lamb's Quarters). Annual; 4=l. [5024].

\* *Chenopodium ambrosioides* L. Mexican Tea. Annual; 4=l. [5027].

\* *Chenopodium botrys* L. (Jerusalem Oak). Annual; 4=F. [5022].

**Convolvulaceae (Morning-glory Family)**

\*† *Convolvulus arvensis* L. (Field Bindweed). Perennial; 2, 4=O. [6533, 88-1255].

**Cornaceae (Dogwood Family)**

*Cornus sericea* L. ssp. *occidentalis* (Torr. & A. Gray) Fosb. [Synonym: *Cornus stolonifera* Michx. var. *occidentalis* (Torr. & A. Gray) Hitchc.]. (American Dogwood). Tall Shrub; 2, 4=O [5046, 6580].

**Curcubitaceae (Gourd Family)**

*Marah oreganus* (Torr. & A. Gray) Howell. (Coast Wild Cucumber). Perennial Vine; 3=R. [5940].

**Dipsacaceae (Teasel Family)**

\* *Dipsacus fullonum* L. [Synonym: *Dipsacus sylvestris* Huds]. (Wild Teasel). Biennial; 3=l. [6611].

**Ericaceae (Heath Family)**

*Gaultheria shallon* Pursh. (Salal). Low Shrub; 2=R. [6660].

*Rhododendron occidentale* (Torr. & A. Gray) A. Gray. (Western Azalea). Tall Shrub; 4=l. [6502, 88-1088].

**Euphorbiaceae (Spurge Family)**

\* *Chamaesyce maculata* (L.) Small. [Synonym: *Euphorbia supina* Raf.]. (Spotted Spurge). Annual; 4, 5=l. [5007, 88-1723].

**Fabaceae (Bean Family)**

\*† *Cytisus scoparius* (L.) Link. (Scot's Broom). Tall Shrub; 2, 3=F. [5313, 6000].

\* *Lathyrus angulatus* L. (Angled Vetch). Annual; 4=R. [88-1315].

\* *Lathyrus hirsutus* L. (Hairy Peavine). Annual; 4=l. [88-1513].

\* *Lathyrus latifolius* L. (Everlasting Peavine). Perennial; 3=R. [90-655].

\* *Lathyrus sphaericus* Retz. (Grass Peavine). Annual; 2=R. [5424].

\* *Lathyrus sylvestris* L. (Flat Peavine). Perennial; 2=O. [88-1261, 90-665].

\* *Lotus corniculatus* L. (Birdfoot Trefoil). Perennial; 3, 4=O. [5904, 6509].

*Lotus micranthus* Benth. (Slender Deer Vetch). Annual; 2, 3, 4=R. [5422, 5933].

*Lotus purshianus* (Benth.) Clem. & Clem. var. *purshianus* (Pursh's Lotus). Annual; 3=O. [6566, 88-1510].

\* *Lotus uliginosus* Schk. (Birdsfoot Trefoil). Perennial; 3, 4=l. [6655].

*Lupinus micranthus* Dougl. (Miniature Lupine). Annual; 2=R. [5406, 88-1314].

*Lupinus rivularis* Lindl. (Stream Lupine). Perennial; 4=O. [5817, 88-1018].

\* *Medicago lupulina* L. (Black Medick). Annual; 3, 4=O. [5173, 5412].

\* *Medicago polymorpha* L. [Synonym: *Medicago hispida* Gaertn]. (California Burclover). Annual; 4=O [5360, 88-1262].

\* *Melilotus alba* Medikus. (White Sweetclover). Annual/Biennial; 3, 4=F. [6560, 88-1087].

\* *Trifolium angustifolium* L. (Narrowleaf Clover). Annual; 2, 4=R. [6548, 88-1053].

\* *Trifolium campestre* Schreb. (Yellow Hop Clover). Annual; 4=l. [5011, 88-1056].

\* *Trifolium glomeratum* L. (Cluster Clover). Annual; 4=R. [5448].

*Trifolium macraei* Hook. & Arn. (Purple Clover). Annual; 2=R. [5425].

*Trifolium microcephalum* Pursh. (Small-headed Clover). Annual; 4, 5=R. [5931].

\* *Trifolium pratense* L. (Red Clover). Perennial; 2, 3, 4=l. [5177, 5836].

- \* *Trifolium repens* L. (White Clover). Perennial; 3, 4=O. [6628, 88-1101].
- \* *Trifolium subterraneum* L. (Subterranean Clover). Annual; 2, 4=O. [5296, 5369].
- Trifolium variegatum* Nutt. (White-tipped Clover). Annual; 2=R. [88-1052].
- Vicia americana* Willd. var. *americana* (American Vetch). Perennial; 2=R. [5921].
- \* *Vicia hirsuta* (L.) S. F. Gray. (Hairy Vetch). Annual; 3, 4=I. [5417, 88-1083].
- \* *Vicia sativa* L. ssp. *nigra* (L.) Erhart. [Synonym: *Vicia sativa* L. var. *angustifolia* (L.) Wahlb.]. (Narrowleaf Vetch). Annual; 3, 5=I. [5926, 88-1608].
- \* *Vicia tetrasperma* (L.) Schreb. (Slender Vetch). Annual; 3, 4=R. [88-1516].
- \* *Vicia villosa* Roth ssp. *villosa* (Winter Vetch). Annual; 3, 4=I. [5932, 88-1511].

#### **Fagaceae (Beech Family)**

- Quercus garryana* Hook. (Oregon White Oak). Canopy Tree; 3=F. [5954, 6659].

#### **Gentianaceae (Gentian Family)**

- \* *Centaurium erythraea* Raf. [Synonym: *Centaurium umbellatum* Gilib.]. (Common Centaury). Biennial; 2, 3, 4=O. [5027, 6526].

#### **Geraniaceae (Geranium Family)**

- \* *Erodium cicutarium* (L.) L'Hér. (Storksbill). Annual; 3, 4=O. [5153, 5314].
- \* *Geranium dissectum* L. (Cutleaf Cranesbill). Annual; 4=I. [5805].
- \* *Geranium molle* L. (Dovefoot Cranesbill). Annual; 2=R. [5339].

#### **Grossulariaceae (Gooseberry Family)**

- Ribes divaricatum* Dougl. (Straggly Gooseberry). Low Shrub; 2=R. [5325, 88-1045].

#### **Haloragaceae (Water-milfoil Family)**

- \* *Myriophyllum aquaticum* (Vell. Conc.) Verdc. [Synonym: *Myriophyllum brasiliense* Cambess.]. (Parrot's Feather). Perennial; 5=R. [88-1713].

#### **Hydrophyllaceae (Waterleaf Family)**

- Hydrophyllum tenuipes* A. A. Heller. (Pacific Waterleaf). Perennial; 1, 2=I. [5827].
- Nemophila menziesii* Hook. & Arn. var. *atomaria* (Fisch. & C. A. Mey.) Chandler. (Baby Blue-eyes). Annual; 2=R. [5225].
- Nemophila parviflora* Benth. (Small-flowered Nemophila). Annual; 2, 3=O. [88-1109].
- Phacelia nemoralis* E. Greene ssp. *oregonensis* Heckard. (Woodland Phacelia). Perennial; 2, 3=I. [5935, 6574].

#### **Hypericaceae (St.-John's wort Family)**

- \*† *Hypericum perforatum* L. (Klamath Weed). Perennial; 2, 4=O. [5044, 6588].

#### **Lamiaceae (Mint Family)**

- \* *Lamium amplexicaule* L. (Henbit). Annual; 3=R. [5345].
- \* *Lamium purpureum* L. (Purple Dead-nettle). Annual; 3, 4=I. [5240, 5305].
- Lycopus americanus* W. C. Barton. (American Bugleweed). Perennial; 2, 4, 5=O. [6545].
- \* *Melissa officinalis* L. (Bee Balm). Perennial; 2, 3=R. [5186, 88-1717].
- \* *Mentha arvensis* L. (Field Mint). Perennial; 2, 4, 5=O. [6547, 90-669].
- \* *Mentha xpiperita* L. (Peppermint). Perennial; 2, 4=O. [5547, 6657].
- \* *Mentha pulegium* L. (Pennyroyal). Perennial; 2, 4, 5=O. [523, 90-667].
- Monardella villosa* Benth. ssp. *villosa*. (Hairy Monardella). Perennial; 4=R. [6531].
- \* *Prunella vulgaris* L. var. *lanceolata* (Barton) Fern. (Self Heal). Perennial; 4=R. [5937].
- Satureja douglasii* (Benth.) Briq. (Yerba Buena). Perennial; 2, 3=F. [6589, 88-1106].
- Stachys ajugoides* Benth. var. *rigida* Jepson & Hoover. [Synonym: *Stachys mexicana* Benth.]. (Mexican Betony). Perennial; 2, 3=I. [6613, 88-1714].



**Lauraceae (Laurel Family)**

*Umbellularia californica* (Hook. & Arn.) Nutt. (California-laurel). Canopy Tree; 1=F. [5211, 6617].

**Lentibulariaceae (Bladderwort Family)**

*Utricularia vulgaris* L. [Synonym: *U. macrorhiza* LeConte]. (Common Bladderwort). Annual/Perennial; 5=I. [88-1733].

**Linaceae (Flax Family)**

\* *Linum bienne* P. Mill. [Synonym: *Linum angustifolium* Hudson]. (Narrow-leaved Flax). Perennial; 3=I. [5900, 88-1086].

**Lythraceae (Loosestrife Family)**

\* *Lythrum hyssopifolia* L. (Hyssop-leaved Loosestrife). Annual/Biennial; 2, 4, 5=O. [6634].

\* † *Lythrum salicaria* L. (Purple Loosestrife). Perennial; 2, 4=R. [6515, 90-672].

**Malvaceae (Mallow Family)**

*Sidalcea malvaeflora* (DC.) A. Gray ssp. *virgata* (Howell) C. Hitchc. [Synonym: *Sidalcea virgata* Howell]. (Checker Mallow). Perennial; 2, 3=R. [5986, 88-1311].

**Molluginaceae (Carpet-weed Family)**

\* *Mollugo verticillata* L. (Carpet-weed). Annual; 4=R. [5154].

**Oleaceae (Olive Family)**

*Fraxinus latifolia* Benth. (Oregon Ash). Canopy Tree; 2=F. [6571, 88-1054].

**Onagraceae (Evening-primrose Family)**

*Epilobium angustifolium* L. ssp. *circumvagum* Mosq. (Fireweed). Perennial; 2=R. [88-1258].

*Epilobium brachycarpum* C. Presl. [Synonym: *Epilobium paniculatum* Nutt.]. (Autumn Willow-weed). Annual; 4=O. [5157].

*Epilobium ciliatum* Raf. ssp. *glandulosum* (Lehm.) P. Hoch & Raven. [Synonym: *Epilobium glandulosum* Lehm.]. (Glandular Willow-weed). Perennial; 4, 5=O. [6574].

*Epilobium ciliatum* Raf. ssp. *watsonii* (Barb.) P. Hoch & Raven. [Synonym: *Epilobium watsonii* Barbey]. (Watson's Willow-weed). Perennial; 4=R. [5076, 88-1738].

*Epilobium torreyi* (S. Wats.) P. Hoch & Raven. [Synonym: *Boisduvalia stricta* (A. Gray) E. Greene]. (Torrey's Spike-primrose). Annual; 4, 5=I. [6554, 6670].

*Ludwigia palustris* (L.) Ell. (False Loosestrife). Perennial; 4, 5=R. [5074].

**Oxalidaceae (Wood Sorrel Family)**

*Oxalis oregana* Nutt. (Oregon Sorrel). Perennial; 1=O. [5232].

*Oxalis suksdorfii* Trel. (Suksdorf's Sorrel). Perennial; 1=F. [5957, 88-1708].

**Papaveraceae (Poppy Family)**

*Dicentra formosa* (Haw.) Walp. (Pacific Bleedingheart). Perennial; 1=O. [5824].

*Eschscholzia californica* Cham. (California Poppy). Annual/Perennial; 3, 4=O. [88-1107].

**Plantaginaceae (Plantain Family)**

\* *Plantago lanceolata* L. (English Plantain). Perennial; 2, 3, 4=O. [5409, 88-1064].

\* *Plantago major* L. (Common Plantain). Perennial; 4=I. [5037, 88-1263].

### **Polemoniaceae (Phlox Family)**

*Collomia grandiflora* Lindl. (Large-flowered Collomia). Annual; 3, 4=R. [6569, 6616].

*Collomia heterophylla* Hook. (Varied-leaved Collomia). Annual; 3=R. [5929].

*Navarretia squarrosa* (Eschsch.) Hook. & Arn. (Skunkweed). Annual; 3, 4=F. [88-1291].

*Phlox gracilis* E. Greene [Synonym: *Microsteris gracilis* (Hook.) E. Greene]. (Pink Phlox). Annual; 3=R. [5818].

### **Polygonaceae (Smartweed Family)**

*Eriogonum compositum* Benth. var. *compositum* (Northern Buckwheat). Perennial; 3, 4=R. [5066, 88-1310].

*Polygonum amphibium* L. var. *emersum* Michx. (Floating Smartweed). Perennial; 5=O. [5063, 88-1286].

\* *Polygonum aviculare* L. (Prostrate Knotweed). Annual; 4=R. [88-1338].

\*† *Polygonum cuspidatum* Siebold & Zucc. (Japanese Knotweed). Perennial; 2=I. [5179].

*Polygonum douglasii* E. Greene. (Douglas' Knotweed). Annual; 2=R. [5013].

\* *Polygonum hydropiper* L. (Waterpepper). Annual; 4, 5=O. [5104].

\* *Polygonum persicaria* L. (Lady's Thumb). Annual; 4, 5=I. [5012, 6654].

\* *Rumex acetosella* L. (Sheep Sorrel). Perennial; 4, 5=F. [5411, 88-1099].

\* *Rumex crispus* L. (Curly Dock). Perennial; 3, 4=O. [5184, 90-683].

\* *Rumex obtusifolius* L. (Bitter Dock). Perennial; 4, 5=R. [5109].

### **Portulacaceae (Purslane Family)**

*Calandrinia ciliata* (Ruiz & Pavón.) DC. (Red Maids). Annual; 4=I. [5405].

*Claytonia perfoliata* Willd. [Synonym: *Montia perfoliata* (Donn) Howell]. (Miner's Lettuce). Annual; 1, 2=O. [88-1062].

*Claytonia sibirica* L. [Synonym: *Montia sibirica* (L.) Howell]. (Western Springbeauty). Annual/Perennial; 1, 2=O. [5329, 88-1069].

*Montia parvifolia* (DC.) E. Greene. (Small-leaved Montia). Perennial; 2, 4=I. [5988].

\* *Portulaca oleracea* L. (Common Purslane). Annual; 4=I. [5155].

### **Primulaceae (Primrose Family)**

\* *Anagallis arvensis* L. (Scarlet Pimpernel). Annual; 4=O. [5033, 5327].

\* *Lysimachia nummularia* L. (Moneywort). Perennial; 5=O. [5126, 88-1724].

*Trientalis latifolia* Hook. (Western Starflower). Perennial; 1=F. [5429].

### **Ranunculaceae (Buttercup Family)**

*Clematis ligusticifolia* Nutt. (Yerba de Chiva). Woody Vine; 2=R. [6661].

*Ranunculus occidentalis* Nutt. (Western Buttercup). Perennial; 1=R. [5294].

*Ranunculus uncinatus* D. Don. var. *parviflorus* (Torr.) L. Benson (Woods Buttercup). Perennial; 1=R. [5830].

*Thalictrum fendleri* A. Gray var. *polycarpum* (Torr.) Wats. [Synonym: *Thalictrum polycarpum* Torr.]. (Tall Meadow-rue). Perennial; 1=R. [5291].

### **Rhamnaceae (Buckthorn Family)**

*Rhamnus purshiana* DC. (Cascara). Small Tree; 2=R. [5171].

### **Rosaceae (Rose Family)**

*Amelanchier alnifolia* (Nutt.) Nutt. var. *semiintegrifolia* (Hook.) C. Hitchc. (Western Serviceberry). Shrub/Small Tree; 2=O. [5353].

*Fragaria vesca* L. (Woods Strawberry). Perennial; 4=I. [5263].

*Holodiscus discolor* (Pursh.) Maxim. (Ocean-spray). Tall Shrub; 2, 4=O. [5903, 6555].

- Oemleria cerasiformis* (Hook. & Arn.) J. W. Landon. (Osoberry). Shrub/Small Tree; 2=O. [6508].
- Physocarpus capitatus* (Pursh) Kuntze. (Pacific Ninebark). Tall Shrub; 2=I. [5989, 6567].
- Potentilla anserina* L. ssp. *anserina* (Silverweed). Perennial; 2, 4=I. [5355].
- Potentilla glandulosa* Lindl. (Grand Cinquefoil). Perennial; 2, 4=R. [5243, 5390].
- Prunus virginiana* L. var. *demissa* (Nutt.) Torr. (Western Chokecherry). Shrub/Small Tree; 2=O. [6622, 88-1264].
- \* *Rosa eglanteria* L. (Sweetbrier Rose). Low Shrub; 2, 4=F. [5942, 6609].
- Rosa gymnocarpa* Nutt. (Wood Rose). Low Shrub; 2=R. [5831].
- Rosa nutkana* Presl var. *nutkana* (Nootka Rose). Low Shrub; 2, 4=R. [5002].
- \*† *Rubus discolor* Weihe & Nees (Himalayan Blackberry). Perennial; 2=F. [5103, 5808].
- \* *Rubus laciniatus* Willd. (Cutleaf Blackberry). Perennial; 2=O. [88-1237].
- Rubus parviflorus* Nutt. (Thimbleberry). Low Shrub; 1, 2=O. [5829].
- Rubus spectabilis* Pursh (Salmonberry). Low Shrub; 1, 2=O. [5100].
- Rubus ursinus* Cham. & Schlecht. (Trailing Blackberry). Perennial; 2, 3=F. [5810, 6665].
- Spiraea douglasii* Hook. (Western Hardtack). Low Shrub; 2, 4, 6=F. [6528, 88-1105].
- Rubiaceae (Madder Family)**
- \* *Galium aparine* L. (Common Cleavers). Annual; 1, 2=F. [5125, 5426].
- Galium triflorum* Michx. (Fragrant Bedstraw). Perennial; 1, 2=F. [6568, 88-1309].
- \* *Sherardia arvensis* L. (Field Madder). Annual; 4=R. [5439].
- Salicaceae (Willow Family)**
- Salix exigua* Nutt. (Narrow-leaved Willow). Shrub; 4, 5=F. [88-1268, 90-679].
- Salix hookeriana* Barratt (Hooker's Willow). Shrub; 4=O. [90-678].
- Salix lucida* Muhl. ssp. *lasiandra* (Benth.) E. Murray. [Synonym: *Salix lasiandra* Benth.] (Red Willow). Small Tree; 4, 5=F. [5201, 6662].
- Salix sitchensis* Bong. (Sitka Willow). Shrub/Small Tree; 4, 5=F. [6537, 88-1055].
- Saxifragaceae (Saxifrage Family)**
- Boykinia occidentalis* Torr. & A. Gray (Slender Boykinia). Perennial; 1=R. [88-1506].
- Tellima grandiflora* (Pursh) Lindl. (Alaska Fringecups). Perennial; 1=I. [5436, 88-1062].
- Tolmiea menziesii* (Pursh) Torr. & A. Gray (Youth-on-age). Perennial; 1=I. [5812].
- Scrophulariaceae (Figwort Family)**
- \* *Digitalis purpurea* L. (Foxglove). Biennial; 1, 2=O. [5809].
- Gratiola ebracteata* Benth. (Bractless Hedge-hyssop). Annual; 5=R. [1305].
- \* *Kickxia elatine* (L.) Dumort. (Sharpleaf Fluellin). Annual; 4=R. [5185].
- Lindernia dubia* (L.) Pennell var. *anagallidea* (Michx.) Cooperr. [Synonym: *Lindernia anagallidea* (Michx.) Pennell]. (False-pimpernal). Annual; 4, 6=O. [6539, 88-1727].
- Mimulus cardinalis* Benth. (Crimson Monkey-flower). Perennial; 4=R. [6503].
- Mimulus guttatus* DC. (Common Monkey-flower). Annual/Perennial; 4, 5=O. [88-1102].
- Mimulus moschatus* Lindl. (Musk Monkey-flower). Perennial; 4, 5=I. [5069].
- \* *Parentucellia viscosa* (L.) Car. (Yellow-weed). Annual; 3, 4, 5=O. [5986, 88-1104].

*Scrophularia californica* Cham. & Schl. (California Figwort). Perennial; 1, 2=I. [6542].

*Synthyris reniformis* (Dougl.) Benth. (Spring Queen). Perennial; 1=R. [5279].

\* *Verbascum blattaria* L. (Moth Mullein). Biennial; 4=R. [5087, 88-1068].

\* *Verbascum thapsus* L. (Common Mullein). Biennial; 4=I. [5110].

*Veronica americana* (Raf.) Schwein. (American Brooklime). Perennial; 4, 5=O. [88-1077].

\* *Veronica persica* Poir. (Persian Speedwell). Annual; 4=R. [5298].

#### **Solanaceae (Nightshade Family)**

*Datura stramonium* L. (Jimson Weed). Annual; 4=R. [5194].

*Nicotiana quadrivalvis* Pursh (Indian Tobacco). Annual; 2=R. [5138].

*Solanum nigrum* L. (Black Nightshade). Annual; 4, 5=R. [5001].

#### **Urticaceae (Nettle Family)**

*Urtica dioica* L. ssp. *gracilis* (Ait.) Seland. (Stinging Nettle). Perennial; 1=F. [88-1515].

#### **Valerianaceae (Valerian Family)**

*Plectritis congesta* (Lindl.) A. DC. (Sea Blush). Annual; 4=R. [5419].

\* *Valerianella locusta* (L.) Betcke. (Blue Corn Salad). Annual; 2=R. [5414, 5295].

#### **Verbenaceae (Vervain Family)**

*Verbena lasiostachys* Link. (Blue Vervain). Perennial; 2=R. [5160].

#### **Violaceae (Violet Family)**

*Viola adunca* J. E. Smith. (Western Dog Violet). Perennial; 2=R. [5257].

*Viola glabella* Nutt. (Yellow Stream Violet). Perennial; 4=R. [5265].

#### **Vitaceae (Grape Family)**

*Vitis californica* Benth. (California Wild Grape). Woody Vine; 2, 3=I. [5141, 88-1287].

### **MAGNOLIOPHYTA—LILIOPSIDA**

#### **Alismataceae (Water-plantain Family)**

*Alisma triviale* Pursh L. (Water-plantain). Perennial; 5=I. [5128, 6530].

#### **Cyperaceae (Sedge Family)**

*Carex barbarae* Dewey (Santa Barbara Sedge). Perennial; 4=R. [5941].

*Carex deweyana* Schwein. (Dewey's Sedge). Perennial; 1=F. [5911, 88-1016].

*Carex hendersonii* L. Bailey (Henderson's Sedge). Perennial; 1=F. [5816, 88-1098].

*Carex nudata* W. Booth (Torrent Sedge). Perennial; 4=O. [6646, 88-1246].

*Carex obnupta* Bailey. (Slough Sedge). Perennial; 4, 5=F. [5006, 6563].

*Carex pachystachya* Cham. (Thick-headed Sedge). Perennial; 1=R. [6549, 88-1066].

*Cyperus bipartitus* Torr. [Synonym: *Cyperus rivularis* Kunth]. (Shining Nutgrass). Annual; 4=I. [5181].

*Cyperus eragrostis* Lam. (Tall Cyperus). Perennial; 5=I. [6522, 88-1269].

*Cyperus erythrorhizos* Muhlenb. (Redroot Cyperus). Annual; 4=R. [6630].

† *Cyperus esculentus* L. (Yellow Nutgrass). Perennial; 4=R. [5130].

*Eleocharis acicularis* (L.) Roemer & Schultes. (Needle Spike-rush). Annual/Perennial; 4, 5=F. [6517].

*Eleocharis macrostachya* Britt. [Synonym: *Eleocharis palustris* (L.) Roemer & Schultes]. (Common Spike-rush). Perennial; 4, 5=F. [6544, 88-1742].

*Eleocharis obtusa* (Willd.) Schult. var. *obtusa* [Synonym: *Eleocharis ovata* (Roth) Roemer & Schultes]. (Ovoid Spike-rush). Annual; 4, 5=F. [5017, 6550].

*Scirpus americanus* Pers. (Three-square Bulrush). Perennial; 4, 5=R. [5101].

*Scirpus microcarpus* C. Presl. (Small-fruited Bulrush). Perennial; 4, 5=l. [88-1732].

*Scirpus tabernaemontani* C. Gmel. [Synonym: *Scirpus validus* Vahl]. (Great Bulrush). Perennial; 4, 5=l. [6504, 90-670].

#### **Hydrocharitaceae (Frog's-bit Family)**

*Elodea canadensis* Rich. (Common Waterweed). Perennial; 5=O. [5053, 5910].

#### **Iridaceae (Iris Family)**

*Iris tenax* Douglas. (Oregon Iris). Perennial; 2=R. [88-1505].

*Sisyrinchium bellum* S. Wats. (Blue-eyed-grass). Perennial; 2=R. [5431].

#### **Juncaceae (Rush Family)**

*Juncus articulatus* L. (Jointed Rush). Perennial; 2, 4=F. [6625, 88-1260].

*Juncus bolanderi* Engelm. (Bolander's Rush). Perennial; 2, 4=l. [6592, 88-1507].

*Juncus bufonius* L. (Toad Rush). Annual; 4, 5=O. [5055, 5949].

*Juncus covillei* Piper (Coville's Rush). Perennial; 4, 5=O. [5120].

*Juncus dudleyi* Wieg. [Synonym: *Juncus tenuis* Willd. var. *dudleyi* (Wieg.) F. J.Herm.]. (Dudley's Rush). Perennial; 2, 5=R. [5193, 88-1035].

*Juncus effusus* L. var. *pacificus* Fern. & Wieg. (Pacific Soft Rush). Perennial; 4, 5=O. [5213, 6507].

*Juncus ensifolius* Wikström. (Swordleaf Rush). Perennial; 4, 5=F. [5137, 6605].

*Juncus oxymeris* Engelm. (Pointed Rush). Perennial; 5=l. [6546, 88-1285].

*Juncus patens* E. Meyer. (Spreading Rush). Perennial; 2, 4, 6=F. [6562, 88-1701].

*Luzula comosa* E. Meyer. [Synonym: *Luzula campestris* (L.) DC.]. Field (Woodrush). Perennial; 1=R. [5838].

#### **Lemnaceae (Duckweed Family)**

*Lemna minor* L. (Water Lentil). Annual; 5=l. [5292].

#### **Liliaceae (Lily Family)**

\* *Allium vineale* L. (Field Garlic). Perennial; 4=R. [6633].

*Brodiaea elegans* Hoover. (Harvest Brodiaea). Perennial; 2=l. [6652, 88-1710].

*Camassia quamash* (Pursh) E. Greene var. *quamash* [Synonym: *Camassia leichtlinii* (Baker) S. Wats.]. (Baker's Camas). Perennial; 2=R. [5371, 5435].

*Disporum smithii* (Hook.) Piper. [Synonym: *Prosartes smithii* (Hook.) Utech, Shinwari & Kawano]. (Large-flowered Fairy-bell). Perennial; 1=R. [6606].

*Smilacina stellata* (L.) Desf. [Synonym: *Maianthemum stellatum* (L.) Link]. (Starry Solomon-plume). Perennial; 1=l. [5835].

*Trillium ovatum* Pursh ssp. *ovatum* (Western White Trillium). Perennial; 1=R. [5260].

*Triteleia hyacinthina* (Lindl.) E. Greene. [Synonym: *Brodiaea hyacinthina* (Lindl.) Baker]. (White Brodiaea). Perennial; 2=R. [88-1290].

#### **Orchidaceae (Orchid Family)**

*Epipactis gigantea* Hook. (Stream Orchid). Perennial; 4=l. [6638, 90-671].

*Spiranthes romanzoffiana* Cham. (Hooded Ladies Tresses). Perennial; 4=l. [88-1243, 90-654].

#### **Poaceae (Grass Family)**

\* *Agrostis capillaris* L. [Synonym: *Agrostis tenuis* Sibth.]. (Colonial Bentgrass). Perennial; 2, 3=O. [5187, 88-1089].

*Agrostis exarata* Trin. (Spike Bentgrass). Perennial; 3, 4=F. [6550].

*Agrostis hallii* Vasey. (Hall's Bentgrass). Perennial; 3=R. [5180].

- \* *Agrostis stolonifera* L. [Synonym: *Agrostis alba* L. var. *stolonifera* (L.) Smith]. (Creeping Bentgrass). Perennial; 2, 3=O. [5049, 5061, 6559].
- \* *Aira caryophyllea* L. (Silver Hairgrass). Annual; 2, 3, 4=F. [5833, 88-1252].
- \* *Anthoxanthum odoratum* L. (Sweet Vernalgrass). Perennial; 2, 3=I. [5953, 88-1021].
- \* *Avena fatua* L. (Wild Oat). Annual; 3=R. [6602].
- \* *Avena barbata* Link. (Slender Oatgrass). Annual; 3=R. [88-1318].
- \* *Briza minor* L. (Little Quaking Grass). Annual; 2, 3=I. [5096].
- \* *Bromus carinatus* Hook. & Arn. (California Brome). Perennial; 3, 4=F. [5973].
- \* *Bromus diandrus* Roth. [Synonym: *Bromus rigidus* Roth]. (Rippgut Brome). Annual; 3, 4=O. [5950].
- \* *Bromus hordeaceus* L. [Synonym: *Bromus mollis* L.]. (Soft Brome). Annual; 3, 4=F. [5408, 5992].
- \* *Bromus japonicus* Murr. (Japanese Brome). Annual; 3=I. [88-1093].
- \* *Bromus tectorum* L. (Downy Brome). Annual; 3=R. [5555].
- \* *Calamagrostis canadensis* (Michx.) Beauv. (Bluejoint Reedgrass). Perennial; 4=R. [88-1336].
- \* *Cynosurus cristatus* L. (Crested Dogtail Grass). Perennial; 3=R. [5811].
- \* *Cynosurus echinatus* L. (Hedgehog Grass). Annual; 2, 3=O. [5924, 88-1075].
- \* *Dactylis glomerata* L. (Orchard Grass). Perennial; 2, 3=F. [5823, 88-1020].
- \* *Digitaria sanguinalis* (L.) Scop. (Hairy Crabgrass). Annual; 3=I. [5003].
- \* *Echinochloa crusgalli* (L.) Beauv. (Barnyard Grass). Annual; 2, 4, 5=F. [5005, 88-1706].
- \* *Elymus glaucus* Buckl. (Blue Wildrye). Perennial; 1=F. [5951, 88-1015].
- \* † *Elytrigia repens* (L.) Nevski. [Synonym: *Agropyron repens* (L.) Beauv.]. (Quackgrass). Perennial; 3, 4=O. [6508, 88-1251].
- \* *Eragrostis pectinacea* (Michx.) Nees (Purple Lovegrass). Annual; 4, 5=F. [5039, 5190].
- \* *Festuca arundinacea* Schreb. (Tall Fescue). Perennial; 2, 3=F. [5385, 88-1017].
- \* *Festuca rubra* L. (Red Fescue). Perennial; 3=R. [88-1107].
- \* *Festuca subulata* Trin. (Bearded Fescue). Perennial; 2=R. [5826, 88-1013].
- \* *Gastridium ventricosum* (Gouan) Schinz & Thell. (Nitgrass). Annual; 2, 3=O. [6629].
- \* *Holcus lanatus* L. (Common Velvet Grass). Perennial; 2, 4, 5=F. [5965, 88-1027].
- \* *Hordeum brachyantherum* Nevski. (Meadow Barley). Perennial; 3=R. [88-1029].
- \* *Hordeum murinum* L. ssp. *leporinum* (Link) Arcang. [Synonym: *Hordeum leporinum* Link.]. (Charming Barley). Annual; 3=R. [5416].
- \* *Leersia oryzoides* (L.) Swartz. (Rice Cutgrass). Perennial; 4, 5=O. [6565, 88-1704].
- \* *Lolium multiflorum* Lam. (Italian Ryegrass). Annual/Perennial; 3, 4=O. [6669, 88-1031].
- \* *Lolium perenne* L. (English Ryegrass). Perennial; 3, 4=I. [88-1072].
- \* *Melica subulata* (Gris) Scribn. (Alaska Oniongrass). Perennial; 1=R. [5554].
- \* *Muhlenbergia mexicana* (L.) Trin. (Wirestem Muhly). Perennial; 3=I. [6543, 90-675].
- \* *Muhlenbergia richardsonis* (Trin.) Rydb. (Mat Muhly). Perennial; 3=R. [5082, 88-1711].

- Panicum acuminatum* Sw. var. *acuminatum*. [Synonym: *Panicum occidentale* Scribn.]. (Western Witchgrass). Perennial; 4=l. [6653, 90-660].
- Panicum capillare* L. (Common Witchgrass). Annual; 3, 4=l. [5041, 90-662].
- Panicum oligosanthos* Schutes var. *scribnerianum* (Nash) Fern. [Synonym: *Panicum scribnerianum* Nash]. (Scribner's Panicgrass). Perennial; 3=l. [88-1324].
- Paspalum distichum* L. (Knotgrass). Perennial; 4=R. [90-674].
- Phalaris arundinacea* L. (Reed Canary Grass). Perennial; 4, 5=A. [5035, 88-1019].
- \* *Phleum pratense* L. (Timothy). Perennial; 2, 3=R. [5131, 88-1333].
- \* *Poa annua* L. (Annual Bluegrass). Annual/Biennial; 2, 4=F. [5302, 5365].
- \* *Poa bulbosa* L. (Bulbous Bluegrass). Perennial; 2=R. [6000].
- \* *Poa palustris* L. (Fowl Bluegrass). Perennial; 2, 4, 5=l. [5964, 88-1030].
- \* *Polypogon monspeliensis* (L.) Desf. (Beard Grass). Annual; 3=O. [5036, 6524].
- \*† *Sorghum halepense* (L.) Pers. (Johnson Grass). Perennial; 5=l. [6624]
- \*† *Taeniatherum caput-medusae* L. [Synonym: *Elymus caput-medusae* L.]. (Medusahead Wildrye). Annual; 3=l. [6001, 88-1094].
- \* *Vulpia bromoides* (L.) S. F. Gray. [Synonym: *Festuca bromoides* L.]. (Barren Fescue). Annual; 3=O. [5410, 5968].
- \* *Vulpia myuros* (L.) C. Gmel. [Synonym: *Festuca myuros* L.]. (Rat-tailed Fescue). Annual; 3=l. [5963].

#### **Potamogetonaceae (Pondweed Family)**

- \* *Potamogeton crispus* L. (Curly Pondweed). Perennial; 5=O. [5908, 88-1036].
- Potamogeton epihydris* Raf. ssp. *nuttallii* (Cham. & Schldl.) Calder & R. Taylor. (Nuttall's Pondweed). Perennial; 5=l. [88-1518].
- Potamogeton pectinatus* L. (Fennel-leaved Pondweed). Perennial; 5=O. [90-673].

#### **Sparganiaceae (Bur-reed Family)**

- Sparganium eurycarpum* Engelm. ssp. *eurycarpum* (Broadfruit Bur-reed). Perennial; 5=R. [6620, 88-1730].

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