

Gentiana* L. spp.*Gentian****Gentianaceae****GENTI**

G. sceptrum Griseb., King's gentian-GESC

G. calycosa Griseb., Explorer's gentian-GESA

Ecology

Description: Native. About 300 species, 36 in Western United States; annual or perennial herb; simple stems; fleshy roots or slender rhizomes; opposite, occasionally whorled, often clasping leaves; inflorescence compact cyme or solitary flowers, bell or funnel shaped, four or five lobed corollas, blue, violet purple, greenish, yellow, red or white; capsule, two valved, many seeded. *Gentiana sceptrum*, 25-100 cm, leaves 10 to 15, 3-6 cm, blue 3-4.5 cm flowers; *G. calycosa*, 5-30 cm.

Range and distribution: Temperate to subarctic and alpine America and Eurasia. *Gentiana sceptrum*: from British Columbia to California, western slope of Cascade Range to coast; *G. calycosa*: also to Rocky Mountains. Widespread and common for some species; others locally abundant.

Associations: Sitka spruce, western hemlock, Pacific silver fir zones. Western redcedar, alder, willow, black cottonwood, and bog or moist meadow. *Gentiana calycosa*: mountain heather, black huckleberry, broadleaf lupine, and showy sedge.

Habitat: Meadows; *G. calycosa*, moist open sites in mountains; other gentian species including *G. sceptrum*, lower foothills and near coast.

Successional stage: Component of well-developed, stable plant communities. Shade intolerant.

Ecological relations: Deer and elk have been known to browse.



Gentiana calycosa

G. sceptrum

Biology

Flowering and fruiting: *Gentiana sceptrum* blooms from July through September, *G. calycosa* from July through October.

Seed: Abundant seed producer; seeds small; disperse well. Seeds are sown in autumn to early spring on top of well-drained, sandy soil, watered from beneath. Germination in full sunlight.

Vegetative reproduction: May be rooted from stem cuttings; difficult to start.

Cultivation: Can be cultivated. Plants and seeds are commercially available for *G. calycosa*, *G. sceptrum*, and other *Gentiana* species.

Transplant viability: Difficult to transplant from the wild. Should not be attempted.

Collection

Part harvested: All parts, but please see “**Comments and Areas of Concern.**” Rhizomes and roots harvested for medicinal purposes.

Harvest techniques: Plant tops are clipped, whole plants have been dug up **but not recommended.**

Harvest season: Late summer and early fall.

Regeneration after harvest: Poor; regrowth slow.

Uses and Products

Common uses: Yellow gentian (*Gentiana lutea*) native to Europe is a well-known wild herb used as a bitter, for anti-inflammatory tonics, beverages, and liqueur flavorings. *Gentiana* species: for improving thyroid function, to aid digestion, and treat infection; rock garden landscaping.

Indigenous uses: Roots of some species used for medicine.

Common products: Herbal tonic and tincture; garden plants and seed.

Types of markets: International for herbal products, landscaping plants and seeds.

Comments and Areas of Concern

Glaucous gentian (*Gentiana glauca*), swamp gentian (*G. douglasiana*), and slender gentian (*G. tenella*) are listed as sensitive (vulnerable or declining) in Washington; Newberry’s gentian (*G. newberryi*), elegant gentian (*G. plurisetosa*), and Mendocino gentian (*G. setigera*) are listed in Oregon. The latter two are U.S. Fish and Wildlife Service “species of concern.” Macoun’s fringed gentian (*G. macounii*) and one-flowered gentian (*G. simplex*) are listed in Montana as imperiled, and four-parted gentian (*G. propinqua*) is listed in Idaho. Yellow gentian (*G. lutea*) is listed as a European species of concern by the World Wide Fund for Nature. *Gentiana sceptrum*, national wetland indicator species. Moist habitats highly susceptible to damage. *Gentiana* is on United Plant Savers North American medicinal plants “To Watch” list. Do not recommend wildcrafting.

References

British Columbia Ministry of Forests (1995), Cooke (1997), Duke (1997), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Kruckeberg (1993), Moerman (1998b), Moore (1993), Pojar and MacKinnon (1994), United Plant Savers (2000), USDA NRCS (1999), USDA Forest Service (1988), Whitney (1997), Williams (1990a, 1990b)

Gypsophila paniculata L.**Baby's breath**

Caryophyllaceae

GYPA

Ecology

Description: Exotic. Perennial herb, 40 to 80 cm tall, thick root; leaves opposite, narrow, 1.8 to 10 cm long with pointed tips; flowers many, tiny, white, massed in clusters, 1.6-3.2 mm wide; inflorescence diffusely branched.

Range and distribution: Widely over Pacific Northwest, primarily east of the Cascade Range, 1200-2000 m. Native to east and central Europe. Widely scattered, dense stands.

Associations: Dry Douglas-fir types, ponderosa pine, bitter-brush, yarrow, sagewort, fescues and other graminoids.

Habitat: Dry, disturbed areas, pastures, and rangeland. Grows on well-drained, poor, and alkaline soil.

Successional stage: Early colonizer; however, can become firmly established after colonization. Appears shade intolerant; cultivated species tolerate shade.

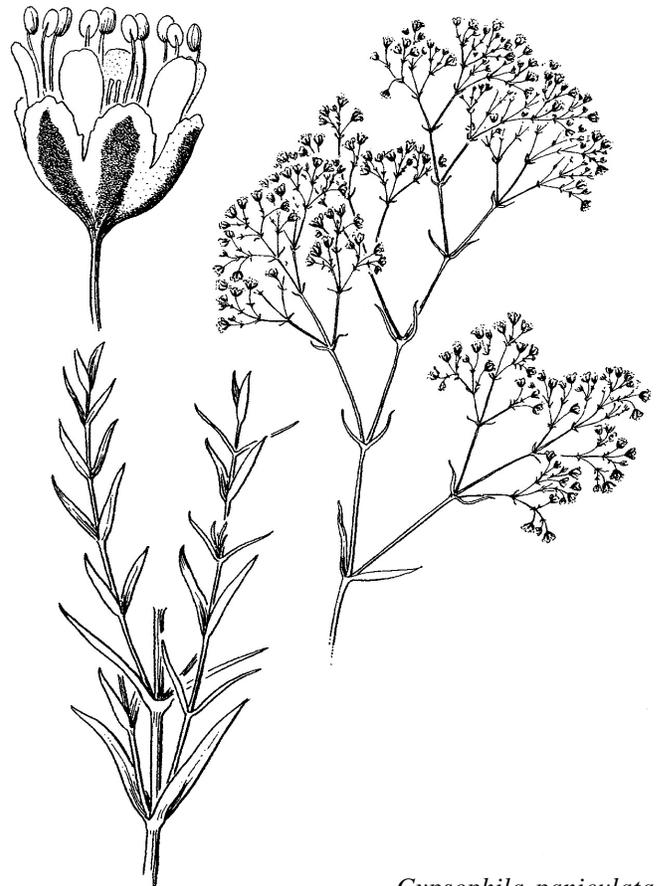
Ecological relations: Noxious weed. Once established, it is difficult to control.

Biology

Flowering and fruiting: Flowers from June through August.

Seed: Two to five black seeds about 2 mm long in small capsule. Reproduces easily from seed; germinate in 1 to 2 weeks at about 20-27 °C temperature.

Vegetative reproduction: For cultivated varieties, cuttings and tissue culture.

*Gypsophila paniculata*

Cultivation: Can be cultivated, but can readily escape and is difficult to control.

Transplant viability: Large taproot makes plant difficult to transplant.

Collection

Part harvested: Branching stems with inflorescent tops.

Harvest techniques: Stems clipped with knives or clippers.

Harvest season: Summer, when plant is in early to mid flower.

Regeneration after harvest: As long as root intact, will

readily resprout following season. In favorable sites, may regrow second crown with inflorescence after clipping, during same season.

Uses and Products

Common uses: Flowering stems as filler in floral arrangements; whole plant, in gardens and flower borders.

Indigenous uses: Not known.

Common products: Floral, dried and fresh flower tops and xeric landscape plant.

Types of markets: Domestic. Fresh floral, and floral crafts; xeric or natural landscape.

Comments and Areas of Concern

Gypsophila from Latin meaning “gypsum loving.” This Eurasian species originally brought to the United States as an ornamental; has escaped cultivation and is now scattered at low elevations throughout the region, especially in dry climates. Listed as a noxious weed in California and Washington. Once established, difficult to control.

References

Antos et al. (1996), Burrill et al. (1996), Rice (1997), USDA NRCS (1999)

Hypericum perforatum L.
St. John's wort, Klamath weed
 Hypericaceae (Clusiaceae)
 HYPE

Ecology

Description: Exotic. Perennial herb from taproot; many branched, erect stems 0.3-1.2 m, rust colored, woody at base; leaves opposite, linear to oblong, 1.5-2.5 cm, edges rolled under, black-dotted, lower surface clear-dotted; flowers bright yellow, five petals, 8-12 mm with black-dotted margins, twice as large as sepals, many stamens; flowers bruise red, stain purple; fruit 7-8 mm, brown seeds less than 1-mm with rows of pits.

Range and distribution: From Tacoma, Washington, to southern California; below 1500 m, Pacific Coast to Rocky Mountains. Weedy; commonly grows in dense patches.

Associations: Various species of open grasslands, disturbed openings including annual fescues, wild oats, bromes, needlegrass and bluegrass; and other exotics, oxeye daisy, Queen Anne's lace, as well as native herbs.

Habitat: Full sunshine on well-drained slopes, pastures, abandoned fields, roadsides, and disturbed places.

Successional stage: Colonizer, early successional. Shade intolerant.

Ecological relations: Flowers attract bees and other pollinators; toxic to livestock; invader of disturbed sites; listed as a noxious weed in several Pacific Northwest states; has been successfully controlled in some areas by the introduced beetle, *Chrysolina quadrigemina* Suffrian; research directed toward controlling further spread is ongoing.



Hypericum perforatum

Biology

Flowering and fruiting: Abundant; flowering late June to August; flowers attractive to bees.

Seed: Copious seed production. Washing seeds can improve germination capacity. A germination inhibitor is present in the seed capsule exudate. Also, pretreatment for 7 to 14 days at 4 °C can increase germination percentage.

Vegetative reproduction: Sprouts seasonally from tap root, short runners or rhizomes. One creeping root mass may have many aboveground plants. Occasional clipping of flowering tops promotes root spread and invigorates aerial stem growth.

Cultivation: Can be cultivated. Seeds are commercially available from various sources.

Transplant viability: Can be transplanted, but exercise caution because it spreads rapidly.

Collection

Part harvested: Flowering tops (leaves and flowers).

Harvest techniques: The uppermost flowering stems of the plant provide the highest quality product. Plants are cleaned of insects before collecting. Plants are clipped in late spring-early summer when flowers are a mixture of buds and blossoms. If flowering stems are cut early in the season, they will rebloom and seed.

Harvest season: Annually, from early to mid bloom, June to early August.

Regeneration after harvest: Good, resilient perennial.

Uses and Products

Common uses: Used as an antidepressant and sedative, for various mood and nervous disorders, anti-inflammatory, antiviral, antibacterial, astringent, antiseptic, and for healing wounds. Reported to have antiretroviral activity especially in the presence of light.

Indigenous uses: Used traditionally in Europe most commonly as a wound healer, but was also hung over doorways, pinned onto clothes or kept under the pillow for symbolic protection against the “evil spirits” that were thought to cause illness. Indigenous American (Cherokee and Iroquois) uses include an infusion taken for bloody flux and bowel complaint, cough, fever, and crushed plant sniffed for nosebleed; milky substance on sores and venereal disease; root as wash to give infants strength; to prevent sterility.

Common products: Tinctures, oils, capsules, tea bags, red dye, and extract in alcoholic beverages.

Types of markets: International and domestic. Dietary supplement and herbal.

Comments and Areas of Concern

When collecting wild *Hypericum perforatum*, check for herbicide application particularly near roadsides and settled or farmed areas. Grows in disturbed sites; typical impact from harvest may encourage spread. An invasive species exotic to North America, considered a noxious weed in Montana, Oregon, and Washington. Cultivation should be undertaken with care to prevent the spread of the plant beyond the cultivated area. Seeds readily stick to animals, vehicles, and clothes. NOTE: It is illegal to grow *H. perforatum* in Washington and Montana; seed suppliers will not ship to these states.

References

Brevoort (1998), Burrill et al. (1996), Campbell and Delfosse (1984), Cooke (1997), Everett (1997), Hickman (1993), Hortus West (1998), Leung and Foster (1996), Mizerak (1998), Moerman (1998b), Moore (1993), Pojar and MacKinnon (1994), Rice (1997), Thomas and Schumann (1993), Tilford (1998), USDA Forest Service (1988), Vance and Thomas (1997)

Juniperus L. spp.

Juniper

Cupressaceae

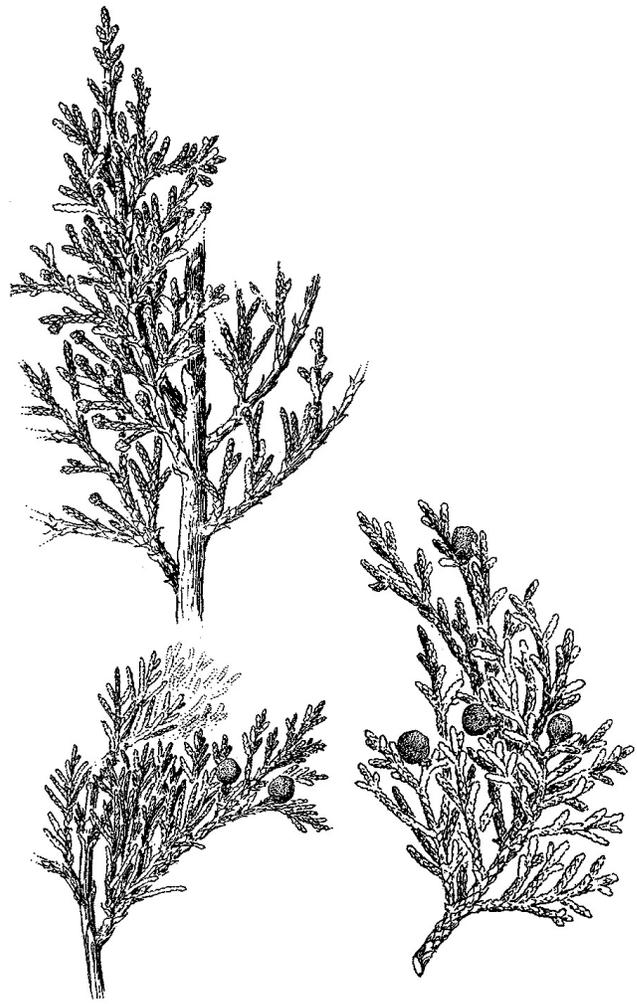
JUNIP

J. occidentalis Hook., Western juniper-JUOC*J. scopulorum* Sarg., Rocky Mountain juniper-JUSC2

Ecology

Description: Native. About 60 species in the Northern Hemisphere, 13 native to the United States; *Juniperus occidentalis* and *J. scopulorum* most common in the Northwest; shrub, tree, generally dioecious; bark thin, peeling in strips; leaves opposite and four-ranked or whorled in threes and six ranked, scalelike to less often needlelike; male flower, short catkin, 3-5 mm, pollen sacs two to six per scale; seed cone 5-18 mm, scales fused and fleshy, berrylike; seeds one to three per cone, flat, un-winged; immature “berries” greenish, ripen blue-black to red-brown, covered with white, waxy bloom. *Juniperus occidentalis*: slow growing and long lived; full crowned, heavy limbed tree 4.6-9.1 m, average circumference 107 cm; bark reddish brown, furrowed, and shredded; spreading branches; leaves mostly in threes 1.5 mm, scalelike, gray-green; cones 6-10 mm, berrylike, blue-black with a bloom, juicy, resinous, two to three seeds. *Juniperus scopulorum*: shrub to small tree, conical crown shape; 6.1-15.3 m, diameter to 45 cm; bark reddish gray to brown, furrowed and shredded; slender twigs; blue-green scalelike leaves 1-4 mm, mostly opposite; cones berrylike, bright blue with whitish coat, juicy, resinous, and two seeds.

Range and distribution: Widely distributed throughout the temperate and subtropical regions of the Northern Hemisphere; common juniper (*J. communis*) is the only conifer with worldwide distribution; *J. occidentalis*: from central, southeast Washington to California, to 3048 m; *J. scopulorum*: of junipers reaching tree size, it is the most widely distributed in North America; much of Pacific Northwest, Rocky Mountains, Great Basin, central British Columbia, to eastern Washington and Oregon;

*Juniperus scopulorum**J. occidentalis*

California juniper (*J. californica*), southwest Oregon and California. *Juniperus occidentalis*: scattered individuals, small groups, extensive stands depending on range (greatest abundance in central Oregon); *J. scopulorum*: scattered, but concentrations generally follow Rocky Mountains.

Associations: *Juniperus occidentalis*: ponderosa pine, big sagebrush, Idaho fescue, and bluebunch wheatgrass; *J. scopulorum*: component of the foothills or woodland coniferous zone, complex transition zones or exposed or severe sites within other forest types; most common understory is big sagebrush.

Habitat: *Juniperus occidentalis*: mountain slopes and plateaus, mostly on shallow, rocky soils; occurs in zone between ponderosa pine communities and sagebrush steppe; *J. scopulorum*: open, exposed sites, rocky calcareous soils, wide range of sites in drier lower foothills of Rocky Mountains and northern plains.

Successional stage: *Juniperus occidentalis*: indicator of climax in many sagebrush-grassland, shrub-steppe and drier conifer habitat types; *J. scopulorum*: indicator of climax in many ponderosa pine, mountain brushland, and sagebrush-grassland habitat types; because of its ability to survive where other species cannot, it is considered a pioneer species in some early-successional communities. Shade intolerant.

Ecological relations: Wildlife cover, nesting and hibernation sites, shade, and food; seeds disseminated during fall primarily by birds and mammals; browsed only on winter ranges; helps prevent erosion on steep hillsides. In general, junipers are highly vulnerable to fire and usually occur in large numbers only in fire refugia. Typically juniper does not resprout after fire, but seeds in the soil may germinate. Some juniper species can survive light fires.

Biology

Flowering and fruiting: Begin bearing at 10 to 20 years old; flowers borne in spring, fruit ripens in fall of second year; remains on tree for 2 years until mature.

Seed: Seeds dispersed in fall usually by birds. Good seed production; seeds removed by macerating and flotation, and store quite well; warm and cold stratification needed; sown in fall or spring, germination completed in several weeks.

Vegetative reproduction: Does not naturally reproduce vegetatively; grafting, cutting, and layering possible.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Does not transplant well from natural environment.

Collection

Part harvested: Berries, leaves, and branches.

Harvest techniques: Berries are picked when dark blue and juicy; collect fruit by handpicking or after berries drop off tree to ensure picking 2-year-old ripe fruit; leaves and branch tips clipped. Berries can be picked in bunches by pruning twig tips; also can be removed by hitting branches with a strong stick and collecting berries on a plastic ground cloth. Twigs with firm, blue berries are harvested by pruning the branches. Branches need to be at least 30 cm long.

Harvest season: Collect berries in fall; leaves and branches anytime. Floral products: branches are picked after the berries harden off but before they fall. Best time is mid summer.

Regeneration after harvest: New branches can sprout below clip point, particularly if younger branches are clipped. In dry locations regrowth is slow.

Uses and Products

Common uses: Wood: fencing, decks, paneling, furniture, particleboard, toys, and firewood; boughs: Christmas wreaths and decorations; used as a diuretic, laxative; in soaps, detergents, perfumes; extracts and oils used in major food categories, gin, herbal tea flavoring; cosmetics; insecticides; whole plant: to inhibit bacteria, as a tonic, for low blood sugar; as a garden ornamental and for landscaping.

Indigenous uses: Food, gastrointestinal aid, coughs, colds, analgesic, poultice for wounds, liniment, ceremonial paint, and decorations.

Common products: Specialty lumber, finish wood, decorative fruits and greens, Christmas wreaths, table decorations, grave blankets, door arches, medicinal herbal products, and transplants.

Types of markets: Domestic and international markets for holiday greenery, health food, herbal, specialty food, and specialty lumber. Domestic markets for home decoration materials and native landscaping products.

Comments and Areas of Concern

Do not use during pregnancy or in presence of kidney disease; gather conservatively; it is important wildlife food and shelter source, and it regenerates slowly. Juniper is traditionally used by Alaska tribes, and Alaska Natives have requested limited commercial use. Is considered an invasive species in sagebrush-steppe rangelands of eastern Oregon where fire has become less frequent. Since 1936, juniper forests have increased fivefold from 456,000 to 2.2 million acres in eastern Oregon.

References

Burns and Honkala (1990), Gedney et al. (1999), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Leung and Foster (1996), Moerman (1998b), Schofield (1989), Tilford (1998), Tirmenstein (1986a, 1986b), USDA Forest Service (1974), Whitney (1997), Willard (1992), Young and Young (1992)

***Ligusticum* L. spp.**
Lovage, osha, licorice-root

Apiaceae

LIGUS

L. apiifolium (Nutt. ex Torr. & Gray) Gray,
 Celeryleaf lovage- LIAP

L. canbyi Coult. & Rose, Canby's lovage-LICA2

L. grayi Coult. & Rose, Gray's lovage- LIGR

Ecology

Description: Native. About 25 species in North America and Eurasia. Perennial herb to 120 cm; stems hollow and stout; root large, brown, fibrous at base, spicy celery odor; mostly basal leaves pinnately divided into one to four pairs, up to 20.3 cm long; umbel inflorescence 5-13 cm broad; flowers white or pinkish; fruit, small oblong, ribbed.

Range and distribution: High elevations in British Columbia, Montana, Idaho, Washington, Blue Mountains in Oregon; most species ring the Great Basin, east of the Sierras, Nevada ranges and along the Rocky Mountains; up to 3658 m. *Ligusticum apiifolium* from Washington to California at low elevations, *L. canbyi* in Washington, Idaho, Blue Mountains, *L. grayi* in the Cascade and Sierra Ranges to Nevada.

Associations: True fir, ponderosa pine, lodgepole pine, mixed-coniferous forests. Willow, angelica, false Solomon's seal, stinging nettle, cow-parsnip, sedges, and bluegrass.

Habitat: Wet mountain meadows, montane forests, marshes, along streambanks, sparsely wooded slopes and prairies.

Successional stage: Mid to late successional; in stable plant communities. Moderately shade tolerant.

Ecological relations: Eaten by moose, deer, and other large animals; flowers attract pollinators. Called "bear medicine" based on observations of sick bears eating



Ligusticum apiifolium

L. canbyi

the plant and rolling in patches of osha. Highly palatable to livestock.

Biology

Flowering and fruiting: *Ligusticum apiifolium* flowers from May through July; *L. grayi* and *L. canbyi* flower from July to September.

Seed: Small, about 1-2 mm in length. Difficult to start from seed. Reproduction naturally poor from seed.

Vegetative reproduction: From root division.

Cultivation: Can be cultivated. Seeds are commercially available for Porter's lovage (*L. porteri*).

Transplant viability: Nearly impossible to transplant.

Collection

Part harvested: Root.

Harvest techniques: Roots are dug conservatively from healthy patches. Patches are approached carefully as the wet environment is sensitive to impact. Roots are dried quickly as they are susceptible to mold.

Harvest season: After flowers have gone to seed but before aerial parts die back (making identification difficult).

Regeneration after harvest: Osha and its habitat are sensitive to harvest. Consider alternatives for the same effects.

Uses and Products

Common uses: Antiviral, expectorant, to induce sweating, upper respiratory infections, herbal baths and deodorants; parsley substitute.

Indigenous uses: Colds, sore throats, and sinus infections.

Common products: Teas, tinctures, capsules, and essential oils.

Types of markets: International and domestic. Herbal and medicinal.

Comments and Areas of Concern

About 18 species occur in the mountain ranges of the West. *Ligusticum* species is being substituted for Chinese *Ligusticum* herbs. Because of market pressure and habitat loss, *Ligusticum* species are becoming increasingly rare; suggest finding alternatives. Use caution when collecting; osha resembles poison hemlock. One of the seven wild medicinal plants under a moratorium imposed on harvest or removal from Montana State lands. No permits are being issued on National Forest System lands and collection or harvest is not permitted on National Forest System lands in the Northwestern and Intermountain Regions. *Ligusticum* on United Plant Savers North American medicinal plants "At Risk" list.

References

Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Medicine Roots (2001), Moore (1993), Niehaus (1976), Ross and Chambers (1988), Schofield (1989), Tilford (1993), United Plant Savers (2000), USDA Forest Service (1988), USDA NRCS (1999), Willard (1992)

Lomatium dissectum (Nutt.)Mathias & Constance
Desert parsley, fern-leaved
lomatium

Apiaceae

LODI

Ecology

Description: Native. Perennial herb; 30-140 cm; stalks extending well above foliage; umbel inflorescence, bracts of umbellets narrow; basal, leaves, finely dissected, fernlike, 15-35 cm wide; flowers yellow or purple; fruits 12-16 mm; seeds large, flat oval, slightly winged.

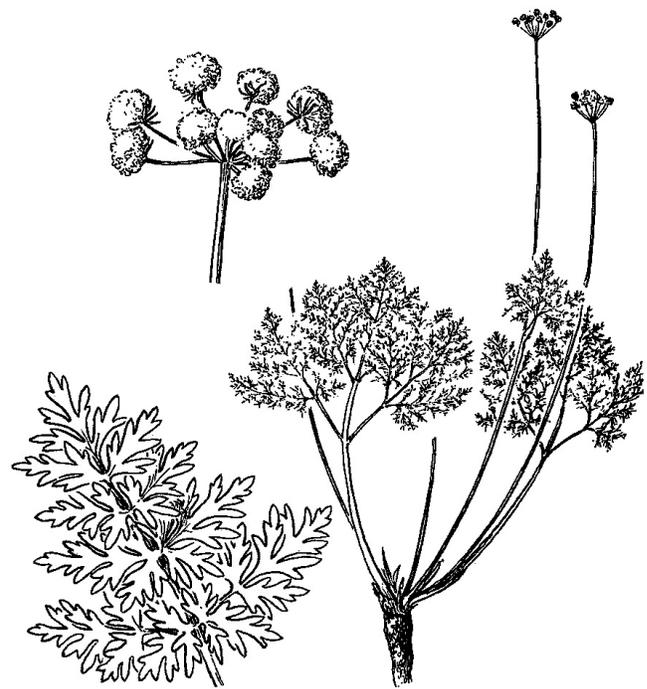
Range and distribution: Mainly the Great Basin, eastern Washington and southern Oregon to Colorado; sporadically from California to Western Canada; 150-3000 m. Large stands, but widely separated.

Associations: Dry Douglas-fir, ponderosa pine, juniper-sagebrush, shrub-steppe zones. Ponderosa pine, black hawthorn, common snowberry, big sagebrush, arrowleaf balsamroot, yarrow, penstemon, bluebunch wheatgrass, and fescue.

Habitat: Wooded or brushy, rocky slopes, dry hillsides, and meadow steppe.

Successional stage: Part of established prairie plant community, but can be colonizer after disturbance on exposed rocky soil. Shade intolerant.

Ecological relations: Large taproot stabilizes soil; forage plant, sometimes upper parts and roots are eaten by rodents, bears, bighorn sheep, deer, and elk; flowers are pollinator attractors, among first to bloom in spring.

var. *eatonii*var. *multifidum**Lomatium dissectum***Biology**

Flowering and fruiting: Blooms in early spring, from April through June.

Seed: Reproduction primarily by seed. Collect seed before fully dried to avoid beetles drilling seed. Bring into greenhouse to dry. Multicycle germinator; needs pretreatment for full germination.

Vegetative reproduction: Can reproduce from tuberous portions of the root.

Cultivation: Can be cultivated. Seeds are commercially available.

Transplant viability: Young plants can be put into "long cells" to increase root systems before transplanting; difficult to propagate; do not transplant well.

Collection

Part harvested: Root.

Harvest techniques: Do not collect commercially in southern Oregon. If it is collected for personal use, be sure root crowns are replanted. Easier to find, identify and dig earlier in the year.

Harvest season: Late spring, summer, early fall (spring is easiest time to identify).

Regeneration after harvest: If enough of root and root crown left, can regenerate from root.

Uses and Products

Common uses: As an antiviral, expectorant, antimicrobial, immunostimulant, for respiratory and skin infections; starchy root stock has been used as flour substitute in allergenic diets.

Indigenous uses: Infusion of root to increase appetite, and to treat tuberculosis, arthritis, dandruff, and pimples. Root combined with tobacco for sinus trouble. Pounded roots applied to open cuts, sores, and bruises; root chewed for sore throat; young shoots eaten; mature tops and roots considered poisonous, and purple shoots considered poisonous by Okanogan and Colville Native Americans.

Common products: Medicinal and herbal.

Types of markets: International and domestic. Medicinal and herbal, dietary supplement.

Comments and Areas of Concern

Loose, rocky growing site can be heavily impacted during harvest; slow growing. Consumer demand increasing. There are several dozen species in the Pacific Northwest; many of them are sensitive, rare, and at risk. One of the seven wild medicinal plants under a moratorium imposed on harvest or removal from Montana State lands. In Northwestern and Intermountain Regions of the USDA Forest Service, removal or collection of all *Lomatium* species is not permitted. In the Pacific Northwest Region of the USDA Forest Service, 12 *Lomatium* species are listed. Geyer's lomatium (*L. geyeri*) is listed in Montana as critically imperiled, and in Idaho, Salmon River lomatium (*L. salmoniflorum*) is listed as rare and imperiled. *Lomatium dissectum* on United Plant Savers North American medicinal plants "At Risk" list.

References

British Columbia Ministry of Forests (1995), Craighead et al. (1991), Franklin and Dyrness (1973), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Mizerak (1998), Moore (1993), Niehaus (1976), Pojar and MacKinnon (1994), Tilford (1993, 1998), United Plant Savers (2000), USDA Forest Service (1988)

Oplopanax horridum (Smith) Miq.

Devil's club

Araliaceae

OPHO

Ecology

Description: Native. Erect to slightly spreading deciduous shrub, 1-3 m; stems 1-4 cm thick, crooked, almost unbranched but often entangled, dense large yellowish spines up to 1 cm long; leaves alternate, up to 35 cm across, maple-leaf shape, prominent veins, seven to nine sharply pointed and toothed lobes, numerous spines on underside; flowers small, 5-6 mm, whitish, numerous in compact pyramidal terminal clusters; bright red, flattened shiny berries, 5-8 mm, in large clusters, with two to three seeds.

Range and distribution: Alaska to Oregon, east and west slope of the Cascade Range, east to Idaho and Montana, also sparsely distributed as far east as Ontario and upper peninsula of Michigan; low to middle elevations, below 1525 m. In cool, moist, shaded habitats may form nearly pure, dense stands.

Associations: Sitka spruce, Pacific silver fir, mountain hemlock, western hemlock zones. Sitka spruce, western redcedar, Alaska-cedar, western hemlock, Douglas-fir; Alaska huckleberry, salmonberry, vine maple; deerfoot vanillaleaf, western trillium, lady fern, and bedstraw.

Habitat: Moist woods, along streams, wet but well-drained seepage sites, and avalanche tracks.

Successional stage: Mid to late successional, will fill in alluvial openings. Shade tolerant.

Ecological relations: Emergent leaves and stems in spring and fruit in summer eaten by bears; browsed lightly by deer and elk; leaves eaten by slugs; provides shade cover for salmonid fishes and eggs; hiding, escape, and thermal cover for various birds and rodents; provides stream-edge protection and buffer to prevent human-livestock intrusion into wetlands.

*Oplopanax horridum***Biology**

Flowering and fruiting: Flowers in late spring to mid summer from June through August, fruits ripen about 4 weeks later and remain over winter.

Seed: Seeds collected from ripe fruit and sown in autumn. Requires moist shady conditions and rich, well drained potting soil. Seedlings transplant after 1 year old.

Vegetative reproduction: Regenerates naturally through layering. To vegetatively propagate, cuttings should be taken in late spring. Take cuttings from horizontal branches with at least one leaf bud scar; stick into well-drained potting mix; keep moist and cool.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Transplants well into appropriate habitat by using rooted stem cuttings.

Collection

Part harvested: Root bark or whole roots, aerial and layered stems, berries, and leaves.

Harvest techniques: Stem harvesting concentrated on outer edges of patches. As many true roots are left with attached stem pieces in the ground as possible. If patch is greater than 100 m², interior patch harvesting is more acceptable but proceed cautiously, especially in Oregon and southern Washington where Devil's club is not as extensively distributed as in areas farther north. Until monitoring shows otherwise, no more than 20 percent of patch is harvested. After being harvested, a patch is left undisturbed until regrowth replaces amount harvested.

Harvest season: Late summer-early fall. Occasionally spring.

Regeneration after harvest: Good, damage to stems initiates new shoot growth.

Uses and Products

Common uses: Astringent, cathartic, to induce sweating and lower blood sugar, expectorant and respiratory stimulant; only the young spring shoots are edible. Increasingly used as a specialty ornamental species in shaded gardens.

Indigenous uses: Extensively used; to Alaska natives and indigenous people of the north Pacific coast it is one of the most important of all medicinal plants. Roots are the major part used for many ailments, including arthritis, ulcers, digestive tract ailments, diabetes (still used today), medicinal tea, poultice, and liniment; hair tonic; protective charms and body paint; fishing lures and dyes.

Common products: Dietary supplement, bulk milled and dried for tea and herbal tinctures, fresh tinctures.

Types of markets: International and domestic; herbal and medicinal. Primarily domestic for landscape markets.

Comments and Areas of Concern

Devil's club has the potential to be overharvested as its popularity increases. This species may be found in easily damaged habitats. Riverbanks and other sensitive areas should be avoided. Central Oregon marks its southern range, where it is limited to moist draws. Devil's club is listed as threatened in Michigan. Commercial harvest is not permitted on the Tongass National Forest in Alaska.

References

British Columbia Ministry of Forests (1995), Cooke (1997), Gardenbed (2000), Hitchcock and Cronquist (1978), Hortus West (1998), Howard (1993), Kruckeberg (1993), Moore (1993), Pojar and MacKinnon (1994), Roorbach (1999), Rose et al. (1998), Thomas and Schumann (1993), Vance and Thomas (1997), Whitney (1997)

Pachistima myrsinites Raf.
False box, Oregon boxwood
 Celastraceae
 PAMY

Ecology

Description: Native. Low, evergreen shrub to 60 cm tall; oval to elongate leaves, opposite, 1-3 cm long, leathery, toothed margins, and darkly evergreen; flowers small and maroon, in clusters along branches; fruit mostly white, oval capsules.

Range and distribution: Northern Mexico to British Columbia, Rocky Mountains; 600-2000 m. Common throughout mountainous forests of the West. Dominant shrub in many habitat types.

Associations: Subalpine fir, Engelmann spruce, grand fir zones. Hemlock, western redcedar, lodgepole pine, mountain maple, mountain snowberry, bunchberry dogwood, huckleberry, ninebark, sweet-cicely, queen-cup beadlily, heartleaf arnica, meadow rue, and pinegrass.

Habitat: Shaded places, dense woods, also rocky openings, and clearings.

Successional stage: Early to late succession. Will establish in openings. Shade tolerant.

Ecological relations: Good browse for deer, elk, and moose. Occasionally browsed by livestock but not considered an important forage. Can be used to revegetate disturbed sites. Can sprout from buds on the taproot or from the root crown after low- or moderate-intensity fire.

Biology

Flowering and fruiting: Fruits from June through September. The seed may remain viable for decades.



Pachistima myrsinites

Seed: Dispersed by gravity. Seeds retain viability for long period. Some seedling establishment may occur from seedbank in soil. May need stratification to break dormancy.

Vegetative reproduction: Easily reproduced from cuttings. Stem cuttings are taken in early fall. Reproduces naturally from layering.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Although transplantable, a less intrusive procedure is to take stem cuttings. With this method, there is less risk of forest ground cover and soil disturbance.

Collection

Part harvested: Leafy fanlike branches 60-75 m long that are free of fruit-flowers. Leaves must be dark green to obtain best prices.

Harvest techniques: Selected branches from no more than 25 percent of total foliage of plant are clipped with sharp clippers. Stems must be 40-45 cm long. A bunch of branches called a “hand” contains 26 to 28 pieces and weighs slightly less than 1 lb. Hands are placed in bundles weighing 40 to 60 lbs. Stem tips clipped for rooting cuttings are refrigerated until stuck for rooting.

Harvest season: Late summer-fall when leaves have hardened, before new growth begins in spring.

Regeneration after harvest: Regrowth occurs, but slowly in the wild. If plant and growing conditions are favorable, regrowth may be sufficient for plant foliage to be collected on an alternate year schedule. New growth will develop where harvest cuts have been made. Often multiple new stems grow from harvest cut on a single older stem.

Uses and Products

Common uses: Branches for floral decorations, a substitute for evergreen huckleberry and salal in floral arrangement, preserved and dried crafts. Whole plant easily shaped and adapts well to both sunny and shady spots, thereby making it ideal for an ornamental and ground cover.

Indigenous uses: Tea for colds, tuberculosis, and kidney troubles. To heal broken bones and internal ailments.

Common products: Floral greenery and landscape plant.

Types of markets: International and domestic for finished floral and craft products and bulk raw materials. Domestic for florist, landscaping, and nursery.

Comments and Areas of Concern

Patches of *Pachistima* near urban centers have been depleted by harvest of branches and leaves for floral industry.

References

Antos et al. (1996), Franklin and Dyrness (1973), Hickman (1993), Hortus West (1998), Kruckeberg (1993), Rose et al. (1998), Snyder (1991), USDA Forest Service (1963)

Petasites frigidus (L.) Fries
 var. *palmatus* (Ait.) Cronq.
 Coltsfoot, palmate coltsfoot
 Asteraceae
 PEFRP

Ecology

Description: Native. Perennial herb, from rhizome; numerous stems 20-60 cm; basal leaves, to 40 cm wide, palmately lobed and veined, coarsely toothed, hairless above, white woolly below; umbel inflorescence; flowers in flat-topped clusters, ray flowers creamy white, 2-7 mm, disk flowers white to pinkish, 3-5 mm; fruits, hairless achenes. Flowering stems grow before leaves.

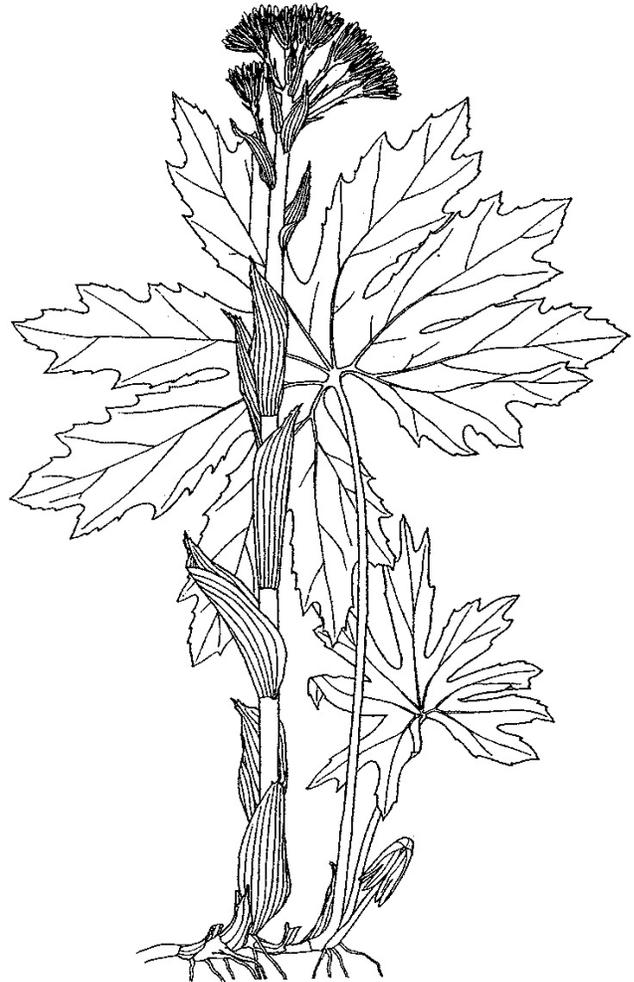
Range and distribution: Circumboreal, widespread at low to mid elevations. Patchy distribution; may grow in pure stands.

Associations: Pacific silver fir, western hemlock zones. Big-leaf maple, vine maple, alder, maple, ferns and allies, Brewer's mitrewort, foamflower, and horsetail.

Habitat: Small forest openings, generally moist soil, along embankments, streams; also found in clearcuts and in moist, open meadows.

Successional stage: Early to late successional. Moderately shade tolerant.

Ecological relations: Plants eaten by elk; as a riparian plant with large leaves, it helps to keep the ground moist and provides habitat for animals including salamanders. Early blooming flowers provide first nectar of season for bees. Goldfinches line nests with the underleaf "felt."



Petasites frigidus var. *palmatus*

Biology

Flowering and fruiting: Flowers from April to June, fruits mid to late summer.

Seed: Collect before the seeds turn to fluff; time is required to separate the seed from the chaff.

Vegetative reproduction: Easy to propagate from division of rhizome.

Cultivation: Can be cultivated. Plants and seeds are commercially available for *Petasites frigidus palmatus*. Seeds are commercially available for *P. frigidus*.

Transplant viability: Can be transplanted.

Collection

Part harvested: Leaves, stems, and roots.

Harvest techniques: Leaves are cut from stems with a serrated knife. Stems are plucked at ground level. Roots are dug carefully. Avoid collecting in sensitive riparian areas.

Harvest season: Mid June to late August for stems and leaves. Root harvested in spring.

Regeneration after harvest: Regeneration from stem harvest good if root crown and rhizomes left intact. Leaves regenerate after spring.

Uses and Products

Common uses: Cough medicine, antispasmodic, nerve sedative, and topical first aid (anti-inflammatory, sedates nerve pain). Stems, leaves, and roots edible; tobacco substitute-additive. Used as a facial compress; salt obtained from burned ashes.

Indigenous uses: Tobacco or snuff additive, infusion of leaves for colds, and head or chest congestion. Young leaves and stems eaten as salad, cooked as pot-herb or as “sauerkraut.” Seed heads used for mattress stuffing with duck feathers. Roots applied to boils, sores, and to help soothe itching.

Common products: Tincture, smoking mixture, tea, and poultice.

Types of markets: International and domestic. Herbal and dietary supplement.

Comments and Areas of Concern

Coltsfoot (*Petasites frigidus* var. *palmatus*) is listed in Idaho as critically imperiled; it should **not** be harvested. In Montana, sweet coltsfoot (*P. frigidus* var. *nivalis*) is listed as critically imperiled. *Petasites* hybridizes readily; because of this, difficult to distinguish varieties. Arrowleaf coltsfoot (*P. sagittatus*) is also listed in Idaho. Although *Petasites* is not listed in Washington and Oregon, wild harvest should be conducted with restraint, if at all. Use cautiously; contains traces of pyrrolizidine alkaloids, a potential liver toxin; some local companies use imported European species. The root is commonly referred to as “butterbur.”

References

Brill and Dean (1994), Hickman (1993), Hortus West (1998), Kruckeberg (1993), Miller (1988), Mizerak (1998), Moore (1993), Munz and Keck (1959), Pojar and MacKinnon (1994), Saunders (1976), Schofield (1989), Thomas and Schumann (1993), Toogood (1993)

Polystichum munitum (Kaulfuss)

K. Presl.

Western sword fern

Dryopteridaceae

POMU

Ecology

Description: Native. Large, to 1.5 m, evergreen with erect leaves forming a crown from a stout, woody, scaly rhizome; leaves, stipe dry-scaly, blade lance shaped, erect to arching, 50-180 cm, once pinnate, leaflets alternate, 3-15 cm, pointed, sharp toothed with incurved spine tips, with small lobe pointing forward at bottom; sori large, circular, halfway between mid vein and margin; indusium round with fringed margins, centrally attached.

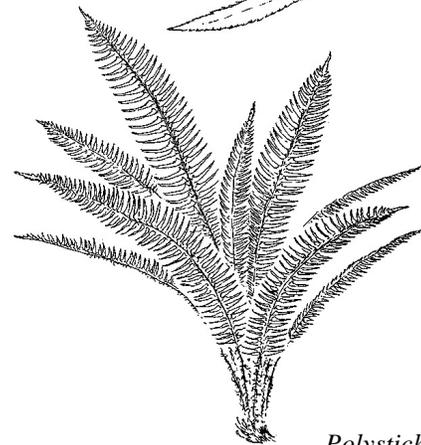
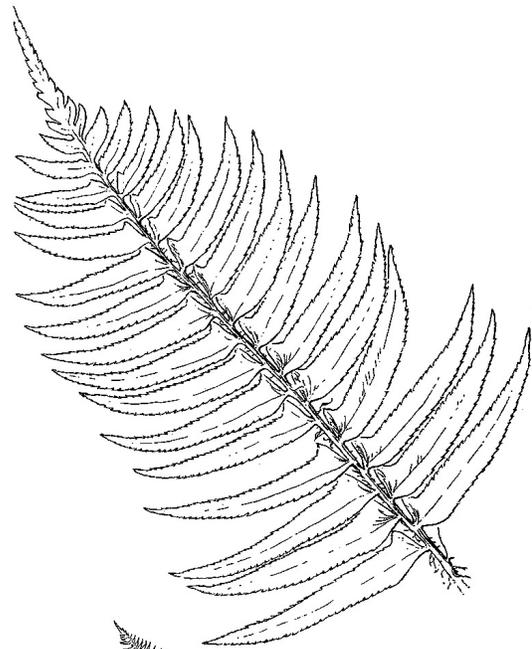
Range and distribution: Alaska to California, Washington to northern Idaho to Montana; low to mid elevations. Common and widespread.

Associations: Primarily Sitka spruce, western hemlock and Pacific silver fir zones. Also mixed-conifer/hardwood forest. Douglas-fir, red alder, vine maple, salmonberry, salal, dwarf Oregon grape, and evergreen huckleberry.

Habitat: Moist forests, wooded hillsides, and slopes; greatest in outer edges of riparian zones.

Successional stage: May be present in all, but best growth and persistence in mid- to late-successional stages.

Ecological relations: Forage for elk, deer, and black bear. Sword fern sprouts from woody underground rhizomes after fire. A single plant also can produce millions of spores that can colonize burn sites.

*Polystichum munitum***Biology**

Flowering and fruiting: Fronds unroll by May; spores near maturity by late July.

Seed: Spores.

Vegetative reproduction: Limited, but can occur through division of rhizome.

Cultivation: Can be cultivated. Plants are commercially available.

Transplant viability: Transplants well.

Collection

Part harvested: Fronds (leaf blade).

Harvest techniques: Fronds are cut by using a special small, curved knife that is attached to a ring that fits over the finger. Fronds must be green and healthy. The underside of the frond has few or no spore cases. Spore cases when present are firm. All fronds are free of insect damage and dirt and 65-70 cm long; all bunches must have 52 frond blades stacked flat and evenly.

Harvest season: Year-round, but if harvested too early in spring, tips will wilt. Edible young fronds (fiddleheads) in early spring.

Regeneration after harvest: Good when less than 50 percent of the new fronds are harvested at any one time.

Uses and Products

Common uses: In flower arrangements, as a decorative; edible (young fronds); and garden landscaping.

Indigenous uses: Edible, cooking, protective layer in ovens, dermatological aid, burn dressing, sore throats, gynecological aid, flooring, and bedding.

Common products: Floral background or filler for fresh flower arrangements.

Types of markets: International and domestic markets for floral and floral crafts. Small domestic landscaping and restoration markets.

Comments and Areas of Concern

Some species of fern are carcinogenic; should not be eaten unless identification is certain and the carcinogenic properties are known. California sword fern (*Polystichum californicum*), found in the Cascade Range of Oregon is listed as imperiled. The more common sword fern resembles this species; collecting not permitted on the Willamette National Forest where it is found.

References

British Columbia Ministry of Forests (1995), Crane (1989a), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Kruckeberg (1993), Moerman (1998b), Pojar and MacKinnon (1994), Seda (1989), Thomas and Schumann (1993), USDA Forest Service (1963, 1965), Vance and Thomas (1997)

Prunella vulgaris L.

Selfheal

Lamiaceae

PRVU

Ecology

Description: Native and exotic. Perennial herb, fibrous, rooted from a short rhizome or stem base; 10-50 cm; stems solitary or clustered, erect to spreading or reclining, square in cross section, unbranched; leaves opposite, few, lower petioled, 5-30 mm, upper sessile, 2-7 cm, 1-4 cm wide, oval to lance shaped, margins smooth or obscurely toothed; inflorescence bract, 2-6.5 cm; flowers purplish to pink, 1-2 cm, sepals united in two-lipped tube, petals fused into two-lipped tube, upper lip hooded, lower lip fringed; fruits four nutlets. *Prunella vulgaris* var. *lanceolata* is native to North America; var. *vulgaris* is introduced from Eurasia.

Range and distribution: Global; low to mid elevations, under 2400 m. Widely scattered.

Associations: Most forests; treeless areas in Sitka spruce zone. Widely associated with moist meadow and roadside herbs; field mint, St. John's wort, thistle, and oxeye daisy.

Habitat: Moist roadsides, clearings, fields, lawns, and forest edges.

Successional stage: Early successional, colonizer after disturbance. Moderately shade tolerant.

Ecological relations: Forage; flowers attract pollinators; rhizomes are soil aerators.

Biology

Flowering and fruiting: From May through September.

*Prunella vulgaris*

Seed: Seed dispersal in fall, tiny seeds disperse quickly once mature.

Vegetative reproduction: Typically grown best from seed. Sow seed in neutral-basic soil in mid to late spring.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Good for seedlings and young plants.

Collection

Part harvested: All aboveground parts.

Harvest techniques: Stems are cut at base without pulling the roots. Do not damage roots while harvesting.

Harvest season: Gather while blooming.

Regeneration after harvest: Generally poor although may resprout the following year if root-rhizome intact.

Uses and Products

Common uses: Medicinal, astringent, tonic, healing wounds, anti-inflammatory; contains ursolic acid, a diuretic, and anti-tumor compound. Medicinal ingredient in several all-purpose salves, ointments, and lotions for burns, wounds, and irritations.

Indigenous uses: As a skin ointment, to treat boils and skin inflammations, as a heart medicine, to reduce fevers, and back and eyewash for horses.

Common products: Teas, capsules, dried herb, ointment, and salves.

Types of markets: International and domestic. Herbal, medicinal, and nutraceutical.

Comments and Areas of Concern

Avoid soil compression in marshy areas; avoid gathering near roads, as it absorbs toxic compounds; use caution where herbicides may have been sprayed as it commonly grows in association with weedy species.

References

Franklin and Dyrness (1973), Gardenbed (2000), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Moerman (1998b), Niehaus (1976), Pojar and MacKinnon (1994), Tilford (1993, 1998)

Pteridium aquilinum (L.) Kuhn
var. *pubescens* L. Underw.
**Bracken fern, western bracken
fern**

Dennstaedtiaceae
PTAQ

Ecology

Description: Native. Fronds large, solitary, erect, deciduous, to 3 m, sometimes up to 5 m; rhizomes spreading, hairy; leaf blades triangular, two to three times pinnate, hairy; stipes stout, straw colored to greenish, longer than the blades; leaflets 10 or more pairs, mostly opposite, lowest pair broadly triangular, upper ones progressively reduced and lance shaped; ultimate segments round toothed, margins rolled under; sori marginal, continuous, indusium not evident.

Range and distribution: Coast to subalpine elevations. Alaska to California, to Colorado; cosmopolitan and widespread.

Associations: Western hemlock and Pacific silver fir hemlock zones. East of Cascade Range, Douglas-fir, ponderosa pine; salal, red huckleberry, thimbleberry, Sitka valerian, fireweed, and grasses.

Habitat: Various habitats, meadows, roadsides, dry to wet forests, open and disturbed sites.

Successional stage: Colonizer, invasive following disturbance. In early-successional communities. Shade intolerant.

Ecological relations: Elk and deer eat new fronds; cover for birds and small mammals; insect habitat in decomposing litter. Bracken fern is adapted to fire and promotes fires by producing a highly flammable layer of dry fronds each fall. Deeply buried rhizomes allow the fern to resprout after fire. Wind-borne spores and surviving rhizomes result in bracken fern being an effective



Pteridium aquilinum

postfire colonizer. Rhizomes effective at mobilizing phosphorus and contributes to potassium cycling. Allelopathic.

Biology

Flowering and fruiting: Fronds emerge between March and early May.

Seed: Spore production differs from year to year. Few plants have been found in the wild that start from spores, but germination in culture is common. Spores germinate best at 1 to 2 °C and in soil at pH range of 5.5 to 7.5.

Vegetative reproduction: Most regeneration is vegetative by rhizomes.

Cultivation: Can be cultivated. Plants are commercially available.

Transplant viability: Good, best with young plants. Propagation by division most successful.

Collection

Part harvested: Fiddlehead (tightly coiled new growth of fern frond) and rhizome.

Harvest techniques: Fronds are cut from rhizomes. Rhizomes are carefully dug from soil leaving portions to resprout buried in the ground. Fronds must be green and healthy. The underside of the frond generally has few or no spore cases. Spore case when present must be firm. All fronds are free of insect damage and dirt.

Harvest season: Spring.

Regeneration after harvest: Will resprout the following season if root crown left intact.

Uses and Products

Common uses: Food, floral, and ornamental. Fronds and rhizomes have been used for brewing beer, food and herbal remedy, and rhizome starch for confections; potential source of insecticides; indicator of acid rain pollution.

Indigenous uses: Young shoots, tonic, antiemetic, decoctions made for various ailments, tuberculosis, rheumatism. Protective layers in ovens, rhizomes and sprouts eaten (sparingly); bronchitis remedy. Roasted and peeled rhizomes used for a starch, also used medicinally. Fronds: to wrap fish and as camp bedding.

Common products: Preserved and dyed craft materials. Young shoots, culinary dishes based on oriental cuisine.

Types of markets: International market for fresh and processed fiddleheads, particularly Japan. Domestic markets for dried and dyed floral and craft products.

Comments and Areas of Concern

All portions of fern, both green and dried, are toxic to livestock in quantity; contains thiaminase, which lead to severe deficiency of vitamin B₁; also contains ptaquilside a substance reported to be a potent carcinogen. **No sources we found recommend eating this plant.**

Commercially sold edible fiddleheads primarily from ostrich fern (*Matteuccia struthiopteris*) found in eastern North America. Fiddleheads may be similar in appearance among fern species, know species being eaten.

References

Cooke (1997), Crane (1990a), Franklin and Dyrness (1973), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Moerman (1998b), Pojar and MacKinnon (1994), Seda (1989), USDA ARS (2001), USDA Forest Service (1963), USDI Bureau of Land Management (1999)

Rosa* L. spp.*Wild rose**

Rosaceae

ROSA5

R. gymnocarpa Nutt., Baldhip rose-ROGY*R. nutkana* Presl., Nootka rose-RONU**Ecology**

Description: Native. Perennial shrub that looks similar to domesticated roses. Wild rose leaves and flowers are smaller, flowers five-petaled. *Rosa gymnocarpa*: bristly stems, compound leaves, five- to nine-toothed leaflets, smooth on both sides; flowers, pale pink to rose, 1-2 cm across, borne singly at the end of branches on glandular stalks; fruit, or hips, orange to scarlet without attached sepals. *Rosa nutkana*: leaves compound with five- to seven-toothed leaflets, slightly hairy underneath; flowers pink and large, 4-8 cm across, borne singly at the end of side branches; hips purplish red with sepals remaining on top.

Range and distribution: Pacific Northwest, western California to Alaska. *Rosa gymnocarpa* below 2000 m; *R. nutkana* below 700 m, scattered and locally common.

Associations: Open-conifer shrub, prairie grass, and mixed-conifer/hardwood forests. Douglas-fir, ponderosa pine, Oregon white oak; snowberry, shinyleaf spirea, oceanspray, white hawkweed, groundsel, heartleaf arnica, and wood violet.

Habitat: Moist flats, forests, and shrublands. *Rosa nutkana*: dry to moist habitats both west and east of the Cascade Range; occurs in upland wooded regions or in open shrub wetlands. *Rosa gymnocarpa*: moist to dry woods.

Successional stage: Primarily in early-successional open shrub and grasslands, persists in established plant communities and forest openings. Intolerant to moderately shade tolerant.

*Rosa gymnocarpa**R. nutkana* var. *hispida*

Ecological relations: Birds, deer, coyotes, bears, and other animals browse rose hips. Thick stands of wild rose bushes provide habitat for various animals and insects. The flowers attract pollinators including honey bees. Well adapted to low- to medium-severity fires. Sprout from both root crowns and rhizomes and are off-site colonizers.

Biology

Flowering and fruiting: Flowers from May through July; fruits develop late summer into fall. Fruits often are retained over winter on plant.

Seed: Seeds dispersed by animals. Seeds germinate slowly, over-winter stratification helps. One of the most effective means for propagating roses is to sow freshly cleaned seeds before they dry out.

Vegetative reproduction: For *Rosa nutkana*, small offshoots from parent root transplant easily; plant sprouts form the root crown. Can root semihardwood cuttings of *R. gymnocarpa*.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Small shrubs can be transplanted.

Collection

Part harvested: Flowers, fruits, bark, and roots.

Harvest techniques: Flowers and fruits (hips) are clipped. Bark is harvested by using a sharp pair of pruning shears to harvest young stems, and bark is peeled off with a sharp knife. Root bark is collected by digging around the base of the shrub to find a side root. Carefully collecting these roots will not permanently harm the plant.

Harvest season: Rose hips gathered after the petals have fallen and the hips have turned bright red. Buds and flowers gathered early to mid summer. Bark is best collected in early spring.

Regeneration after harvest: Stems readily resprout after clipping.

Uses and Products

Common uses: Leaves and stems: astringent, different plant parts offer differing levels of effectiveness; soothing herbal teas, digestion, dermatitis, urinary tract infection, anti-inflammatory; rosehips: beverages, jellies, decoratives, and potpourri.

Indigenous uses: Tonics, smoking powder, and an eyewash. Hips were usually only eaten when no other food was available. The interior Salish believe the Nootka rose offers protection from any bad influences and cleanses people after contact with the dead. Rose leaves were chewed and put on insect bites to alleviate pain and swelling. The Ninilchik people of Alaska make tea from hips and petals of the Nootka rose. Jelly and syrup made from hips, sometimes in combination with other fruit.

Common products: Major commercial source of rose hips for vitamin C, tablets and capsules, herbal teas, vitamin supplement, hot, cold beverages, syrups, jellies, botanical crafts, and ingredient in various herbal products.

Types of markets: International and domestic. Food, herbal, nutraceutical, health care, and floral craft.

Comments and Areas of Concern

Rosa species can substitute well for other less common plants with similar uses. However, wild rose species are traditionally used by American tribes, and Alaska Natives have requested limited commercial use for native rose species in their region. Wood's rose (*Rosa woodsii*) widely distributed east of the Cascade Range and cluster rose (*R. pisocarpa*) west of the Cascade Range also are popular for similar uses as *R. gymnocarpa* and *R. nutkana*.

References

Cooke (1997), Franklin and Dyrness (1973), Hickman (1993), Hortus West (1998), Kruckeberg (1993), Leung and Foster (1996), Reed (1993b), Rose et al. (1998), Russell (1994), Tilford (1998), Young and Young (1992)

Rubus idaeus L.

Red raspberry

Rosaceae

RUID

Ecology

Description: Native. Deciduous, erect or arching, thicket-forming shrub, 0.5-3 m; woody stems bristly or prickly (main prickles not hooked) with shredded, exfoliating yellow brown bark; leaves are alternate and pinnately compound in leaflets of three to five; small white flowers in cluster of one to four; fruit is several drupelets (berry), pink and hard as immature, red or pinkish purple when mature.

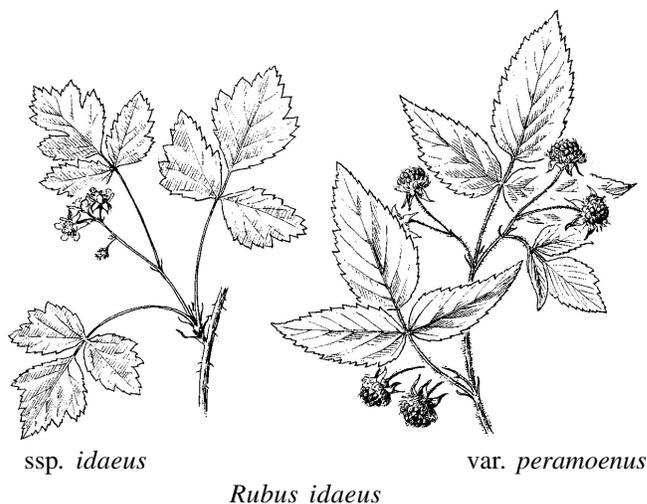
Range and distribution: Over much of temperate North America and Eurasia; the common species on the drier east side of the Coast and Cascade Ranges; low to mid elevations. Common and locally abundant, dense thickets.

Associations: Grand fir, Douglas-fir zones. Mixed conifer, cedar, black cottonwood, trembling aspen, spirea, and serviceberry.

Habitat: Moist or dry woods to open and often rocky mountain slopes, clearings or borders in boreal forests, ravines, bluffs, and streambanks, and on talus.

Successional stage: Pioneer or early successional. Vigorously invades and colonizes many types of disturbed sites, decreases as canopy closes. Shade intolerant.

Ecological relations: Provides forage and cover for various wildlife; fruits important for bear, grouse, quail, and other birds. Deer, elk browse leaves and berries. Seed dispersed by birds and mammals; provides nesting habitat and erosion control and used in restoration projects. Minor producer of pollen and nectar; primarily pollinated by bees.

**Biology**

Flowering and fruiting: Flowers from June through July, fruits soon after, from July through September. Attractive to bees. Honey-bee pollination is considered important in formation of well-shaped fruit and a good crop.

Seed: Produces an abundance of seed, but production varies annually according to climate and age; germination slow, requires both warm and cold stratification; can remain viable for 60 to 100 years. Seed germination about 70 to 90 percent. Best germination usually follows late-summer or early-fall sowing of scarified seeds.

Vegetative reproduction: Rhizomes, root sprouts, and leaf bud cuttings.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: When plants dormant can be transplanted.

Collection

Part harvested: Usually fruits, shoots, leaves, and sometimes roots.

Harvest techniques: Leaves are gathered just after flower buds form in early spring; fruits, when ripe.

Harvest season: Shoots in spring; leaves in spring to summer; fruits in summer; roots in spring and fall.

Regeneration after harvest: Shoots readily sprout back; if portion of root system taken, roots will readily regenerate.

Uses and Products

Common uses: Leaves, as an astringent, reproductive tonic, source of vitamin C, diuretic, to relieve diarrhea, and mild sedative; roots, diuretic; fruits, in jams, jellies, flavor additives, juice, tea, and syrup.

Indigenous uses: Eaten fresh, boiled and dried into cakes, preserved for winter use, various medicinal preparations, urinary aid, antidiarrhea, and dermatological aid.

Common products: Teas and food. Dried leaves sold in bulk.

Types of markets: Primarily domestic. Food, herbal and nutritional supplement.

Comments and Areas of Concern

Biology and use of blackcap raspberry (*Rubus leucodermis*) are similar to *R. idaeus* and collection techniques would be the same. *Rubus leucodermis* grows in foothills from British Columbia to Wyoming; common in brushy draws and second-growth forests. Use leaves either dried or fresh as wilted leaves can be toxic; be aware of herbicide use when collecting near roadsides.

References

Burgett et al. (1989), Hitchcock and Cronquist (1978), Hortus West (1998), Moerman (1998b), Pojar and MacKinnon (1994), Rose et al. (1998), Schofield (1989), Tilford (1998), Tirmenstein (1990d), USDA Forest Service (1988), Willard (1992), Young and Young (1992)

***Rumex acetosella* L.**
Sheep sorrel, red sorrel
 Polygonaceae
 RUAC3

Ecology

Description: Exotic. Perennial herb from slender rhizome; several unbranched, slender stems 15-50 cm, somewhat woody at base; leaves generally basal, arrow-head shaped, 2-10 cm; flowers small reddish (female) or yellowish (male) along erect panicle; fruits triangular, yellow brown, 1-2 mm achenes.

Range and distribution: Common and widespread to 3000 m throughout temperate North America. Grows in groups from common rhizome.

Associations: Willow, bull thistle, redstem ceanothus, ninebark, perennial bunchgrass communities, and annual grasses.

Habitat: Flood-plain and riparian habitats, disturbed sites, pastures, meadows, grasslands, woods, and hill-sides.

Successional stage: Early successional, colonizes from seed after disturbance. Shade intolerant.

Ecological relations: Summer food of ruffed grouse (*Bonasa umbellus* L.) and Canada geese (*Branta canadensis* L.); seeds are common diet of ground-feeding birds; deer eat the leaves; probably sought by black bears (*Ursus americanus* Pallas) and grizzly bears (*Ursus arctos* L.); food for American copper butterfly larvae (*Lycaena phlaeas* L.). Colonizes disturbed sites, but erosion control is low. Data are limited, but sheep sorrel probably resprouts after fire from rhizomes and roots and is reestablished by seeds in the soil. Presence of sheep sorrel indicates poor soils.



Rumex acetosella

Biology

Flowering and fruiting: From May through September in Washington and Oregon; from March through August in California; fruits small reddish and three angled.

Seed: Flower stalk turns brown when seeds are mature. Seed is triangular and mahogany colored. Can be grown from seed.

Vegetative reproduction: Can propagate from portions of rhizome.

Cultivation: Can be cultivated. Plants are commercially available for western dock, a native *Rumex* species.

Transplant viability: Can be transplanted.

Collection

Part harvested: Leaves and roots.

Harvest techniques: Roots are gathered by pulling up gently. Leaves are clipped from stem; 40 to 50 percent of the plants in a patch can be collected without impact. Should be checked to be sure they have not been treated with herbicides.

Harvest season: Late spring-summer, before flower is mature.

Regeneration after harvest: If part of root rhizome system left intact, may regenerate new aerial stems the following year.

Uses and Products

Common uses: Edible; astringent, sore throat, as a source of vitamin C; dyes. Ingredient in two commercial herbal tonics used by cancer patients.

Indigenous uses: Poultice of bruised leaves and blossoms applied to old sores, fresh leaves chewed as a stomach aid, and to treat tuberculosis; leaves eaten raw or boiled; tart tangy leaves used with salt in a brine for cucumbers.

Common products: Tinctures, fresh leaves, dried herb, and root.

Types of markets: International and domestic markets for herbal use. Medicinal, herbal, and nutraceutical.

Comments and Areas of Concern

Contains oxalic acid, which can be poisonous in large quantities. Considered a noxious weed in 6 states, none of which are in the Northwest. Because it is a weedy exotic, care should be taken not to spread seed.

References

Brill and Dean (1994), Burrill et al. (1996), Cooke (1997), Craighead et al. (1991), Elias and Dykeman (1990), Esser (1995), Everett (1997), Franklin and Dyrness (1973), Hickman (1993), Hortus West (1998), Klein and Johnson (1997), Mizerak (1998), Pojar and MacKinnon (1994), Rice (1997), Richardson et al. (2000), Ross and Chambers (1988), Schofield (1989)

Rumex crispus* L.*Curly dock**

Polygonaceae

RUCR

Ecology

Description: Exotic. Perennial herb from taproot; stems unbranched below flower clusters, 50 cm-1.5 m often slightly reddish; leaves both basal and stem, oblong to lance shaped 10 to 30 cm long, 5 cm wide, with curly edges; flowers ovate to round, greenish to rusty brown, clustered on stalk; entire plant turns reddish to rusty brown at maturity; fruit: triangular reddish brown 1-2 mm achenes.

Range and distribution: Abundant through North America in disturbed areas, below 2500 m. Scattered over wide expanses of open ground.

Associations: Common dandelion, mullein, common yarrow, chickweed, perennial and annual grasses.

Habitat: Waste places, roadsides, meadows, fields, pastures; also in undisturbed wet sites; adapted to areas that dry out in summer.

Successional stage: Early colonizer, thrives in disturbed places. Shade intolerant.

Ecological relations: Taproot aerates compacted soils, help prevent erosion; provides iron as a nutrient.

Biology

Flowering and fruiting: Blooms from June to September, mature achenes release in fall.

Seed: Winged seeds disperse by wind and water. Germinates in light, 18 to 24 °C.

Vegetative reproduction: May regenerate aerial stems from root crowns.

*Rumex crispus*

Cultivation: Can be cultivated. Plants are commercially available for western dock, a native *Rumex* species.

Transplant viability: Easily transplanted.

Collection

Part harvested: Roots for medicinal, flowers for floral.

Harvest techniques: Roots are collected before the plant goes to seed. A tool is used to dig roots out of the ground.

Harvest season: Flowers are collected in spring at the beginning of flowering; roots in fall after seeding.

Regeneration after harvest: If entire plant and root is removed, will not regenerate. Space may be reoccupied by seedlings germinating from seed bank.

Uses and Products

Common uses: Dried flowers used in floral arrangements. Leaves used as a potherb, roots used to stimulate and aid digestion, for skin disorders, and an iron source; as a dye.

Indigenous uses: Mashed root used for swellings and sores. Infusion of root used to treat constipation, dysentery, to correct fluids, and as salve for various skin problems. Leaves rubbed in mouth for sore throat, decoction of plant for urinary problems, and roots for jaundice, eaten as greens. *Rumex fenestratus* and *R. arcticus* are called wild rhubarb by the Ninilchik people and other Alaska natives.

Common products: Roots, herbal; dried bulk supplied in manufacture of herbal cancer tonics, flowering stems, dried decorative.

Types of markets: International and domestic. Medicinal, herbal, nutraceutical, floral, and crafts.

Comments and Areas of Concern

Along roadsides be aware of herbicide use. Is considered a noxious weed in Midwestern United States. Curly dock is the *Rumex* species preferred by herbalists. Leaves contain oxalic acid, which can cause digestive and urinary tract problems when used excessively.

References

Brill and Dean (1994), Burrill et al. (1996), Cooke (1997), Elias and Dykeman (1990), Everett (1997), Hortus West (1998), Klein and Johnson (1997), Mizerak (1998), Moore (1993), Pojar and MacKinnon (1994), Rice (1997), Russell (1994), Schofield (1989), Thomas and Schumann (1993), Tilford (1993, 1998), Young and Young (1986)

Sambucus racemosa L.
Red elderberry, bear berry
 (locally, Alaska)
 Caprifoliaceae
 SARAP

S. cerulea Raf., Blue elderberry-SACE3

Ecology

Description: Native. Deciduous shrub to small tree, 0.5-6 m tall; bark dark reddish brown, warty; soft pithy twigs; foliage with strong characteristic odor; leaves large, opposite compound, with five to nine leaflets, lance shaped, 5-15 cm long, pointed, sharply toothed, somewhat hairy beneath; small flowers white to creamy, with unpleasant odor, numerous in a pyramidal cluster; fruits bright red, berrylike drupes; two to four seeds.

Sambucus is a genus in which there is much hybridization and backcrossing. *Sambucus racemosa* is the designation of a circumboreal species; the American plants are considered *S. racemosa* ssp. *pubens* by many authorities. Black elderberry (var. *melanocarpa*) has black or purplish-black fruits, blue elderberry, *S. cerulea*, has blue fruits (edible) with a whitish bloom.

Range and distribution: Across North America; red elderberry (*S. racemosa* ssp. *pubens*) is most common on the coastal and western slope of the Cascade Range from Alaska to California; black elderberry (var. *melanocarpa*), eastern slope of the Cascade Range, British Columbia, Washington, Oregon, northeastern California; blue elderberry, *S. cerulea*, from British Columbia to California, east into Montana, most common in eastern Oregon and Washington, and Willamette Valley in Oregon. In low valleys, may form large clumps; where found in upland sites, it is high in frequency and low in density.



Sambucus racemosa

S. cerulea

Associations: Sitka spruce, western hemlock, Pacific silver fir, and grand fir zones. Grand fir, Douglas-fir, and ponderosa pine forests; trembling aspen, red alder, snowberry, and serviceberry; in coastal forests, vine maple, salmonberry, red huckleberry, and western sword fern.

Habitat: Streambanks, swampy thickets, moist clearings and open forests, and cooler uplands; low to subalpine elevations; *S. cerulea*, open hillsides and roadsides, and along fence rows.

Successional stage: *Sambucus racemosa*, early to mid successional; can persist in relatively open conifer stands; may also persist in long-lived deciduous forests of trembling aspen or red alder; *S. cerulea*, primarily short lived early successional; intolerant to slightly shade tolerant.

Ecological relations: Fruit, food for many bird species and small mammals; nectar for hummingbirds; elk and deer browse on var. *melanocarpa* and *S. cerulea*; pollinated by insects; valuable for cover and nesting habitat; stabilizes soil and helps prevent erosion on moist sites. Elder responds to disturbance including fire by re-sprouting from root crowns, rhizomes, or regenerating from long-lived seed bank. Seeds may be stored in soil, will germinate even if the plant is completely killed or not present before fire. Because of extensive root systems, valuable for streambank or slope stabilization.

Biology

Flowering and fruiting: Blooms from May through July, fruit ripens from June through September.

Seed: Dispersed by birds and other animals that eat fruit. Direct seeding can be erratic. Seeds are difficult to germinate because of their hard seed coats and dormant embryos; heat treatment or sulfuric acid scarification and stratification can hasten germination. Long-term storage viability.

Vegetative reproduction: Regenerates from sprouts, rhizome suckers and layering; softwood cuttings are taken in June.

Cultivation: Can be cultivated. Plants and seeds are commercially available.

Transplant viability: Wild shrubs do not transplant well, but those from nurseries are easy to establish.

Collection

Part harvested: Flowers, berries, leaves, and inner bark.

Harvest techniques: Flower clusters and berries are gathered that are only within easy reach, minimizing impact to each tree and the surrounding area. Limbs break easily.

Harvest season: Flower clusters are gathered when beginning to open; fruits when fully ripe.

Regeneration after harvest: If inner bark is harvested, will not regenerate. Leaves and branch tips regenerate the following season if not overharvested.

Uses and Products

Common uses: Fruits for foods and flavoring, fruits and flowers for beverages, wine, jelly; medicinal uses from berries and other plant parts; antioxidant protection, diuretic, expectorant, laxative, antiviral, and skin

care; bark, fruit, and stems for dyes; dried leaves for insecticides; whole plant used for restoration, landscaping, and windbreaks.

Indigenous uses: Important food source; analgesic, cathartic, gastrointestinal aid, emetic, and witchcraft medicine. Niniichik people make jelly and wine (and possibly ketchup) from the berry. Branches have been used as steam bath switches.

Common products: Fruits, jams, yogurts, desserts, beverages, flavorings, and coloring; whole plant or parts, tea, nutraceutical, capsules, and tablets; perfumes; nursery crop for landscape restoration, wildlife, and orchards.

Types of markets: Food, herbal, and landscaping. International and domestic markets for finished food and herbal products. Domestic markets for live plants, nursery, and restoration industries.

Comments and Areas of Concern

Gather conservatively, be aware of possible animal presence. Berries should always be cooked and seeds removed, as raw berries may cause nausea; stems, bark, leaves, and roots are toxic because of presence of cyanide-producing glycosides. Elder is traditionally used by American tribes, and Alaska Natives have requested limited commercial harvest.

References

British Columbia Ministry of Forests (1995), Cooke (1997), Crane (1989b, 1989c), Hitchcock and Cronquist (1978), Hortus West (1998), Kilham (2000), Leung and Foster (1996), Moerman (1998b), Pojar and MacKinnon (1994), Rose et al. (1998), Russell (1994), Tilford (1998), USDA Forest Service (1963), Whitney (1997), Willard (1992), Young and Young (1992)

Scutellaria L. spp.

Skullcap

Lamiaceae

SCUTE

S. lateriflora L., Blue skullcap-SCLA2

S. galericulata L., Marsh skullcap-SCGA

S. nana Gray, Dwarf skullcap-SCNA

Ecology

Description: Native. About 300 species; perennial herb; from rhizomes or tubers; stems erect, square; leaves opposite, basal, and cauline; bracted raceme inflorescence; solitary flowers in leaf axis, bilaterally symmetric, with five fused sepals and five petals usually fused into a five-lobed, two-lipped tube; stamens two or four; fruit of four nutlets. *Scutellaria galericulata* 20-90 cm, lance-shaped, blunt-toothed leaves 2-5 cm long, single blue or pink-purple flower on axils; *S. lateriflora* 20-150 cm, leaves 3-10 cm, several flowers on leaf axils.

Range and distribution: Circumboreal; low to mid elevations (*S. galericulata* and *S. lateriflora*); *S. nana* and snapdragon skullcap (*S. antirrhinoides*) Oregon to Idaho. At low elevations, *S. lateriflora* may grow in pure stands.

Associations: Mixed-conifer hardwoods throughout region. Alder, willow, stinging nettle, bedstraw, field mint, sedges, and rushes.

Habitat: *Scutellaria galericulata* and *S. lateriflora* are facultative wetland species; wet meadows, marshes, bottomlands, streams; *S. lateriflora*, alluvial thickets, meadows and swampy woods; *S. galericulata*, moist acidic or calcareous soils near water; *S. nana* foothills and plains, open, dry soil.

Successional stage: Varies from early to late successional. Moderately shade tolerant.

Ecological relations: Nectar source for pollinators including bees and flies.



Scutellaria lateriflora

Biology

Flowering and fruiting: *Scutellaria lateriflora* and *S. galericulata* blooms July to September. Several to many flowers in elongate clusters. Fruits yellowish, warty nutlets, late summer to fall, July through September.

Seed: Four nutlets each contain a single seed.

Seedling production: Sow outside in late spring. If only small amounts of seed, better to germinate seed in a cold frame in March and April. When large enough to handle, seedlings are put into individual pots and then planted in early summer.

Vegetative reproduction: Basal cuttings in early summer in a frame.

Cultivation: Can be cultivated. Seeds are commercially available for *S. lateriflora*.

Transplant viability: Sensitive to transplant from wild; not recommended.

Collection

Part harvested: Flowering aerial portion of plant.

Harvest techniques: Grows in moist soil so care should be taken not to pull out whole plant. Top should be clipped with clippers.

Harvest season: Late in flowering period.

Regeneration after harvest: If root crown and some aerial stem is left, plant will regrow the following season. Care is taken not to harvest aerial parts of one plant too frequently as harvest of crowns removes flowers and seeds and removes ability to regenerate sexually.

Uses and Products

Common uses: Substituted for valerian for sleeplessness; as a nerve sedative, for drug withdrawal symptoms, antifungal, anti-inflammatory, antibacterial, antispasmodic, astringent; garden ornamental.

Indigenous uses: Heart medicine, to treat rabies, menstrual cramps, and colds.

Common products: Herbal tea, tincture, and landscape plant.

Types of markets: International and domestic. Medicinal, herbal, seed, horticulture, and landscape.

Comments and Areas of Concern

Some species grow on moist habitats highly susceptible to disturbance. The distribution of *Scutellaria galericulata* in California is limited and species endangered in a portion of its range. This species rarely used in herbal medicine, may promote miscarriage; use with caution.

References

Cooke (1997), Gardenbed (2000), Hanes (1998), Hickman (1993), Hitchcock and Cronquist (1978), Hortus West (1998), Moore (1993), Ody (1993), Plants for a Future (1997), Pojar and MacKinnon (1994), Thomas and Schumann (1993), Tilford (1998), Willard (1992)

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