

VEGETATION MANUAL
OF THE
JACKSONVILLE WOODLANDS

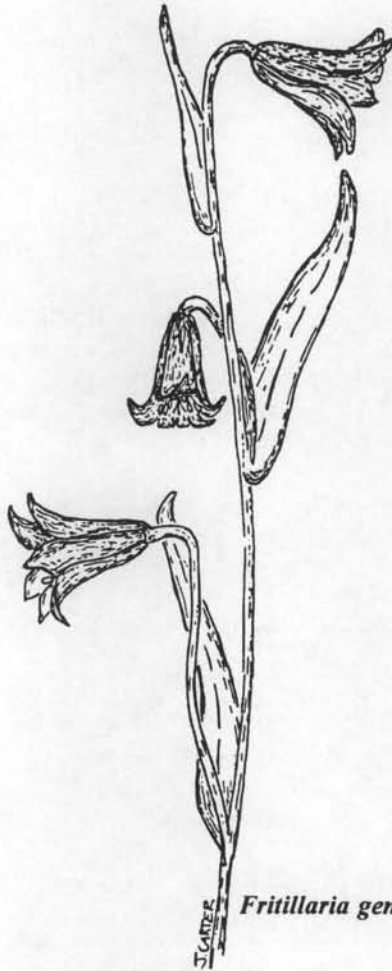


Fritillaria gentneri

A PUBLICATION
OF THE JACKSONVILLE WOODLANDS ASSOCIATION

Prepared by
Jennifer Beigel and Jennifer Carter
January 1995

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We would especially like to thank the University of California Press for allowing us to include numerous illustrations from The Jepson Manual: Higher Plants of California in this publication. They and other contributors of illustrations are acknowledged below followed by the page numbers on which their drawings occur in this manual:

Abrams, Leroy and Roxana Stinchfield Ferris. 1960. Illustrated Flora of the Pacific States, Vol. I-IV. Used by permission. Copyright 1960 by Board of Trustees of the Leland Stanford Junior University. Stanford: Stanford University Press: pp. 41,53,69,73,91,103.

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Hickman, James C., ed. 1993. The Jepson Manual: Higher Plants of California. Berkeley: University of California Press: pp. 7,8,10-17,19,21-31,33-4,37-40,42-45,47-8,51-2,54-57,59,62-64,66,72,75-80,82-90,92-95,97-100,102,105,115-21.

Hitchcock, C. Leo, et al. 1971. Vascular Plants of the Pacific Northwest, Vol. I-V. Seattle: University of Washington Press: pp. 9,20,32,35-6,46,49,50,58,60-1,65,70-1,74,81,96,101,104,106-7.

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We truly appreciate the contributions that all of the people and organizations mentioned above made to the successful completion of this manual.

ABOUT THE AUTHORS

Both Jennifer Beigel and Jennifer Carter are students at Southern Oregon State College. While in the Environmental Education Graduate Program their course work consisted of numerous botany and natural history courses, including Plant Systematics and Plant Ecology.

Jennifer Beigel lives in the Illinois Valley. While a student at S.O.S.C. she worked as an assistant curator in the Herbarium and as a teaching assistant. Since graduation she has spent a summer as a backcountry ranger in the Red Buttes Wilderness, worked as a private contractor, and taught field courses for college students in environmental issues and wilderness education. She is currently working on the U.S. Forest Service "Guide to the Sensitive Plants of the Siskiyou National Forest," and teaching botany workshops at a local elementary school. She also helps produce educational materials for the Siskiyou Regional Education Project, a local group working to preserve biological diversity in the Klamath-Siskiyou bioregion.

Jennifer Carter resides in the Rogue Valley. Her undergraduate degree is in Resource and Environmental Geography from San Diego State University. Upon completion of her degree she worked as a Land Use Planning Consultant in southern California. As an Environmental Education graduate student at S.O.S.C she worked as an assistant curator in the Herbarium. She has also assisted with vegetative sampling as part of a neotropical bird study. This past year she worked for The Nature Conservancy as a Field Ecologist and is currently doing contract work for the U.S. Forest Service.

INTRODUCTION

PROJECT OVERVIEW:

This vegetation manual is an educational guide to the plants and ecological zones of the Jacksonville Woodlands. It is designed to increase awareness of the biological diversity found in the areas surrounding Jacksonville, Oregon.

Initial field surveys for this project were conducted in the spring of 1993 as part of the authors' joint graduate project for Dr. Frank Lang's Plant Systematics course at Southern Oregon State College. Additional field surveys, research and production of the manual were completed from March through December 1994.

The manual is a publication of the Jacksonville Woodlands Association, a non-profit organization working to establish a Natural Park and Trail System (Figure 1, p.108) designed to preserve and protect the biological value and historical heritage of Jacksonville's scenic landscape. Of the several land parcels proposed for inclusion in this project, this manual specifically focuses on the plant communities found in the 70 acre Britt Woods and adjacent Bureau of Land Management (BLM) properties located west of the Britt Festival amphitheater. Included within the Britt Woods property is the seven and one-half acre Zigler parcel bordering Jackson Creek. The 20 acre Beekman Woods property, found southwest of the historic Beekman House, is also addressed. Many of the plants and ecological zones described in this publication are commonly found throughout the Rogue Valley and within the other proposed properties of the Jacksonville Woodlands Natural Park. In this respect, this manual can also serve as a general, regional guide for those interested in exploring beyond the boundaries of the properties surveyed for this project.

SPECIES DESCRIPTION:

The manual is divided into four main sections which group the plants according to similar characteristics. The first section includes the woody plants: trees, shrubs and vines. The second section includes herbs: the annual and perennial plants commonly called flowers. The third section is comprised of the ferns and fern allies, such as horsetails. And the fourth section includes the grass species. Under each of these major headings the plants are grouped alphabetically by family since plants within the same family share similar characteristics which might aid in identification. Each "species description page" within these sections describes a different plant. The manual focuses on 100 of the most common and/or unusual plants occurring within the Jacksonville Woodlands. Illustrations are included to aid in identification and a standardized form has been established for easy reference. Each species description page includes the following:

Scientific Name: The name of the plant used in scientific and botanical literature worldwide. Each plant has two names. The genus name, which comes first, and the specific epithet, which follows. Thus *Acer* is the genus for maple, and *Acer macrophyllum*, is one of the species of maple found in our region. The genus can be abbreviated after it is first stated by using the first letter of its name (*A. macrophyllum*). These names are all in Latin or latinized Greek, so people from different parts of the world can write and speak about plants in the same language. The name of the author(s) who described the plant as a new species is technically part of the complete scientific name. Species are often reclassified and renamed as our knowledge of plant taxa

increases. Because of this, more than one author's name may follow the scientific name. These surnames are often abbreviated. Parentheses around an author's name means that the author originally described that species in a different genus, subspecies, or variety than what it is today. The author whose name follows the parentheses is the one who gave the species its present name. Scientific names follow Hickman (1993) and Peck (1941).

Common Name: Generally one or more descriptive names for the plant. These names often differ from region to region and some plants do not have established common names.

Family: The system of names (nomenclature) is hierarchical. As each genus contains one to many species, each family contains one to many genera which have several characteristics in common. Thus the Rosaceae (rose) family contains, among others, the genera *Rosa* (rose), *Rubus* (blackberry) and *Amelanchier* (serviceberry).

Non-Native: Alien plants, not native to this region, are denoted as "non-natives." This label appears below the family name.

Description: A detailed physical description of what the plant looks like, its size and distinguishing characteristics. The flower color is printed in bold type to aid in locating species within the manual.

Habitat: Types of areas in which the plant grows.

Distribution: The geographic range of the plant, the locations and elevations where it occurs.

Phenology: Describes the lifecycle of the plant (i.e. blooming period). Due to changes in climatic conditions from year to year the timing and duration of the blooming season may vary.

Ecology: Information about the plant's role in the ecosystem.

Cultural Significance: Historical uses of the plant by various cultures, including Native Americans, early European settlers of the region and current residents. This section also discusses different beliefs these cultures have held about the plant.

Remarks: Includes other anecdotal information about the plant, such as origins of scientific and common names, and details about the family.

Management Recommendations: Primarily addresses the control and eradication of invasive species. Recommendations are also provided for the endangered *Fritillaria gentneri*.

Ecological Zone: The specific area within the Britt/BLM and Beekman Woods where the plant occurs. Corresponds with included maps.

ECOLOGICAL ZONES:

Within the Britt Woods/BLM and Beekman Woods properties there are three intergrading ecological zones. These zones are largely delineated by the plant communities which grow within them, as well as such factors as slope, aspect and moisture availability. Although different

ecological zones may contain several of the same plants, the overall composition of each zone is distinctive. The ecological zones which occur in the areas of this survey include the mixed woodland, oak woodland and riparian (Figures 2 and 3, pp.109-10). Plants growing on the properties but not included in the 100 species description pages, as well as the plants described in the species description pages, are listed according to the ecological zone in which they occur. This list can be found in the "ecological zones" section of the manual (pp. 111-114).

Mixed Woodland: The mixed woodland zones are found on both the Britt and Beekman Woods properties. This zone is characterized by a combination of hardwood and softwood trees such as Pacific madrone (*Arbutus menziesii*), black oak (*Quercus kelloggii*), ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*) and incense cedar (*Calocedrus decurrens*). In both locations the woodlands have experienced disturbance and alteration from past mining and logging practices. The mixed woodland zones of the Britt Woods are primarily dominated by conifers such as ponderosa pine and Douglas fir. The mixed woodland zone of the Beekman Woods is dominated by hardwood trees such as Pacific madrone and black oak. The different composition of dominant plants in these areas may be attributed to the different aspects of the geography of the land and to past logging practices. In several areas where conifers were cut down in the past, faster growing hardwood species like madrone have taken over. Shrub species commonly found in both the mixed woodland zones include poison oak (*Toxicodendron diversilobum*) and Oregon grape (*Berberis aquifolium*). Common flowers include Western false Solomon's seal (*Smilacina racemosa*), and wood strawberry (*Fragaria vesca*). The mixed woodland zone of the Britt Woods dominates the steep north facing slopes above Jackson Creek and patches within canyons. The majority of the Beekman Woods is mixed woodland.

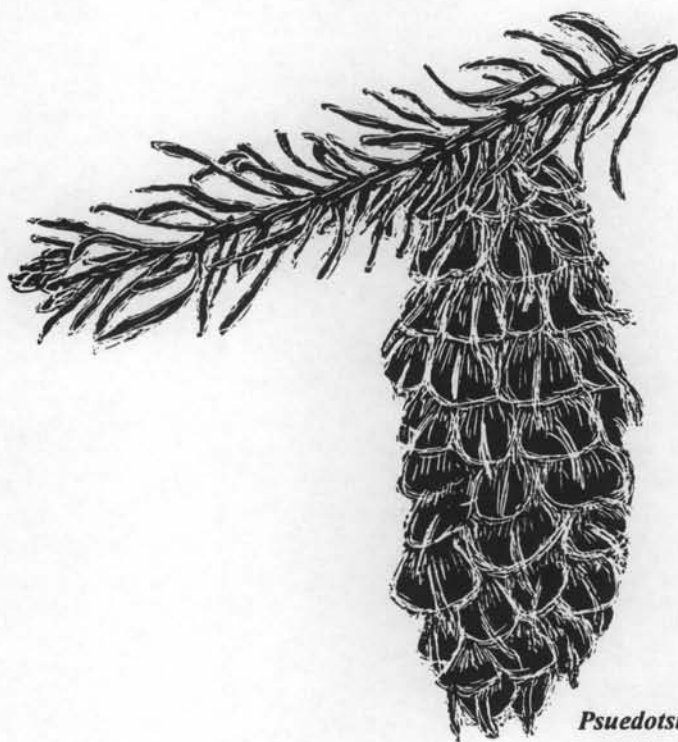
Oak Woodland: Oak woodlands are found on the drier portions of the Britt Woods/BLM and Beekman Woods properties. This zone is characterized by an overstory of white oak (*Quercus garryana*). The most common shrubs are poison oak (*Toxicodendron diversilobum*), buckbrush (*Ceanothus cuneatus*) and whiteleaf manzanita (*Arctostaphylos viscida*). Common flowers include Henderson's fawn lily (*Erythronium hendersonii*), hound's tongue (*Cynoglossum grande*), cat's ear (*Calochortus tolmiei*) and shooting star (*Dodecatheon hendersonii*). The endangered lily, Gentner's fritillaria (*Fritillaria gentneri*) is also found within the oak woodlands.

Riparian: The riparian zone is found immediately adjacent to Jackson Creek along the northern boundary of the Britt Woods property. The term riparian refers to land bordering a river or stream. This zone is characterized by the presence of hardwood, deciduous trees dependent on the seasonal Jackson Creek. Plants commonly found here include big-leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*) and Oregon ash (*Fraxinus latifolia*).

GLOSSARY: This manual is designed for people with little or no background in plant identification. For this reason the manual includes a comprehensive, illustrated glossary to help users identify plants and their distinguishing characteristics more easily.

BIBLIOGRAPHY: In a manual of this type it is not customary to site references within the body of the text. However, much of the information presented here comes from various sources which are listed in the bibliography. This may be helpful to those who wish to explore the subjects presented here in more detail.

TREES, SHRUBS AND WOODY VINES



Psuedotsuga menziesii

***ACER MACROPHYLLUM* Pursh**

Big-Leaf Maple

Aceraceae (Maple) Family

Description: Tree 5-30 m tall. Bark smooth, grayish-brown on young trees; grayish to reddish-brown, with furrows on old trees. Leaves opposite, simple, palmately lobed; blade 10-25 cm wide, lobes 3-5, deep, irregularly few toothed, dark green above, paler below; petiole 5-12 cm. Inflorescence long, pendent raceme, more than 30 flowers; staminate (male) and bisexual flowers on same raceme. Flowers small, **greenish-yellow**. Fruit a double samara (achenes with wings) in a "V" shape, 3-4 cm long; at first light green, then turning brown.

Habitat: Grows along streams, rivers and canyons. Primarily on moist, well-drained soils.

Distribution: From southern California to Alaska. Elevation range below 1500 m (4920 ft).

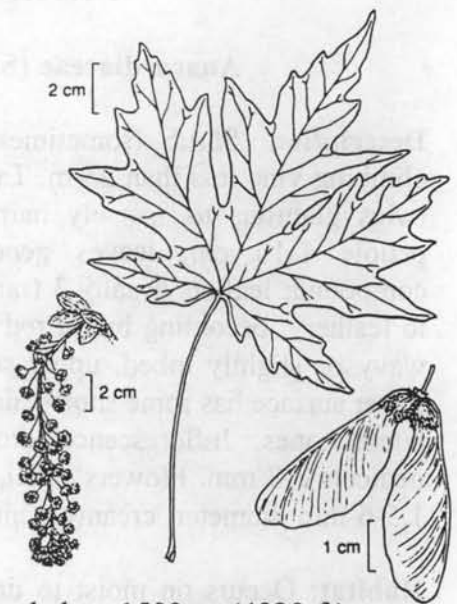
Phenology: Flowers generally appear in early spring just before or as the tree is beginning to leaf out. The leaves are deciduous; they turn a golden-yellow and drop in the autumn. Trees begin to fruit when only 10 years old.

Ecology: The leaves are good browse for deer. Bees seek out the nectar of the fragrant flowers; the maple depends upon such insects for fertilization. Birds and squirrels eat the fruits, which often hang on through fall and winter. This plant often resprouts from the stump after being cut or burned. The thick trunk and branches provide homes for many different types of mosses.

Cultural Significance: Native Americans in the Pacific Northwest used the wood for carvings, dishware, canoe paddles and sweatlodges. The wood is now utilized commercially for making furniture and paneling. Burls weighing from a few hundred pounds to several tons are cut and shipped to France and Italy where they are sliced into veneer used in furniture manufacturing.

Remarks: Big-leaf maple has the largest leaves of any of the maples. It is the biggest maple native to the western United States, and it is one of the largest species in the genus. Similar to the eastern sugar maple, the big-leaf maple has a high sugar content; however, unlike its relative, the big-leaf maple does not exhibit a high flow of sap. This is largely a result of climatic factors within the big-leaf maple's range. The fruits twist like propellers as they are carried away by the autumn winds, thus greatly increasing their dispersal.

Zone: Riparian, mixed woodland (Britt and Beekman Woods). The big-leaf maple is a common overstory species in the riparian and adjacent mixed woodlands of the Britt Woods property.



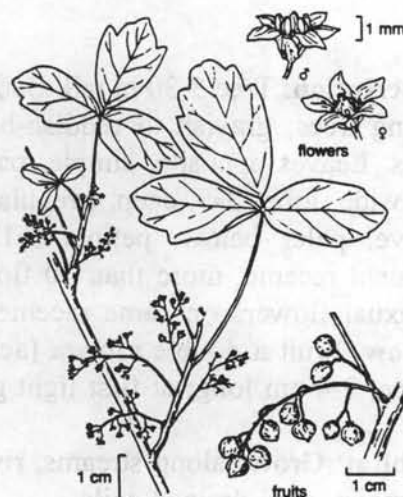
TOXICODENDRON DIVERSILOBUM

(Torrey & Gray) E. Greene

Poison Oak

Anacardiaceae (Sumac) Family

Description: Shrub (sometimes tree-like) 0.5-4 m tall or climbing vine less than 25 m. Takes various forms. Stem and twigs glabrous to sparsely hairy, gray to red-brown. Leaf petiole 1-10 cm; leaves generally ternate or pinnately compound; leaflets usually 3 (rarely 5), round to oblong, thin to leathery, becoming bright red in autumn, margins entire to wavy or slightly lobed, upper surface glabrous, often shiny, lower surface has some short-hairs; terminal leaflet larger than lateral ones. Inflorescence drooping, spreading or erect, pedicels 2-8 mm. Flowers small, **yellow-green**. Fruit spheric, 1.5-6 mm diameter, creamy white, black longitudinal stripes.



Habitat: Occurs on moist to dry, well drained sites in the sun or shade; in oak woodlands, canyons and chaparral. Most common in the valleys along fence rows and in pastures, also in the woods surrounding foothills. In the mountains it is found on the drier ridges and on south and west slopes.

Distribution: From southern British Columbia to southern California on the west side of the Cascades and Sierra Nevada. Elevation range below 1650 m (5400 ft).

Phenology: Leaves are deciduous. Flowers bloom late spring through summer. The plant easily resprouts from wide-spreading root systems.

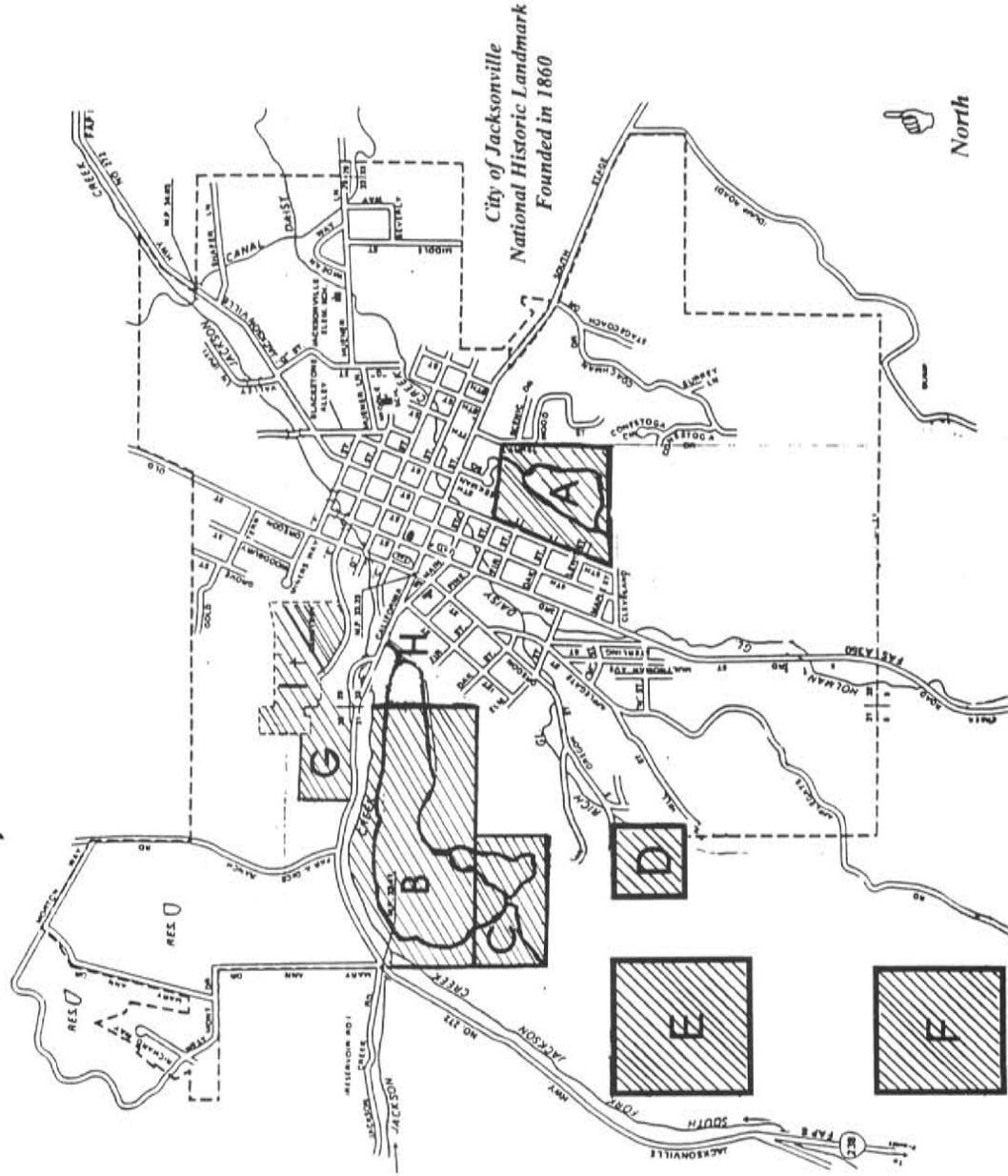
Ecology: Deer browse the foliage. Bees are attracted to the flowers in the spring. The toxicity of the plant is not transmitted through the nectar.

Cultural Significance: Poison oak is toxic to most people. The resin (urushiol) on its leaves, stems, and fruits causes most people who come in contact with it to breakout in an itchy rash. However, some fortunate people do not have any reaction to the plant's toxic resins. Fumes from the burning plant are especially toxic. Cats and dogs that come in contact with the plant can transfer the irritants to humans. Horses and cattle can eat the leaves without any negative reaction.

Remarks: The genus name, *Toxicodendron*, is derived from the Latin word for "poisonous tree."

Zone: Oak woodland, mixed woodland and riparian (Britt/BLM and Beekman Woods). Poison oak is one of the most abundant species in the oak woodlands of the Britt/BLM and Beekman Woods. The species is also common in the shadier mixed woodlands of these sites as well as the riparian area of the Britt Woods property.

Jacksonville Woodlands Natural Park & Trail System Proposed Master Plan



A — Beekman Woods (20 acres - U of O)
B — Britt Woods (70 acres - SOSOC)
C — BLM (20 acres)

D — BLM (10 acres)
E — BLM (40 acres)
F — City of Jacksonville (40 acres)

G — City of Medford (7 acres)
H — Jackson County (10 acres - Britt Gardens)
I — City of Jacksonville (20 acres)

This natural park and trail system will preserve and protect Jacksonville's historic landscape and backdrop. The trails will be self-guided, non-motorized and will provide opportunities for all ages to experience the native trees, plants, wildflowers, birds and animals. Also, much of Jacksonville's mining history will be exhibited and can be studied on the Britt Woods and BLM parcels.

Jacksonville Woodlands Land Acquisition Fund

- Phase 1 Beekman Woods \$124,000
- Phase 2 Britt Woods \$140,000
- Phase 3 Establish trail system
- Phase 4 Expand trail network

Buy one of the following trees and together we can complete the first phase of this historic park and trail system, the Beekman Woods. Make your purchase today and send your tax-deductible gift in the enclosed envelope.

- Manzanita (\$50-\$100)
- Madrone (\$100-\$250)
- Black Oak (\$250-\$500)
- White Oak (\$500-\$1,000)
- Ponderosa Pine (\$1,000-\$5,000)
- Incense Cedar (\$5,000-\$10,000)
- Douglas Fir (\$10,000 or more)

The Jacksonville Woodlands was incorporated in 1989 and is non-profit organization. You gift is tax-deductible, Thank you!

***HEDERA HELIX* L.**

English Ivy

Araliaceae (Ginseng) Family

NON-NATIVE

Description: Woody vine. Leaves simple; on juvenile stems palmately 3-5 lobed, less than 35 cm; on flowering stems less than 15 cm, ovate to diamond shaped; petiole, lower surfaces hairy to more or less glabrous. Juvenile stems climbing by aerial rootlets; flowering stems fewer, nonclimbing. Fruit a berry, black, about 5 mm.

Habitat: Grows in disturbed areas in sun or shade.

Distribution: This non-native plant is widely cultivated in mild-winter regions throughout the U.S. It is native to Europe.

Phenology: Leaves are persistent (evergreen).

Ecology: Ivy is good for holding soil, discouraging soil erosion and slippage on slopes. Its roots grow deep and densely fill the soil. Its branches root as they grow, further binding the soil.

Cultural Significance: The family Araliaceae grows worldwide, with more species in tropical and subtropical regions. Many species have important ornamental and medicinal uses. *Hedera helix* is the most widely planted ground cover in California. It climbs on walls, trellises and fences by aerial rootlets. The root of *Panax quinquefolia* (ginseng) is highly valued by the Chinese and others as a stimulant, tonic and supposed aphrodisiac. Various *Schefflera* are cultivated as house plants.

Remarks: *Hedera helix* often spreads aggressively, escaping the bounds of cultivated landscapes. Its juice is toxic and can cause contact dermatitis. The berries and leaves are also toxic if eaten. The genus name, *Hedera*, is derived from the Latin for the sacred plant of Bacchus, the god of wine. The names yew (a tree) and ivy are derived from the same ancient word *iua* - a clear indication of how much common names may change over time.

Management Recommendations: This species is occasionally found climbing on trees in the shady mixed woodlands. Although it is not an immediate threat to the communities in which it occurs, it should be managed to control further spreading and encroachment on native species.

Zone: Mixed woodland (Britt and Beekman Woods). This species is believed to have escaped from the Peter Britt Gardens around the turn of the century.



***BERBERIS AQUIFOLIUM* Pursh**

Oregon Grape

Berberidaceae (Barberry) Family

Description: Stems spreading to erect, 0.1-2 m tall. Inner bark and wood is yellowish. Leaves cauline, pinnately compound, not crowded, 8-24 cm; petiole 1-6 cm; leaflets 5-9, 2-7.5 cm long, 1.5-4.5 cm wide, dark green, glossy above, ovate to elliptic, flat, edges serrate, spine-tipped teeth. Inflorescence 3-6 cm, dense. Flower petals 6, in two whorls of 3, **yellow**; stamens 6; stigma more or less spheric. Sepals 9, in 3 whorls of 3. Fruit a berry, dark blue, 4-7 mm, ovoid to obovoid.



Habitat: Grows in coniferous forests, canyons, chaparral and oak woodlands.

Distribution: Throughout California, except in the desert regions, north to Canada, west to the Great Plains and northern Mexico. Elevation range below 2200 m (7200 ft).

Phenology: Flowers bloom in the early spring. Berries ripen in late summer. In the late summer or fall some of the leaves may turn red.

Ecology: The fruit is eaten by many birds and mammals.

Cultural Significance: Native Americans used the shredded bark to make a yellow dye. Medicinal teas have also been made from the bark to treat sore throats and for use as an eye wash and general tonic. Chemical analysis suggest its use is effective in reducing inflammation in the mucous membrane of the eye. Some commercial eyewashes contain an active ingredient derived from the plant. The berries are edible and can be eaten raw. They are rather dry and sour, but have lots of pectin, so they are good for making jelly. Unlike the berries, the roots of this genus are often toxic. Florists use the holly-like foliage for greenery.

Remarks: This is the state flower of Oregon. The berries are a dark blue to purplish color and look like small grapes. The genus name, *Berberis*, is Latin and derived from the ancient Arabic name for barberry. Spines on the plants may sometimes inject fungal spores into the skin. There are several varieties of *B. aquifolium* which intergrade.

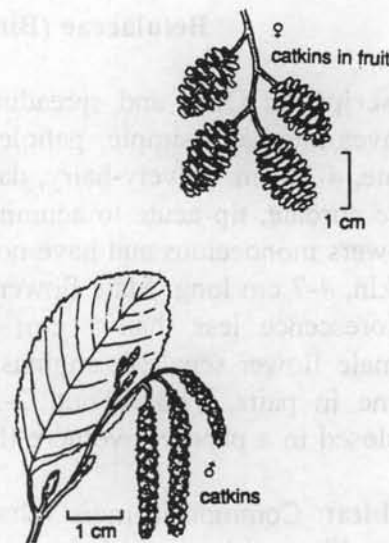
Zone: Mixed woodland, oak woodland (Britt/BLM and Beekman Woods). Oregon grape is common within the mixed woodlands of the Beekman and Britt Woods properties. It is abundant within the shady, eastern portion of the Beekman Woods property.

ALNUS RHOMBIFOLIA Nutt.

White Alder

Betulaceae (Birch) Family

Description: Tree usually less than 35 m tall. Bark smooth, whitish to grayish brown. Leaves simple, alternate, petioled; blade 3-15 cm, elliptic to ovate, thick, upper surface green, paler on lower surface; midrib and major veins not indented; base tapered to round, tip round to acute, margins serrate. Flowers born in catkins, male and female flowers separate. Male catkins are 5-20 cm in length. The male flowers have 4 sepals, no petals, and 1-4 stamens. The female catkins are 5-20 mm. Female flowers have no sepals or petals, 1 pistil, 2 stigmas. Many fruits, brown, in cone-like catkins, woody, winged.



Habitat: Grows on moist sites along streams and on lower mountain slopes.

Distribution: From California (except in the desert, Great Basin and Central Valley) north to Washington and Idaho. Elevation range 100-2400 m (330-7870 ft).

Phenology: Leaves are deciduous. Staminate catkins are preformed, which means the male flowers emerge during the current growing season, but hang from the twigs unopened until the following growing season. The catkins bloom in late winter before the leaves appear.

Ecology: The roots of the alder create dense mats that help hold the soil in place. Alders are nitrogen-fixing plants. They enrich the soil through root nodules containing atmospheric nitrogen-fixing bacteria. The bacteria converts atmospheric nitrogen into a form of nitrogen useable by other plants. In summer, alder, along with other trees in riparian areas, provide cool, shady cover for wildlife. Birds eat the seeds that are tucked inside the small cone-like fruits. Beetles feed and lay their eggs on the leaves.

Cultural Significance: The wood is not commercially important but is used for interior finishing and to smoke fish and meat.

Remarks: Alders, along with ash and cottonwood, form a protective buffer zone of vegetation along streams.

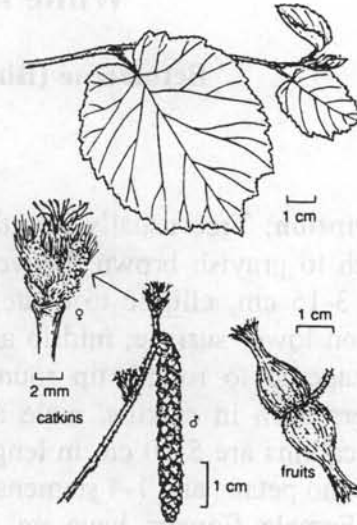
Zone: Riparian (Britt Woods). Common overstory species within the riparian zone.

CORYLUS CORNUTA Marsh.

Hazelnut, Filbert

Betulaceae (Birch) Family

Description: Open and spreading shrub less than 4 m tall. Leaves alternate, simple, petiole 5-10 mm; blade oblong to ovate, 4-10 cm, velvety-hairy, dark green above, paler below, base cordate, tip acute to acuminate, margins doubly serrate. Flowers monoecious and have no petals. Male inflorescence a catkin, 4-7 cm long. Male flower sepals 0, stamens 4. Female inflorescence less than 1 cm, appearing as terminal bud. Female flower sepals 4, stigmas showy, **bright red**, usually borne in pairs. Fruit a nut, 2-3 cm, 1-2 per catkin, each enclosed in a papery involucre (husk-like) of 2 fused bracts.



Habitat: Common in moist, shady places. Occurs in the understory of coniferous forests, on burned/logged lands, and along streamsides and roads.

Distribution: From British Columbia south to central California on the west side of the Cascades and Sierra Nevada. Elevation range below 2100 m (6885 ft).

Phenology: Leaves are deciduous. Male catkins begin elongating in the late winter and early spring before the leaves appear. The catkins and the bright red pistils of the female flower are very noticeable. Of the several pistils in each flower only one develops into a nut. The nuts ripen from August to October.

Ecology: Browse value of the foliage is fair to poor. Squirrels, chipmunks, mice and some birds eat the nuts. Instead of having showy, fragrant flowers to attract pollinating insects and birds, the female flowers of the hazelnut do not have any petals and rely strictly on wind pollination. The female flower catches wind blown pollen grains released from the male catkins.

Cultural Significance: Many Native American tribes in the West ate the fresh nuts and stored them for winter. They often buried the nuts, which rotted away the hard hulls. The nuts can also be ground into meal and made into a bread. Some tribes used the twigs to make rope and baskets.

Remarks: This hazelnut is a wild relative of the garden filberts, many strains of which have been developed from a European species and are now raised commercially for their nut crop. *Corylus* is the Latin word for hazelnut. The nuts are composed of about 25% protein, 60% fat, and only 5-10% carbohydrate, giving them good nutritional value. This has made them an important food source for humans and wildlife. Check around the bases of the plants in the late summer and fall to find bits of nut husks with teethmarks left by various animals.

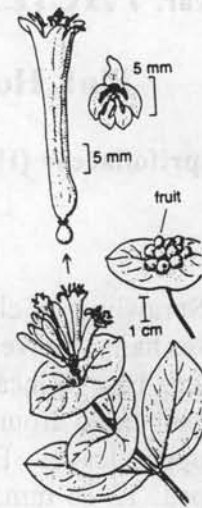
Zone: Mixed woodland and riparian (Britt and Beekman Woods). The hazelnut is relatively abundant on the lower reaches of the shady, north facing slope above Jackson Creek.

***LONICERA CILIOSA* (Pursh) Poiret**

Orange Honeysuckle

Caprifoliaceae (Honeysuckle) Family

Description: Trailing to high climbing woody vine, stems 3-30 dm. Leaves simple, opposite, 6-10 cm; blade oval or ovate, fringe of delicate hairs, base tapered to petiole, tip round to sharp; upper 1-2 pairs fused like a disk around stem. Inflorescence a short, dense cluster. Flower corolla **orange**; 16-40 mm, cylindric, trumpet-shaped, weakly 2-lipped, divided 1/6-1/4; stamens, style, stigma slightly exerted. Fruit a red berry, round, about 8 mm and slightly glaucous.



Habitat: Grows in forests and thickets. Likes sunny places, and is most abundant in brushy areas and at the edges of woods.

Distribution: From northern California to British Columbia and Montana. Elevation range 700-1700 m (2296-5576 ft).

Phenology: Leaves are deciduous. Flowers bloom from mid spring to early summer. Fruits ripen late in the summer and early fall.

Ecology: Unlike many honeysuckles that are pollinated by hawk moths at night, this species is pollinated during the day by hummingbirds which are attracted by the bright orange color of the flowers.

Cultural Significance: The berries are considered inedible and may be poisonous. Native Americans have used this plant for many medicinal purposes. The bark can be boiled as a tea for colds and sore throats. The flow of breast milk is said to be stimulated by holding the breasts over the steaming leaves. The Snohomish tribe of Washington have a legend that says the crow swings from this plant. The plant is known to other northern tribes as "ghost's swing" or "owl's swing." The stems were used by some tribes for weaving and binding.

Remarks: The trumpet-shaped flowers are showy but do not have much of a scent. Sometimes young Douglas firs are so weakened by the tight coils of this vine that they break under the pressure of wind or snow. Honeysuckle is the "woodbine" of Shakespeare:

"I will twine thee in my arms. So doth the woodbine, the sweet honeysuckle entwist."

Zone: Oak woodland, mixed woodland (Britt and Beekman Woods).

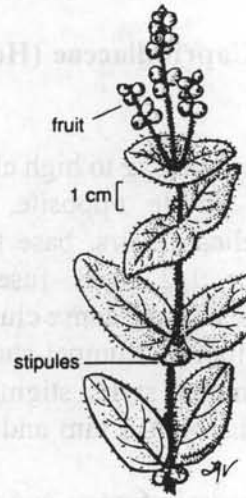
***LONICERA HISPIDULA* Douglas**

var. ***VACILLANS* A. Gray**

Pink Honeysuckle

Caprifoliaceae (Honeysuckle) Family

Description: Sprawling or climbing woody vine, 18-60 dm. Stems and leaves hairy. Leaves opposite, simple, 4-8 cm; blade oblong to ovate, base truncate or subcordate, tip generally obtuse; upper pair fused around stem. Inflorescence a spike in the axils of upper leaves. Flowers in pairs, sessile, **pink**, strongly 2-lipped, 12-16 mm, glandular-hairy; stamens, style and stigma sticking out. Fruit a berry, 8 mm, red.



Habitat: Grows in woodlands, canyons, and streamsides. This species prefers exposed places and is often found where it is dry and the ground is rocky.

Distribution: From central California north to southeastern Vancouver Island. Elevation range below 1100 m (3600 ft).

Phenology: Leaves are persistent (evergreen). Flowers bloom late spring to early summer. Clusters of berries are conspicuous in the fall.

Ecology: The female pistil protrudes farther out of the mouth of the flower than do the male stamens. When a pollinating insect arrives at the flower, it first brushes against the sticky surface of the pistil, leaving pollen from a previously visited flower. Then as the insect moves deeper into the blossom to the nectar, it brushes against the anthers, which cover parts of its head and body with new pollen. The structure of the flower is well adapted for cross pollination.

Remarks: The genus *Lonicera* is named after the German herbalist, Adam Lonitzer, who lived in the 16th century. There are 150 species of *Lonicera* worldwide. Some are shrubs and some are vines. Many are cultivated as ornamentals. Another common name for this plant is "hairy honeysuckle."

Zone: Oak woodland, mixed woodland (Britt and Beekman Woods). The plant vines around many different species of trees and shrubs. It commonly occurs as a ground cover in the Beekman Woods.

SYMPHORICARPOS ALBUS (L.) S.F. Blake

Snowberry

Caprifoliaceae (Honeysuckle) Family

Description: Shrub 6-18 dm, glabrous or hairy. Leaves simple, opposite; blade generally 1-3 cm, elliptic, some lobed. Inflorescence 8-16 flowered, generally a terminal raceme. Flower corolla bell-shaped, 4-6 mm, **pink** (sometimes whitish), swollen on lower side, glandular within swelling, lobes and upper throat densely hairy inside, lobes more or less erect; calyx limbs spreading, divided halfway. Fruit 8-12 mm, round, berry-like, generally white, waxy. Seeds 2, oblong, 4-5 mm.

Habitat: Grows in shady woods, on streambanks and north slopes. Tolerates dry to moist, well-drained sites in the sun or partial shade.

Distribution: From southern California north to Alaska, and west to Montana. Elevation range below 1200 m (3935 ft).

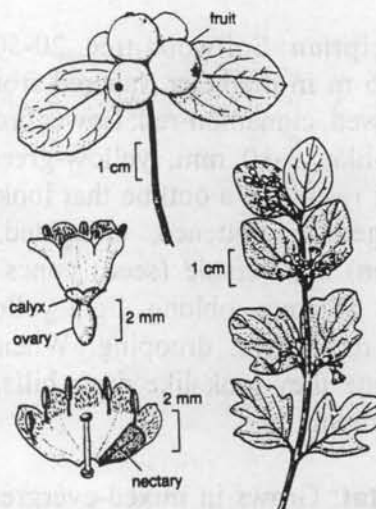
Phenology: Leaves are deciduous. Flowers bloom late spring to early summer. The conspicuous white fruits ripen in the late summer and often remain on the twigs through the winter.

Ecology: An important browse plant for deer and elk. Many birds feed on the fruits.

Cultural Significance: The Chehalis, a Native American tribe of western Washington rubbed the berries on their hair as a shampoo. They also used the leaves by bruising and applying them to a cut as a poultice. Another cure involves washing a cut with an infusion made by boiling the leaves, or by chewing the leaves and spitting them on the injury. The Green River people of Washington, used the plant for the same purpose and say that when the berries are plentiful, there will be many dog salmon, for the white berry represents the eye of the dog salmon. The Klamath used the pithy stems to make pipes. While some Native Americans are reported to have eaten the berries, most did not, and it is now believed they may be toxic to humans if eaten in large quantities. In several Native American languages the berries have been given such names as "corpse berry" and "snake berry."

Remarks: In Greek the genus name, *Symphoricarpos*, means "to bear fruit together," referring to the berries of this plant which are borne in clusters. Another common name is "waxberry." It is often cultivated as an ornamental shrub.

Zone: Mixed woodland, oak woodland (Britt and Beekman Woods). Snowberry is abundant along the Zigler trail and on the shady, north facing slope above Jackson Creek on the Britt Woods property.

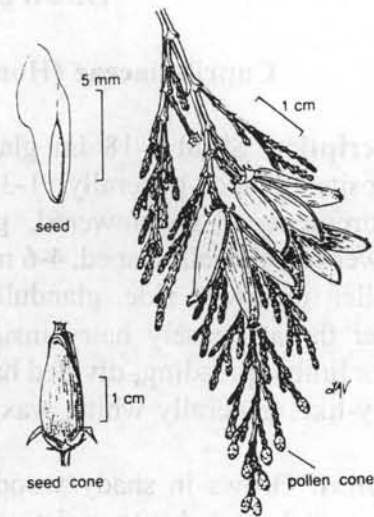


***CALOCEDRUS DECURRENS* (Torrey) Florin**

Incense Cedar

Cupressaceae (Cypress) Family

Description: Softwood tree, 20-50 m tall. Trunk usually less than 6 m in diameter, tapered from wide base. Bark fibrous, furrowed, cinnamon-red. Lower branches down-curved. Leaves scale-like, 3-10 mm, yellow-green. The overlapping of the scales results in a outline that looks like a wine glass. Foliage arranged in flattened, elongated, finger-like sprays. Male (pollen) and female (seed) cones on the same plant. Pollen cones 5-7 mm, oblong, light yellow. Seed cones 18-25 mm, light red-brown, drooping. When the cone scales begin to separate they look like duck bills. Seed 8-12 mm, yellow to red-brown.



Habitat: Grows in mixed-evergreen, ponderosa pine forests. Does best on moist, porous soils, but is able to adapt itself to various soil types.

Distribution: From northern Baja, throughout California (except in the desert regions), and western Nevada. In Oregon it grows on both slopes of the Cascades, in the Siskiyou and northern coast ranges. It is planted and grown farther north. Elevation range 350-2500 m (1150-8200 ft).

Phenology: Leaves are persistent (evergreen). Dead leaves fall in sprays. Seed cones mature in autumn.

Ecology: The incense cedar is a fire adapted species. The thick bark at the base of the old trees makes them less susceptible to fires that often kills thinner barked species, such as Douglas fir, which occur in the same area. Incense cedar is a vigorous seed producer, but slow growing.

Cultural Significance: Extensive use of this cedar for lumber is deterred by a fungus which attacks the heartwood, producing the condition known as "peck." This condition does not impair the durability of the wood. Incense cedar makes excellent fence posts, chests, shingles and railroad ties. It is the primary species used in making pencils.

Remarks: Very aromatic. John Muir wrote of the incense cedar's foliage: "No waving fern-frond in shady dell is more unreservedly beautiful in form and texture, or half so inspiring in color and spicy fragrance. In its prime, the whole tree is thatched with them, so that they shed off rain and snow like a roof, making fine mansions for storm-bound birds and mountaineers." "In the fall," writes Mary Tressider, "the edges of the flat sprays are picked out with the immature green pollen buds, like the old fashioned scalloped edges of embroidery we used to do."

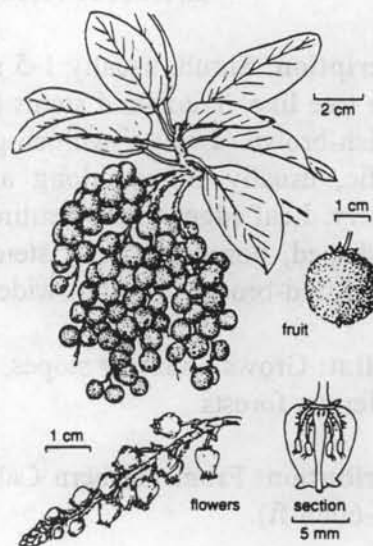
Zone: Mixed woodland (Britt and Beekman Woods). Only small saplings occur infrequently within the mixed woodlands of the Britt and Beekman Woods. Mature trees may have been removed by past logging activities.

ARBUTUS MENZEISII Pursh

Pacific Madrone

Ericaceae (Heath) Family

Description: Hardwood tree usually less than 40 m tall. Bark at first yellowish-green, then reddish-brown, sloughing off in long frayed pieces which make it look as if the tree is shedding its skin. Leaves leathery, 7-12 cm, oblong-elliptical, glabrous, rounded to pointed at the tip; margins entire to minutely serrate; upper surface bright green, lower whitish; petiole grooved, up to 3 cm long, light green, smooth. Flower less than 8 mm long, urn-shaped, borne in clusters up to 15 cm long. Petals **yellowish, white or pinkish**. Fruit round, berry-like drupes, less than 12 mm wide, reddish-orange, rough skinned.



Habitat: Grows in conifer and oak forests on dry to moist soils.

Distribution: From southwestern British Columbia south on the west side of the Cascades and Sierra Nevada to southern California. Elevations range 100-1500 m (328-4920 ft).

Phenology: An evergreen tree but its dead leaves fall intermittently, usually in spring or early summer. Leaves stay green 13 or 14 months. The flowers bloom from March to May. Fruits appear in late summer and autumn.

Ecology: Birds, including band-tailed pigeons, quail and starlings eat the berries. They are a primary factor in disseminating madrone seed. Flowers have a strong sweet, odor that attracts honey bees.

Cultural Significance: Native Americans in California ate the berries both raw and cooked. The berries have a "dry, custardy taste" with sharp, tiny seeds that make them difficult to eat. Overeating the berries can cause cramps. The berries can also be used as beads for ornamentation. It has been noted that Native Americans boiled the leaves and used the infusion to treat colds and sore throats. The wood can be used for furniture and panelling, but is difficult to dry because of its tendency to warp and crack.

Remarks: For a hardwood tree, *Arbutus menzeisii* has a long lifespan. The largest specimens are said to be 200-250 years old. A white explorer, Father Juan Crespi, on an overland trip in 1769 in search of the "lost bay" of Monterey noted, "many madronos, though with smaller fruit than the Spanish." The Madrono he refers to is the strawberry tree, *Arbutus unedo*, a sister species of the Mediterranean, which resembles the species which grows in North America.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Pacific madrone occurs in its greatest abundance within the main drainage of the Beekman Woods.

ARCTOSTAPHYLOS VISCIDA Parry

Whiteleaf Manzanita

Ericaceae (Heath) Family

Description: Shrub, usually 1-5 m tall, but can get taller and more tree like. Trunk and stems twist and turn. Bark smooth, reddish-brown. Leaves whitish-green and broadly ovate to elliptic, usually 2-5 cm long and 2-4 cm wide, stiff and leathery. Leaf edges usually entire. Flowers **white** or **pinkish**, urn-shaped, borne in sticky stemmed clusters. Fruit sphere-shaped, red-brown, 6-8 mm wide.

Habitat: Grows on rocky slopes, in woodlands, chaparral and coniferous forests.

Distribution: From northern California to southwestern Oregon. Elevation range 150-1850 m (492-6068 ft).

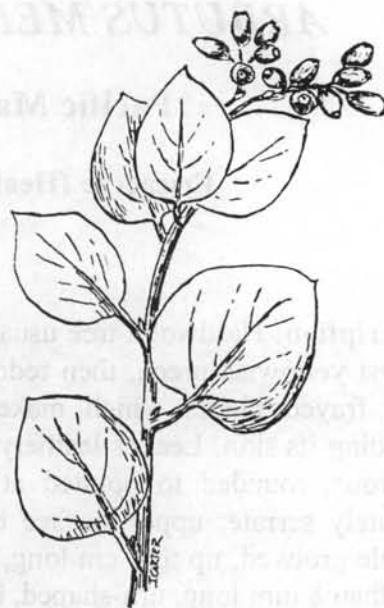
Phenology: The flowers bloom in the early spring, usually near the middle of March. Leaves are persistent (evergreen).

Ecology: Many manzanita species are "stump-sprouters." After a fire, when a plant is burned to the ground, the plant will resprout from the stump. In addition to resprouting following fires, manzanitas typically experience prolific seed germination after burning. Although the whiteleaf manzanita is not a stump-sprouter, it does experience high seed germination following a fire. The dominance of manzanita can often indicate a past fire in the area. Different species of manzanitas are notorious for their ability to hybridize where they occur together. Many birds eat the berries.

Cultural Significance: Humans can eat the berries raw, boiled or dried. However, eating too many can cause cramps. The manzanita berry was a favorite food of local Native Americans, the Takelma. The berries were pounded into a flour, mixed with sugar, pine nuts and stored for winter. Liquid from the boiled bark yields tannic acid useful in leather tanning. Manzanita wood is very fine-grained and is used in carving. In 1991, a group of Japanese scientists collected samples of local manzanita in hope of finding a natural compound active against cancer.

Remarks: Manzanita is a Spanish word which means "little apple," referring to the fruit of this shrub. The genus name, *Arctostaphylos*, means "bearberry." In Greek, *arctos*, refers to both the "far North" and to "bears," which they thought came from the northern region. The name *staphylos* means "grapes."

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Manzanitas are common understory species of the oak woodlands. However, some manzanitas on the BLM and Britt properties exemplify the absence of fire by reaching heights of 5-7 m and sharing the overstory with the white oaks.



CYTISUS SCOPARIUS (L.) Link

Scotch Broom

Fabaceae (Pea) Family

NON-NATIVE

Description: Shrub 2-2.5 m tall. Branches generally 5 angled, green, hairy when young, then generally glabrous. Forms a broom-like mass of upward curved stems. Leaflets 5-20 mm, obovate to oblong, hairs appressed or 0. Leaflets 1, sessile on young branches, 3 on older. Inflorescence is clustered, axillary. Corolla **golden-yellow**, sometimes fringed with red-purple, banner generally 15-18 mm, reflexed or not; calyx glabrous, less than 5 mm. Fruit a legume, 25-40 mm, flat, brown or black, glabrous except for hairy margins. Seeds 5-12.



Habitat: Grows in disturbed moist places, such as roadsides, fields, and in gardens.

Distribution: This introduced species is now found in the moister parts of the Northwest and California, also along the East Coast from Nova Scotia to Virginia. Native to southern Europe and North Africa. Usually below 1000 m (3280 ft).

Phenology: Flowers bloom mid spring to early summer. Leaves deciduous. The two halves of the seed pod tend to warp in different directions, and when they finally separate, on a dry summer day, they often do so with an almost explosive snap. The seeds may be catapulted for a distance of several feet.

Ecology: Dispersal of seed is also carried out by ants, attracted by an oil-rich appendage on the seeds. The seeds are remarkably heat resistant, so at least some are likely to survive a fire.

Cultural Significance: Scotch broom is often planted as an ornamental and to stabilize road banks. It is regarded as a good renovator of denuded and barren lands because it adapts easily and has nitrogen-fixing bacteria on its roots. In addition, its leaves are rich in potash. Its name is said to come from its use as a broom in Scotland.

Remarks: Scotch broom is not native to North America. It was introduced as an ornamental, some say by Thomas Jefferson, and has now become well established in parts of the U.S. It is considered a noxious weed by the state of California because it is an aggressive, alien plant, which displaces native vegetation. This species can be poisonous to livestock and humans as it contains toxic alkaloids that can depress the heart and nervous system.

Management Recommendations: Due to the invasive nature of this species, individuals should be removed by hand pulling/cutting prior to setting seed (early summer).

Zone: Oak woodland (Britt Woods). Localized to vicinity surrounding the Britt Woods parking area.

***ROBINIA PSUEDOACACIA* L.**

Black Locust

Fabaceae (Pea) Family

NON-NATIVE



Description: Tree with dark brownish-black bark, furrows on older trees with orange or yellow color in fissures. Paired stipular-spines present on young twigs. Leaves compound, odd 1-pinnate, alternate; 7-19 elliptical to ovate-oblong leaflets, margins entire. Inflorescence a raceme, pendent. Flower corolla pea-like, **creamy-white**, petals 5, 1.5-2 cm; calyx bell shaped, 5-lobed; 9 filaments of stamens fused, 1 free. Fruit flat, brown legume, 5-10 cm long, upper margins narrowly winged.

Habitat: Grows along streambanks, roadsides, on canyon slopes and near abandoned houses.

Distribution: Native to the eastern United States. Alien to the western states, but has been extensively planted and has escaped from cultivation. Elevation range 50-1900 m (164-6232 ft).

Phenology: Leaves are deciduous. Flowers bloom in the late spring.

Ecology: Like all species in the pea family, black locust has nitrogen-fixing nodules on the roots, which help replenish the nutrients in the soil. The root system is deep and wide spreading which makes it effective in controlling erosion.

Cultural Significance: Settlers took black locust all over the United States because they loved the fragrant, sweet-pea flowers and because of its tolerance of harsh growing conditions. A native of the southern Appalachian and Ozark highlands, black locust has been planted throughout Oregon, especially on the east side of the Cascades where its resistance to heat, cold, and drought enable it to survive the climate. The wood is very durable, heavy and hard. It has been used for fence posts, tool handles, posts, mine timbers, musical instruments and fuel. The flowers may be gathered, fried and eaten; but the leaves, bark, roots and seeds are toxic and may be fatal to humans and livestock if consumed.

Remarks: Some people say that the young leaves, when seen in the sunlight, show the most beautiful green of any broadleaf tree.

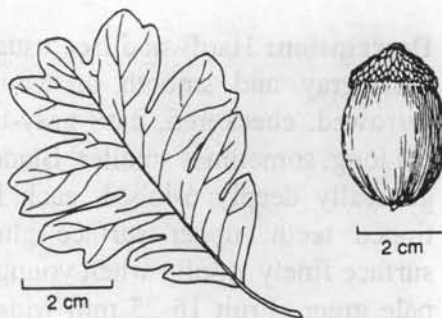
Zone: Riparian (Britt Woods). Uncommon.

QUERCUS GARRYANA Hook.

Oregon White Oak

Fagaceae (Oak) Family

Description: Hardwood tree 8-20 m tall or shrub 1-5 m tall, bark light-brown or grayish-brown with thick furrows and ridges. Leaves 5-15 cm; petiole 5-25 mm; blade tip obtuse to rounded, margins deeply 5-7 lobed, lobes entire or 2-toothed; upper surface shiny, dark green; lower surface short-hairy, dull, light green. Male and female flowers borne on separate flower clusters on the same tree; male flowers in catkins, female flowers single or small clusters. Fruit an acorn (nut), maturing in 1 year; cup 12-15 mm wide, 4-9 mm deep, nut 20-30 mm, tip rounded.



Habitat: On dry to moist soils in valleys and lower foothills; in open woodlands, mixed evergreen forests. Forms pure stands or grows with madrone, big-leaf maple, Douglas fir, ponderosa pine and black oak.

Distribution: From southern British Columbia south, primarily on the westside of the Cascades and Sierra Nevada, to north-central California. Elevation range usually below 1800 m (5900 ft).

Phenology: In the spring, the tree flowers as the leaves appear. Leaves are deciduous. Leaves turn a dull yellow-brown color in the fall before they drop.

Ecology: The acorns are eaten by a number of animals including bears. White oak is a heavy seeder and vigorous sprouter. It is parasitized by the American mistletoe, *Phoradendron villosum*.

Cultural Significance: Acorns from both the white and black oaks provided a primary food source for Native Americans living in the Rogue Valley. Since acorns contain bitter tasting, toxic tannins, the nuts were first soaked in lakes and streams to leach out the tannins. Tannin or tannic acid is the substance commonly used to tan leather. After being leached of tannins, the acorns were often roasted or made into flour. Historically, white oak has had little commercial value, with the exception of lumber for shipping materials and fence posts. This species is often referred to as "post oak" because it splits easily and its heartwood is long lasting even when in contact with soil. The wood is close-grained, strong and hard. The sap wood is nearly white. Today, oak is being used more frequently as lumber for furniture and construction.

Remarks: This species is the most abundant and widely distributed oak in Oregon. It is the only native oak found in eastern Oregon (Sherman Co.), Washington and British Columbia. "Garry oak" is another common name for this species.

Zone: Oak woodland and mixed woodland (Britt/BLM and Beekman Woods). White oak is the dominant tree species of the oak woodlands.

***QUERCUS KELLOGGII* Newb.**

Black Oak

Fagaceae (Oak) Family

Description: Hardwood tree usually less than 25 m tall. Bark dark gray and smooth on young trees, becoming deeply furrowed, checkered, dark gray-brown to black. Leaves 9-20 cm long, sometimes smaller. Blade tips generally acute, margin generally deeply 6-lobed, each lobe with 1-4 coarse bristle tipped teeth; upper surface glabrous, bright green, lower surface finely woolly when young, becoming mostly glabrous, pale green. Fruit 16-25 mm wide, 15-25 mm deep, generally cup shaped; nut (acorn) 20-35 mm, oblong-ovoid, puberulent, tip obtuse, shell woolly inside.



Habitat: Grows on dry, sandy or gravelly soils in the valleys, foothills and lower mountain slopes in woodlands and coniferous forests. Elevation range from 200-2400 m (656-7872 ft).

Distribution: On the west side of the Cascades and Sierra Nevada from south-central Oregon to southern California and into northern Baja.

Phenology: Leaves are deciduous. Acorns take two years to mature.

Ecology: Deer and porcupine eat the leaves. Woodpeckers, jays and other birds, along with squirrels eat the acorns. Woodpeckers bore holes in trees and snags, and then forcefully drive the acorns of both the white and black oaks into the prepared holes for winter storage. These storage trees and snags are called granary trees. Galls are formed on the twigs and leaves of many oak species; from far away fresh galls resemble small apples, and have the common name of "oak apple." Galls are produced by wasps. Wasps deposit their eggs in the new growth of twigs and leaves. The presence of wasp eggs stimulates the oak to produce the gall. The gall protects the tree from the growing wasp larvae while providing a food source and shelter for the larvae. Different species of wasps create different shapes of galls. Galls are easiest to see in winter when the leaves have dropped from the trees. Cut a gall in half and the developing larvae of the wasp is often visible.

Cultural Significance: Acorns were probably the most important food of the Takelma, a local Native American tribe. The wood is now sometimes used for furniture and flooring, and occasionally for posts and tool handles.

Remarks: The word acorn comes from the Anglo-Saxons and originally meant "fruit of the open country." Often struck by lightning, oaks were thought to be mediators between earth and heaven and so were sacred to the Romans, Druids and Vikings.

Zone: Oak woodland and mixed woodland (Britt and Beekman Woods). The black oak is most abundant in the mixed and oak woodlands of the Beekman Woods.

RIBES SANGUINUM Pursh.

Red Flowering Currant

Grossulariaceae (Currant) Family

Description: Loosely branched shrub usually less than 4 m tall. No spines. Bark reddish to grayish-brown; splits longitudinally revealing vertical rows of horizontal lenticels. Leaves simple, small, palmately lobed and veined; blade 2-7 cm, irregularly toothed and finely serrate; upper surface hairy; lower surface paler, sparsely hairy to white velvety. Inflorescence 10-20 flowered; bracts white to red, long showy raceme. Flower petals 2-3 mm, white to red (usually **bright pink**), united to form a tube or funnel; sepals 4-5 mm, white, pink, or red. Fruit a dark blue berry with stalked glands, covered with a white-waxy coating, 4-8 mm.



Habitat: Occurs in many habitats, dry to moist, in sun or shade, brushy areas and woods.

Distribution: From central California, on the west side of the Cascades and Sierra Nevada to British Columbia. Elevation range usually below 2200 m (7216 ft).

Phenology: Leaves are deciduous. Flowers bloom in late March and April.

Ecology: Caterpillars feed on the leaves and hummingbirds feed on the nectar of the flowers. The various *Ribes* species are the alternate host to the "white pine blister rust," the most deadly fungus disease of western white pine and other five-needled pines.

Cultural Significance: Its value as an ornamental plant is recognized far beyond the region where it grows wild. It was first discovered by Archibald Menzies in 1793 and introduced to European horticulture in 1828 by David Douglas, a famous Scottish explorer of the Northwest wilderness. *Ribes sanguinum* can be propagated from seeds and cuttings fairly easily. It is planted in the parks of London and the gardens of Paris. The berries are rather dry and some say taste too much of pine resin to be palatable. They are good for making pies and jellies and have been used by various Native American tribes to make pemmican, a mix of dried meats and berries.

Remarks: The genus *Ribes* includes all shrubs called currants and gooseberries. It has a large representation in the Northwest. Most species with spines and prickles are called gooseberries. Unarmed species are called currants. *Ribes* is the Arabic word for plants of this genus. The name currant is believed to come from the Middle English "raison of corante" (raisin of Corinth) and refers to the Greek port from which currants were said to be first traded. The *Ribes* were formerly included in the Saxifragaceae family. The name *sanguinum* means "blood red."

Zone: Mixed woodland (Britt Woods). This species occurs in isolated locations in the mixed woodlands above Jackson Creek. In early spring look for the bright pink flowers of this bush near the start of the Zigler trail.

***FRAXINUS LATIFOLIA* Benth.**

Oregon Ash, Black Ash

Oleaceae (Olive) Family

Description: Tree usually less than 25 m tall. Twigs olive drab, woolly when young, eventually becoming grayish. Leaves opposite, pinnately compound, yellowish-green, 12-33 cm; leaflets 5-7, 2-10 cm, widely elliptic to narrowly ovate, entire to serrate, sparsely puberulent below, sessile or very short petioled. Flowers small, **white**, in dense clusters, dioecious (the male flowers which produce pollen are on separate trees from the female flowers which produce the fruits). No flower petals. Calyx 1-2 mm, shallowly 4 lobed. Fruit a single, flat samara with a terminal wing, 28-50 mm long, 5-8 mm wide.



Habitat: Grows in canyons and woodlands. Usually on moist, sandy, rocky, or gravelly soil near a stream, on bottomlands or around the margins of swampy areas.

Distribution: From central California, on the west side of the Cascades and Sierra Nevada, to British Columbia. Elevation range usually below 1700 m (5576 ft).

Phenology: Leaves are deciduous. Flowers bloom in April or May at the same time the leaves appear. In the early fall the leaves turn yellow and drop.

Ecology: The foliage is important browse for elk and deer.

Cultural Significance: Native Americans have used the wood for canoe paddles and digging sticks. The wood is also used for tool handles, furniture, baseball bats, boxes, crates and boat building. It is valued as firewood as it splits and burns easily.

Remarks: The flattened fruits are distinctive, resembling small tongue depressors or stirring paddles. Even in winter a few fruits are likely to be seen on the trees. The bark of the ash is grayish and closely furrowed; it generally supports an assortment of lichens, often making the bark appear lighter than it is. During the pioneering times of the old fur trade in the Pacific Northwest, the English botanist Thomas Nuttall reported that "an opinion prevails in Oregon among the hunters and Indians that poisonous serpents are unknown in the same tract of country where this ash grows, and stories are related of a stick of the black ash causing the rattlesnake to retire with every mark of trepidation and fear; and that it would sooner go into the fire than creep over it [the stick]. It is singular to remark that a similar superstition concerning the ash prevailed even in the time of Pliny, the natural historian."

Zone: Riparian and mixed woodland (Britt Woods). Abundant within the mixed woodland/riparian transition area along the Zigler trail.

***PHILADELPHUS LEWISII* Pursh**

Wild Mock Orange

Philadelphaceae (Mock Orange) Family

Description: Shrub generally less than 3 m tall. Bark red-brown, aging gray, peeling as narrow strips or narrow rectangles; twigs glabrous to hairy. Leaves simple, opposite; petiole 3-8 mm; blade 25-75 mm long, 20-40 mm wide, oval, margins entire to toothed, 3-veined from base. Inflorescence a raceme, flowers 6 or more, in terminal clusters. Flower petals **white**, usually 4, 8-12 mm long, obovate to oblong. Sepals 4-5, 4-7 mm long. Many stamens with yellow anthers. Fruit an oval capsule, about 1 cm long, becoming woody.



Habitat: Grows in forest openings, in canyons and on slopes. Usually on moist, well-drained sites in the sun. Also grows in open, brushy areas on dry, rocky soils.

Distribution: From central California, in the Cascades and Sierra Nevada, north to British Columbia, and east to Montana. Elevation range below 1500 m (4920 ft).

Phenology: Leaves are deciduous. Flowers bloom from late May to July.

Ecology: The foliage is browsed by deer. This species is extremely variable both in terms of vegetative and floral characteristics. It seems to be particularly affected by local ecological conditions.

Cultural Significance: Native Americans have used the wood for arrow shafts, netting shuttles, and in more recent years for knitting needles. The Klamath made a soapy lather with which to wash from the bruised leaves and flowers. Mock orange is often planted as an ornamental in parks and gardens. The wood of this species is strong and hard.

Remarks: The flowers are particularly fragrant, somewhat orange smelling. In winter the younger twigs are a light, reddish-brown which makes it possible to recognize the shrub when it is dormant and has no leaves. Mock orange will almost always be found in places where poison oak, serviceberry and ocean spray occur together. The genus name *Philadelphus* means "brotherly love." Aristotle gave the name *Philadelphus* to a tree, now unknown, to honor Pharaoh Ptolemy II Philadelphus (308-246 B.C.).

Zone: Mixed woodland and riparian (Britt Woods). Abundant along the Zigler trail.

***PINUS PONDEROSA* Laws.**

Ponderosa Pine, Yellow Pine

Pinaceae (Pine) Family

Description: Large coniferous tree, branches sometimes lacking on lower half of trunk when mature. Bark generally yellow-brown when mature, furrows shallow, well spaced, forming plates; the plates resemble jigsaw puzzle pieces. Leaves are needles, usually in bundles of 3, 12-26 cm long, less than 2 mm thick, green to yellow-green. Cones 9-18 cm long, ovoid, dark brown, knob prickles straight (sometimes called "prickly pine"), generally less than 3 mm.



Habitat: Grows on a wide variety of soils, generally in mixed conifer forests. On drier sites it forms extensive pure stands.

Distribution: From the Rocky Mountains to the Pacific Coast, also in the Black Hills of South Dakota, and from southern British Columbia to northern Mexico. Elevation range generally 150-2300 m (492-7545 ft), but higher in some areas.

Phenology: Leaves persistent (evergreen). They remain on the tree about 3 years and fall at intervals.

Ecology: This is a fire adapted species. Ponderosa pine has very thick bark which enables it to survive moderate fires. The limbs of mature trees occur on the upper two-thirds of the tree; this reduces the fire's ability to climb up the branches and reach the crown. The seeds of the cones are a food source for quail, grouse, squirrels and chipmunks. Seedlings often grow out of chipmunk caches. Woodpeckers drill into the pines with their beaks to find insects to eat. When the cones mature in the fall, blue jays, nutcrackers and other birds eat and help disperse the heavy, wingless pine seeds that cannot float through the air.

Cultural Significance: The new growth (light green needles on the tips of branches) is a good source of vitamin C and can be chewed raw or used to make a tea. Bark warmed by the sun, is said to smell like vanilla. The wood is used for lumber in house building, furniture, and general construction. In Oregon, it is second only to Douglas fir in the volume of sawtimber produced.

Remarks: Ponderosa pine has one of the most extensive ranges of any western conifer. There are a number of bark beetles that attack ponderosa pine and can kill trees of all ages. Dwarf mistletoe sometimes weakens the trees. Ponderosa pine was first made known to Western science by David Douglas, a famous Scottish explorer of the Northwest. It was also collected earlier by Meriwether Lewis, of the Lewis and Clark expedition, but his collections were never fully studied. "Of all pines," wrote John Muir, "this one gives forth the finest music to the winds."

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Scattered throughout the properties. A large ponderosa pine is located near the start of the Beekman Woods trail.

***PSUEDOTSUGA MENZIESII*(Mirbel)Franco**

Douglas Fir

Pinaceae (Pine) Family

Description: Large coniferous tree. Young bark smooth and gray with resin blisters; mature bark thick, dark brown and deeply furrowed. Leaves are needles, 2-4 cm long, spirally arranged around the twig. Cones 5-9 cm long, hang pendently from the branches; bracts of cones exerted, often said to look like mouse tails sticking out from under the scales of the cones.

Habitat: Grows in mixed evergreen forests on a wide variety of soils.

Distribution: Widespread, ranging from central British Columbia and southwestern Alberta down into the mountains of northern and central Mexico, from the Pacific Coast to the Rocky Mountains. Elevation range usually below 2200 m (7215 ft), although it grows higher in some areas.

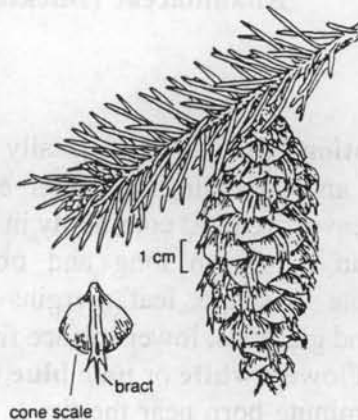
Phenology: Needles are persistent (evergreen), falling at intermittent times.

Ecology: Squirrels harvest the cones. Chipmunks, mice and shrews eat the seeds. The seeds are also an important part of the diet of crossbills, winter wrens, and song sparrows. Deer eat the new shoots, and black bears often strip the bark of young trees to eat the sap layer or cambium.

Cultural Significance: Native Americans used the pitch as a caulking for their canoes. The pitch was also used as a medicinal salve for wounds. The wood was used for lumber, fish harpoon shafts and other implements. The pliable roots were used for making baskets. Douglas fir is the most important lumber tree in the nation and is the principal wood used in construction. It is also used for Christmas trees and in the production of pulp.

Remarks: Douglas fir, the state tree of Oregon, is the most common and abundant tree in the Pacific Northwest. This species is not a true fir, which belong to the genus *Abies*. The genus name *Psuedotsuga* comes from *psuedo* (false) and *tsuga* (hemlock). Exploring the Oregon Territory in 1825, David Douglas was awed by these great trees. He was employed by the Royal Horticultural Society of London to find plants in the Pacific Northwest that would grow well in English parks and gardens. He shipped back seeds of many plants, including Douglas fir. Many of these were new to Western science. Douglas may have more plants named for him than any other botanist. Often alone as he roamed the wilds, David Douglas sometimes lived for weeks on berries or whatever game he could shoot.

Zone: Oak woodland and mixed woodland (Britt and Beekman Woods). Abundant on the shady, north facing slope above the riparian area of the Britt Woods property.

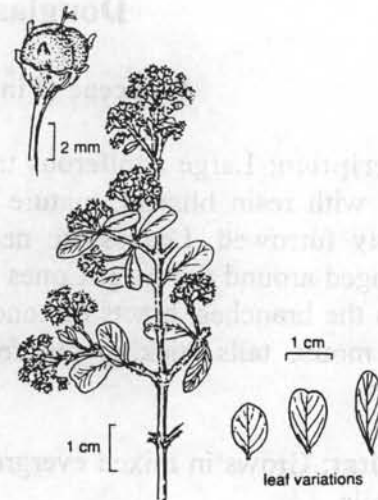


***CEANOTHUS CUNEATUS* (Hook.) Nutt.**

Buckbrush, Wedgeleaf Ceanothus

Rhamnaceae (Buckthorn) Family

Description: Erect shrub, usually less than 3 m tall, often smaller and sprawling at higher elevations. Twigs are light gray. Leaves are most commonly in opposite clusters, generally less than 2.5-3 cm long and oblong-elliptical to oblong-lanceolate in shape; leaf margins entire; upper surface dull green and glabrous; lower surface finely hairy; petiole less than 3 mm. Flowers **white** or **pale blue to lavender**. Fruit 4-6 mm, with a minute horn near the tip.



Habitat: Grows in hot, dry areas, foothills and valley floor alluvium, on rocky slopes and ridges. Also grows in sand and on serpentine.

Distribution: From the central Willamette Valley in Oregon to southern California and northern Baja. Also in extreme western Nevada. Elevation range up to 1800 m (5910 ft).

Phenology: Leaves are persistent. Flowers bloom in mid spring.

Ecology: The leaves are important winter browse for deer. Flies are often found on clusters of small, white, or green flowers with readily accessible nectar, as in *Ceanothus* plants. Squirrels like the seeds. All *Ceanothus* are nitrogen fixing plants. Bacteria living on the root nodules of the plant form a symbiotic association in which they produce nitrogen, which benefits the plants and soil. This species does not resprout from the roots or foot crown following a fire. Fire does, however, stimulate the germination of its dormant seeds in the soil.

Cultural Significance: Some Native American tribes used the bark and roots of buckbrush to relieve coughs. Two tablespoons of the root were boiled in a quart of water. A third of a quart was consumed before each meal. Pounded leaves were used as a poultice for burns and to dry sores. According to the folklore of the Klamath Indians, Hawk used the leaves as arrowheads.

Remarks: Buckbrush is a major component of chaparral and brushfields. It was part of a hot, dry valley plant community that became more common in this area about 6,000 years ago. The flowers are very aromatic when in bloom. Another common name is "tickbrush."

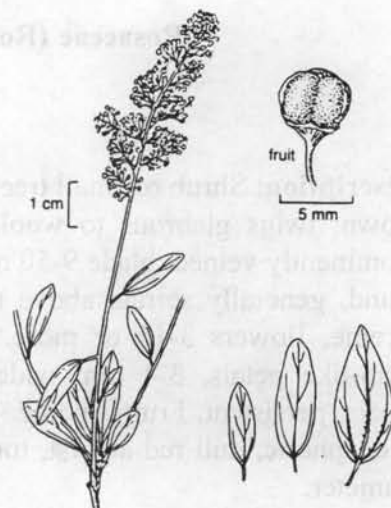
Zone: Oak woodland (Britt/BLM and Beekman Woods). *Ceanothus* is a dominant understory species in the oak woodlands.

***CEANOTHUS INTEGERRIMUS* Hook & Arn.**

Deerbrush, Wild Lilac

Rhamnaceae (Buckthorn) Family

Description: Loosely branched shrub, usually less than 4 m tall. Twigs round, yellowish to pale green, glabrous to somewhat strigose, not changing color. Leaves alternate, simple; blade ovate to elliptic, less than 8 cm long; margins generally entire, or minutely dentate toward tip; upper surface light green, glabrous to puberulent; lower surface paler, glabrous to hairy; 3 prominent veins from the base of the leaf; petioles less than 15 mm. Inflorescence raceme-like, less than 15 cm. Flowers **white** or **blue**, rarely pink, 5 petals and 5 sepals. Fruit a capsule, round to round-triangular, 4-5 mm, sticky, top more or less depressed. 3 seeds.



Habitat: Grows on many types of soils, but does best where the soil is moderately fertile and well drained. Common on dry slopes, open areas, ridges and roadsides.

Distribution: From western Washington south through California, and east into western Nevada and Arizona. Elevation range 300-2100 m (985-6885 ft).

Phenology: Leaves are deciduous, although occasionally some are semi-persistent. Flowers bloom in May and June.

Ecology: Deerbrush is one of the most nutritious browse plants in the western United States. In California it provides more forage than any other browse species for both domestic and wild animals. Like all the plants in the genus *Ceanothus*, deerbrush is a nitrogen-fixer for the soil.

Cultural Significance: The flowers are said to make an excellent wild soap substitute and shampoo when crushed and rubbed in water. They are known to leave the skin soft and slightly fragrant. Native Americans have used the twigs for making baskets.

Remarks: *Ceanothus integrerrimus* is also called "wild lilac" for its blue and very fragrant flowers. It is the only *Ceanothus* species in our area with deciduous leaves. The genus first appears in the fossil record in the John Day area about 27 million years ago. Some buckthorns appear to be Ice Age relics. Many species have evolved in the last 20 million years. The family Rhamnaceae consists of about 900 species worldwide; they are most common in subtropical and tropical regions. The largest genus, *Rhamnus*, has a number of species that are used medicinally. One is *Rhamnus purshiana* (cascara), which grows in our region and is used as an ingredient in laxatives.

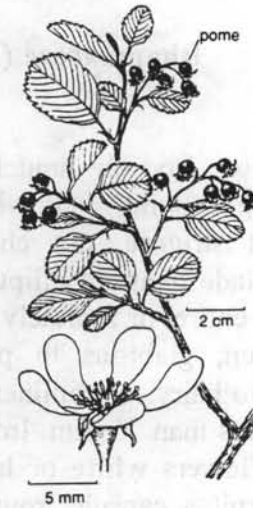
Zone: Oak woodland (Britt/BLM and Beekman Woods).

***AMELANCHIER ALNIFOLIA* (Nutt.) Nutt.**

Western Serviceberry, Saskatoon

Rosaceae (Rose) Family

Description: Shrub or small tree, 1-8 m tall. Bark gray to red-brown, twigs glabrous to woolly. Leaves alternate, simple, prominently veined, blade 9-50 mm, 8-45 mm wide, elliptic to round, generally serrate above middle. Inflorescence a short raceme, flowers 3-16 or more. Flowers **white** with 5 long strap-like petals, 3-4 mm wide, oblong to oblanceolate; 5 sepals, persistent. Fruit a pome (like immature apples), berry-like, spheric, dull red at first, turning blue-black, 7-14 mm in diameter.



Habitat: Grows in open shrublands, woodlands and coniferous forests. Prefers moist, well-drained sites in the sun or partial shade.

Distribution: From southern Alaska to northwestern California and eastward throughout the Rocky Mountains. Elevation range 50-2600 m (165-8525 ft).

Phenology: Flowers bloom from late March through April. Fruits ripen in the late summer. Leaves are deciduous.

Ecology: The foliage and young twigs are an important food source for deer and elk. Many birds and mammals feed on the berries.

Cultural Significance: Native Americans in the Pacific Northwest have eaten the fruit fresh and dried it for winter use as a seasoning for soups and meats. The wood has been used for arrow shafts, digging sticks and drying racks. The Snohomish of Washington use the wood to make discs for a local gambling game. Some tribes practiced burning to encourage the growth of stands of serviceberry.

Remarks: Another common name for the plant is "shadblow." Traditions says that the "shadblow" blooms when the shad, a native fish, begin to run the rivers. The genus name, *Amelanchier*, comes from an old French common name. Saskatoon is a name which comes from the Indians and trappers of the northern rivers and Manitoba. In the U.S. it is called "servis" or "sarvis" berry; there seems to be no satisfactory explanations for the origin of this name. Horticulturalists have developed several varieties for commercial and garden use.

Zone: Mixed woodland (Britt and Beekman Woods). This species is common along the Zigler trail in the Britt Woods.

***CERCOCARPUS BETULOIDES* Torrey & A. Gray**

Mountain Mahogany

Rosaceae (Rose) Family

Description: An evergreen shrub or small tree 2-8 m tall, branches spreading to erect. Leaf petiole 5-10 mm, blade 2-8 cm, widely elliptic to obovate, sparsely hairy below. Lateral veins of leaf prominent, 5-12. Leaf margins generally entire below, serrated above the middle. Inflorescence flowers 1-3. Flowers 10 mm long, hypanthium funnel-shaped, glabrous to sparsely hairy; petals 0; stamens 25-45, anthers hairy. Fruit 8-12 mm, twisted style 5-10 cm, covered with whitish hairs.

Habitat: Grows in chaparral, pine/oak woodlands and coniferous forests. Likes drier foothills and lower mountain slopes in the sun.

Distribution: From southern Oregon to northern Baja, California, and east to Arizona. Elevation range below 2500 m (8200 ft).

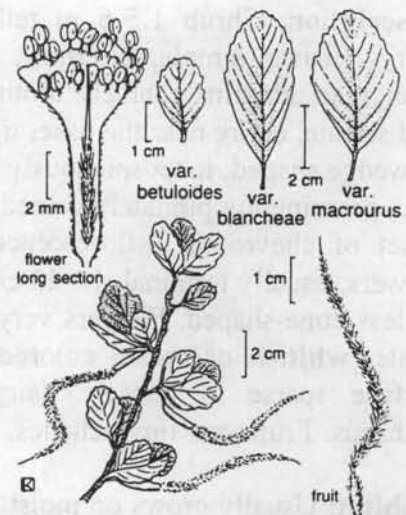
Phenology: The flowers bloom in the early spring. Fruit matures mid to late summer.

Ecology: Good deer browse. Grouse will sometimes eat the leaves and seeds. The fruit is long and hairy, tipped with a twisted, feathery, tail-like style. This construction enhances wind dispersal. The fruits also get transported in the fur of animals. When the fruit lands on the ground, the style acts like a corkscrew, drilling the seed into the soil.

Cultural Significance: Native Americans used the wood for digging sticks. The wood is also used for fuel.

Remarks: The genus name, *Cercocarpus*, is from the Greek words for tail (*cerco*) and fruit (*carpus*), describing the hairy tails or plumes from the elongated flower style. Another common name for this plant is "hardtack," perhaps referring to its ability to withstand cutting, fire, drought and heavy browsing. It is not related to the tropical mahogany tree.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Abundant throughout the oak woodlands of the Britt and BLM properties.



***HOLODISCUS DISCOLOR* (Pursh) Maxim.**

Oceanspray, Creambush

Rosaceae (Rose) Family

Description: Shrub 1.5-6 m tall, loosely branched. Stems hairy. Leaves simple, alternate, 2-12 cm, broadly oval to triangular; margins coarsely toothed or very shallowly lobed and serrate, entire near the base; tip acute; base broadly obtuse or wedge shaped; inconspicuously hairy, the lower surface felt-like; prominently pinnately veined (venation pattern resembles a set of chevrons). Inflorescence a dense cluster of many flowers, usually terminal, 10-25 cm long, 5-25 cm wide, more or less cone-shaped. Flowers very small; petals 5, 1.5-2 mm, ovate, **whitish** or cream colored; sepals 5, 1-2 mm, outer surface sparse to densely hairy, inner surface generally glabrous. Fruits are tiny achenes, light brown.



Habitat: Usually grows on moist woodland edges and rocky slopes. It is tolerant of a variety of habitats in the sun and shade. Often found on rocky soil.

Distribution: From south central California north to British Columbia, east to Montana, Colorado, Texas and Mexico. Elevation range generally below 1800 m (5905 ft).

Phenology: Leaves are deciduous. The dry, withered flowers and fruits turn brown and remain on the plant over the winter.

Ecology: Oceanspray is browsed by deer and elk. This species exhibits moderate post-fire regeneration from basal stem sprouts.

Cultural Significance: Native Americans used the straighter stems for arrow shafts. Wood was also used for bows, digging sticks, tongs, spears, drum hoops and paddles. Wood was hardened by heating it over a fire. It was then usually polished with horsetail stems. Bark and leaves were used to treat burns and sores. Seeds were eaten raw or cooked by many western tribes. Infusions of seeds and dried fruiting clusters seeped in boiling water were used to prevent contagious diseases and diarrhea.

Remarks: The genus *Holodiscus* is a small genus, consisting of only 5 species confined to the Americas. Ocean spray is abundant in almost any coniferous forests that is not especially dark or dense; it is a particularly conspicuous element of the vegetation in open woods and in brushy situations. One of its common names is "arrow-wood," given for its use by Native Americans for arrow shafts. It is also referred to as "ironwood," a name that reflects the hardness and strength of its wood. Other common names are "mountain spray," and "rock spirea."

Zone: Mixed woodland and riparian (Britt Woods). Abundant on the shady, north facing slope above Jackson Creek and along the trail.

OEMLERIA CERASIFORMIS (Hook. & Arn.) Landon

Oso Berry, Indian Plum

Rosaceae (Rose) Family

Description: Shrub or small tree, 1-5 m tall. Bark smooth, reddish-brown to dark gray. Leaves simple, elliptic to broadly lance-shaped, generally entire, paler below, glabrous above, 5-13 cm long. Inflorescence racemes on short lateral branches, 3-10 cm, pendent, bracted; bractlets 1-2 at pedicel tip. Male and female flowers are on separate plants. Staminate (male) flowers **whitish**, 5 petals, spreading, clawed, 15 stamens. Pistillate (female) flowers **whitish**, 5 petals, erect, clawed, ovaries generally 5. Fruit a drupe, 1-5 per pistillate flower, 5-15 mm, bean-shaped, peach colored, ripening to bluish-black.

Habitat: Grows in shaded coniferous forests, chaparral, moist, well-drained sites in the sun or shade.

Distribution: From British Columbia south into California, on the west side of the Cascade Mountains. Elevation range below 1700 m (5575 ft).

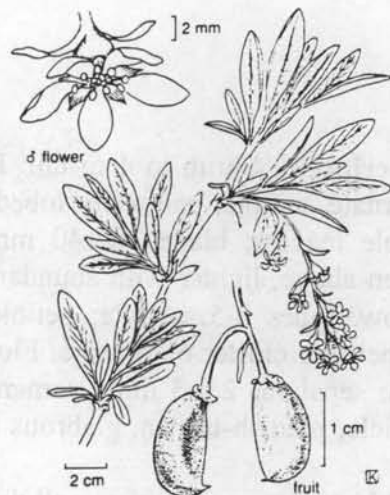
Phenology: Leaves are deciduous, leafing out very early in the spring, usually before other species. The flowers also bloom early, sometimes in early March before spring even begins. The first blossoms often appear before the leaves.

Ecology: The foliage is poor forage for animals. Birds, however, eat the fruit, usually before it matures.

Cultural Significance: The berry is edible but is rather bitter. Several tribes of Native Americans have eaten the berries fresh and dried them for winter use. They were usually not a staple of the diet, but picked casually when walking through the woods or used more heavily during periods of food scarcity.

Remarks: The fruits look like small plums. Flowers have an unusual fragrance. One book describes the smell as "something between watermelon rind and cat urine."

Zone: Mixed woodland, riparian (Britt and Beekman Woods). Abundant along the Zigler trail.

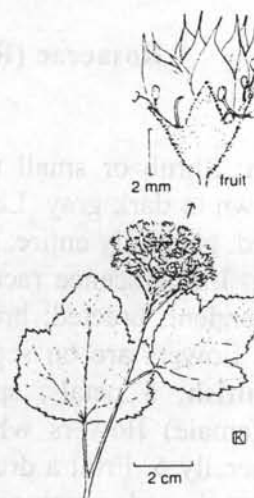


***PHYSOCARPUS CAPITATUS* (Pursh) Kuntze**

Pacific Ninebark

Rosaceae (Rose) Family

Description: Shrub to 4 m tall. Bark thin, brownish. Leaves alternate, simple, palmately lobed (look somewhat like small maple leaves); blade 30-140 mm, generally glabrous, dark green above, lighter with abundant stellate (star-shaped) hairs below, lobes 3-5, serrate; petiole 5-20+ mm. Inflorescence umbel-like cluster of flowers. Flower petals 5, **whitish**, 2.5-3 mm; sepals 5, 2.5-3 mm; stamens 20-40; pistils 1-5. Fruit a follicle, reddish-brown, glabrous to hairy.



Habitat: Grows on moist, well drained sites in the sun or shade. On moist stream or river banks, north facing slopes, and in coniferous forests.

Distribution: From southern California north to Alaska, east to Montana and Utah. Elevation range below 1400 m (4590 ft).

Phenology: Leaves are deciduous. Flowers bloom in the late spring and early summer.

Ecology: The umbel-like flower clusters of the Pacific ninebark are ideally suited for beetles, since they provide a large landing platform for these somewhat "clumsy fliers." The pollen of the plant is also very accessible to the chewing mouthparts of beetles. This is not a good browse species for animals.

Cultural Significance: Native Americans in western Washington used the young shoots (peeled of bark) as an emetic. Some say the common name of ninebark comes from the number of medicinal cures the plant was thought to possess. Another belief is that there are nine layers of bark on the stems.

Remarks: In Greek, *Physocarpus* means "bladdery fruit," *physo* (bladder) and *carpus* (fruit). The fruits of this shrub are inflated follicles which often open along both sutures. The drooping fruits are very obvious on the plants in fall after the leaves have dropped. The bark breaks up into long strips and eventually exfoliates.

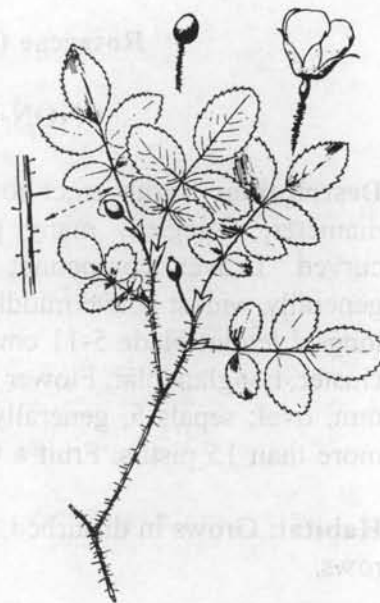
Zone: Riparian (Britt Woods).

***ROSA GYMNOCARPA* Nutt.**

Wood Rose

Rosaceae (Rose) Family

Description: Loose shrub 5-20 dm. Stems grayish-brown; prickles few-many, slender, straight. Leaves alternate, with an odd number of pinnately compound leaflets, paired stipules at the base of the rachis; leaflets 5-9, glabrous, terminal leaflet 10-30 mm, widely elliptic, margins generally double toothed, glandular. Inflorescence 1 flowered (sometimes 2-3), pedicels 15-30 mm, usually stalked and glandular. Flower petals 5, **pink**, about 10 mm; sepals 5, deciduous. Fruit achenes enclosed in a fleshy, reddish hypanthium, elliptical or flask-shaped (a rosehip).



Habitat: Generally grows on moist sites in forests and shrublands.

Distribution: From southern California north to British Columbia. From the Rocky Mountains to the Pacific Coast. Also in Montana. Elevation range 30-2000 m (100-6560 ft).

Phenology: Flowers bloom in May.

Ecology: The fruits (rosehips) are eaten by many species of birds. Deer and elk browse the foliage.

Cultural Significance Humans can eat the fruits, which are very high in vitamin C. They can be eaten raw, stewed, candied, made into preserves or a tea. A little sugar or honey improves the flavor. Seeds should be removed from the fruit prior to eating as the seeds contain hairs that can be irritating to the digestive tract. The petals of the flowers are pleasant tasting and can be used in salads or candied. The leaves can be chewed and if applied to bee stings are said to reduce swelling and pain. Ancient legends told that the rose sprung from the blood of the god Adonis. Rosary beads originally represented the Virgin's crown of roses, or rosarium, as her garland was called in Medieval Latin. In early eras rose water was used for baptisms and the purification of mosques and temples, where all the objects and even the walls were washed with it. Persian women added it to a love potion that was guaranteed to bring back an erring lover.

Remarks: Plant easy to recognize as its stems are usually covered with delicate prickles. The red ripening fruit stands out against the green foliage as the crown of sepals falls away from the fruit, leaving the end of the rosehip "bald." This "baldness" of the rosehip is unique among the roses.

"Sweetbrier is thrice crowned: in fragrant leaf, tinted flower and glossy fruit." -Thoreau

Zone: Mixed woodland (Britt and Beekman Woods). This species is common along the northwest portion of the Beekman Woods trail.

***RUBUS DISCOLOR* Weihe & Nees**

Himalayan Blackberry

Rosaceae (Rose) Family

NON-NATIVE

Description: Shrub erect to sprawling. Stems 5-15 mm in diameter, 5-angled; many prickles, generally wide-based, curved. Leaves compound; petiole 3-9 cm; leaflets 3-5, generally widest above middle, sharply toothed, white below, longest leaflet blade 5-11 cm. Inflorescence a many flowered cluster, nonglandular. Flower petals 5, **white to pinkish**, 10-15 mm, oval; sepals 5, generally reflexed, tips generally 1 mm; more than 15 pistils. Fruit a blackberry, glabrous.



Habitat: Grows in disturbed, moist areas, roadsides and fence rows.

Distribution: Throughout the Pacific states to British Columbia. Native to Eurasia. Elevation range below 1600 m (5250 ft).

Phenology: Many of the leaves may stay on through the winter, but this species is not truly evergreen. Flowers bloom in late spring to early summer. Berries ripen in late summer and are initially greenish in color, turning red and then bluish-black.

Ecology: Birds and mammals feed on the fruit, and seek protection in the tangled thickets.

Cultural Significance: The fruit is widely utilized for making jams and jellies.

Remarks: This alien species is the most common introduced blackberry in our region and often forms dense, impenetrable thickets. It can become annoying to people who try to keep it out of their yards and gardens as it is difficult to eradicate. Each year, however, in the late summer it makes a lot of berry pickers happy and is the foundation for blackberry festivals all over the Pacific Northwest.

Management Recommendations: Due to the invasive nature of this species, it should be removed to prevent further encroachment and competition with native species.

Zone: Riparian, mixed woodland (Britt and Beekman Woods). Large thickets are present as one enters the lower portion of the main drainage on the Beekman Woods property.

***RUBUS URSINUS* Cham. & Schldl.**

California Blackberry, Dewberry

Rosaceae (Rose) Family

Description: Climbing or trailing shrub, with long slender branches. Stem 2-10 mm diameter, round; prickles slender, more or less straight. Leaves generally 3-lobed or compound with 3-5 leaflets, terminal leaflet 3-lobed; blade 2-10 cm, irregularly toothed, green. Flowers are **white or pink**, born in clusters; five petals, 5-25 mm, elliptic; pistils generally greater than 10; many stamens. The male and female flowers are on separate plants. Fruit a blackberry.

Habitat: Generally grows in moist places, streamsides and shrublands. Also likes open woods, old burn sites and cut-over areas.

Distribution: Throughout California, except in the desert regions, north to British Columbia and Idaho. Elevation range below 1500 m (4920 ft).

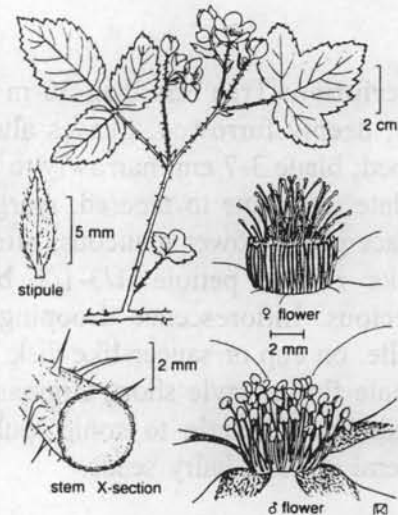
Phenology: Flowers bloom from mid spring to early summer. The berries change from red to black as they ripen. The leaves are deciduous.

Ecology: A large number of birds and mammals feed on the fruit, and many seek cover in the dense thickets.

Cultural Significance: The fruit can be eaten fresh or dried. It is used to make jams, jellies and wine. Native Americans have used the fresh or dried leaves to make a tea. The tea was used to help relieve stomach problems, fevers and sores in the mouth. The leaves were added to bitter tasting medicines to sweeten the flavor.

Remarks: This native blackberry grows well on poor, eroded soils, the stems taking root at intervals, making it a worthwhile shrub for erosion control. The genus name, *Rubus*, is Latin for bramble. This plant has figured in the parentage of some important varieties, including the loganberry and boysenberry. It is the only native blackberry to this region.

Zone: Mixed woodland and riparian (Britt Woods).



***POPULUS BALSAMIFERA* L.**

ssp. ***TRICHOCARPA*** (Torrey & Gray) Brayshaw

Black Cottonwood

Salicaceae (Willow) Family

Description: Tree less than 30 m tall; bark brown becoming gray, deeply furrowed. Leaves alternate, simple, nearly heart shaped; blade 3-7 cm, narrowly to widely ovate, base round to cordate, tip acute to tapered, margins finely scalloped, upper surface green, lower glaucous, often stained with brown resin (looks rusty); petiole 1/3-1/2 blade length. Flowers are dioecious. Inflorescence drooping catkins, 3-8 cm. Flowers sessile, on cup or saucer-like disk. Male flower stamens 8-60. Female flower style short, stigmas 2-3, large, scalloped to 2-lobed. Fruit spheric to conic, pubescent capsule, 3-12 mm. Several minute, hairy seeds.



Habitat: Occurs on moist sites along streams, bottomlands, rivers and lakes.

Distribution: From southern Alaska to northern Baja, east into Nevada, the northern Rocky Mountains, central Montana and Utah. Elevation range below 2800 m (9185 ft).

Phenology: Leaves are deciduous. Flowers bloom in mid spring. Catkins appear before the leaves. Black cottonwood grows rapidly and will sprout from the stump. In summer the small fruits, having ripened, split open and release their seeds, which are covered with cottony hairs that are easily carried by the wind. In the autumn the leaves turn bright yellow.

Ecology: Bees collect the resin from the buds for use in their hives. The resin is an anti-infectant that prevents decay of the hive.

Cultural Significance: Some Native American tribes in the Pacific Northwest made a tea from the bark which was used as a gargle for sore throats. The leaves were also crushed and put in water to use as an antiseptic on cuts. Some tribes used the wood for posts, and the young shoots for making sweatlodges. The Klamath peeled the bark and used it to make a type of cloth. The wood is very light weight and has been used to make paper pulp, crates, and toys.

Remarks: Black cottonwood is the largest of the American poplars, and the largest hardwood species indigenous to the western United States. The first forest plantations in Oregon were of black cottonwood and were established along the Willamette River. In the spring, as the buds begin to swell and burst, the air is filled with a honey-like fragrance. According to one informant, the elders of the Chehalis tribe said that this tree has a life of its own because it shakes itself when there is no wind. Consequently, they did not use it for firewood.

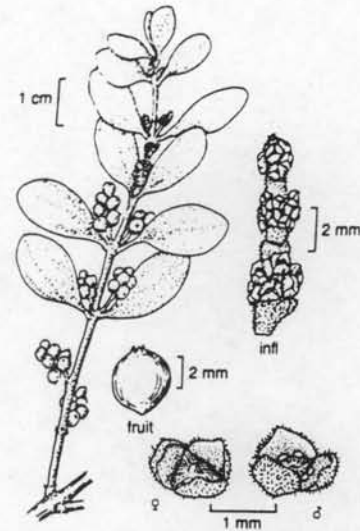
Zone: Riparian (Britt Woods). Common overstory species along Jackson Creek.

***PHORADENDRON VILLOSUM* (Nutt.) Nutt.**

Oak Mistletoe

Viscaceae (Mistletoe) Family

Description: Stems up to 1 m, gray-green, generally densely hairy, more glabrous when older; internodes 15-38 mm. Leaves simple, opposite, 15-47 mm long, 10-25 mm wide, obovate-elliptic, petioled or not, very densely short-hairy. Male inflorescence 25-30 flowered. Female inflorescence 10-15 flowered. Flowers **greenish**. Fruit spheric, 3-4 mm, pinkish-white, short-hairy near tip.



Habitat: Grows on *Quercus* species in oak woodlands. It is less often associated with other woody plants, such as *Arctostaphylos* (manzanita) and *Umbellularia* (Bay, Laurel).

Distribution: From southern California to northern Oregon, Texas and Mexico. Elevation range 60-2100 m (195-6888 ft).

Phenology: Leaves do not appear until the second year after germination, when the connection between the young mistletoe and its host is well established. Flowers bloom from July through September.

Ecology: The fruits are eaten by birds which excrete the seeds, facilitating dispersal. The sticky texture of the mistletoe fruits also enhances seed dispersal. A bird that eats the sticky fruits rubs its beak against a branch to clean it off. In doing this the bird wedges the seeds into cracks in the bark where the mistletoe can germinate.

Cultural Significance: This and other species are collected each year for use during the Christmas season. Mistletoe is sacred to people throughout the world. From the Druids of Europe to the Ainos of Japan, and certain tribes in Africa it is surrounded with superstition. As a plant that grows without roots in the ground it was seen as a divine gift, and was often likened to the soul because it is evergreen. During northern winters when the tree "died," and its leaves were gone, the foliage of the mistletoe was seen as the sign of "life everlasting," the soul of the tree. In many cultures mistletoe is seen as a protector against witchcraft.

Remarks: The genus name, *Phoradendron*, means "tree thief" in Greek. Mistletoe is a flowering plant but it has no true roots. The branch structure that penetrates into a limb and takes water and nutrients from the host tree comes closest to being a modified stem. Because mistletoe has chlorophyll it can make at least some of its own food; so it is only a partial parasite. Mistletoe was originally called *misteltan* ("little dung twig") by the Anglo-Saxons. From the German *mist* (dung) and Anglo-Saxon *tan* (twig), referring to the part birds play in seed dispersal.

Zone: Oak woodland and mixed woodland (Britt/BLM and Beekman Woods). Common throughout the oak woodlands, especially on the white oaks.

HERBS



Erythronium hendersonii

***ANTHRISCUS CAUCALIS* M. Bieb**

Bur-Chervil

Apiaceae (Carrot) Family

NON-NATIVE

Description: Herb 4.5-10 dm. Stem erect, branched. Leaves mostly cauline, blade 5-15 cm, oblong to triangular-ovate, pinnately dissected, segments 1-5 mm, linear-oblong, obtuse; petioles 3-8 cm. Inflorescence an umbel. Flower petals 5, **white**, narrow. Fruit 2 dry, 1-seeded halves that separate from each other but generally remain attached for some time to a central axis; ovate, 4 mm, beak less than body, bristly.

Habitat: Generally grows in shady places. Often around old buildings and in farm yards.

Distribution: Native to Europe and western Asia. Alien to North America but now naturalized in many areas of the country. In the Northwest it is commonly found west of the Cascades. Elevation range 0-400 m (0-1310 ft).

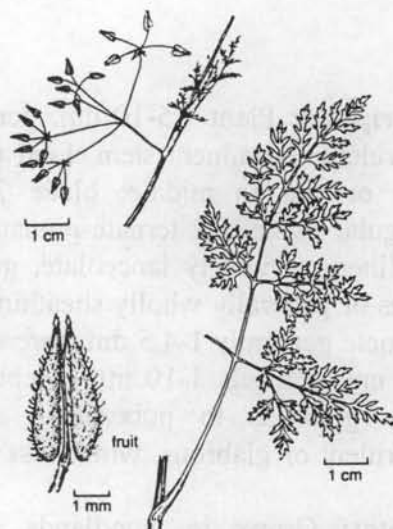
Phenology: Flowers bloom in late spring.

Cultural Significance: The family Apiaceae includes many species which are cultivated for food and spices. *Daucus carota* (carrot) and *Pastinaca sativa* (parsnip) are root crops. Other Apiaceae foods include *Apium graveolens* (celery), *Carum carvi* (caraway seeds), *Anethum graveolens* (dill), *Petroselinum crispum* (parsley), and *Pimpinella anisum* (anise).

Remarks: This plant was introduced into North America as a garden herb and was used in salads. Since it seeds easily and thrives in almost any soil, it has naturally escaped the bounds of cultivation and become naturalized in many parts of the country. The family Apiaceae used to be called the Umbelliferae, referring to the shape of the inflorescence which characterizes the family.

Management Recommendations: This species is reasonably abundant along Jackson Creek and should be managed to control further spreading.

Zone: Riparian (Britt Woods). Abundant along the Zigler trail.



***LOMATIUM TRITERNATUM* (Pursh) Coulter & Rose**

Lewis's Lomatium

Apiaceae (Carrot) Family

Description: Plant 1.5-10 dm, generally finely soft-hairy or puberulent. Prominent stem. Leaf petiole 7-20 cm, sheathing more or less to middle; blade 7-20 cm, oblong-ovate to triangular ovate, 1-2 ternate-pinnate (divided), leaflets 1.5-20 cm, linear to widely lanceolate, generally entire; no cauline leaves or generally wholly sheathing. Inflorescence an umbel, peduncle generally 1-4.5 dm, spreading to erect; bractlets 3-8, 2-10 cm; pedicels 1-10 mm, webbed. Flower petals **yellow**, ovary glabrous to puberulent. Fruit oblong, 6-22 mm, puberulent or glabrous, wings less than body in width.

Habitat: Grows in woodlands and forests, open slopes, meadows and scrub.

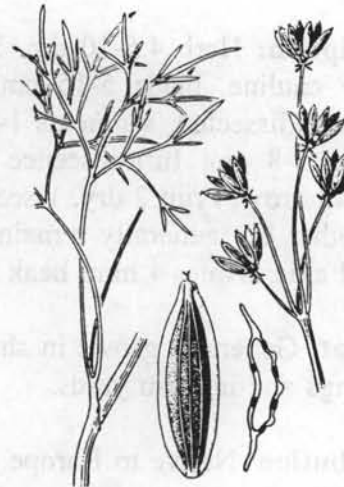
Distribution: From central California to British Columbia and Wyoming. Elevation range 200-2000 m (656-6560 ft).

Phenology: Flowers bloom in the mid spring.

Cultural Significance: The young leaves of *Lomatium* species were eaten by some Native American tribes. The leaves were cooked as a potherb or sometimes eaten raw. They were, and still are, in some areas a popular spring vegetable rich in vitamin C. The seeds were used for flavoring soups, stews, teas and tobacco. Some species of *Lomatium* were known to have powerful medicinal properties. The seeds of another species, *Lomatium nudicaule* were chewed for colds, sore throats, and tuberculosis.

Remarks: The genus name, *Lomatium*, comes from the Latin *loma*, which means "a border." This refers to the ribbed or winged fruits. The tight cluster of bright yellow flowers on *Lomatium triternatum* makes this plant easy to identify.

Zone: Oak woodland (Britt/BLM Woods). This species occurs infrequently within the oak woodlands.

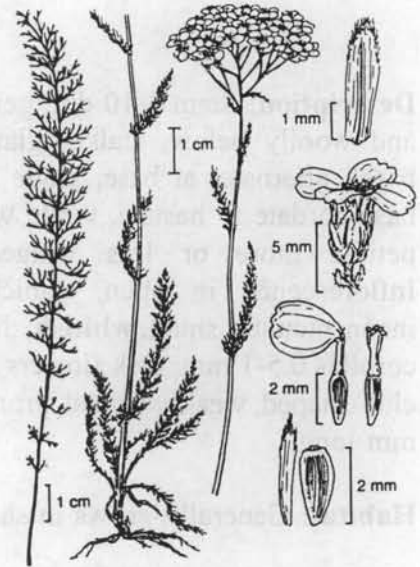


ACHILLEA MILLEFOLIUM L.

Yarrow

Asteraceae (Sunflower) Family

Description: Strongly scented plant from 10-200 cm in height. Leaves alternate, fern-like, 3-pinnately dissected, very finely divided, soft, light green, and often hairy. Cauline leaves (on the stem) often appear to grasp the stem. Inflorescence a flat-topped umbel (cluster) of **white** flowers, sometimes tinged with pink. Phyllaries (bracts beneath the flower head) 4-9 mm in length. Each "flower" is actually a flower head consisting of two kinds of small flowers, ray and disk. Ray flowers (petal shaped) generally 3-8, 2.5-4 mm in length, ovate to round, white to pink. Disk flowers (tube shaped) generally 15-40, corollas 2-3 mm, white to pink. Fruit a small achene, about 2 mm, oblong to obovate.



Habitat: Grows in many habitats. Thrives in dry, disturbed areas.

Distribution: Around the world at northern latitudes, usually below 3500 m (11,480 ft).

Phenology: Perennial. Sends up tall stalks from May to August. Blooms late spring and summer.

Ecology: This common plant often becomes even more abundant when a site is disturbed or overgrazed. It is one of the first plants to recolonize an area after such a disturbance. It germinates from seeds that often exhibit a high tolerance of fire. Yarrow is generally unpalatable to animals, however, rabbits and grouse have been known to eat the leaves.

Cultural Significance: Humans have used yarrow in a variety of ways. Applied topically, the fresh leaves are said to stop or slow bleeding from skin abrasions. The root is supposed to be good chew for toothaches and gum problems, especially when steeped in rum or whiskey. The entire plant has been used to make teas as a tonic to improve digestion. Native Americans placed stems and leaves on hot coals to repel mosquitos and used them in smoking mixtures. Seventeenth century Europeans ate the leaves in salads. In Sweden it is called field hop and has been used in the making of beer. Linnaeus, an 18th century Swedish botanist, considered this beer much more intoxicating than when traditional hops were used.

Remarks: The aroma of yarrow's crushed leaves is distinctive. The genus name, *Achillea*, is said to be named for Achilles, a legendary Greek hero, who is said to have used this plant to stop the bleeding wounds of his soldiers. Its specific name, *millefolium*, is derived from the many segments of its foliage.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Abundant.

ADENOCAULON BICOLOR Hook.

Trail Plant, Pathfinder

Asteraceae (Sunflower) Family

Description: Stem 3-10 dm, generally erect, openly branched and woolly below, stalked-glandular above. Leaves mostly basal, alternate, at base; blade 3-25 cm, triangular to ovate, base cordate to hastate, white woolly below, glabrous above; petiole more or less winged; leaves reduced upward. Inflorescence in open, panicle-like cymes. Flowers are inconspicuous, small, **whitish**, disciform; pistillate flowers 3-7, corollas 0.5-1 mm; disk flowers 3-10, corollas 1.5-2 mm. Fruit club-shaped, weakly veined, prominently stalked-glandular, 5-8 mm long.

Habitat: Generally grows in shaded woodlands and forests.

Distribution: From central-western California north to British Columbia, and east to the north-central U.S. Elevation range below 2000 m (6560 ft).

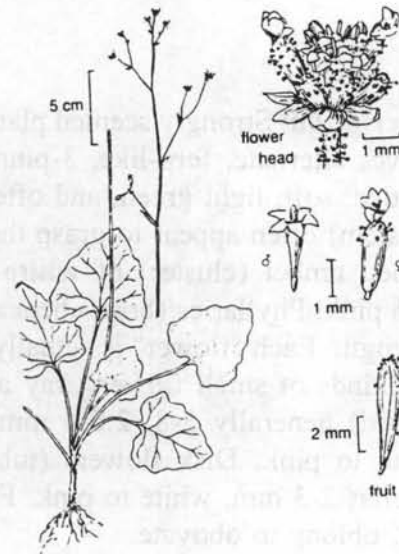
Phenology: Perennial. Flowers bloom in early summer, after the flower stalk shoots up high above the leaves.

Ecology: Like other herbs that live on the forest floor, pathfinder is a "sunfleck" species, dependant on intermittent patches of light reaching the forest floor for a large part of its daily carbon gain.

Cultural Significance: Native Americans in western Washington, the Cowlitz, bruised the leaves and applied them to boils. The leaves are triangular, shaped like arrowheads, and their white-woolly undersides stand out against the dark forest floor. If one turns a leaf over it makes a good trail guide, pointing in the right direction. Native Americans used the plant to mark trails in unfamiliar areas.

Remarks: The genus name, *Adenocaulon*, is Greek for glandular stem. The species name *bicolor* refers to the difference between the leaves' silvery underside and bright green upperside. Unlike most members of the sunflower family, pathfinder does not have ray flowers or pappus.

Zone: Mixed woodland, riparian (Britt Woods).



***ANTENNARIA ARGENTEA* Benth.**

Pussy Toes, Pearly Everlasting

Asteraceae (Sunflower) Family

Description: Stems 18-40 cm. Leaves alternate, entire; basal leaves 20-50 mm, oblanceolate to elliptic, 1-3 veined, gray-woolly; cauline leaves 15-45 mm, lanceolate. Inflorescence 10-75 flower heads; involucre 4-5 mm, more or less glabrous; phyllaries wide, acute, whitish. Flower heads composed of many small flowers; staminate (male) flower corolla 2.5-3.5 mm, **white**; pistillate flower corolla 3-4 mm, **white**. Male and female flowers on separate plants. Fruit elliptic, 1-1.5 mm, glandular; pappus 3-4 mm, soft bristles, weakly barbed.

Habitat: Grows in dry coniferous forests and open areas.

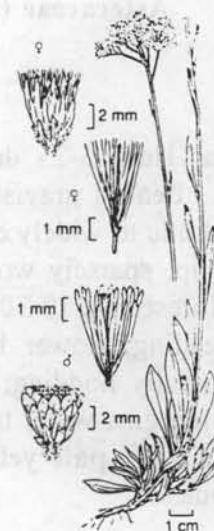
Distribution: From the Sierra Nevada, Fresno County, in California to Oregon. Elevation range 800-2000 m (2624-6560 ft).

Phenology: Perennial. Flowers bloom in late spring to early summer. If male plants are not present, seeds can still germinate without fertilization, and produce offspring genetically identical to the mother plant.

Cultural Significance: Parts of the stems can be chewed to make a pleasing gum said to be somewhat nourishing. The Asteraceae family is an important source of food plants including: *Lactuca sativa* (lettuce), *Helianthus tuberosus* (Jerusalem artichoke), *Helianthus annuus* (sunflower seeds and oil) and *Carthamus tinctorius* (safflower seeds and oil). Another, *Tanacetum cinerariifolium*, produces a natural insecticide, pyrethrum, that is commercially marketed.

Remarks: The genus name, *Antennaria*, is derived from the Latin word for antenna, because the tips of the pappus hairs of the male flowers resemble insect antennae. The plant is also called pussy toes because the flower heads, especially in fruit, resemble cat paws. The family Asteraceae is one of the largest plant families, with 1100 genera and about 20,000 species distributed worldwide (except in Antarctica). It is well represented in warm climates of the Mediterranean and subtropical regions, and poorly represented in the tropical rainforest.

Zone: Oak woodland, mixed woodland (Britt and Beekman Woods). Abundant along the northwestern portion of the Beekman Woods trail.



ARTEMISIA DOUGLASIANA Besser

Mugwort

Asteraceae (Sunflower) Family

Description: Herb 5-25 dm. Stems many, erect, brown to gray-green. Leaves grayish-green, evenly spaced, 1-11 cm, narrowly elliptic to widely oblanceolate, entire or coarsely 3-5 lobed near tip, sparsely woolly above, densely white-woolly below. Inflorescence 10-30 cm, 3-9 cm wide, leafy; branches widely spreading; flower heads 2-4 mm in diameter, bell-shaped, generally nodding; phyllaries widely obovate, gray-tomentose, margins wide, transparent. Pistillate flowers 6-9; disk flowers 9-25, **pale yellow**, staminate. Fruit less than 1 mm, glabrous.

Habitat: Grows in open to shady places, often in drainages and on roadsides.

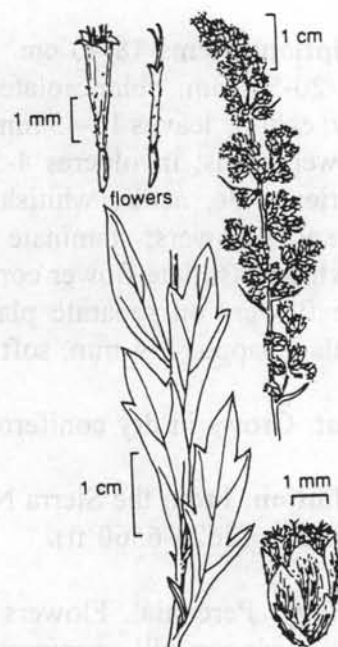
Distribution: Throughout California north to Washington and Idaho. Elevation range generally below 2200 m (7216 ft).

Phenology: Perennial.

Cultural Significance: Native *Artemisias* have been used in medicine by the Chinese, Europeans, and Native Americans to cure worms, gout, baldness, and other maladies.

Remarks: The genus name, *Artemisia*, is derived from the Greek. Some authorities say it was named for Artemis, goddess of the moon and the hunt, who protected mortals from plagues and diseases. Others say it commemorates Queen Artemisia of ancient history, a noted herbalist and Queen of Anatolia, who is said to have discovered the medicinal properties of the genus, and gave the plant her own name to show that it was her royal herb. Its common name, mugwort, comes from the Anglo-Saxon *Mucgwyrt*. A *mucg* was a midge or gnat; the scent of the plant's leaves is said to repel many insects.

Zone: Riparian (Britt Woods). In scattered patches on the north side of Jackson Creek bordering Highway 238.



***BALSAMORHIZA DELTOIDEA* Nutt.**

Deltoid Balsam-root

Asteraceae (Sunflower) Family

Description: Stems 2-9 dm, densely glandular, sparse long hairs. Basal leaves 20-60 cm; long petiole; blade widely triangular, edges entire to coarsely toothed, scabrous to stiff-hairy, base cordate and more or less hastate; cauline leaves 2-several, alternate or opposite, oblanceolate, entire. Inflorescence has 1-few flower heads; outer phyllaries 10-40 mm, 3-9 mm wide, oblong-lanceolate, obtuse to acute, glandular and hairy. Ray (petal shaped) flowers showy, **yellow**, 2-3 cm; disk (tube shaped) flowers **yellow**, 5-7 mm. Fruit 7-8 mm.

Habitat: Grows in open forests, shrubby areas, and on grassy slopes.

Distribution: From central California north to British Columbia. Elevation range 300-2400 m (985-7872 ft).

Phenology: Perennial. Flowers begin blooming in mid spring, usually April.

Ecology: Birds, such as grouse, will sometimes eat the seeds and leaves of this plant.

Cultural Significance: Native Americans ate the sunflower-like seeds of this species. The ripe seeds are said to be quite nutritious and were used by the Klamath to make a gruel, or were mixed with marrow or fat to make a dough. They also utilized a related species, *Balsamorhiza sagittata*, boiling, drying and grinding up the roots to make a medicine. *Balsamorhiza sagittata* is reported to be poisonous, but when used in moderation, it is said to be a good cure for rheumatism and insect bites.

Remarks: The genus name, *Balsamorhiza*, is derived from the Greek word for balsam-root, and refers to the healing balsam-like qualities of the plant.

Zone: Oak woodland (Britt Woods) This species can be found in isolated clumps within the southern portion of the Britt Woods property.



***CICHORIUM INTYBUS* L.**

Chicory

Asteraceae (Sunflower) Family

NON-NATIVE

Description: Stems 3-10 dm. Leaves basal and cauline, reduced upward; lower oblong to elliptic in outline, subentire to coarsely pinnately lobed. Flowers usually **blue**, sometimes pink or white, about 2.5-3 cm across, ligulate. Phyllaries of the involucre in 2 series. Fruit oblong, 5-angled, 1.5-2.5 mm.

Habitat: Grows in disturbed areas, along roadsides.

Distribution: Throughout North America where it is an alien species. Native to Europe. Elevation range below 1500 m (4920 ft).

Phenology: Perennial. This aggressive weed quickly colonizes disturbed areas. Flowers bloom from late spring through summer.

Ecology: Birds, such as pine siskens, eat the seeds.

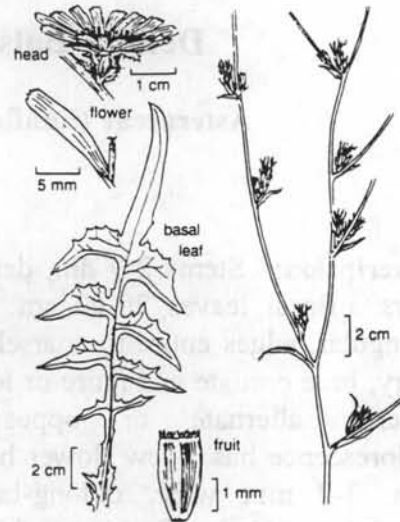
Cultural Significance: The roots, after being dried and roasted, can be ground-up and used to make a hot brew that tastes somewhat like coffee. It is more commonly used for "stretching" coffee or for adding an extra flavor to it. Chicory labeled as coffee annoyed 19th century consumers who complained that the "coffee-dealer adulterate(d) his coffee with chicory." This led to some of the first labeling laws which required the coffee dealers to state the amount of chicory on the package. For thousands of years the plant has been cultivated and used for medicinal purposes as a diuretic, tonic and laxative. In 1940 a scientific study determined that two substances in chicory, lactucin and lactucoprin, act as a sedative on the central nervous system of rabbits and mice. Thomas Jefferson had chicory planted at his home in Monticello in 1774; the seeds probably came from Italy. He used it as a ground cover in his fields and as cattle fodder, not to mention as a "tolerable salad for the table..." Trendy Italian salad greens like radicchio or Treviso are nothing more than the forced leaves of special varieties of chicory.

Remarks: The flowers open in the morning and close later in the afternoon. In Europe, stories are told of how you can tell the time of day by the chicory bloom:

*"On upland slopes the shepherds mark
The hour when, to the dial true,
Cichorium to the towering lark
Lifts her soft eye, serenely blue."*

Management Recommendations: Individuals should be pulled prior to setting seeds.

Zone: Oak woodlands, mixed woodland (Britt and Beekman Woods). Abundant in disturbed open area immediately south of the Beekman House.



***CIRSIIUM VULGARE* (Savi) Ten.**

Bull Thistle

Asteraceae (Sunflower) Family

NON-NATIVE

Description: Stem generally 1, but openly branched, 3-20 dm tall. Leaves harsh-bristly above, sometimes woolly when young; main veins prominently raised on lower surface; lower leaves 10-40 cm, sessile or wing-petioled, shallowly to deeply lobed; cauline leaves gradually reduced, generally spinier than lower, main spines less than 15 mm. Flower heads clustered, each about 3 cm across; corollas **purple**; involucre 3-4 cm, hemispheric or bell shaped; phyllaries in 5-10 series, spines 1-5 mm. Fruit ovoid, 3.5-4.5 mm, light brown.

Habitat: Grows in disturbed areas.

Distribution: This alien species is found throughout North America. It is native to Europe. Elevation range usually below 2300 m (7545 ft).

Phenology: Biennial. The plant dies back after the first year's growth and then blooms in the second summer.

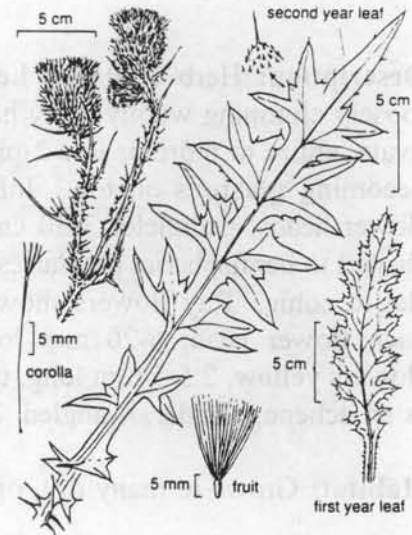
Ecology: Thistles are well adapted for invading new areas. The plumed seeds of the bull thistle facilitate its dispersal. Its long fleshy taproot makes its eradication nearly impossible. Flowers are very sweet smelling and provide food for bees. Butterflies lay their eggs in the axis of the bristly leaves where they are protected from raiding ants and grazing cattle.

Cultural Significance: Many of the alien thistle species were used as a food source and medicinally by Europeans. Few records of the introduction of thistle to the United States exist, but it has been reported that several varieties grew in Puritan gardens in the mid 17th century. Some of these soon escaped. Others were unintentionally introduced in the fodder brought for the first cattle and horses. Bull thistle and star thistle *Centaurea solstitialis* (also present within the Jacksonville Woodlands) were among those hidden invaders that have destroyed thousands of acres of cultivated and pasture land, and crowded out native species in nearby woodlands.

Remarks: One story reveals that bull thistle was brought into North America by a poor Scottish minister. Upon prospering in the New World, the minister acquired enough money to replace his old thistle mattress with chicken down. The shaking out of his old mattress marks the introduction and later invasion of bull thistle.

Management Recommendations: Both bull thistle and star thistle should be pulled prior to setting seed (early summer).

Zone: Mixed woodland, oak woodland (Britt and Beekman Woods).



***ERIOPHYLLUM LANATUM* (Pursh) James Forbes**

Woolly Sunflower

Asteraceae (Sunflower) Family

Description: Herb 1-10 dm. Leaves and stem covered with loosely clumping woolly, gray hairs. Leaves 1-8 cm, linear to ovate, entire to more or less 2-pinnately compound; generally becoming glabrous on top. Inflorescence has 1-5 (or more) flower heads; peduncles 3-30 cm; involucre 5-12 mm, bell-shaped to hemispheric; phyllaries 5-15; receptacle more or less flat to conic. Ray flowers showy, **yellow**, generally 8-13 on each flower head; 6-20 mm long, oblong to elliptic. Disk flowers **yellow**, 2.5-5 mm long, tube generally glandular. Fruit is an achene, slender, 4-angled, 2-5 mm, glandular or hairy.



Habitat: Grows in many dry, open places.

Distribution: From California north to British Columbia, Montana, Wyoming and Nevada. Elevation range usually below 4000 m (13,120 ft).

Phenology: Perennial. Flowers bloom June to July.

Ecology: The woolly hairs on the plant help prevent evaporation of water and enable these plants to grow in dry areas. There are many varieties of this species within its widespread habitat.

Cultural Significance: Native Americans of the Chelis tribe, of western Washington mixed the dried flowers with grease and rubbed them on a person of the opposite sex as a love charm. One informant told the story of how her uncle was "doped" by the potion by an old woman and almost drowned trying to reach her. Another tribe rubbed the leaves on their faces to prevent chapping.

Remarks: The genus name, *Eriophyllum*, is derived from the Greek words *erion*, which means woolly, and *phyllon*, which means leaf. The species name, *lanatum*, is Latin for woolly. Another common name for this species is "Oregon sunshine."

Zone: Oak woodland (Britt/BLM and Beekman Woods).

***LAPSANA COMMUNIS* L.**

Nipplewort

Asteraceae (Sunflower) Family

NON-NATIVE

Description: Generally one stem, often tall (30-150 cm), more or less soft-hairy, becoming glabrous. Leaves alternate, broadly egg-shaped, 2-5 cm, thin, dentate, petioled or upper leaves more or less sessile. Inflorescence panicle-like, involucre 4-5 mm; main phyllaries (bracts) 8, surrounding each flower head. Usually numerous heads on slender hairless stalks. Flower heads of ray flowers only. Ray flowers **yellow**, 6-15 on each flower head, wither quickly. Fruit oblong, curved, 2.5-9 mm, hairless, outer larger than inner fruits, 20-30 veined, glabrous; no pappus.

Habitat: Grows in shady places, woodlands, fields, disturbed areas and sometimes in open forests.

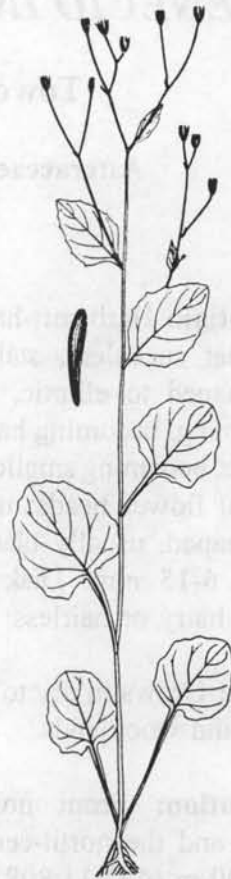
Distribution: Native to Eurasia, but now common in North America west of the Cascades from Alaska southward. Elevation range below 1400 m (4592 ft).

Phenology: Annual. Flowers bloom from early to late summer.

Cultural Significance: This plant was used to treat sore or cracked nipples or ulcerated breasts. In French it is called *herbes aux mamelles*. The genus name, *Lapsana*, is from the Greek *lapazo*, meaning "purge," referring to its other medicinal uses.

Remarks: Nipplewort is a weedy species introduced from Eurasia. Its lower, stalked leaves are said to resemble banjos.

Zone: Riparian, mixed woodland (Britt Woods) Abundant along Jackson Creek, also occurs in the recently disturbed areas within the mixed woodlands of the Britt Woods property.



***SENECIO INTEGERRIMUS* Nutt.**

Tower Butterweed

Asteraceae (Sunflower) Family

Description: Herb soft-hairy, 2-7 dm tall. Basal leaves thick, somewhat succulent, stalked (petiole sometimes indistinct), lance-shaped to elliptic, entire to irregularly toothed, hairy when young, becoming hairless with age, 6-25 cm; stem leaves alternate, becoming smaller and stalkless upward. Inflorescence has 6-20 flower heads; involucre 5-10 mm high, the bracts lance-shaped, usually black-tipped. Ray flowers usually 13, **yellow**, 6-15 mm. Disk flowers **yellow**, 20-50. Fruit an achene, hairy or hairless; pappus hairs white.

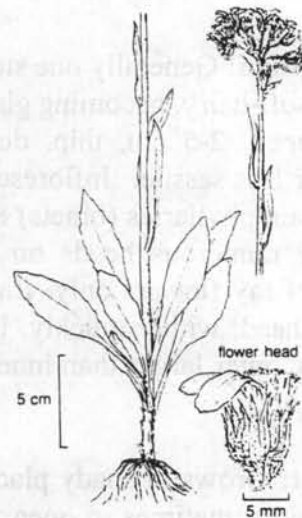
Habitat: Grows in dry to moist meadows, grassy slopes, open forests and woodlands.

Distribution: From northern California to southwestern Canada and the north-central United States. Elevation range 150-3600 m (492-11,808 ft).

Phenology: Perennial. Flowers bloom from late spring to mid summer.

Remarks: This genus is one of the largest genera of flowering plants. The genus name, *Senecio*, is derived from the Latin word for old man, referring to the white pappus. The species name, *integerrimus*, is Latin for "entire leaves." The common name, tower butterweed, refers to the cluster of flowers at the top of a single "tower-like" stalk.

Zone: Oak woodland (Britt/BLM and Beekman Woods).



CYNOGLOSSUM GRANDE Lehm.

Hound's Tongue

Boraginaceae (Borage) Family

Description: Stem generally 1, 3-9 dm, no hairs. Large leaves, lower surface hairy, upper surface glabrous; petioles of basal leaves 8-15 cm, more or less unwinged; largest leaves near the base of the plant; leaf blade 8-15 cm, 3-10 cm wide, ovate to elliptic, bases truncate or cordate; cauline leaves few, petioled. Inflorescence on stalk well above leaves, bracts scale-like or 0, pedicels 10-25 mm. Corolla of flower 8-12 mm, gen 10-15 mm wide, salverform, **blue-violet** with white appendages in center. Fruit are nutlets, outer surfaces rounded, margins not raised.

Habitat: Grows in shaded or open areas of woodlands or chaparral. Indicates dry sites with shallow soils.

Distribution: From the coast ranges of central and northwestern California, the Cascades and high Sierra Nevada, through Oregon and Washington north into British Columbia. Elevation range usually below 1500 m (4920 ft).

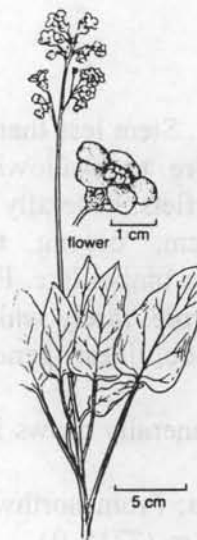
Phenology: Perennial. Leaves begin to push their way above ground early in the year, usually from January to February. Flowers bloom in early spring (March-April).

Ecology: The distribution of the seed is aided by tiny barbs which cover the surface of the nutlets, and are well adapted for catching in the hair of animals.

Cultural Significance: Native Americans used hound's tongue as a medicinal plant. The roots were believed to be good for treating ulcers and colic and served as a poultice for scalds and burns. The plant was also used to treat skin diseases and dog bites. An old superstition called for putting the leaves in shoes to prevent aggression and barking from strange dogs.

Remarks: The flowers are at first pinkish, later becoming bright blue, perhaps after fertilization has taken place. The common name is a translation of the generic name, which is derived from two Greek words: *cyno* (dog) and *glossum* (tongue). The name refers to the shape of the leaves. The borage family includes over 2000 species worldwide. *Borago officinalis* (borage) and *Symphytum officinale* (comfrey) have been used medicinally, and as flavorings and ornamentals.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). This early spring blooming species is abundant throughout the oak woodlands.



***CARDAMINE NUTTALLII* E. Greene**

Bittercress, Toothwort

Brassicaceae (Mustard) Family

Description: Stem less than 2 dm, slender. Rhizome leaves 1, simple, entire to shallowly lobed, or with 3-5 palmately arranged leaflets; generally 2 cauline leaves, petioled, leaflets 2-5, 1-4 cm, oblong to oblanceolate, sessile, entire. Inflorescence umbel-like. Flowers conspicuous, 4 petals, pale pink to purple, rarely whitish, 1-1.5 cm. Fruit 2-4 cm long, 2-2.5 cm wide, linear, generally flat.



Habitat: Generally grows in moist sites, canyons and forests.

Distribution: From northwest California through British Columbia. Elevation range generally below 2200 m (7215 ft).

Phenology: Perennial. One of the first plants to bloom in the spring. Like many early-flowering plants, *Cardamine* can bloom early because of energy stored in its bulbs.

Ecology: Several caterpillars eat the leaves. Mice and other small mammals sometimes eat the seeds, fruits, leaves and roots. The flowers produce large amounts of nectar which attract the few pollinators active early in the spring.

Cultural Significance: Humans can eat the peppery roots of the plant raw or cooked. They are high in vitamins, especially vitamin C. The raw leaves, stems and roots are said to add a pleasant taste to salads. The plant can be somewhat bitter, giving rise to the name "bittercress."

Remarks: One of the first plants to bloom in the Jacksonville Woodlands. The rhizome leaves may emerge from the ground several inches from the main stem of the plant. Upon initial inspection, the leaves do not appear to be attached to the flowering part of the plant. *Cardamine* is the Greek name for "a cress with many uses." The Brassicaceae family used to be called the Cruciferae, so called because of the family's characteristic flowers which have four petals that stretch out like the arms of a rounded maltese cross.

Zone: Mixed woodland (Britt and Beekman Woods). Abundant throughout the mixed woodlands.

CAMPANULA PRENANTHOIDES Durand

California Bluebell

Campanulaceae (Bellflower) Family

Description: Glabrous to short-hairy herb. Stem 20-150 cm. Leaves alternate, 10-60 mm, lanceolate to ovate, thin to leathery, with toothed margins; petiole less than 5 mm. Flower pedicel 2-6 mm (sometimes longer). Corolla 7-14 mm, cylindric to bell-shaped, **light blue**, petals reflexed; stamens 6 mm, bases ciliate; ovary 2.5-5 mm, hemispheric; style 15-18 mm, blue, sometimes curved, extending well beyond the flowers. Sepals spreading. Fruit hemispheric.

Habitat: Dry, somewhat open woodlands, redwood forests.

Distribution: From central California to southern Oregon. Elevation range 50-2000 m (164-6560 ft).

Phenology: Perennial. Flowers bloom in the early summer, sometimes through the early fall.

Ecology: Although bluebells look somewhat fragile, they are rather hardy plants. They do well in seemingly difficult environments, such as harsh sun and howling winds.

Remarks: The genus name, *Campanula*, is from the Latin for "little bell," referring to the shape of the corolla. Other common names include "harebell," "lady's thimble," and "witch's thimble."

Zone: Mixed woodland (Britt and Beekman Woods). Small patches found along the upper slopes above Jackson Creek. Also found in isolated locations along the Beekman trail. Uncommon.

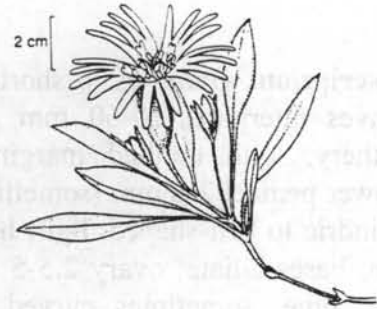


***SILENE HOOKERI* Nutt.**

Indian Pink

Caryophyllaceae (Pink) Family

Description: Stem decumbent to erect, appressed hairy below, sometimes glandular-puberulent above. Leaves in opposite pairs along the stem, slightly reduced upward, 2-8 cm long, 8-25 mm wide, oblanceolate, fuzzy. Flower petals 5; **white, pink, or purple**, 4 lobed, 2 appendages; stamens more or less equal to the corolla; styles 3, slightly greater than the corolla. Calyx 12-20 mm, 5 sepals, canescent to soft, white-hairy, lobes 4-7 mm. Fruit oblong to obovoid, stalk 2-5 mm, glabrous to puberulent. Seed generally 2 mm, black.



Habitat: Grows on rocky slopes, in open areas, oak woodlands and coniferous forests. Also does well on serpentine soils.

Distribution: From northwestern California to Oregon, west of the Cascades to Polk County. Elevation range usually below 1400 m (4590 ft).

Phenology: Perennial. Flowers bloom in mid spring. Auxin, a growth substance, is thought to play a role in determining what time of year some plants within the pink family flower.

Ecology: Aphids are thought to have first evolved on members of the rose family and then later began utilizing the pink and sunflower families. Some species of the genus *Silene* are called catchfly because their sap is so sticky that it traps flies. When broken, tiny hairs on the stem exude sap that may trap and keep ants from stealing nectar.

Cultural Significance: Leaf or root poultices of other species of the genus *Silene* have been used to treat dog and coyote bites, sprains, sores, ulcers and burns. A tea can be made to treat intestinal worms and also acts as a sedative. The plant contains bitter saponins, chemicals common in members of the family. It is dangerous to consume large amounts of saponins because they can dissolve red blood cells. However, cooking destroys much of the saponin content of the plants. Several species, such as carnations, are cultivated as ornamentals.

Remarks: This plant is also called Hooker's pink or catchfly. Sir William Hooker (1853-1929) was one of the first botanists in the Pacific Northwest, and founder and editor of the "Journal of Botany." He was also one of the first botanists in Iceland. Some say the flower acquired the name "pink" not because of the color but due to the petal ends; pinking shears make similar patterns in cloth. The genus name, *Silene*, refers to Silenus, a drunken god associated with Bacchus.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Common along trail leading to water tank on the Britt Woods property.

LATHYRUS LATIFOLIUS L.

Perennial Sweet Pea, Everlasting Pea

Fabaceae (Legume) Family

NON-NATIVE

Description: Stems sprawling, climbing or erect, flattened with wing-like extensions. Leaflets 2, 5-14 cm, lanceolate to ovate; tendril branched, coiled, extends past leaflets. Inflorescence 4-5 flowered. Flower petals **pink, pink-purple, or red**; flowers about 2 cm long; calyx tube greater than lobes; 9 filaments of stamens fused, 1 free. Fruit a legume, oblong, flat, glabrous.

Habitat: Grows in disturbed areas, especially along roadsides and around old settlements.

Distribution: Throughout the states on the West Coast. Sporadic to the eastern United States. Native to Europe. Elevation range below 2000 m (6560 ft).

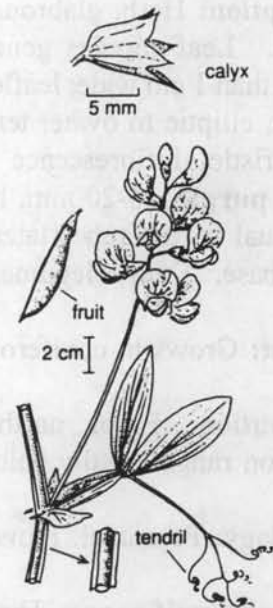
Phenology: Perennial. Flowers bloom from late spring through summer.

Cultural Significance: This sweet pea is cultivated as an ornamental in gardens and parks. Economically, the Fabaceae family ranks second in value next to the Poaceae (grass) family. Food plants of the Fabaceae include *Arachis hypogaea* (peanuts), *Cicer arietinum* (chick peas), *Glycine max* (soybean), *Glycyrrhiza glabra* (licorice), *Lens culinaris* (lentils) and *Pisum sativum* (common pea). Forage plants for livestock include *Medicago sativa* (alfalfa), *Melilotus* (sweet clover), and *Trifolium* (the clovers).

Remarks: This common species of *Lathyrus* is not native to North America. The seeds of most alien species of *Lathyrus* are toxic to humans, especially young males, and livestock, particularly horses.

Management Recommendations: Although a beautiful flowering plant, this is an invasive species which should be eradicated where it occurs.

Zone: Mixed woodland and oak woodland (Britt and Beekman Woods). Abundant in the open area south of the Beekman House.



LATHYRUS POLYPHYLLUS Nutt.

Oregon Pea

Fabaceae (Pea) Family

Description: Herb, glabrous, often robust. Stem angled, not winged. Leaf stipules generally conspicuous, widely ovate, greater than 1 cm wide; leaflets 10-16, subopposite to alternate, 3-6 cm, elliptic to ovate; tendril branched, coiled, or reduced to a bristle. Inflorescence 6-12 flowered, 1-sided. Flower corolla **purple**, 16-20 mm; lower calyx lobes narrow, more or less equal to the tube, lateral lobes triangular, not widened above base. Fruit a legume, glabrous, oblong.

Habitat: Grows in coniferous forests and on forest margins.

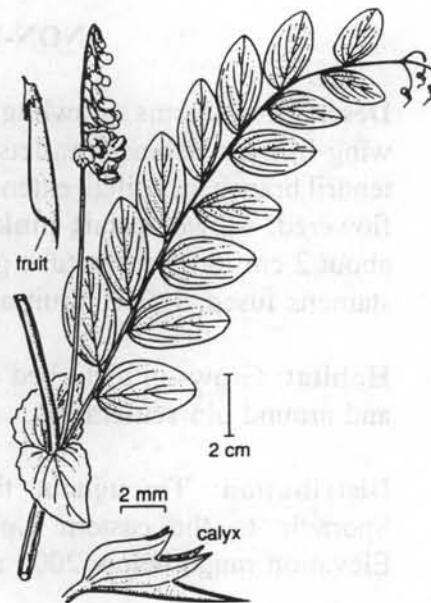
Distribution: From northern California to Washington. Elevation range usually below 1500 m (4920 ft).

Phenology: Perennial. Flowers bloom in mid spring.

Cultural Significance: The genus name, *Lathyrus*, is from the Greek word *thorous*, meaning "something exciting," referring to the belief that the seeds have some medicinal value. Our cultivated sweet pea was developed from a Mediterranean species, *Lathyrus odoratus*. Seeds from pea plants have been a favorite food of people across the globe.

Remarks: The peas resemble another genus of the Fabaceae family which grows in this area, the vetches (*Vicia*) in many characteristics, such as the segmented leaves and tendrils. *Vicia faba*, a bean from Europe, is one of the oldest cultivated plants.

Zone: Mixed woodland and riparian (Britt Woods). Occurs along open stretches of the Zigler trail on the Britt Woods property.



***DICENTRA FORMOSA* (Haw.) Walp.**

Bleeding Heart

Fumariaceae (Fumitory) Family

Description: Plant 20-45 cm, sometimes glaucous. Leaves generally basal, sometimes cauline, deeply (2-ternately) divided, 20-50 cm. Inflorescence 4 or more flowered. Flowers nodding; petals 4, outer 2 free, lanceolate, pouched at base, inner 2 adherent at tips, oblanceolate and crested on back, 14-18 mm, **rose-purple to whitish**. Fruit a capsule, long-conic, 14-20 mm.

Habitat: Grows in damp, shaded areas, coniferous forests and woodlands.

Distribution: From north-central California to British Columbia. Elevation range generally below 2200 m (7215 ft).

Phenology: Perennial. Flowers bloom mid to late spring.

Ecology: The black seeds have little white appendages which contain an oil that attracts ants. When they carry off the seeds to use as food, the ants inadvertently disperse the seeds. The plant is a host to caterpillars of certain butterflies. Pollination is by bumblebees. The bushy tailed woodrat eats the green vegetative portions of the plant.

Cultural Significance: Native Americans in western Washington, the Skagit, chewed on the roots of the plant to cure toothaches. They also washed their hair in a tea made from the plant to make it grow faster.

Remarks: The flattened, heart-shaped, rose-pink flowers above lacy leaves make this plant stand out from the forest floor when it is in bloom. When a bit of the plant is crushed, its fragrance resembles that of a poppy. This is not surprising as the two groups are closely related, with some books including the bleeding heart in the Papaveraceae (poppy) family. *Dicentra* means two spurs, referring to the symmetrical arrangement of the flowers. The term *formosa* means graceful or beautiful. Small plants with bluish glaucous leaves and light petals from northwest California and southwestern Oregon have been called *Dicentra formosa* ssp. *oregana*.

Zone: Mixed woodland and riparian (Britt Woods). Found in isolated patches along the western portion of the Zigler trail in the Britt Woods property.



***HYPERICUM PERFORATUM* L.**

Klamath Weed, St. John's Wort

Hypericaceae (St. John's Wort) Family

NON-NATIVE

Description: Stems erect, 3-12 dm tall. Leaves simple, cauline, sessile, 1.5-2.5 cm, linear to oblong; margins rolled under, black dotted; lower surface clear dotted. Inflorescence 25-100 flowers. Flower petals five, oblong, 8-12 mm, **bright yellow**, black gland-dotted; sepals five, lanceolate, 4-5 mm, with black and clear dots, margins glabrous; stamens many, in 3 clusters, anthers black-dotted; styles 4-6 mm. Fruit a capsule, 7-8 mm. Seeds small, brown, 1 mm.

Habitat: Generally grows in disturbed areas, roadsides, pastures and abandoned fields.

Distribution: Although it is naturalized throughout North America it is an alien species. It is native to Europe. Elevation range below 1500 m (4920 ft).

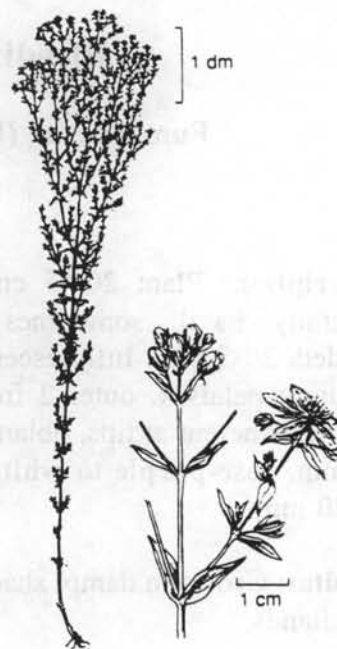
Phenology: Perennial. Flower bloom late spring through summer.

Cultural Significance: The plant has been used to treat nervous disorders, depression, gastric problems, anemia and worms. According to the seventeenth-century "Doctrine of Signatures," a plant's appearance should give some clue to its medicinal value. Because the "little holes" (glands) in the St. John's wort leaves resemble pores, the herb was recommended for skin problems of all sorts, including wounds and bruises. Yellow and red dyes can be obtained from the flowers and stems. There's also a dangerous side to St. John's wort, and until more is learned about the plant, it should be used with caution. In Australia, where it is a rampant weed, it has killed pale-pigmented sheep and goats by inducing photosensitivity. If an animal or a light-skinned human eats large amounts of the plant, exposure to direct sun may cause dermatitis or more toxic reactions. It is also toxic to livestock.

Remarks: Pinch the yellow flowers of this plant and the petals turn red. The genus name, *Hypericum*, means "above an icon" in Greek. Sprigs were once set above images to drive off malevolent spirits. With the spread of Christianity, the plant was associated with St. John the Baptist. It was said first to bloom on his birthday, June 24, and to bleed red oil from its leaf glands on the day in August that he was beheaded. The state of California has listed this species as a "noxious weed" and advocates its eradication due to its ability to out compete both native and agricultural species. Biological controls such as the flea beetle, *Chrysolina quadrigemina*, have been introduced in various places to successfully control *Hypericum perforatum*.

Management Recommendations: In an effort to preclude its establishment within the Jacksonville Woodlands, this species should be hand pulled prior to setting seeds.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods).



***IRIS CHRYSOPHYLLA* Howell**

Yellow-Flowered Iris

Iridaceae (Iris) Family

Description: Stem erect, less than 2 dm tall. Leaves generally basal (a few cauline), linear, grass-like, sheathing stem, 3-5 mm wide. Flower petals and sepals both petal-like, in two series, pale **creamy yellow to whitish**, sometimes with faint bluish tinge, generally with darker veins; petals and sepals fused into tube, 43-120 mm, tapering down to ovary; style branches petal-like, arching over stamens. Fruit a capsule.

Habitat: Usually grows in open coniferous forests.

Distribution: From the most northern parts of California in the Klamath Region to Oregon west of the Cascades. Elevation range generally 600-1000 m (1965-3280 ft).

Phenology: Perennial. Flowers bloom in late April and May.

Cultural Significance: Native Americans throughout North America have used different parts of other species of *Iris* for medicinal purposes. A decoction of the root was made by a number of tribes and dropped into the ear to cure earaches. The Yana Indians in northern California chewed the raw roots of one species to cure coughs. Various tribes also used the fibers of the leaves to make rope. Early explorer and botanist David Douglas noted Native Americans braiding iris leaves into snares to catch animals as large as elk: "...in point of strength it will hold the strongest bullock and is not thicker than the little finger."

Remarks: Iris is the Greek word for rainbow, or the Greek messenger goddess whose path was the rainbow and whose coat was of many colors. This refers to the flower's many colors. The Greek goddess' special role was to receive the souls of dying women. Irises were cultivated in ancient Japan, Babylonia and Egypt.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Occurs sporadically throughout the woodlands, but is in greatest abundance on the Britt Woods property along the trail leading to the water tank.



MELISSA OFFICINALIS L.

Bee Balm, Lemon Balm

Lamiaceae (Mint) Family

NON-NATIVE

Description: Herb. Stem 2-15 dm, branched, finely glandular-hairy. Leaves opposite; leaf blade 2-14 cm, 1.5-7 cm wide, ovate, crenate. Inflorescence 4-12 flowered, axillary at upper nodes; subtending leaves reduced upward; pedicels 2-5 mm. Flower corolla **light yellow**, becoming **white** or **pinkish**, 8-15 mm; two-lipped - upper lip entire, hood-like, lower lip 3-lobed; calyx 7-9 mm, tube ribbed, long-soft hairy. Fruit ovoid, smooth.

Habitat: Grows in moist sites, meadows, ditches and fields.

Distribution: Native to southern Europe, alien to North America. Elevation range generally below 800 m (2625 ft).

Phenology: Perennial. The plant dies back in the winter. Flowers bloom from June to September.

Ecology: Bees swarm around the plant as they aid in its pollination.

Cultural Significance: The word balm is an abbreviation of balsam. In ancient times the juice of balm was known to have many medicinal properties, including healing sores. Lemon balm continued to be used for medicinal purposes well into the 19th century. It was often used to raise the spirits, as a British herbalist wrote in the 17th century: lemon balm "...causeth the mind and heart to become merry...and driveth away all troublesome care and thought out of the mind..." The oil of lemon balm also seems to inhibit bacteria and viruses. Europeans brought lemon balm with them when they began colonizing North America. Thomas Jefferson grew it at Monticello. The leaves can be used in cooking and salads, or dried to make a pleasant tea.

Remarks: Rub this plant's leaves and your fingers will smell of a combination of lemon and mint, a scent that has drawn people to lemon balm for at least 2000 years. The genus name, *Melissa*, is derived from the Greek word for "bee," referring to how attractive the flowers are to these insects.

Zone: Riparian (Britt Woods). Common. In clustered patches.



***PRUNELLA VULGARIS* L.**
var. *LANCEOLATA* (Barton) Fern.

Self-Heal

Lamiaceae (Mint) Family

Description: Stem 1-5 dm tall, squarish, glabrous to short-hairy. Leaves opposite; lower petioled, petiole 5-30 mm; upper subsessile; blade 2-7 cm, ovate to elliptic, or lanceolate, base generally wedge-shaped. Inflorescence 2-6.5 cm, short, oblong spike, bract margins ciliate, reddish. Flower petals **bluish-violet**, sometimes **pink or white**, 2-lipped, lower lip 3-lobed, upper lip generally entire, hood-like; stamens 4, lower pair greater than upper pair; calyx of 2 long and 3 shorter spur-tipped lobes. Fruit four nutlets.

Habitat: Grows in moist areas, primarily coniferous forests and woodlands. Also grows in clearings, forest edges and roadsides.

Distribution: Throughout North America and eastern Asia. Elevation range usually below 2400 m (7870 ft).

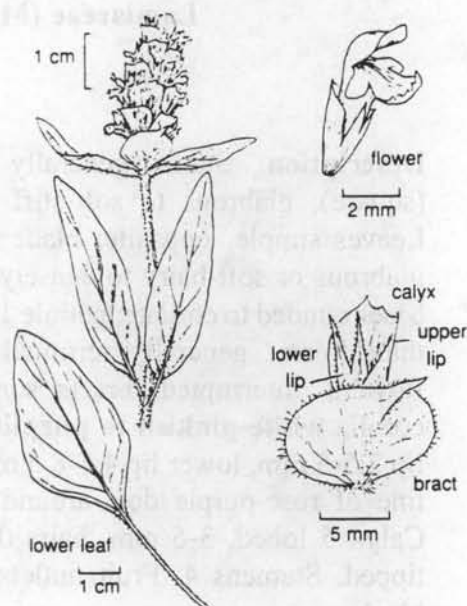
Phenology: Perennial. Flowers bloom in early summer from June to July.

Ecology: The flower is adapted for fertilization by bees, who land on the lower lip, and while sticking their probosces down the tube for nectar, dust their heads with the pollen from the anthers and then carry it to other flowers. Chipmunks and some birds will eat the seeds.

Cultural Significance: Some Native American groups used the plant as a medicine. The juice of the plant has been used to treat boils and other sores. It is also said to relieve headaches when mixed with oil of roses and rubbed on the temples. A refreshing drink can be made by chopping up the leaves and soaking them in cold water. The widespread traditional medicinal uses of the plant gave rise to its common name of "self-heal."

Remarks: The genus name, *Prunella*, is Latin from an early German name for a plant used to treat chest pains. Common names include "heart of the earth" and "blue curls."

Zone: Mixed woodland and riparian (Britt Woods). Abundant between the Zigler trail and Jackson Creek.



***STACHYS AJUGOIDES* Benth.**

var. ***RIGIDA* Jepson & Hoover**

Rigid Hedge Nettle, Woundwort

Lamiaceae (Mint) Family

Description: Stems generally erect, 6-10 dm, 4-angled (square), glabrous to soft-stiff hairy, sometimes glandular. Leaves simple, opposite; blade 5-9 cm, ovate to lanceolate, glabrous or soft-hairy to densely felt-like; tip acute to obtuse; base rounded to cordate; petiole 1.5-6 cm. Inflorescence greater than 5 cm, generally terminal spike of sessile cluster of flowers, interrupted; bracts sometimes long, leafy. Flower corolla **white-pinkish to purplish**; bilateral; 2-lipped - upper lip 2.5-5 mm, lower lip 4.5-8.5 mm, tongue-like with a distinct line of rose-purple dots around the margin; tube 6-10 mm. Calyx 5 lobed, 3-6 mm, hairs 0 or soft to stiff, sepals spine tipped. Stamens 4. Fruit nutlets, oblong to ovoid, brown to black.



Habitat: Generally grows in moist places, sometimes on dry hillsides; in many different plant communities.

Distribution: From Baja, California north to Washington. Elevation range usually below 2500 m (8200 ft).

Phenology: Perennial. Flowers bloom from late spring to early summer.

Cultural Significance: A tea made from the leaves is believed to relieve headache pain associated with migraines, hangovers and eye strain. In addition to drinking it as a tea, the herb (in any form) may be placed on the forehead to alleviate headaches. A poultice made from the mashed roots has been used to treat sprains and joint inflammation. For sore throats the fresh root can be chewed. The tea may be combined with lemon balm (*Melissa officianalis*) to treat nervousness and irritability.

Remarks: The plants have a strong minty, rhubarb-like scent, which sometimes can smell a bit unpleasant. Rigid hedge nettle is the most common of the genus *Stachys* on the Pacific Coast. It tends to grow in patches, so if you find some it is likely you will find more nearby.

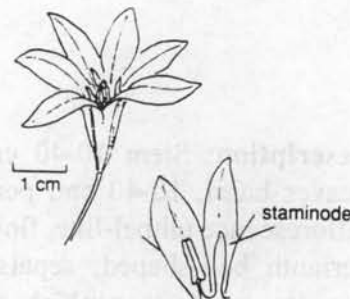
Zone: Riparian, mixed woodland (Britt Woods). Common along Jackson Creek.

***BRODIAEA ELEGANS* Hoover**

Harvest Brodiaea, Elegant Brodiaea

Liliaceae (Lily) Family

Description: Leaves basal, generally 3-5, linear, entire, glabrous. Inflorescence axis 10-50 cm, stout; pedicels 5-10 cm. Flower petals and sepals both petal-like, **blue-purple to violet**, tube 13-17 mm, funnel-shaped, petals ascending, 22-30 mm, tips recurved; stamens 3, staminodes 3; style 1, ovary 9-11 mm. Fruit a capsule, sessile, ovoid. Seeds black, lined.



Habitat: Grows in grasslands, open woodlands, disturbed areas.

Distribution: From the Sierra Nevada, and northern California coast ranges through the Klamath Range in southwest Oregon.

Phenology: Perennial. Flowers bloom in early summer, June to July.

Ecology: Small mammals, such as chipmunks, will dig up and eat the bulbs of many *Brodiaea* species.

Cultural Significance: Native Americans cooked and ate the bulbs of many of the *Brodiaea* species. The Yana Indians of northern California used the sap from the bulbs of one species as a paint binder on bows.

Remarks: The genus *Brodiaea* is named after Brodie, a Scottish botanist. The lily family has 19 endemic species in the northern California-southern Oregon area. Endemic refers to plants that only grow in specific geographical areas. In contrast, the much larger Asteraceae (sunflower) family has only nine northern California-southern Oregon endemic species. Perhaps the Liliaceae family, much older than the Asteraceae family, has had more time to evolve endemics to fit unusual local environments.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Primarily found in the oak woodland zones, and the open, grassy area to the south of the Beekman House.

***CALOCHORTUS TOLMIEI* Hook and Arn.**

Pussy Ears, Cat's Ear

Liliaceae (Lily) Family

Description: Stem 10-40 cm, simple or branched, slender. Leaves basal, 10-40 cm, persistent, generally 1 cauline leaf. Inflorescence umbel-like, flowers 1-several, erect or spreading. Perianth bell-shaped; sepals 10-15 mm; petals 12-25 mm, obovate, **white to pinkish or purplish**, more or less ciliate, densely hairy. Fruit nodding, 20-30 mm, winged. Seeds irregular, dark brown.

Habitat: Dry grassy slopes and woodlands. Often found in poor soil. Elevation range usually between 50-2000 m (164-6560 ft).

Distribution: From Washington and Idaho south through Oregon and into northwestern California down to the central coast and San Francisco Bay area.

Phenology: The flowers bloom in mid spring, usually April and May.

Ecology: Many members of the genus wave in the breeze, which may attract pollinators to the flowers.

Cultural Significance: The bulbs, flowers and seeds are edible raw or cooked. The bulbs can also be dried and made into an edible flour. The bulbs of some species have been mashed and applied to poison ivy. The Cheyenne tribe put bulbs into a horse's mouth in the belief that they would help the horse run faster. Another species of *Calochortus* is the state flower of Utah. During a famine in the mid 1800's, Native Americans taught the new European settlers how to harvest and eat the bulbs.

Remarks: The genus name, *Calochortus*, means "beautiful grass." Another common name for the genus is "Mariposa lily." Mariposa means butterfly in Spanish. This name was first applied to the plants because of the resemblance of the petals to butterfly wings.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). Abundant throughout the oak woodlands. Common along trails.

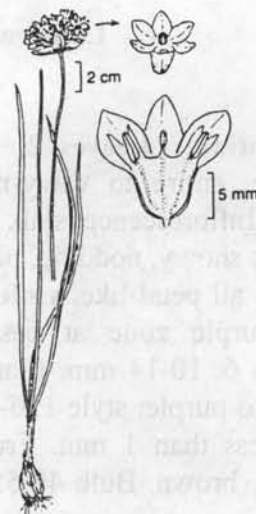


***DICHELOSTEMMA CAPITATUM* Alph. Wood**

Blue Dicks

Liliaceae (Lily) Family

Description: Leaves generally basal, 2-3, 10-40 cm long, barely keeled, glabrous. Inflorescence head or umbel-like, dense, bracts widely lanceolate and dark purple (or paler and striped dark purple), flowers 6-15. Petal and sepals of flower both petal-like (tepals), **blue-purple**, lobes 6 in 2 petal-like whorls, tube 3-12 mm, narrowly cylindric to short bell-shaped; 6 stamens; 1 style, stigma 3-lobed. Fruit a capsule, generally ovoid, 3 angled. Seeds sharply angled, black. Corms scaly-coated, small, sessile, on stolons.



Habitat: Grows in open woodlands, scrub, deserts and grasslands.

Distribution: Throughout California north to Oregon. Also found in Utah, New Mexico and northern Mexico. Elevation range generally between 0-2300 m (0-7545 ft).

Phenology: Perennial. Flowers bloom in mid spring to early summer.

Cultural Significance: The little bulbs eaten raw are said to be quite palatable, and were eagerly sought out by children in some Native American tribes who called them "grass-nuts." Cooking them removes their mucilaginous quality. The bulbs are said to be best when roasted in ashes. The early Spanish-Californians also appreciated them and called them "saitas."

Remarks: This is one of the most common lilies in the region. It grows mostly in open grassy areas where its dense flower heads, on tall slender stems are usually easily seen. Other common names include "Spanish lily," "cluster lily," "wild hyacinth," and "hog onion." The genus *Dichelostemma* was formerly a part of the genus *Brodiaea*.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Abundant throughout the oak woodlands of the Britt/BLM and Beekman properties.

***ERYTHRONIUM HENDERSONII* S. Watson**

Henderson's Fawn Lily

Liliaceae (Lily) Family

Description: Leaves 2, basal, 10-25 cm long, oblong to obovate, entire to wavy-margined, mottled with brown or white. Inflorescence stalk 12-30 cm, reddish; flowers 1-4. Flowers showy, nodding, perianth segments (sepals and petals) 6 parts, all petal-like, **violet to pink** (darker toward tip) with dark purple zone at base, lanceolate, strongly recurved; stamens 6, 10-14 mm, filaments slender, purple, anthers pale brown to purple; style 1, 6-8 mm, violet, stigma entire or with lobes less than 1 mm. Fruit ovoid to oblong. Seeds ovoid, angular, brown. Bulb 40-55 mm, slender.

Habitat: Grows in dry woodlands and openings.

Distribution: From the Klamath Region of northern California to southwestern Oregon. Elevation range 300-1600 m (985-5250 ft).

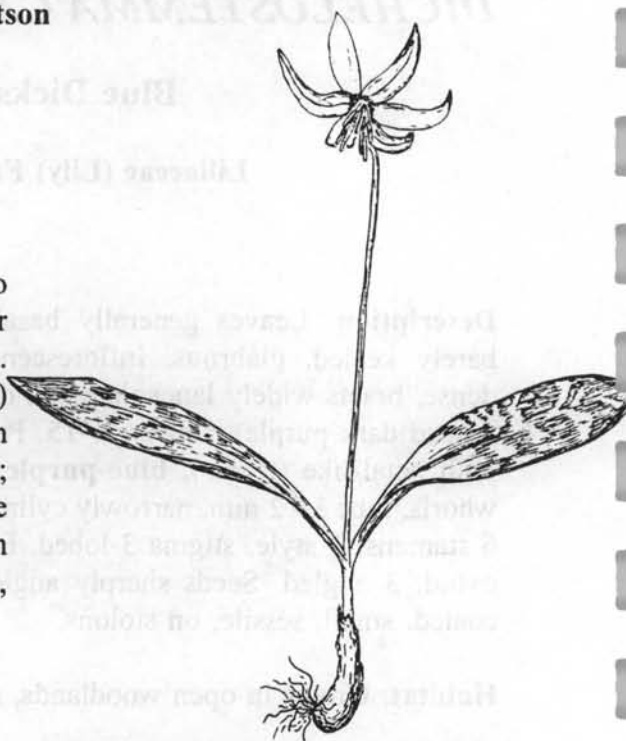
Phenology: Flowers bloom in early spring.

Ecology: *Erythronium* species have unusual underground structures: a bulb with only one scale and a segmented corm made of round annual segments, like a string of beads.

Cultural Significance: Traditionally, the bulbs of many species of *Erythronium* have been cooked and eaten by Native Americans in the region.

Remarks: This plant is uncommon and has a very narrow range. It was named by Sereno Watson (1826-1892), an assistant to Asa Gray and curator of the Gray Herbarium at Harvard University from 1888-1892. He was an avid student of plants of the American West. The genus *Erythronium* includes 25 species, occurring mostly in temperate North America. *Erythro* means reddish in Greek, referring to the color of the flowers of some of the species in the genus, which were used in ancient times to make dyes. John Burroughs is said to have named this species "fawn lily" because he thought the two leaves looked like the ears of a fawn. The common name may also have been referring to the mottled leaf color.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). This endemic species to northern California and southwestern Oregon is abundant throughout the oak woodlands and open areas of the mixed woodlands of the Britt/BLM and Beekman properties. This species is commonly found on and along the northwestern portion of the Beekman trail.



***FRITILLARIA GENTNERI* Gilkey**

Gentner's Fritillaria

Liliaceae (Lily) Family

Description: Stem 5-7 dm, glaucous green to purple. Leaves lanceolate to broadly linear, 7-15 cm long, often in 2 whorls of 3, often with a pair of one or 2 alternate leaves above (in larger specimens frequently with 5 to a whorl). Flowers solitary or in racemes, 1-5 (rarely 8-9), on long slender pedicels; perianth campanulate, 3.5-4 cm long, petals and sepals all petal-like, tips somewhat spreading but not recurved, **dark red (maroon) mottled with pale yellow**; petals keeled beneath by glands extending 1/2 the length of petals; stamens included; styles reaching anther tips, branches split 1/2 the length of style, spreading. Fruit a capsule, winged. Bulb fleshy.

Habitat: Grows in dry, open fir and oak woodlands.

Distribution: Only in Jackson and Josephine Counties in southwest Oregon. At lower elevations.

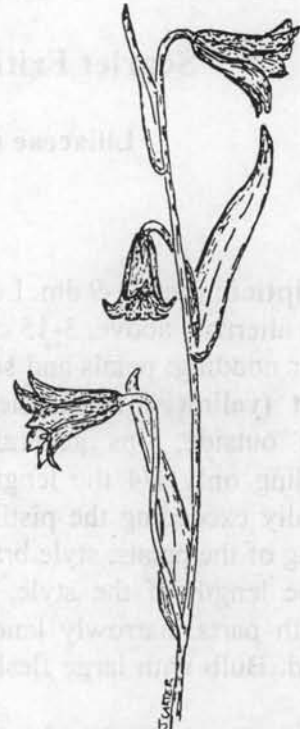
Phenology: Perennial. Flowers bloom from late March to early May. Its flowering period usually begins two weeks later than that of *Fritillaria recurva*.

Ecology: Deer will sometimes eat the flowers, leaving beheaded stems. The flowers come back each year from their bulbs.

Remarks: In 1944, Mr. L.G. Gentner, an entomologist and assistant superintendent of the Southern Oregon Branch Experiment Station in Medford, reported what appeared to him an undescribed species of *Fritillaria*. The previous year one of his daughters had collected for her garden a plant that she had assumed was the fairly common red bell (*Fritillaria recurva*). But when it flowered it was noticeably different. By this time, however, she had forgotten where she had originally collected it. The family made numerous trips to locate the plant in the wild but had no luck. Then another daughter recognized the lily in a flower arrangement at the home of a friend who then led them to the where the plant was growing. Helen Gilkey later studied the differences between *F. recurva* and this "new" fritillary and determined that they are indeed distinct species. Gilkey described this plant new to Western science and named it in honor of the family which discovered it.

Management Recommendations: *Fritillaria gentneri* is **rare and endangered** throughout its range. It should not be picked or harmed in anyway, nor should its habitat be altered or destroyed.

Zone: Oak woodlands (Britt/BLM and Beekman Woods). This species occurs infrequently in the oak woodlands of the Britt/BLM and Beekman properties. It is easily viewed during the blooming season. The species is also found throughout the Jacksonville Cemetery.



***FRITILLARIA RECURVA* Benth.**

Scarlet Fritillary, Red Bell

Liliaceae (Lily) Family

Description: Stem 3-9 dm. Leaves in 1-3 whorls of 2-5 below; leaves alternate above, 3-15 cm, linear to narrowly lanceolate. Flower nodding; petals and sepals both petal-like, 1.5-3.7 cm, **scarlet (yellowish-red)**, checkered with yellow inside and purple outside, tips generally recurved; glands on petals extending only 1/4 the length of the petal or less; stamens generally exceeding the pistil, conspicuously revealed by the curving of the petals; style branched, equalling less than 1/4 to 1/3 the length of the style, erect or nearly so; nectary 1/5 perianth parts, narrowly lanceolate, yellow. Fruit a capsule, winged. Bulb with large fleshy scales.



Habitat: Grows in shrublands and woodlands.

Distribution: From Douglas County through Josephine and Jackson Counties in Oregon into California in the Cascades and Sierra Nevada, also in western Nevada. Elevation range 300-2200 m (985-7220 ft).

Phenology: Perennial. Flowers bloom from March to May.

Ecology: Deer often eat the flowers, leaving behind many beheaded stems. The flowers come back each year from their bulbs.

Cultural Significance: The bulbs can be heated and used as glue. The bulbs and green seed heads are edible when cooked.

Remarks: *Fritillaria recurva* is easily confused with *Fritillaria gentneri*, which is currently listed as endangered and grows in the same area. However, once you see both of them they are fairly easy to distinguish. Among other differences *F. gentneri* is a much deeper/darker shade of red/maroon than the bright red *F. recurva*; the petals and sepals of *F. gentneri* are not sharply reflexed like those of the *F. recurva*.

Management Recommendations: This species used to be listed as threatened in Oregon due to habitat destruction and collecting. It is still uncommon, though abundant in certain areas, and should not be picked.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Found in association with the endangered *Fritillaria gentneri* in the oak woodlands of the Britt/BLM and Beekman properties. The brilliant red color makes detection easy during the blooming season.

***SMILACINA RACEMOSA* (L.) Link**

Western False Solomon's Seal

Liliaceae (Lily) Family

Description: Erect, unbranched stem, 30-90 cm. Leaves alternate, finely hairy above, 7-20 cm long, elliptic, lacking a petiole (sessile), bases generally clasping stem. Leaf has prominent parallel veins which converge at the acute leaf tip. Inflorescence a showy, terminal branching cluster (panicle), 5-12 cm long, of small **white** to **cream** flowers. Flowers 1-2 mm, perianth parts 6, all petal-like, stamens stick out of the perianth. Fruit a berry, 5-7 mm, spheric, red, dotted purple. Seed black. Thick, creeping rhizome.

Habitat: Grows in moist woodlands (shady and open) and on streambanks. Also grows in meadows and clearings.

Distribution: Widespread in North America with a sporadic distribution. From central California north up to Alaska. Elevation range below 2000 m (6560 ft).

Phenology: Perennial. Flowers bloom from April to June.

Ecology: Grouse, and other birds, eat the berries. The plant is generally not palatable to big game and livestock, although young stalks are occasionally browsed by deer.

Cultural Significance: Native Americans cooked the roots in pits. Berries were eaten in small amounts to prevent scurvy and in larger amounts as a laxative. Cooking the bitter-sweet berries removes much of the purgative element and makes them more palatable. Dried, powdered roots are said to stop bleeding.

Remarks: The plant is called false Solomon's seal because it slightly resembles the true Solomon's seal of the genus *Polygonatum*, found in eastern North America and Europe. The name is thought to refer to the rhizomes of this species which bear surface scars and markings said to resemble the seal of Solomon: a six pointed star.

Zone: Mixed woodland and riparian (Britt Woods). This species is found in great abundance on the north facing, shady slope above Jackson Creek. It forms a dense, ground cover along the Zigler trail on the Britt Woods property.



***SMILACINA STELLATA* (L.) Desf.**

Starry False Solomon's Seal

Liliaceae (Lily) Family

Description: Stem erect, 30-70 cm. Leaves alternate, narrow, elliptic with prominent parallel veins, 5-17 cm long, sessile, clasping stem. Inflorescence a short terminal raceme, 2-8 cm long, flowers few 5-15. Flowers **whitish**, star-like, perianth parts 6, all petal-like, stamens do not extend above perianth. Fruit small, greenish berries with purple stripes, becoming reddish-brown to blackish at maturity, 7-10 mm. Seed brown. Slender rhizomes.

Habitat: Grows in moist woodlands, shaded forests and on open slopes and streambanks. Also in meadows and clearings. A common species from valley bottoms to timberline.

Distribution: Throughout North America, from California to Alaska, east to the Atlantic Coast. Elevation range generally below 2400 m (7872 ft).

Phenology: Perennial. Flowers bloom in April and June.

Ecology: Birds, such as band tailed pigeons and thrushes, will eat the seeds.

Cultural Significance: Roots were cooked and eaten by Native Americans. Tea from the roots is said to help colds and stimulate the appetite. A tea made from the leaf by some Native American tribes was used to prevent pregnancy by drinking a half of a cup daily for 2 weeks. Raw berries are known to have a laxative effect. The root of this plant was used by early explorers as a cure for wounds. Captain Fremont called it "the best remedial plant known to the Indians." Some tribes still use it as a remedy for treating rheumatism.

Remarks: Resembles western false Solomon's seal, *Smilacina racemosa*, but is noticeably smaller with fewer, starry looking flowers on the terminal raceme. The leaves of *S. stellata* are set more at right angles to the stem than those of *S. racemosa*.

Zone: Mixed woodland, riparian (Britt Woods). Found in association with *Smilacina racemosa* along the Zigler trail.

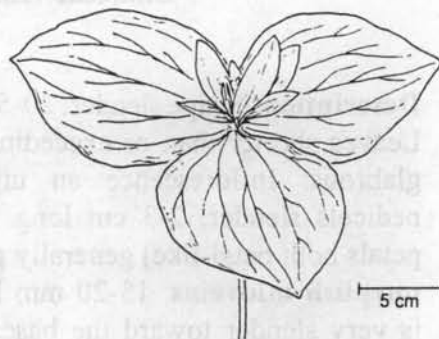


TRILLIUM ALBIDUM Freeman

Trillium, Wakerobin

Liliaceae (Lily) Family

Description: Stem erect, 2-7 dm. Leaves 3 in a single whorl, beneath flower, sessile, 7-20 cm, rounded to obtuse, generally somewhat brown spotted. Flowers 1 per stem; petals 3, **white to pinkish**, sometimes purplish near base, 4-11 cm, oblanceolate to obovate; sepals 3, greenish, persistent, 3-8 cm, lanceolate; stamens 6, 14-31 mm, tissue between anther sacs greenish; ovary greenish or rarely purplish, styles 3. Fruit a capsule, berry-like.



Habitat: Grows in mixed-evergreen forests, coastal scrub, chaparral, moist canyon slopes and ravine banks.

Distribution: From northwestern California to Washington. Elevation range usually below 2000 m (6560 ft).

Phenology: Perennial. *Trillium* bloom early in the spring, late March and April, before many of the deciduous trees leaf out.

Ecology: *Trillium* seeds have a small, oil-rich projection that attracts ants, which in turn help disperse the seeds.

Cultural Significance: Native Americans used various parts of different *Trillium* species as medicines. The roots were used to make a decoction to ease childbirth. The juice of some smashed plants was dropped in the eyes to relieve soreness. The bulb was pounded and rubbed on the body as a love medicine.

Remarks: The flower generally has a sweet rose-like or spicy scent. The genus name, *Trillium*, comes from the Latin prefix *tri* (three), as the plants have three leaves and the flower parts are in threes. The roots have rings around them. Their number reveals the age of the plant. Many live to be 20-40 years old, and some live more than 50 years. *Trillium* received their common name, "wakerobin," because they are among the first flowers to bloom in the spring. This genus was probably part of the great Oligocene broadleaf forest that extended from Asia to the southeastern United States. The center of diversity for *Trillium* is now in the southeastern United States, perhaps because the current climate and plant communities there most closely resemble the ancient Oligocene forest.

Zone: Riparian, mixed woodland (Britt and Beekman Woods). This species is one of the most beautiful and showy flowering plants occurring within the Jacksonville Woodlands. It grows in great abundance between the Zigler trail and Jackson Creek on the Britt Woods property. Only a few individuals occur within the main drainage of the Beekman Woods.

TRITELEIA HENDERSONII (S.Wats.) Greene

Henderson's Triteleia

Liliaceae (Lily) Family

Description: Scape slender, 20-50 cm long, minutely scabrous. Leaves shorter than or exceeding the scapes, 5-10 mm wide, glabrous. Inflorescence an umbel, open, 6-15 flowered; pedicels slender, 2-3 cm long. Flower perianth (sepals and petals both petal-like) generally **pale yellow with broad, dark purplish midveins**, 15-20 mm long; the tube of the perianth is very slender toward the base, flaring above; stamens in 1 row, anthers blue. Fruit a capsule, broadly ovoid, abruptly beaked by the style, 6 mm.

Habitat: Grows on prairies and dry hills, oak woodlands and coniferous forests.

Distribution: From Lane to Josephine and Jackson Counties in Oregon. In the Siskiyou Mountains of southern Oregon and perhaps northern California.

Phenology: The flowers generally bloom from April to July.

Cultural Significance: Like most other lilies, the bulbs were eaten by Native Americans.

Remarks: This species was formerly called *Brodiaea hendersonii*. Henderson's triteleia is easily identified by the vibrant purple midveins in the flowers.

Zone: Oak woodland and mixed woodland (Britt/BLM and Beekman Woods). This species is endemic to central and southern Oregon and possibly to northern California. Endemic refers to plants which only occur in a specific and limited range. Another endemic species within the Jacksonville Woodlands is the *Fritillaria gentneri*.



***ZIGADENUS MICRANTHUS* Eastw.**

Death Camus

Liliaceae (Lily) Family

Description: Stem 15-80 cm, glabrous to somewhat scabrous. Leaves 15-80 cm long, 4-25 mm wide, scabrous-ciliate. Inflorescence a raceme or panicle, 5-40 cm, open; flowers bisexual; pedicels spreading, 15-40 mm. Flowers 3-7 mm; perianth parts ovate to elliptic, **white to yellowish**; stamens 6; styles 3. Fruit a capsule, 8-25 mm, cylindric.

Habitat: Dry slopes, flats and seeps.

Distribution: From northwestern California to southwestern Oregon. Elevation range generally below 1000 m (3280 ft).

Phenology: Flowers bloom from the late spring to early summer, often in May.

Cultural Significance: Native Americans in the region avoided this plant because of its poisonous nature. They were particularly wary of it because it grows in the same places where an edible species of camas (*Camassia quamash*) often occurs. The bulbs of the edible species were roasted and eaten. Since the bulbs were dug up in the fall when the flowers were not present it was very important for harvesters to be able to recognize the differences in the plants and to know exactly where they were growing. The bulbs of another species of poisonous *Zigadenus* were powdered and applied as a poultice to cure boils, rheumatism, bruises and sprains by certain tribes of Native Americans in the region.

Remarks: The genus name, *Zigadenus*, is derived from the Greek, meaning "joined glands," referring to the pairs of glands inside the flowers of some species in the genus. All species of the genus are highly toxic to livestock and humans, and are generally unpalatable due to high concentrations of alkaloids. Some members of the Lewis and Clark Expedition ate the bulbs and became seriously ill.

Zone: Oak woodland (Britt Woods). Uncommon.



SIDALCEA MALVAEFLORA (DC.) Benth

Checker Mallow

Malvaceae (Mallow) Family

Description: Stem erect (base often decumbent), 1.5-6 dm, hairy. Leaves alternate, simple, variable, toothed and shallowly lobed; upper leaves much reduced, more deeply lobed. Inflorescence dense to open; lowest bracts often leaf-like, divided to base. Flower petals 5, 10-20 mm (sometimes larger), **bright to deep pink**, white veined; calyx 5-12 mm in flower, slightly larger in fruit, bristly, 5 sepals; stamens many, filaments fused into a tube around style; pistil 1, ovary superior. Fruit of 5-10 segments, beaked, 2.5-4 mm.

Habitat: Grows in open, generally dry places in forests and scrub.

Distribution: Throughout California (except the desert regions) north to southern Oregon. Elevation range generally below 2300 m (7545 ft).

Phenology: Perennial. The flowers bloom in mid spring.

Ecology: Bees pollinate the flowers of the *Sidalceas*.

Cultural Significance: The family Malvaceae contains over 2000 species growing world wide, especially in warm regions such as the South American tropics. Some are important agricultural crops. Cultivated varieties include *Abelmoschus* (okra), *Gossypium* (cotton), and *Hibiscus*. Various species of the Malvaceae have been used as soothing poultices. The word mallow comes from the Greek word for these plants, *malanche*, which is related to the Greek *malakos*, meaning soft. The name was given either because of the soft, downy leaves or because of the soothing, gelatinous properties of the roots, which were used in cough syrups until quite recently and for "internal irritations," as described in old medical books. Pliny said that to take one spoonful of syrup made from any of the mallows would free you from all disease from that day on. Marshmallows were originally made from the roots of the marsh mallow plant.

Remarks: The genus *Sidalcea* is highly variable, with many local forms. The updated Jepson Manual of the vegetation of California states that some plants will not key with certainty and that additional work on determining species is warranted. There are a number of subspecies of *Sidalcea malvaeflora*. Another common name is "wild hollyhock." The French word for mallow is "mauve," and this eventually became the name of that particular shade of pink.

Zone: Oak woodland (Britt and BLM). Occurs near the parking area on the Britt Woods property.



CLARKIA RHOMBOIDEA Douglas

Tongue Clarkia

Onagraceae (Evening Primrose) Family

Description: Stem erect, less than 1 m, puberulent. Leaves simple, pinnately veined; blade 1-6 cm, lanceolate to elliptic or ovate; petiole 5-25 mm. Inflorescence axis in bud recurved at tip; buds pendent. Flower petals 4, **pinkish-lavender to purplish**, often darker flecked, claw 2 lobed, blade lanceolate to widely ovate or diamond shaped; stamens 8, anthers alike, pollen blue-gray. Ovary 4-grooved, stigma not beyond anthers. Fruit a capsule, elongated. Seeds many.



Habitat: Grows in woodlands and ponderosa pine forests.

Distribution: Throughout the western U.S to Baja. Elevation range below 2500 m (8200 ft).

Phenology: Annual. The flowers bloom from the late spring to early summer.

Cultural Significance: The seeds of some *Clarkia* species were gathered and eaten by several Native American tribes.

Remarks: The genus, *Clarkia*, is named after Captain William Clark (1770-1838) of the famed Lewis and Clark Expedition, who crossed the Rocky Mountains in 1806. Many other plants are named after Lewis. *Clarkia* is often called "farewell-to-spring" as they bloom late in the spring to early summer.

Zone: Mixed woodland (Britt and Beekman Woods).

***CALYPSO BULBOSA* (L.) Oakes**

Fairy Slipper, Calypso Orchid

Orchidaceae (Orchid) Family

Description: Herb 7-18 cm. Stem more or less scapose. One basal leaf, with petiole; blade 3-6.5 cm, elliptic to ovate, slightly serrated along the margin; 2-4 cauline leaves, sheath-like. Inflorescence generally has only one flower, which is **pinkish-purple**; the lip of the flower is pendent, pouch-like, purplish outside and purple striate inside.

Habitat: Moist, generally shaded coniferous forests. Plants usually grow out of a thick deposit of decaying fir or hemlock needles, or out of a bed of moss.

Distribution: From northwestern California to Alaska. Also found in part of northeastern North America, New Mexico and Eurasia.

Phenology: Perennial. In the spring a single, dark green leaf unfolds. Blooms April to June.

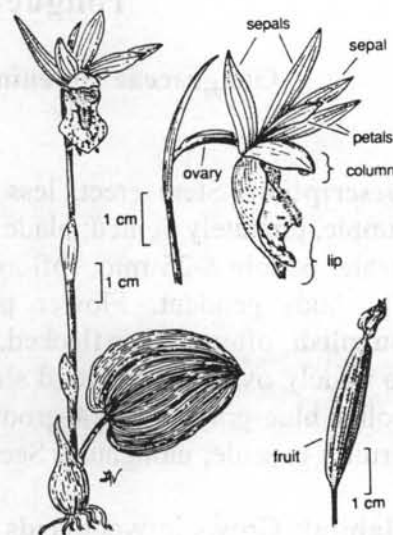
Ecology: The "fairy slipper," common as it is in some places, is extremely vulnerable. Its tuber is close to the ground surface and subject to attacks by rodents and slugs. Its seed production will be low if it is not successfully pollinated, and there are only a few insects that can do this. Also, its survival past the seedling stage depends on success in establishing a permanent relationship with a specific type of fungus. This fungus spreads through the woody soil and absorbs and modifies nutrients which are necessary to both the orchid and the fungus.

Cultural Significance: The genus name, *Calypso*, is derived from the Greek Kalypso, the sea nymph in Homer's *Odyssey*. The nymph was known for her beauty and secretive behavior. The family name, *orchid* or *orchis*, was given by the Greeks as a description of the tuberous roots; *orchis* means "testicle." Because of this resemblance orchids were said to be powerful aphrodisiacs for "man and beast." *Satyrion*, another popular medieval word for orchids and still used in France, was derived from "satyr," the name of the lustful wood deities of Greek mythology.

Remarks: It is best not to pick the flowers because it reduces the seed crop and disturbs the shallow bulbs. Transplanting the fairy slipper is not likely to be successful.

"Oh, if only man brought his ingenuity to bear on protecting, not on destroying...Were a miracle to produce in our woods some astounding orchid, a thousand hands would stretch out to tear it up, to destroy it...and then people are amazed that it is rare." - Andre Gide, Journal, 1910

Zone: Mixed woodland (Britt woods). Uncommon.



***BOSCHNIAKIA STROBILACEA* A. Gray**

California Ground-cone

Orobanchaceae (Broom-rape) Family

Description: Plant 10-30 cm tall. Inflorescence 7-18 cm long, 3-6 cm in width, generally reddish-brown to dark purplish; lower bracts 15-20 mm, ovate to widely obovate, margin generally pale, tip obtuse to rounded. Flower calyx cup shaped, 2-4 mm, teeth 3-7 mm, narrowly deltate; corolla 15-20 mm, generally **purplish** (lobe margins pale), lips 5-6 mm, lower lip 3-lobed, generally spreading. Fruit a capsule, 2-4 valved. Seeds many, about 2 mm, angled.

Habitat: Grows in open woods and chaparral. Parasitizes on *Arctostaphylos* (manzanitas) or *Arbutus* (madrone) species.

Distribution: Scattered throughout California (except the desert regions) north to southern Oregon. Elevation range generally below 3000 m (9840 ft).

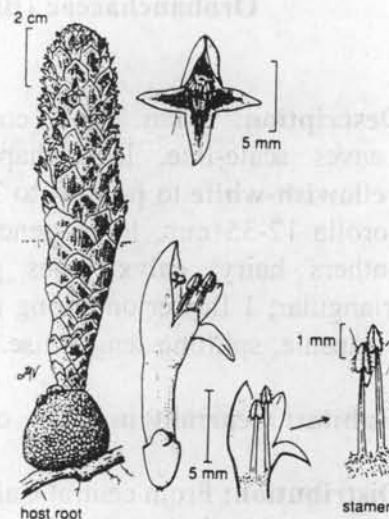
Phenology: Perennial. A single ground cone plant can produce more than a third of a million seeds.

Ecology: These non-green root parasites attach themselves to other species to access nutrients. Their roots are modified into absorptive structures.

Cultural Significance: The root bases of another northern species of ground-cone were eaten by Native Americans in British Columbia. The plant was also used as a good luck charm by some of these tribes.

Remarks: The genus, *Boschniakia*, is named for the Russian botanist A.K. Boschniaki. The common name, "ground-cone," refers to this species resemblance to a large pine cone sitting upright on the ground. What might be mistaken for cone scales are really the flowers of the plant.

Zone: Mixed woodland, oak woodland (Britt and Beekman Woods). Relatively common on and along the Beekman trail. Found in association with manzanitas and madrones.



OROBANCHE UNIFLORA L.

Naked Broom-rape

Orobanchaceae (Broom-rape) Family

Description: Stem 0.5-5 cm, glandular-hairy, yellowish. Leaves scale-like, lance-shaped, to 1 cm long. Flowers yellowish-white to purple, to 3.5 cm long, irregular in shape, corolla 12-35 mm, lobes generally rounded, stigma lobes 2, anthers hairy; calyx lobes generally 4-8 mm, narrowly triangular; 1 flower on a long pedicel 3-12 cm, scapose. Fruit a capsule, splitting lengthwise.

Habitat: Generally in moist, open sites and open woods.

Distribution: From central California north to the Yukon, and in eastern North America. Elevation range usually below 3100 m (10,168 ft).

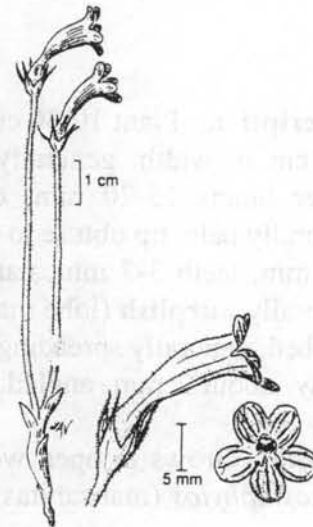
Phenology: Flowers usually bloom from April to May. The fine seeds are produced in a small capsule that cracks open in late summer.

Ecology: *Orobanche uniflora* parasitizes on herbs, especially saxifrages, stonecrops and species in the sunflower family. It has no chlorophyll, so all of its nourishment must come from its host plants. The seeds of the plant are washed into the soil, but must germinate in contact with the roots of a suitable host if they are to survive.

Cultural Significance: The entire plant can be roasted and eaten, but because the species is rather rare it should not be disturbed.

Remarks: Clustered broom-rape (*O. fasciculata*) is similar but larger and with more numerous flowers. Some plants of *O. fasciculata* are intermediate in characteristics to *O. uniflora*. The genus name, *Orobanche*, is from the Greek *orobos* (a clinging plant) and *ancho* (to strangle), referring to the fact that this species is parasitic on the roots of other plants. The single flower (*uniflora*) is borne on a stem with no leaves. A British species is parasitic on Scotch broom and so received the common name "broom-rape."

Zone: Mixed woodland (Beekman Woods). Occurs infrequently along the northwestern portion of the Beekman Woods trail.



***ESCHSCHOLZIA CALIFORNICA* Cham.**

California Poppy

Papaveraceae (Poppy) Family

Description: Herb 5-60 cm, glabrous, sometimes glaucous. Leaves basal and some cauline, much divided (lacy), grayish-green; leaf segments obtuse or acute. Flower buds erect, acute to long pointed, glabrous, sometimes glaucous; receptacle obconic; generally 4 petals, 20-60 mm, **yellow to orange**, bases generally orange spotted; many stamens. Fruit 3-9 cm, linear, pod-like capsules. Seeds numerous, 1.5-1.8 mm wide, round to elliptic, brown to black.

Habitat: Roadsides, clearings, grassy areas and dry, rocky slopes.

Distribution: Native to parts of western Oregon, southern Washington and California, but has been widely introduced in other areas within our region.

Phenology: Perennial. Flowers bloom from mid to late spring. Until the flower is ready to open, the sepals are stuck together forming a tall cone. The pistil becomes a long pod that splits open after ripening and drying.

Ecology: Birds, such as meadowlarks and mourning doves, will sometimes eat the seeds of the flowers. The flowers close up at night and on dark days. The petals fall off after pollination.

Cultural Significance: This poppy is the state flower of California.

Remarks: The genus, *Eschscholzia*, is named for a Russian naturalist, J.F. Eschscholtz (1793-1831). He came to the Pacific Northwest on expeditions in 1816 and 1824. The common name, "poppy," is from the Latin name for many poppies, *Papaver*. Several other species of poppy occur in western North America, but only the California poppy has a rim on the receptacle that bears the flower.

Zone: Oak woodland (Britt Woods)



***COLLOMIA GRANDIFLORA* Lindley**

Grand Collomia

Polemoniaceae (Phlox) Family

Description: Herb, stem erect, hairy, glandular. Basal leaves lanceolate, toothed; cauline leaves lanceolate to linear, entire, generally glabrous above, glaucous, slightly glandular below. Inflorescence a cluster of terminal flowers, some axillary. Flowers sessile. Flower corolla **salmon** colored, trumpet-like, 15-30 mm, 5 petals. Calyx 7-10 mm, lobes lanceolate.

Habitat: Generally grows in open areas.

Distribution: From California to British Columbia, Idaho, Colorado and Arizona. Naturalized in Europe.

Phenology: Annual. The flowers bloom from the mid spring to mid summer, generally April through July.

Remarks: This showy flower is very noticeable due to its unusual color. When the flared tube is spread apart, the distinctive stamens can be easily seen. They are remarkably uneven, in length, and also arise from different levels on the corolla tube, just below the flared mouth. The genus name, *Collomia*, is derived from the Greek word, *kolla* (glue), referring to the mucilaginous covering apparent when seeds are moistened. This flower is sometimes listed under the genus, *Gilia*.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Occurs along trails.

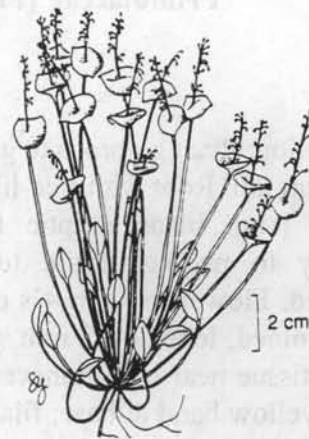


CLAYTONIA PERFOLIATA Willd.

Miner's Lettuce

Portulacaceae (Purslane) Family

Description: Smooth, succulent herb. Stem 1-40 cm long, spreading to erect. Basal leaves 1-25 cm; blade less than 4 cm, less than 3x longer than wide, elliptic to round-deltate, tip obtuse to acute; petiole linear. Cauline leaves fused, disk-like, less than 10 cm diameter, round or obtuse-angled. Inflorescence stalked or sessile, open or dense, 1 bracted at base, flowers 5-40. Petals 5, **white** or **pinkish**, 2-6 mm; stamens 5, appear fused to petals; sepals 2, 1.5-4 mm. Fruit a capsule, 1.5-4 mm. Seeds 1.2-2.7 mm, black, round, shiny and smooth.



Habitat: Grows in vernal moist, often shady and disturbed sites.

Distribution: Common throughout California and Oregon, north to British Columbia and Montana. Elevation range usually below 2000 m (6560 ft).

Phenology: An annual herb that comes up each year from seed. Highly variable because of hybridization with other species of *Claytonia*. Flowers bloom from early spring to early summer.

Ecology: The black, shiny seeds are an important food source for western songbirds, such as the junco, lazuli bunting, pine grosbeak, and sparrow.

Cultural Significance: The leaves and stems are edible. They are good in salads, although somewhat peppery. They are high in vitamin C and were used as a salad green by early pioneers and miners in western North America. They learned to use it from Native Americans, who sometimes before eating it would spread it on the hills of red ants to give it a formic acid taste.

Remarks: Plants are generally under 25 cm tall, and are typically smaller in size when they occur on dry soils. This species is extremely variable in size, color and shape of the leaves, and size of the flowers. Where miner's lettuce grows it is usually abundant, and it may form a nearly continuous ground cover. *Claytonia* is named for John Clayton (1685-1773), a colonial American botanist. This succulent plant is easy to recognize because the uppermost pair of opposite leaves are joined to form a shallow saucer, out of which springs the cluster of small whitish flowers on slender stalks. The stem appears to perforate the leaves, hence the species name, *perfoliata*. This plant is also known as *Montia perfoliata*.

Zone: Riparian, mixed woodland (Britt and Beekman Woods). This species is abundant along the Zigler trail in the Britt Woods. It is also common around the base of a large ponderosa pine at the lower reaches of the main drainage in the Beekman Woods.

DODECATHEON HENDERSONII A. Gray

Shooting Star

Primulaceae (Primrose) Family

Description: Plant glabrous to glandular-hairy. Stems generally 20-30 cm tall. Root with rice-like bulbets. Leaves are basal, 2-16 cm long, blade elliptic to ovate, generally narrowed abruptly to petiole, entire to toothed. Inflorescence 3-17 flowered. Flower parts in 4's or 5's, even on the same plant. Petals joined, lobes 6-23 mm, **magenta to deep lavender or white**; tissue near base transversely wrinkled, dark maroon to black, yellow band at base; filament tube 1-3 mm, anthers 3-5 mm; stigma not much enlarged. Fruit a capsule, about 1 cm long.

Habitat: Generally grows in shady sites, also found in dry open woods.

Distribution: From northwestern California, the Cascades, the Sierra Nevada foothills north through Oregon to southern British Columbia, and in Idaho. Elevation range below 1900 m (6232 ft).

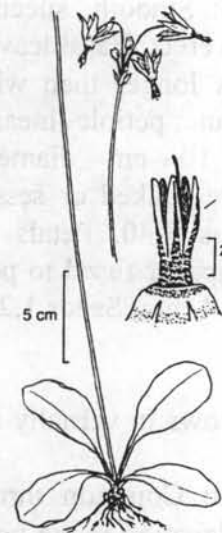
Phenology: Perennial. Flowers bloom in March and April.

Ecology: Shooting stars are an example of "buzz pollination." This occurs when pollen is dislodged from the anthers into the stamen tube by the sound waves created by buzzing bumblebees.

Cultural Significance: The roots and leaves may be eaten roasted or boiled. The flowers are edible and make a decorative addition to salads.

Remarks: The genus name, *Dodecatheon*, is derived from the Greek and was given to this genus by Linnaeus. It means "the twelve gods," which can be interpreted to mean a plant protected by the gods, or whose beauty resembles them. The common name, shooting star, describes the flowers whose stamens lead the way as the turned back petals trail behind like the tail of a shooting star. Other common names include "mosquito bills," "sailor caps," "mad violets," and "prairie pointers." The family Primulaceae includes nearly 1000 species that occur throughout the world, but most commonly in the temperate and cooler regions of the northern hemisphere; it is also found in the mountains of the tropics. The family is important economically, mainly for its garden ornamentals such as "cyclamen," a well known horticultural plant from Iran.

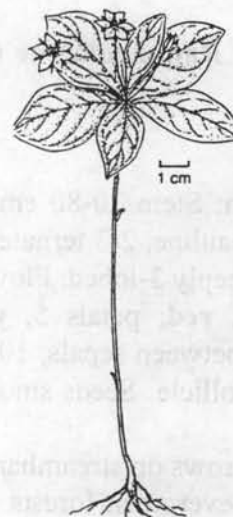
Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). This species occurs in great abundance throughout the oak woodland of the Britt Woods property.



TRIENTALIS LATIFOLIA Hook.

Western Starflower

Primulaceae (Primrose) Family



Description: Stem 5-30 cm, erect, simple. Leaves simple, 25-90 mm long, 10-50 mm wide, ovate to elliptic, mainly crowded near stem tip in a whorl. Flowers on slender, thread-like peduncles above leaves. Flowers are **white or pinkish to rose**; corolla 8-15 mm wide; number of flower parts vary from 5 to 7, looks star-like. Fruit a capsule, spherical, splits into 5 parts when dry.

Habitat: Grows in shaded and open places, woodlands, thickets and meadows.

Distribution: From California west of the Cascades to British Columbia. Elevation range generally below 1400 m (4592 ft).

Phenology: Perennial. Flowers blooms in the mid spring, usually April.

Cultural Significance: The Cowlitz tribe of western Washington squeezed the juice from the plant into water and used it as an eyewash. The tubers, found just 1-2 cm below the surface of the ground, were eaten by some Native American tribes. Another common name for this plant is "Indian potato."

Remarks: The genus name, *Trientalis*, is derived from Latin, meaning "1/3 foot," referring to the height of the plant. The species name, *latifolia*, means broad leaved. The flower stalks are very thin, causing the flowers to appear to hang in the air like tiny stars.

Zone: Mixed woodland (Britt and Beekman Woods). This species occurs sparingly throughout the mixed woodlands. It is often evident on the north facing slope above the Zigler trail on the Britt Woods property.

AQUILEGIA FORMOSA Fischer

Crimson Columbine

Ranunculaceae (Buttercup) Family

Description: Stem 20-80 cm, sometimes taller. Leaves basal and lower cauline, 2-3 ternate, petioles 5-30 cm; upper cauline simple to deeply 3-lobed. Flowers nodding; sepals 5, petal-like, 12-20 mm, **red**; petals 5, **yellow**, 1-8 mm, sac-like spurs projecting between sepals, 10-23 mm, tube red; pistils usually 5. Fruit a follicle. Seeds smooth, shiny, brown-black.

Habitat: Grows on streambanks, in chaparral, oak woodlands, and mixed-evergreen forests.

Distribution: California to Alaska and Montana. Elevation range below 3300 m (10,825 ft).

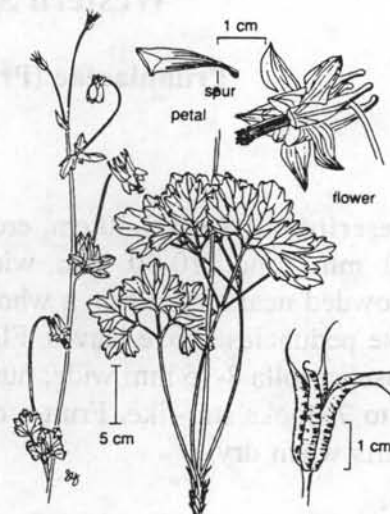
Phenology: Perennial. Flowers bloom in the mid spring, often in April.

Ecology: The red and yellow flowers are pollinated by hummingbirds and butterflies.

Cultural Significance: Native Americans of western Washington, the Quilete, scraped the roots with a sharp rock and smeared the milky pulp on sores to help form a scar. They also chewed the leaves and spit them on sores as a cure.

Remarks: Many species and hybrids of columbine are cultivated as ornamentals.

*Sprung in a cleft of the wayside steep,
And saucily nodding, flushing deep,
With her airy tropic bells aglow,-
Bold and careless, yet wondrous light,
And swung into poise on the stony height,
Like a challenge flung to the world below!
Skirting the rocks at the forest edge
With a running flame from ledge to ledge,
Or swaying deeper in shadowy glooms,
A smoldering fire in her dusky blooms;
Bronzed and molded by wind and sun,
Maddening, gladdening every one
With a gypsy beauty full and fine,-
A health to the crimson columbine!* -Elaine Goodale



Zone: Mixed woodland (Britt and Beekman Woods). This species occurs infrequently in the shady mixed woodlands of the Britt and Beekman Woods. It can be found on the north facing slope above Jackson Creek.

DELPHINIUM DECORUM Fischer & C. Meyer

Larkspur

Ranunculaceae (Buttercup) Family

Description: Herb, stem 7-45 cm, narrower than root, not firmly attached to root, lower stem generally hairy. Leaves mostly basal, more or less glabrous on upper surface, generally somewhat puberulent on lower surface and margins; lobes 3-15, sometimes more than 6 mm at widest. Inflorescence has 2-20 flowers; pedicels 10-63 mm, 10-25 mm apart, generally puberulent. Flowers **dark blue-purple**, puberulent outside, spur 13-20 mm; lower petal blades 6-11 mm, generally hairier on inner lobes. Fruit 9-20 mm, curved.

Habitat: Grasslands, open chaparral, meadows.

Distribution: From northwest California to southern Oregon. Elevation range generally below 2,300 m (7545 ft).

Phenology: Flowers bloom in the mid spring, often in April.

Ecology: Most species of *Delphinium* are highly toxic to many animals, including humans, when eaten. Members of this genus can kill cattle. Horses and sheep are also occasionally killed by consuming *Delphinium* species.

Cultural Significance: In ancient medicine, larkspur was said to drive away scorpions and other stinging or venomous creatures. Larkspur lotion was once a popular American patent medicine used to treat body lice. Native Americans used the roots and stalks of other species of larkspur as poultices for sores. Many larkspurs are poisonous and should not be eaten; symptoms of poisoning include abdominal pain, nausea, depressed respiration and eventually asphyxiation.

Remarks: The colors of this genus are very vibrant. The genus name, *Delphinium*, is derived from the Latin word for dolphin, referring to the shape of the bud, which resembles the nose of a dolphin. The common name, larkspur, also refers to the shape of the flowers. The long pointed nectary was said to be like the back spur that characterizes the feet of the lark family, and "lark's heel" and "lark's claw" were other common names once widely used. The Spanish-Californians called the blossoms "espuela del caballero" - the cavalier's spur.

Zone: Oak woodland (Britt/BLM and Beekman Woods). Abundant throughout the oak woodlands. The vibrant blue-purple color of this plant allows for easy detection.



***RANUNCULUS OCCIDENTALIS* Nutt.**

Western Buttercup

Ranunculaceae (Buttercup) Family

Description: 10-60 cm tall, erect, few branched, generally hairy. Leaves usually soft hairy. Basal and lower cauline leaves 1.5-6 cm, ovate to cordate, generally deeply 3-lobed, lobes toothed to deeply cut; upper cauline leaves smaller. Flower petals **yellow**, generally 5-6, 4-15 mm long, 2-8 mm wide, many pistils; sepals generally 5, 3-8 mm, hairy. Fruit 10-22 achenes, smooth, with minutely hooked beaks, in a spheric cluster.

Habitat: Grows in meadows, grassy slopes, flats, open woodlands and shaded forests.

Distribution: From central California (except in the desert regions and the Central Valley) north to Alaska. Elevation range 100-2200 m (328-7216 ft).

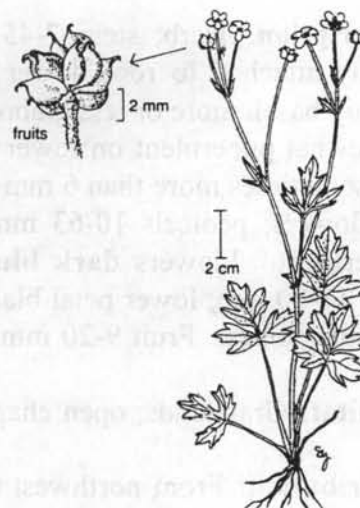
Phenology: Perennial. Flowers bloom in the early spring (March). It is one of the first flowers to appear.

Ecology: Several species of birds, such as pheasants, quail and sparrows will eat the seeds. Deer and other mammals will eat the entire plant.

Cultural Significance: Native Americans parched the seeds of some species of *Ranunculus* and beat them into flour, which they could eat without cooking. The flour is said to have the peculiar rich flavor of parched corn. The roots of other *Ranunculus* species are dug up and roasted.

Remarks: *Ranunculus* is Latin for "little frog," which refers to the generally wet habitats where this genus is usually found. The western buttercup is the most common and widespread native species found in open areas, especially on hillsides that are wet in winter and spring, dry in the summer. The family Ranunculaceae is relatively large, consisting of about 2000 species distributed primarily in cooler temperate regions of the northern hemisphere.

Zone: Oak woodland, mixed woodland (Britt and Beekman Woods). Abundant along the Beekman Woods trail.

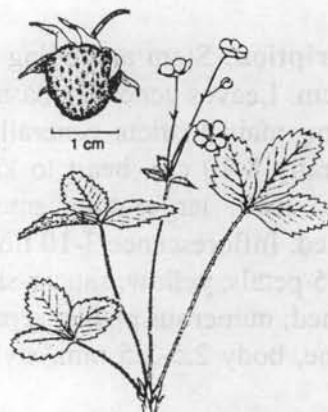


FRAGARIA VESCA L.

Wood Strawberry

Rosaceae (Rose) Family

Description: Stem generally 3-30 cm. Leaves basal, 1-ternate, thin; petiole generally 3-12 cm; central leaflet stalk less than 2 mm, blade 15-70 mm, widely elliptic-obovate, acute to obtuse, teeth generally 12-21, below and above middle, sharp or obtuse; leaflets sparsely hairy above, hairier below. Inflorescence a cyme, umbel-like, open, 1-several flowered. Flowers generally about 15 mm wide, petals 5, obovate, 5-8 mm, **white**; sepals 5, 4-8 mm; stamens 20-35; pistils many. Fruit receptacle enlarged, red, fleshy, incompletely covered with achenes (a strawberry). Plant has short rhizomes and leafless stolons.



Habitat: Generally grows in partial shade in forests.

Distribution: Widely distributed from central California to eastern North America. Also in Europe. Elevation range 30-2000 m (100-6560 ft).

Phenology: Perennial. Flowers bloom in early spring, usually April to May.

Ecology: Birds, such as pheasants, grouse and quail, will eat the leaves and fruit. Songbirds feed on the fruit. Mammals, such as rabbits, chipmunks, squirrels, will also eat the leaves and fruits.

Cultural Significance: The berries, although small, are sweet and delicious. Many people prefer them to cultivated varieties. Some Native American tribes in the region prepared a tea from the green leaves. Some tribes also planted and cultivated the plant to have greater crops of berries. Several commercial gourmet teas contain strawberry leaves for added flavor. Both the leaves and roots were included in early pharmacopeias as having medicinal properties. They are said to be astringent and were used to treat diarrhea and dysentery. The fresh fruit is said to remove slight sunburn when rubbed over the face after washing. This species is also said to remove discoloration of the teeth when the juice is sloshed in the mouth for 5 minutes followed by a rinsing with a solution of warm water and bicarbonate of soda.

Remarks: In Anglo-Saxon the name was *strewawberige*. *Strew* means "strew" and was given because the plant spreads by strewing its runners (stolons). *Strew* is also the root word for straw; grass was strewn, or spread out to dry. *Berige* means berry. The Romans called strawberries *fragaria*, because of their fragrance, and this remains their scientific name.

Zone: Mixed woodland (Britt and Beekman Woods). This species occurs within the shady mixed woodlands above the Britt Woods Zigler trail and along the slopes of the main drainage of the Beekman Woods property.

***GEUM MACROPHYLLUM* Willd.**

Bigleaf Avens

Rosaceae (Rose) Family

Description: Stem ascending to erect, hairy, generally 20 to 100 cm. Leaves generally basal, odd 1-pinnate compound, 10-45 cm; main leaflets generally 2-4 per side; terminal leaflet generally 8-10 cm, heart to kidney-shaped, 3-lobed less than 3/4 to base, larger than smaller leaflets below, irregularly toothed. Inflorescence 3-10 flowered; pedicels straight. Flower with 5 petals, **yellow**, saucer-shaped, 3-7 mm, ovate, shallowly notched; numerous pistils; sepals 5, 3-5 mm, reflexed. Fruit an achene, body 2.5-3.5 mm, style 2.5-5 mm, hooked.

Habitat: Grows in meadows, woods and along streambanks.

Distribution: Throughout the Pacific States to northern and eastern North America. Elevation range below 3300 m (10,825 ft).

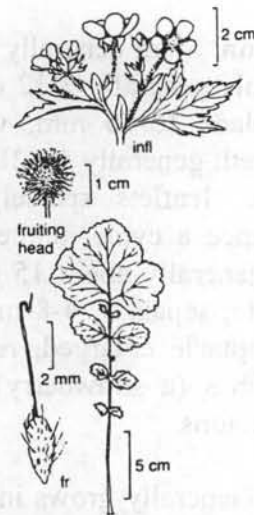
Phenology: Perennial. Flowers bloom from late spring to early summer.

Ecology: Seed dispersal of this species is enhanced by the elongated styles of the fruits which cling to the fur of animals as they brush against the plant.

Cultural Significance: Several Native American tribes recognized the plant for its astringent qualities. Some tribes smashed the leaves and rubbed them on open cuts and boils. This species is also used in childbirth. Some tribes prescribed chewing the leaves during labor. A Quilete legend promotes chewing the plant during labor since the plant is found at the birth site of seal pups. Women of the Chehalis tribe of western Washington steep the leaves in water and drink the tea to avoid conception.

Remarks: The flowers resemble buttercups, however, the petals of the *Geum* are not shiny and the its dry fruits with their long and hairy styles are distinctly unlike those found in buttercups. The hooked seeds often attach to pant legs and socks. The species name, *macrophyllum*, means "big leaf" referring to the large terminal leaflet.

Zone: Mixed woodland (Britt Woods). Evident along the western portion of the Zigler trail.



GALIUM APARINE L.

Bedstraw, Goose Grass

Rubiaceae (Madder) Family

Description: Climbing or sprawling herb, sometimes erect. Stem 3-9 dm, square, weak, brittle. Plant seems to stick to surrounding vegetation due to the presence of tiny hooked hairs. Leaves in whorls of 6-8, 13-31 mm, lowest petioled, upper sessile, narrowly oblanceolate. Flowers small, 3-5 in each axil, 4 petals, **whitish**. Fruit are nutlets covered with short, hooked bristles.

Habitat: Grows in many plant communities but prefers grassy, partially shaded places such as open forests. Becomes weedy in gardens.

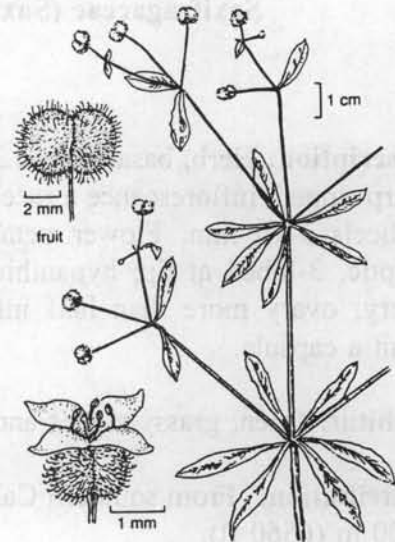
Distribution: From California, west of the Great Basin and desert areas, north through Oregon to Alaska. It also occurs on the East Coast of the United States (circumpolar, most of temperate North America). Also native to Europe. Elevation range 30-1500 m (100-4920 ft).

Phenology: Annual. The fruits are covered with hooked bristles which enhance seed dispersal by easily attaching to animals, including humans as they pass by (check your socks after walking through *Galium*).

Cultural Significance: A tea made from the plant has been used as a spring tonic by Native Americans and can be drunk cold as a remedy against fevers. In Washington, the Snohomish tribe rubbed the body with the plant after bathing. Women in the Cowlitz tribe believed they would be successful in love if they used the right incantation while rubbing themselves with the plant when bathing. Younger shoots are said to be good potherbs, boiled about 25 minutes and topped with butter. Dried fruits are ground and used as tea and coffee substitutes. A purple dye may be obtained from the roots of many of the *Galium* species. Belgian lacemakers used the fruits of this species as heads for their pins. In Scandinavia masses of stems and leaves were used as filters for milk.

Remarks: *Galium* belongs to the family Rubiaceae which also includes the plants that give us coffee beans, gardenias and quinine. The plants have a pleasant aroma when dried and were once used extensively for mattress stuffing; hence the name of bedstraw. Some say it received the name of bedstraw because one species in the genus, *Galium verum*, filled the manger of the newborn baby Jesus. *Galium* is derived from the Greek word *gala* (milk); the juice from *G. verum* was used to curdle milk.

Zone: Oak woodland, mixed woodland and riparian (Britt/BLM and Beekman Woods). A widespread species throughout the Jacksonville Woodlands.



LITHOPHRAGMA AFFINE A. Gray

Woodland Star

Saxifragaceae (Saxifrage) Family

Description: Herb, basal leaves 3-5 lobed, teeth more or less sharp-tipped. Inflorescence a raceme, 10-60 cm; 3-15 flowers; pedicels 3-10 mm. Flower petals **white**, 5-13 mm, ovate-elliptic, 3-lobed at tip; hypanthium obconic, partly fused to ovary; ovary more than half inferior; stamens 10; pistil 1. Fruit a capsule.

Habitat: Open, grassy slopes and in dry forests.

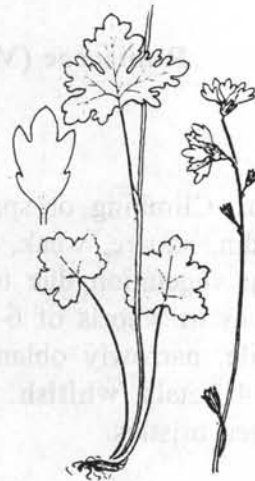
Distribution: From southern California to southwest Oregon. Elevation range generally below 2000 m (6560 ft).

Phenology: Flowers bloom in the mid spring, usually March and April.

Ecology: This species is very similar to *Lithophragma parviflorum*, which also grows in the area. *Lithophragma parviflorum* has leaves that are much more deeply divided or compound. Individual plants of *L. affine* which are intermediate in characteristics to *L. parviflorum* are common in northern California and probably occur here in southern Oregon.

Remarks: The genus name, *Lithophragma*, is from the Greek *lithos* (stone) and *phragma* (wall or hedge), referring to the fact that some of the species in the genus grow in or near rock walls or hedges. This species, however, does not. The common name refers to the star-like flowers of the species.

Zone: Oak woodland (Britt/BLM and Beekman Woods)



TELLIMA GRANDIFLORA (Pursh) Lindley

Fringe Cups

Saxifragaceae (Saxifrage) Family

Description: Stem hairy, with some glands. Leaves basal and cauline, reduced upward; blade 2-10 cm, ovate to heart-shaped, base cordate, lobes shallow, teeth sharp; stipules about 5 mm, ciliate to toothed; petiole 3-30 cm, hairy. Inflorescence a spike-like raceme, 40-100 cm, generally 1-sided. Flowers many; petals small, 3-7 mm, **white-greenish**, aging to a brown-red, tips fringed, lobes 5-7; sepals 5, 2-3 mm, elliptic, fused to form a cup; stamens 10; pistil 1. Fruit a capsule, 2 equal valves, many brown wrinkled seeds.

Habitat: Grows in moist woods, forest slopes and streambanks.

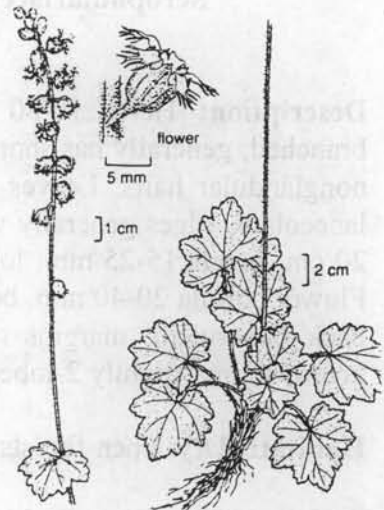
Distribution: From central California north to Alaska, and east to Montana. Elevation range below 2000 m (6560 ft).

Phenology: Flowers bloom in mid to late spring, often in April and May. Fruits apparent by late May. Dried flowers remain on the stem into the late summer.

Cultural Significance: Native Americans in Washington, the Skagit, pounded the whole plant, boiled it and drank the tea as a cure for all kinds of sickness. This species is said to help restore the appetite. The family Saxifragaceae is important economically for its use as garden ornamentals. Many species are grown as rock garden plants.

Remarks: This species is very common in coniferous woods where soils typically exhibit high moisture holding capacities. The common name "fringe cups" refers to the highly divided petals which fringe the edge of the floral disk. The genus name, *Tellima*, is an anagram of another Saxifragaceae genus, *Mitella*. The family Saxifragaceae consists of about 700 species worldwide, but has its greatest diversity in the arctic, boreal, and montane regions of the northern hemisphere. The largest genus is *Saxifraga* (about 300 species), which is very common in arctic and alpine floras.

Zone: Riparian, mixed woodland (Britt Woods). This species can be found along the Zigler trail of the Britt Woods property.



CASTILLEJA APLEGATEI Fern.

Applegate's Paintbrush

Scrophulariaceae (Figwort) Family

Description: Herb, 10-80 cm tall, green to dusty, few-branched, generally has short, glandular-sticky hairs and long, nonglandular hairs. Leaves sessile, 20-70 mm, more or less lanceolate, edges generally wavy, lobes 0-3. Inflorescence 5-20 cm; bracts 15-25 mm, lobes 0-7, **bright red to yellowish**. Flower corolla 20-40 mm, beak more or less equal to the tube, back puberulent, margins reddish, lower lip 1-3 mm, dark green; stigma slightly 2-lobed, exserted. Fruit ovoid, 8-15 mm.

Habitat: Dry, open forests and scrub.

Distribution: From northern Baja, California to Oregon, Idaho, and Nevada. Elevation range 300-3600 m (985-11,808 ft).

Phenology: Flowers bloom in mid to late spring, usually in April and May.

Ecology: *Castilleja* species are partially parasitic on the roots of other plants. They have leaves and chlorophyll, so they can make much of their own food, but underground they are attached to other plants. Because of this they are extremely difficult to transplant. Deer will sometimes browse the plants and hummingbirds will search out the nectar from the flowers.

Cultural Significance: Another species of *Castilleja* was used medicinally by Native Americans in western Washington. They made an infusion of the whole plant and drank it to bring about regularity in menstruation. This was known to be a mild cure and not used as an abortive if pregnancy was suspected.

Remarks: The "paintbrush" is not the flowers themselves, but the leafy bracts surrounding the mostly greenish flowers. These showy bract resemble a brush dipped in paint. The genus *Castilleja* is named for Don Domingo Castillejo, a Spanish botanist of the 18th century who found a species of *Castilleja* in Central America. The genus is complex and highly variable, as is this species.

"It is startling to see a leaf thus brilliantly painted, as if its tips were dipped into some scarlet tincture, surpassing most flowers in intensity of colour." - Thoreau

Zone: Oak woodland (Britt and Beekman Woods). Uncommon, found in isolated patches.

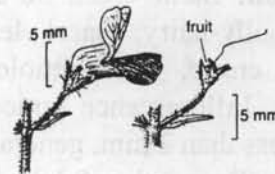


***COLLINSIA LINEARIS* A. Gray**

Blue-Eyed Mary

Scrophulariaceae (Figwort) Family

Description: Plant 10-40 cm tall. Leaves opposite, linear to narrowly oblanceolate, rolled under. Inflorescence open, finely scaly-hairy and glandular; bracts larger than 2 mm; pedicels generally 1-3 (sometimes 5) per node, greater than calyx, ascending. Flower corolla strongly two lipped, **purple-blue**, except for upper lip which is **whitish**, 8-15 mm, more than 2 times larger than the calyx.



Habitat: Grows in open coniferous forests.

Distribution: From northern California to southern Oregon. Elevation range 200-2000 m (656-6560 ft).

Phenology: Annual. Flowers bloom in the spring, usually during March and April.

Ecology: Some birds, such as mountain quail, will eat the seeds of this *Collinsia*; but the seeds only comprise a small percent of their diet.

Remarks: This species is easy to recognize by its two colored petals and two-tiered cluster of flowers. The genus name, *Collinsia*, is named for Zaccheus Collins (1764-1831), an early American botanist. Another common name for this species is "Chinese pagodas."

Zone: Oak woodland (Britt/BLM and Beekman Woods). Relatively common.

VERBASCUM THAPSUS L.

Woolly Mullein

Scrophulariaceae (Figwort) Family

NON-NATIVE

Description: Stem erect, 30-200 cm, stellate-hairy. Leaves large, woolly-hairy; basal leaves 5-30 cm, oblanceolate, generally entire, short-petioled; cauline leaves 5-30 cm, lanceolate. Inflorescence a raceme, dense; bracts 12-18 mm; pedicels less than 2 mm, generally fused to stem. Flower petals 5, fused, **yellow**; calyx 5 lobed, lobes lanceolate; upper three filaments white or yellow-hairy, lower 2 glabrous to sparsely hairy. Fruit a capsule, 7-10 mm, ovoid.

Habitat: Grows in disturbed areas.

Distribution: A non-native, but found throughout the Pacific states. Native to Eurasia.

Phenology: Biennial. Flowers bloom in the early summer. Flowers open at different times so that during the season only a few flowers on each raceme are open at one time.

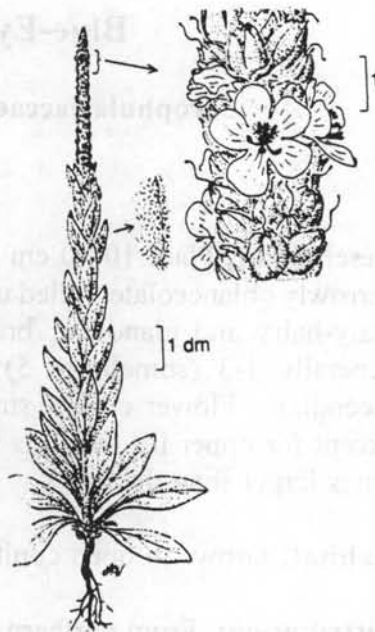
Ecology: Hummingbirds use the leaves to line their nests. The hairs on the leaves act as a protective coat, so that the plant does not lose too much moisture. The hairs also act as a defensive mechanism for the plant, preventing the attack of creeping insects, and causing an intense irritation in the mucous membranes of grazing animals which attempt to eat them.

Cultural Significance: Pliny recommended mullein for coughs and tonsillitis. The Romans coated dried mullein stalks with suet and burned them as funeral torches. An infusion of the flowers was used by Roman women to dye their hair a golden color. The down on the leaves and stem was also used to make lamp wicks. Early Swedish settlers in North America prepared a tea of the leaves for dysentery. They also used a decoction of the roots which they injected into the wounds of cattle infected with worms. The plant was used to treat similar ailments throughout Europe. Steeping the fresh flowers in olive oil for 21 days is said to make a good bactericide. In Europe and Asia it has been believed to have the power to drive off evil spirits. From the Greek classics we learn that it was this plant that Ulysses took to protect himself against the wiles of Circe.

Remarks: Mullein is derived from the Latin *mollis* (soft), referring to the plant's thick, gray-green woolly leaves. Other common names include "old lady's flannel" and "candlewick plant."

Management Recommendations: To prevent the spread of woolly mullein and another non-native mullein, *V. blattaria*, they should be pulled or cut prior to setting seed (early summer).

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman). Both *V. thapsus* and *V. blattaria* occur in isolated locations within the oak and mixed woodlands.



PLECTRITIS CONGESTA (Lindley) A. DC.

Sea Blush, Corn Salad

Valerianaceae (Valerian) Family

Description: Stem upright, 5-80 cm tall, angled. Leaves simple, basal and cauline, opposite, generally entire or obscurely toothed; basal short-petioled, spoon-shaped; cauline generally sessile (hugging the stem), oblong to ovate. Inflorescence terminal, a head-like cluster of 20-30 flowers. Each flower corolla 4-9.5 mm, pale to dark **pink**, 2-lipped, slender spur; no calyx; 3 stamens. Fruit an achene, 2-4 mm, sharply winged.

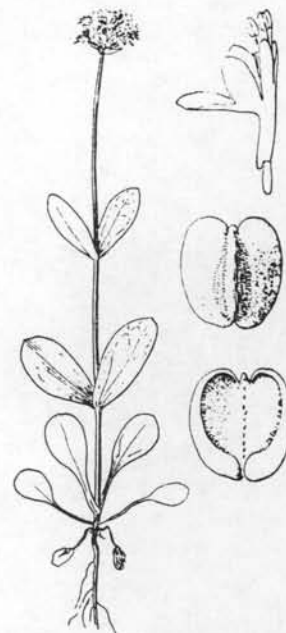
Habitat: Grows in numerous habitats: open, grassy places, partly shaded slopes, woodlands, meadows and coastal bluffs.

Distribution: From central-western California to British Columbia. Elevation range 100-900 m (328-2925 ft).

Phenology: Annual. Flowers bloom in the early spring.

Remarks: In Greek, *Plectritis* means "spur" or "pleated" and *congesta* means "congested" or "crowded;" both names refer to the flowers. The common name, sea blush, refers to the color of the flowers, which often grow in great abundance on bluffs of the ocean. The family Valerianaceae consists of 300-400 species which exist all over the world. The largest genus is *Valeriana* (250 species). The leaves and root extracts of *Valeriana officianalis* are used to treat nervous disorders.

Zone: Oak woodland, mixed woodland and riparian (Britt/BLM and Beekman Woods). Common on the slope above the Zigler trail in the Britt Woods.



FERNS AND FERN ALLIES



Cystopteris fragilis

***CYSTOPTERIS FRAGILIS* (L.) Bernh.**

Fragile Fern

Dryopteridaceae (Wood Fern) Family

Description: Leaf (frond) 8-30 cm in length, sometimes bigger; petiole generally less than blade, less than 1.5 mm wide, base straw-colored to reddish-brown; blade generally 10-24 cm, 5-9 cm wide, ovate-lanceolate; blade divided into leaflets (pinnae). The clusters of spore-bearing sacs (sori) are round and covered by a hood-like indusium, attached on the side away from margin. The indusium soon withers and curls back.

Habitat: Shady, moist rock crevices, meadows, banks and streamsides. It prefers rocky areas that are partially shaded by shrubs or trees.

Distribution: Found worldwide. Elevation range 50-3800 m (165-12,465 ft).

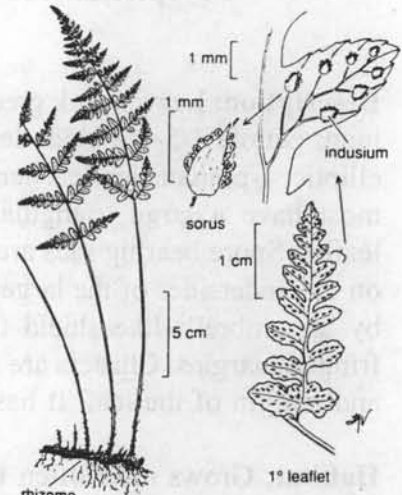
Phenology: The plant dies back in the winter. As the sori ripen and prepare to discharge the spores, the indusia are thrust back and wither.

Ecology: Wildlife, typically, do not eat ferns. The minute size of their spores limits their use as a significant food source. However, some birds, such as grouse, and some mammals, such as deer, occasionally eat the fronds.

Cultural Significance: Fern fronds have been widely used by regional Native American tribes for lining and covering storage baskets, cleaning fish, and covering food during cooking.

Remarks: The plant has creeping, scaly rhizomes. The genus name, *Cystopteris*, is derived from the Greek words *kystos* (bladder) and *pterus* (fern), referring to the hood-like indusium. Another common name is "brittle bladder fern."

Zone: Riparian and mixed woodland (Britt and Beekman Woods). Common on the shady, north facing slope above Jackson Creek. Abundant along the Zigler trail of the Britt Woods property.



***POLYSTICHUM MUNITUM* (Kaulf.) C. Presl**

Western Sword Fern

Dryopteridaceae (Wood Fern) Family

Description: Leaves dark green, leathery, generally 50-120 cm long; petiole 1/5-1/2 blade length; blade lanceolate to narrow elliptic, 1-pinnate; leaflets generally 2-8 cm, serrated, acute tip, most have a large triangular projection at the base of the leaflet. Spore bearing sacs are arranged in dense clusters (sori) on the undersides of the larger leaflets. Each cluster is covered by an umbrella-like shield (indusium) which is round with fringed margins. Clusters are in two rows between the midvein and margin of the leaf. It has a stout, scaly rhizome.

Habitat: Grows most often in moist, partly open and shaded forests, on wooded hillsides; rarely on cliffs and rock outcrops.

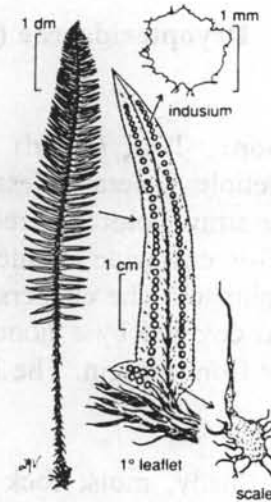
Distribution: From central California to Alaska and Montana, also South Dakota. Elevation range below 1600 m (5248 ft).

Phenology: Evergreen perennial. Each spring, when new leaves unroll, the ones produced the preceding year are pushed closer to the soil; they generally survive for another year.

Cultural Significance: Native Americans have used the plant in many ways. The young leaves were eaten raw as a cure for sore throats and tonsillitis. Leaves were used to line baking or steaming pits. The leaves were also used for cleaning fish and as a stuffing for mattresses. Rhizomes were eaten baked or boiled. Spore sacs were scraped off the leaves and applied to burns. Water from the boiled roots was used as a cure for dandruff. Women chewed on the new leaves to facilitate childbirth.

Remarks: The projection at the base of the leaflet gives it the characteristic shape of a sword. Ferns are believed to have evolved before conifers and flowering plants because they do not produce seeds. Instead they reproduce by spores. The spores that land in a suitably moist location germinate into little plants that are not fern-like, but look more like certain liverworts. They represent the sexual generation, which produces microscopic eggs and sperm, the latter having to reach the eggs by swimming to them in a film of water. After fertilization, the eggs develop into new fern plants.

Zone: Mixed woodland and riparian (Britt Woods). Found in isolated locations on the shady, north facing slope above Jackson Creek.



***EQUISETUM HYEMALE* L.**

Common Scouring Rush, Horsetail

Equisetaceae (Horsetail) Family

Description: Stems all alike, generally erect, green, ridged lengthwise, hollow except at nodes, 60-210 cm, unbranched. Leaves scale-like, whorled, fused into a nodal sheath, 7-17 mm, about as long as wide, generally with two dark bands, 1 at base, 1 at tip, teeth 22-50, generally deciduous. The sporangia (spore producing organs) are on the inner surface of scales that are clustered into a cone on top of the stem; cone tip pointed. Spores spheric, green. Rhizomes creeping, slender, blackish.

Habitat: Grows along streams and rivers, in moist, sandy or gravelly areas.

Distribution: Throughout North America. Elevation range usually below 2500 m (8200 ft).

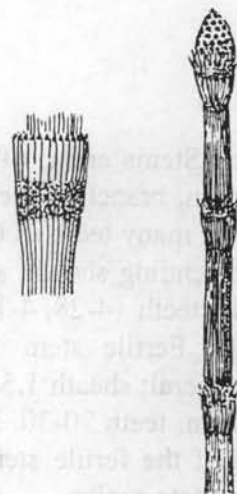
Phenology: One of the first green sprouts in the early spring. Some stems will persist for a number of years. The sheaths are generally deciduous.

Ecology: Waterfowl, such as geese, will eat the roots and stems of this species. Black bears will eat the entire plant, although horsetails will only comprise a small percentage of a bear's diet.

Cultural Significance: Native Americans used the plant for polishing arrow shafts, canoes and dishes. The stems are impregnated with a hard, glass-like silica. The silica acts like a fine sandpaper when the rushes are used for scouring. Early settlers also used the scouring rush to clean pots and pans. In Europe the plant was used to scour utensils made of pewter or wood. It was also used for honing the reeds of woodwind instruments. The peeled stems can be eaten but are tedious to prepare. A tribe in western Washington, the Cowlitz, dry the cone-like top of the stalk, mash it and mix it with salmon eggs. They also use the stalks as a medicine, boiling them, and washing hair infested with "vermin" with the water. Swimmers of the Quilete tribe rub themselves with the stalks to feel strong. Horsetails have been known to poison livestock and should be eaten sparingly. No cases have been reported of poisoning to humans from eating the peeled stems.

Remarks: Horsetails are living remnants of primeval plants which had giant tree-like forms, and existed long before humans.

Zone: Riparian (Britt Woods).



***EQUISETUM TELEMATEIA* Ehrh.**

Giant Horsetail

Equisetaceae (Horsetail) Family

Description: Stems erect, of two types. Sterile stem 30-100 cm, light green, branched. Leaves scale-like, fused into nodal sheath with as many teeth as leaves. Basal internode of branch less than subtending sheath; sheath 7-18 mm, more or less as long as wide, teeth 14-28, 4-10 mm; branch with 4-5 grooved ridges, solid. Fertile stem 17-45 cm, unbranched, fleshy, brown, ephemeral; sheath 1.5-4 cm, greater than the sheath of the sterile stem, teeth 20-30, 5-16 mm. A long cone (up to 10 cm) on top of the fertile stem holds the spores on the inner surface of peltate scales.



Habitat: Grows in moist to wet places, on streambanks, roadside ditches and seepage areas.

Distribution: From southwestern California north, west of the Cascades, to British Columbia.

Phenology: Perennial from deep-seated rootstalks. Above ground stems annual.

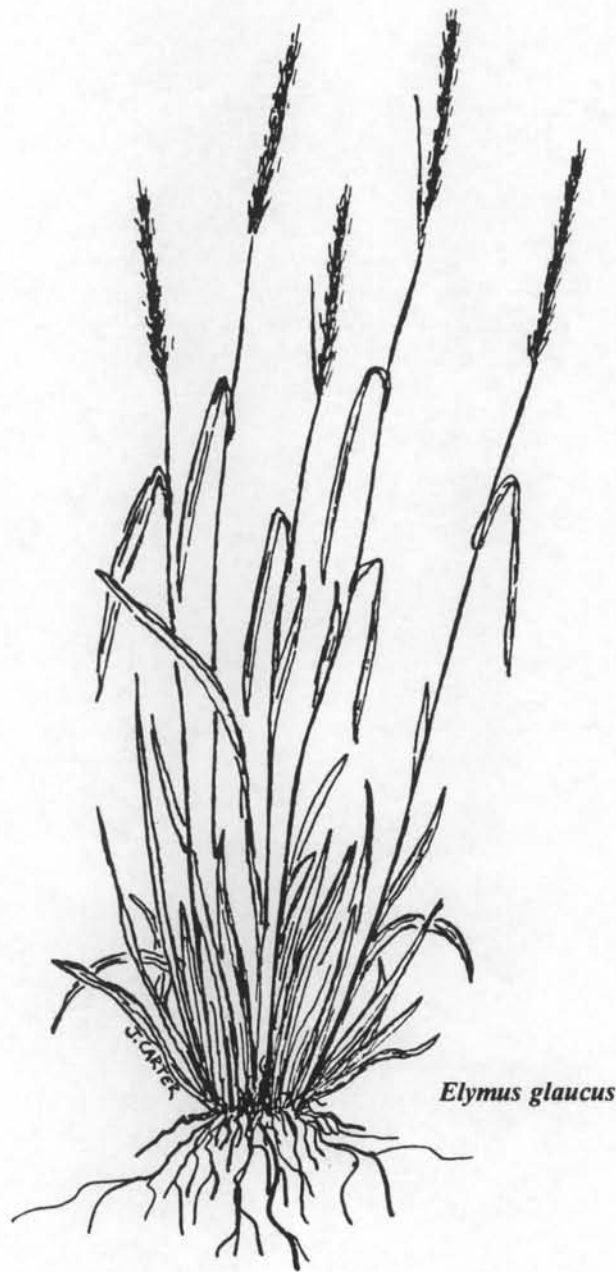
Ecology: The development of young horsetails from spores is similar to that of ferns (refer to *Polystichum munitum*). They also propagate in a vegetative, non-sexual manner, by means of subterranean stolons and by tubers.

Cultural Significance: Native Americans in western Washington used the rough stalks for polishing arrow shafts and the black roots for making coiled baskets. They also ate the little bulbs on the rootstock after cooking them. When horses were introduced, this horsetail was considered good fodder, and called "horses eat it" by the Quinault tribe.

Remarks: *Equisetum telemateia* can be differentiated from *E. arvense* (common horsetail) by its larger, looser sheath and more numerous (20-30) 2 ribbed teeth. Although *E. arvense* is not reported from the Jackson Creek area in the Britt Woods, this species could be present. The family Equisetaceae is allied with the ferns. The genus *Equisetum* includes about 20 species, several occurring in our region. Other subspecies of *Equisetum telemateia* occur in Europe and Asia. The name is derived from the Latin words *equus* (horse) and *seta* (bristle), from the peculiar appearance of the jointed stems.

Zone: Riparian (Britt Woods). This species occurs in isolated, dense patches along the banks of Jackson Creek.

GRASSES



Elymus glaucus

***ACHNATHERUM LEMMONII* (Vasey)Barkworth**

Lemmon's Needlegrass

Poaceae (Grass) Family

Description: Stems 1.5-9 dm tall. Leaf blade 0.5-1.5 mm wide; basal ligules 0.5-1.2 mm. Inflorescence 7-21 cm. Spikelet somewhat laterally compressed; glumes 7-11.5 mm, more or less equal; floret 5.5-7 mm; callus blunt; lemma 1.1-1.3 x palea length, hairs short, tip lobe about 0.1 mm, thick, awn 16-30 mm.

Habitat: Grows in shrublands, coniferous forests and sagebrush. Especially likes dry open ground and open woods.

Distribution: From British Columbia south through Washington, Idaho, Oregon to California in the Sierra Nevada and Great Basin. Also to Utah. Elevation range below 2300 m (7545 ft).

Phenology: Perennial.

Ecology: The long, hard, sharp tipped seeds are an important food for both songbirds, such as lazuli buntings and sparrows and small mammals, such as chipmunks and squirrels. Deer browse the foliage.

Remarks: This native bunch grass is considered a "choice" range plant that has good forage value for livestock. This species was previously included in the genus *Stipa*, and was called *Stipa lemmonii*. The new genus name, *Acnatherum*, is derived from Greek and means awned scale, from the lemma. Fossil "grass-like" pollen has been found in Upper Cretaceous deposits, and fossil grass pollen and grains have been found in Paleocene, Eocene, and more recent deposits.

Zone: Oak woodland and mixed woodland (Britt/BLM and Beekman Woods).



***BROMUS CARINATUS* Hook & Arn.**

California Brome

Poaceae (Grass) Family

Description: 45-150 cm. Leaf blade 3-12 mm wide, glabrous, scabrous or soft-hairy; sheath glabrous to soft-hairy. Inflorescence 5-20 cm, generally dense, becoming more open in fruit; lowest branches generally spreading to ascending; upper branches ascending to erect. Spikelet strongly compressed; glumes keel-like, glabrous to short soft-hairy; lower glume 6.5-12 mm, generally 3-veined; upper glume 9-15 mm, 5-7 (sometimes 9) veined; florets 7-11; lemma body 12-17 mm, 7-9 veined, keel-like, glabrous to densely short-hairy, awn 3-15 mm.

Habitat: Grows in open shrublands, woodlands and coniferous forests, also in disturbed areas.

Distribution: From Alaska south to California (except in the Great Central Valley and Sonoran Desert) and into northern Mexico. Elevation range generally below 3500 m (11,480 ft).

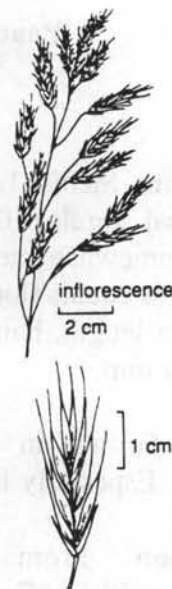
Phenology: Perennial. The flowers bloom in the late spring to early summer. This species will sometimes flower its first year.

Ecology: The seeds are consumed by a number of birds and rodents. The foliage is eaten by deer.

Cultural Significance: Before maturity, this grass is a favorite for browsing by horses, cattle and sheep.

Remarks: California brome is a common native grass. It is extremely variable in size, hairiness and in the shape of its inflorescence. *Bromus* is an ancient name for "oat."

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods).



***BROMUS LAEVIPES* Shear**

Brome, Lob Grass

Poaceae (Grass) Family

Description: Plant light green or glaucous, 55-140 cm tall. Leaves glabrous to short hairy; blade 4-17 mm wide. Inflorescence 7-27 cm, open; branches nodding to spreading, upper more or less ascending. Spikelet compressed; glumes glabrous to puberulent; lower glume 4-9 mm, 3-veined; upper glume 6-11 mm, 5-7-veined; florets 5-11; lemma body 9-15 mm, back rounded, 5-7-veined, puberulent or glabrous above middle, densely puberulent below middle near margin, tip obtuse to minutely lobed, awn 3.5-7 mm; anthers 3-5 mm.

Habitat: Grows in shrublands and coniferous forests.

Distribution: From southern Washington to California and Baja. Elevation range 100-2500 m (328-8200 ft).

Phenology: Perennial bunch grass.

Cultural Significance: The light windblown pollen of many grasses creates problems for a large number of allergy sufferers. Grasses are the major cause of "hayfever" problems.

Remarks: *B. laevipes* is a common native bunch grass. One common name for this species is "lob grass," referring to the panicles (flower heads) which "loll" or "lob" to one side.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods).



CYNOSURUS ECHINATUS L.

Hedgehog Dogtail

Poaceae (Grass) Family

NON-NATIVE

Description: 10-50 cm tall, hairless. Flower a dense, clustered panicle, over 1 cm wide, 1-4 cm long, dense and one-sided; spikelet mostly in pairs on very short branches; one spikelet of the pair fertile, the other flattened, fan-like. Spikelets have awn tipped glumes (5-6 mm long) and lemmas about the same length with awns 3-10 mm long. Leaf blade, flat 4-10 cm long, 2-5 mm wide; ligule 2-5 mm, prominent, rounded, irregularly toothed.

Habitat: Grows in open, disturbed areas, roadsides and dry forest edges.

Distribution: From southwest British Columbia to central California; scattered throughout to the East Coast of the U.S. Native to Europe. Elevation range below 1000 m (3280 ft).

Phenology: Annual. It often remains erect and visible throughout the winter, when all other grasses are decumbent.

Ecology: The leaves are few, small, and so early withered that animals don't use *C. echinatus* much for forage. The plants are readily adapted to thin soil and rocky areas, often crowding out native plants.

Remarks: This grass is alien to North America and was introduced from Europe. However, it is now naturalized here and commonly found growing throughout the West. It is often an indicator of dry sites with shallow soils. The genus name, *Cynosurus*, is Greek for dogtail, referring to the shape of the inflorescence. *Echinos* means "hedgehog." The prickly spike is fringed mostly on one side like the tails of some dogs. The stiff bristles of the flower heads cause them to cling to the fur of animals and to human clothing. This grass becomes very dry in the summer, and its tendency to carpet large areas may make it a serious fire hazard.

Management Recommendations: Due to the widespread distribution of this species throughout the Jacksonville Woodlands, the control and/or eradication of this invasive species is a difficult task. Future management strategies could include the implementation of seasonal mowing and/or a series of prescribed burns followed by reseeding of native bunch grasses.

Zone: Oak woodland and mixed woodland (Britt/BLM and Beekman Woods). This is the most common grass species encountered within the woodlands. It occurs in great abundance along the trail leading to the water tank within the Britt Woods property.



***ELYMUS GLAUCUS* Buckley**

Blue Wild Rye

Poaceae (Grass) Family

Description: In loose to dense tufts, usually forming small clumps. Stems 6-14 dm. Leaf blade 4-12 mm wide, generally flat or slightly inrolled, usually scabrous on both surfaces; sheath glabrous or hairy, appendages about 2 mm. Inflorescence long, erect, 6-16 cm (except awns), dense, not breaking apart with age; internodes 4-8 mm; spikelets generally 2 per node. Spikelet 8-16 mm, glumes 6.5-19 mm, short awned; lower florets concealed; lemma 8.5-14 mm, awn less than 30 mm, generally straight; anthers 1.5-3 mm.

Habitat: Grows in dry to moist open areas, chaparral, woodlands and forests.

Distribution: From Alaska south to California and northern Mexico, east to the Great Plains. Elevation range generally below 2500 m (8200 ft).

Phenology: Perennial. Bunch grass.

Ecology: This species provides forage for wildlife and domestic stock.

Cultural Significance: All of the species in the genus *Elymus* produce an edible grain.

Remarks: Blue wild rye is a common native bunch grass which has highly variable characteristics and has several subspecies. This is one of the tallest grasses. The genus name, *Elymus*, is derived from the ancient name for millet. *Glaucus* refers to its blue-grey color. This resemblance *E. glaucus* to rye, *Secale cereale*, accounts for its common name.

Zone: Oak woodland, mixed woodland (Britt/BLM and Beekman Woods). This is a commonly occurring native bunch grass species. It is abundant throughout the oak and mixed woodlands of the Britt and Beekman Woods.



***FESTUCA CALIFORNICA* Vasey**

California Fescue

Poaceae (Grass) Family

Description: Stems 4.5-12 dm, clumped, nodes visible. Leaf blade 10-100 cm, 1.8-3.5 mm wide, flat or rolled, scabrous; sheath more or less scabrous, conspicuously persisting; collar glabrous to long-hairy; ligule 0.5-1.5 mm. Inflorescence 10-27 cm, open; spikelets borne near branch tips. Spikelet 13-18 mm; lower glume 4.5-7 mm; upper glume 6-8 mm; florets 4-6; lemma 7.5-11 mm, glabrous, awn 1.5-2.5 mm; anthers 4.5-5 mm; ovary tip hairy.

Habitat: Grows in open forest, chaparral, dry ground and thickets.

Distribution: From central-western California north to Oregon. Elevation range below 1800 m (5905 ft).

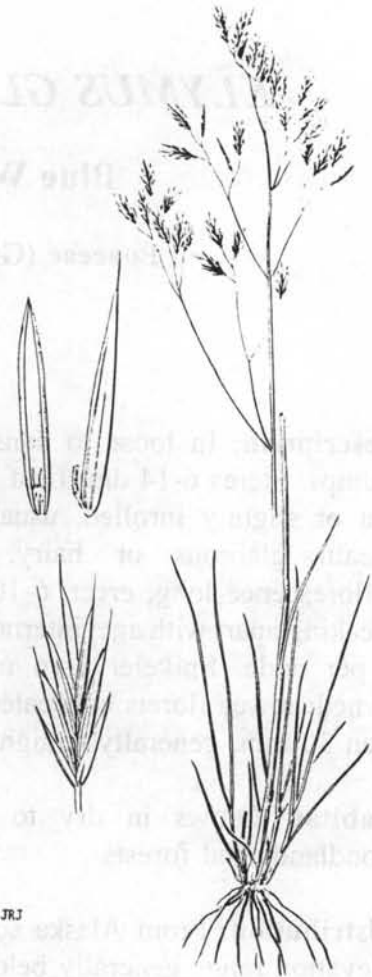
Phenology: Perennial.

Cultural Significance: As a food source, the family *Poaceae* is the most important plant family to humans. It provides all of the cereal crops, including the three most widely cultivated species: *Triticum* spp. (the wheats), *Oryza sativa* (rice), and *Zea mays* (corn). Other food crops include *Avena sativa* (oats), *Hordeum vulgare* (barley), *Saccharum officinarum* (sugar cane), *Secale cereale* (rye) and *Sorghum bicolor* (sorghum).

Ecology: Birds, such as larks, sparrows and finches, will eat the seeds. Rabbits, squirrels and mice eat the seeds and foliage. Deer also browse the foliage.

Remarks: The large tufts of California fescue are quite conspicuous in late spring and early summer, covering large areas. The family *Poaceae* includes between 7500-10,000 species distributed throughout the world, growing in all climates and regions. It has been estimated that 20% of the world's vegetational cover is made up of grasses.

Zone: Mixed woodland (Britt and Beekman Woods). This species commonly occurs within the main drainage and on the adjacent slopes of the Beekman Woods property. Also common within the mixed woodlands of the Britt Woods property.



***FESTUCA IDAHOENSIS* Elmer**

Idaho Fescue

Poaceae (Grass) Family

Description: Grows in dense tufts 3-10 dm tall with mostly smooth, erect stems; sheaths mostly without hairs; auricles lacking; ligules less than 0.6 mm long, higher on sides. Leaves narrow, with abundant basal leaves, slightly tough, scabrous, and rolled in, 5-35 cm long, less than 2 mm wide. Flowers in narrow panicles with branches ascending to erect, 6-20 cm long; spikelets 7-17 mm; lower glume 2.5-6 mm; upper glume 4-8 mm; axis generally visible, zig-zag; florets 3-9; lemma 6-19 mm, scabrous near tip, awn 1-6 mm long and rather stout; anthers 3-4.5 mm; ovary tip glabrous.

Habitat: Grows in dry, open or shady places in woods and on rocky slopes.

Distribution: From British Columbia to Alberta, south to central California and Colorado. Elevation range generally below 1800 m (5905 ft).

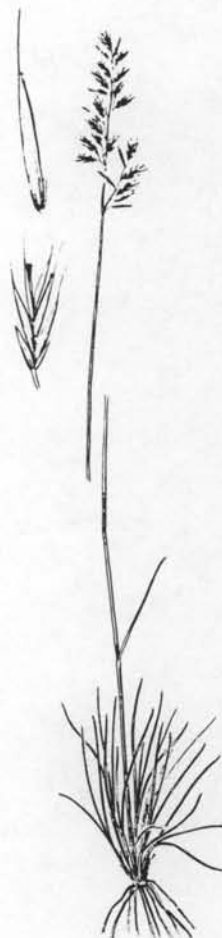
Phenology: Perennial. Flowers bloom late spring to summer, often from May to July. The plant may not flower in shady areas. It goes to seed by early summer.

Ecology: Fair to good browse for wildlife, sometimes fair for livestock; burning seems to enhance its palatability. Regenerates by seed germination and by resprouting from the roots.

Cultural Significance: Species in the family Poaceae are often cultivated as ornamentals for use in lawns and as turf plants. The woody bamboos are often planted as ornamentals in yards and gardens in the United States, but are also a good building material; in Asia they are used in construction, for matting, thatch and scaffolding.

Remarks: Another common name for this species is "blue bunchgrass." *Festuca* is an ancient word, which means "a straw" or "a mere nothing."

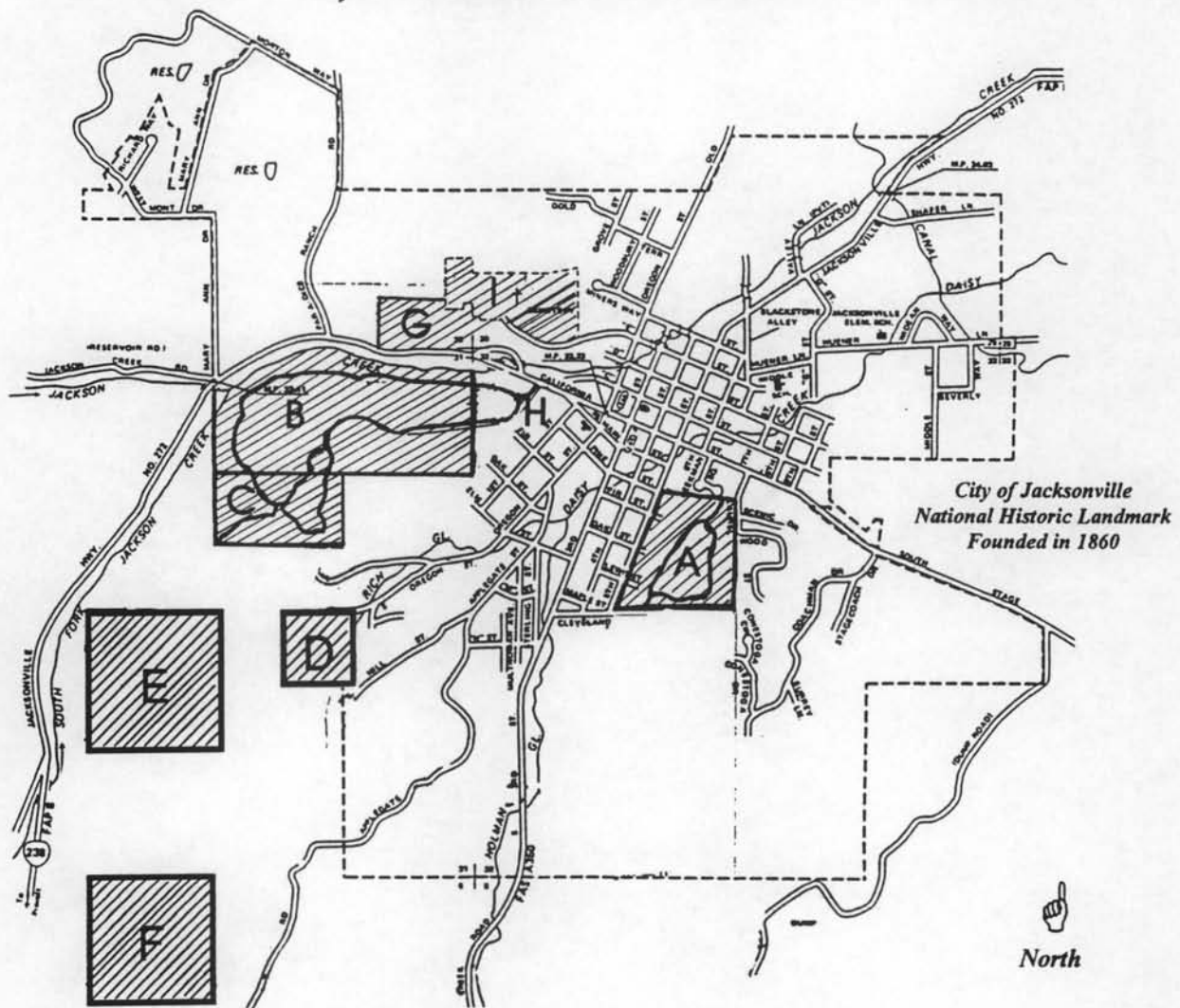
Zone: Oak woodland (Britt/BLM and Beekman Woods).



ECOLOGICAL ZONES:
MAPS AND PLANT COMPOSITION

Figure 1

Jacksonville Woodlands Natural Park & Trail System Proposed Master Plan



A — Beekman Woods (20 acres - U of O)
B — Britt Woods (70 acres - SOSOC)
C — BLM (20 acres)

D — BLM (10 acres)
E — BLM (40 acres)
F — City of Jacksonville (40 acres)

G — City of Medford (7 acres)
H — Jacksonville County (10 acres - Britt Gardens)
I — City of Jacksonville (20 acres)

This natural park and trail system will preserve and protect Jacksonville's historic landscape and backdrop. The trails will be self-guided, non-motorized and will provide opportunities for all ages to experience the native trees, plants, wildflowers, birds and animals. Also, much of Jacksonville's mining history will be exhibited and can be studied on the Britt Woods and BLM parcels.

Figure 2 Ecological Zones of Britt Woods and BLM

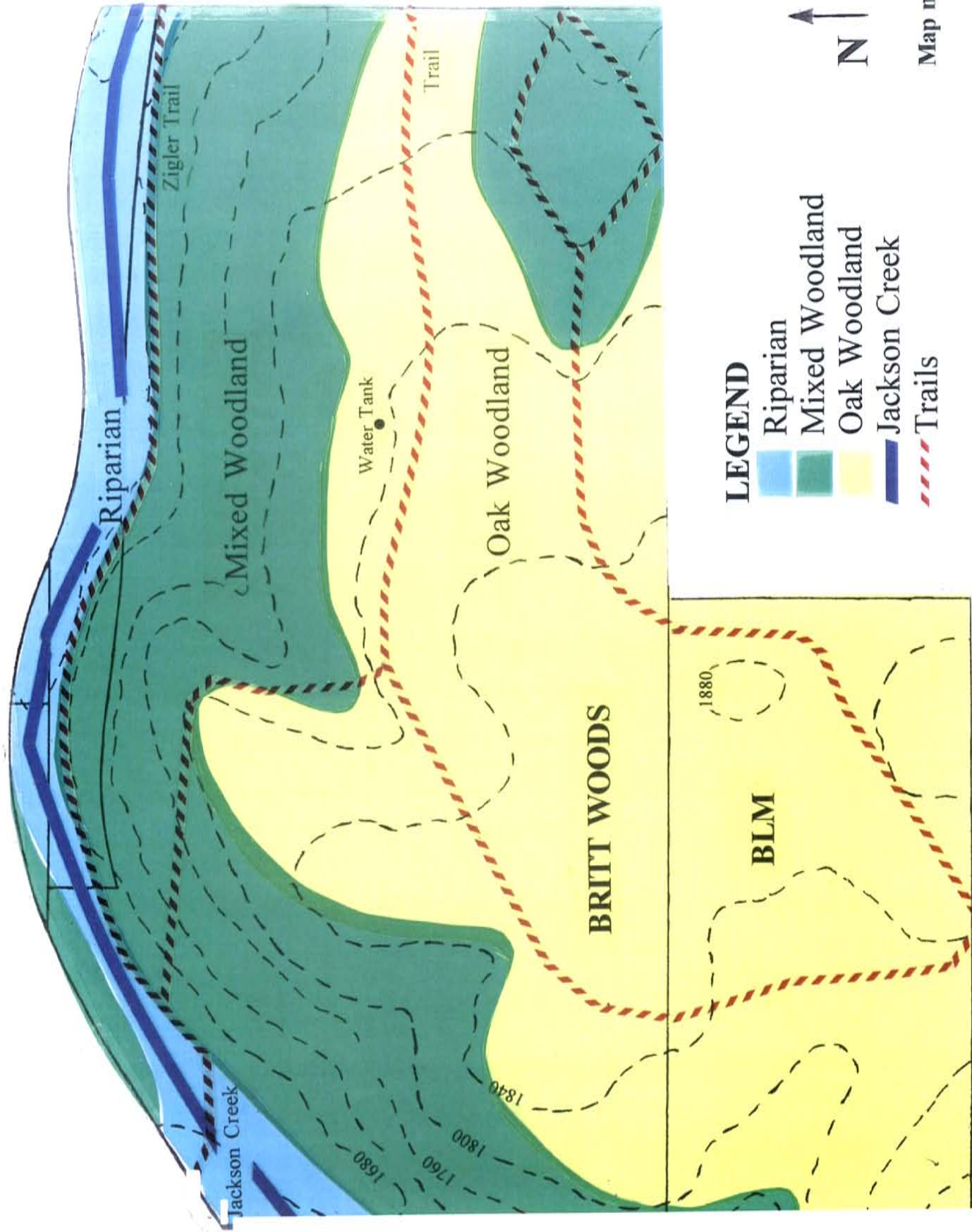


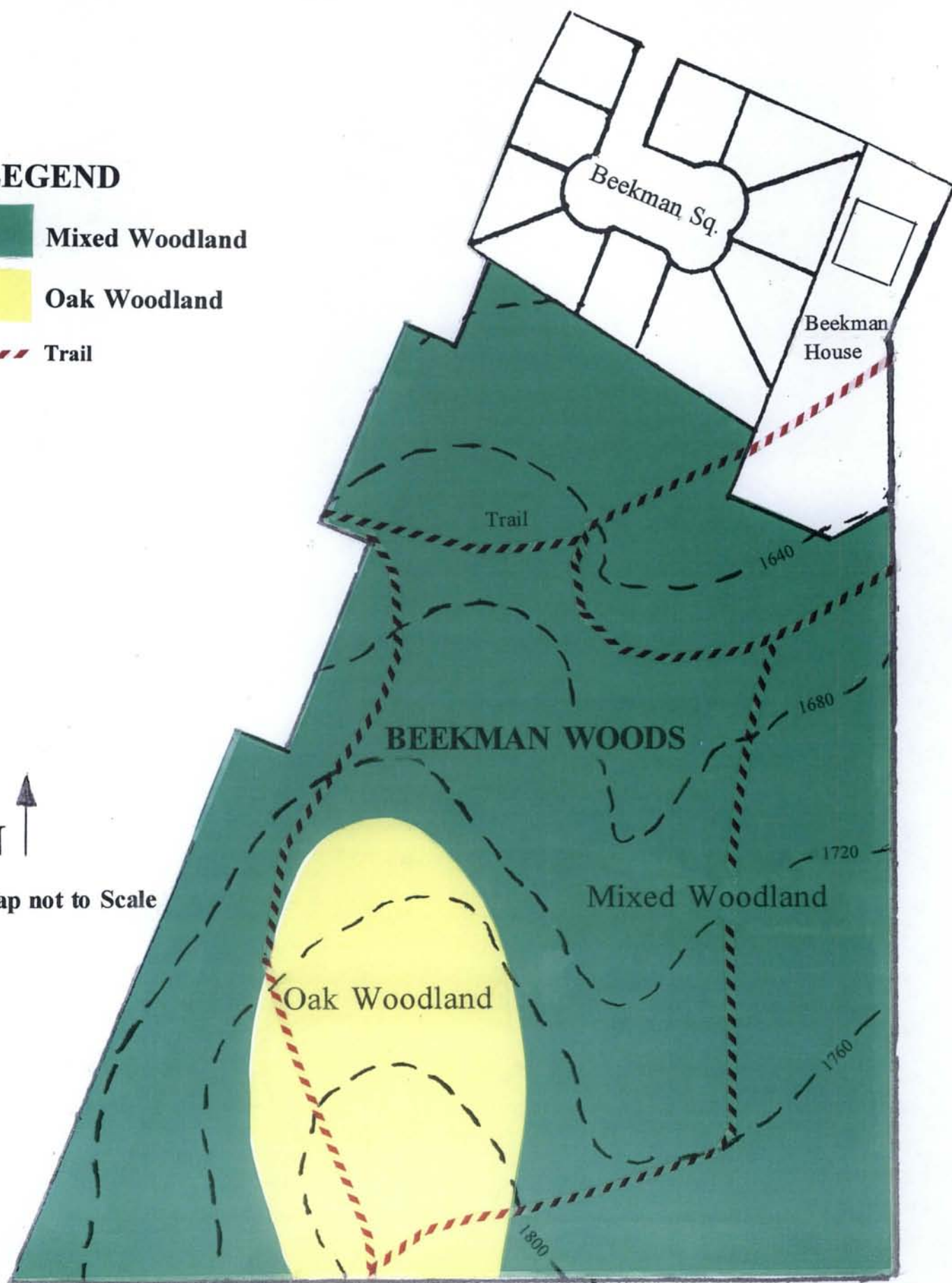
Figure 3 Ecological Zones of Beekman Woods

LEGEND

-  Mixed Woodland
-  Oak Woodland
-  Trail



Map not to Scale



PLANT COMPOSITION OF ECOLOGICAL ZONES

The following lists group the plants found in the Jacksonville Woodlands according to their ecological zones. The lists include the 100 species described in the preceding pages plus other species that occur in the woodlands but are not addressed in depth in this manual.

MIXED WOODLAND

Trees, Shrubs and Woody Vines:

<u>Scientific name</u>	<u>common name</u>
<i>Acer macrophyllum</i>	big-leaf maple
<i>Amelanchier alnifolia</i>	serviceberry
<i>Arbutus menziesii</i>	Pacific madrone
<i>Arctostaphylos viscida</i>	whiteleaf manzanita
<i>Berberis aquifolium</i>	Oregon grape
<i>Calocedrus decurrens</i>	incense cedar
<i>Cercocarpus betuloides</i>	mt.-mahogany
<i>Corylus cornuta</i>	filbert, hazlenut
<i>Crataegus</i> spp.	hawthorn
<i>Hedera helix</i>	English ivy
<i>Holodiscus discolor</i>	oceanspray
<i>Juglans</i> spp.	walnut
<i>Lonicera ciliosa</i>	orange honeysuckle
<i>Lonicera hispidula</i>	pink honeysuckle
<i>Oemleria cerasiformis</i>	oso berry
<i>Philadelphus lewisii</i>	mock orange
<i>Phoradendron villosum</i>	oak mistletoe
<i>Pinus ponderosa</i>	ponderosa pine
<i>Prunus amygdalus</i>	almond
<i>Psuedotsuga menziesii</i>	Douglas fir
<i>Quercus garryana</i>	white oak
<i>Quercus kelloggii</i>	black oak
<i>Ribes sanguinum</i>	red flowering currant
<i>Rosa californica</i>	California rose
<i>Rosa gymnocarpa</i>	wood rose
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rubus ursinus</i>	California blackberry
<i>Symphoricarpos albus</i>	snowberry
<i>Toxicodendron diversilobum</i>	poison oak

Herbs:

<i>Adenocaulon bicolor</i>	trail plant
<i>Allium</i> spp.	wild onion
<i>Antennaria argentea</i>	everlasting

Herbs:

<i>Apocynum androsaemifolium</i>	dogbane
<i>Aquilegia formosa</i>	crimson columbine
<i>Aster radulinus</i>	aster
<i>Boschniakia strobilacea</i>	ground-cone
<i>Brodiaea elegans</i>	elegant brodiaea
<i>Calochortus tolmiei</i>	pussy ears
<i>Calypso bulbosa</i>	fairy slipper
<i>Campanula prenanthoides</i>	bluebell
<i>Cardamine nuttallii</i>	bittercress
<i>Cardamine oligosperma</i>	bittercress
<i>Cichorium intybus</i>	chicory
<i>Cirsium vulgare</i>	bull thistle
<i>Clarkia rhomboidea</i>	tongue clarkia
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Cynoglossum grande</i>	hound's tongue
<i>Dicentra formosa</i>	bleeding heart
<i>Disporum hookeri</i>	Hooker's fairybell
<i>Dodecatheon hendersonii</i>	shooting star
<i>Erythronium hendersonii</i>	fawn lily
<i>Euphorbia crenulata</i>	Chinese caps
<i>Fragaria vesca</i>	wood strawberry
<i>Galium aparine</i>	goose grass, bedstraw
<i>Galium nuttallii</i>	climbing bedstraw
<i>Geum macrophyllum</i>	bigleaf avens
<i>Heuchera micrantha</i>	crevice heuchera
<i>Hieracium scouleri</i>	hawkweed
<i>Hydrophyllum fendleri</i>	Fendler's waterleaf
<i>Hypericum perforatum</i>	St. John's wort
<i>Iris chrysophylla</i>	yellow-flowered iris
<i>Lapsana communis</i>	nipplewort
<i>Lathyrus latifolius</i>	everlasting pea
<i>Lathyrus polyphyllus</i>	Oregon pea
<i>Madia gracilis</i>	slender tarweed
<i>Micropus californicus</i> var. <i>californicus</i>	slender cottonweed
<i>Navarretia</i> spp.	navarretia
<i>Nemophila parviflora</i>	small flowered nemophila

Herbs:

<i>Orobancha uniflora</i>	.....	naked broom-rape
<i>Osmorhiza chilensis</i>	.....	sweet cicely
<i>Piperia transversa</i>	.....	orchid
<i>Plagiobothrys</i> spp.	.....	popcorn flower
<i>Plectritis congesta</i>	.....	sea blush
<i>Prunella vulgaris</i>	.....	self-heal
<i>Ranunculus occidentalis</i>	..	western buttercup
<i>Saxifraga integrifolia</i>	.....	saxifrage
<i>Smilacina racemosa</i>	.....	western false Solomon's seal
<i>Smilacina stellata</i>	.....	starry false Solomon's seal
<i>Sonchus oleraceus</i>	....	common sow thistle
<i>Stachys ajugoides</i>	.....	rigid hedge nettle
<i>Stellaria media</i>	.....	common chickweed
<i>Tellima grandiflora</i>	.....	fringe cups
<i>Tonella tenella</i>	.....
<i>Trientalis latifolia</i>	.....	starflower
<i>Trillium albidum</i>	.....	trillium, wakerobin
<i>Triteleia hendersonii</i>	..	Henderson's triteleia
<i>Verbascum blattaria</i>	.....	moth mullein
<i>Verbascum thapsus</i>	.....	woolly mullein
<i>Vicia americana</i>	.....	American vetch
<i>Vicia cracca</i>	.....	vetch

Ferns and Fern Allies:

<i>Cystopteris fragilis</i>	.....	fragile fern
<i>Polystichum munitum</i>	.....	sword fern

Grasses and Rushes:

<i>Achnatherum lemmonii</i>	.....	Lemmon's needlegrass
<i>Aira caryophylla</i>	.....	European hairgrass
<i>Bromus carinatus</i>	.....	California brome
<i>Bromus laevipes</i>	.....	brome
<i>Cynosurus echinatus</i>	.....	hedgehog dogtail
<i>Elymus glaucus</i>	.....	blue wild rye
<i>Festuca californica</i>	.....	California fescue
<i>Luzula comosa</i>	.....	hairy wood rush
<i>Melica subulata</i>	.....	melic, oniongrass
<i>Phleum pratense</i>	.....	timothy
<i>Trisetum canescens</i>	.....

OAK WOODLAND

Trees, Shrubs and Woody Vines:

<i>Arbutus menziesii</i>	.....	Pacific madrone
<i>Arctostaphylos viscida</i>	..	whiteleaf manzanita
<i>Berberis aquifolium</i>	.....	Oregon grape
<i>Ceanothus cuneatus</i>	.....	buckbrush
<i>Ceanothus integerrimus</i>	.....	deerbrush
<i>Cercocarpus betuloides</i>	.....	mt.-mahogany
<i>Cytisus scoparius</i>	.....	Scotch broom
<i>Cytisus striatus</i> (reported)	.....	broom
<i>Garrya fremontii</i>	.....	silk tassel
<i>Lonicera ciliosa</i>	.....	orange honeysuckle
<i>Lonicera hispidula</i>	.....	pink honeysuckle
<i>Phoradendron villosum</i>	.....	oak mistletoe
<i>Pinus ponderosa</i>	.....	ponderosa pine
<i>Psuedotsuga menziesii</i>	.....	Douglas fir
<i>Quercus garryana</i>	.....	white oak
<i>Quercus kelloggii</i>	.....	black oak
<i>Symphoricarpos albus</i>	.....	snowberry
<i>Toxicodendron diversilobum</i>	.....	poison oak

Herbs:

<i>Achillea millefolium</i>	.....	yarrow
<i>Antennaria argentea</i>	.....	everlasting
<i>Balsamorhiza deltoidea</i>	.....	balsam-root
<i>Boschniakia strobilacea</i>	.....	ground-cone
<i>Brodiaea elegans</i>	.....	elegant brodiaea
<i>Calochortus tolmiei</i>	.....	pussy ears
<i>Castilleja applegatei</i>	.	Applegate's paintbrush
<i>Castilleja tenuis</i>	.....	hairy owl clover
<i>Centaurea solstitialis</i>	.....	yellow star-thistle
<i>Chamomila suaveolens</i>	....	pineapple weed
<i>Cichorium intybus</i>	.....	chicory
<i>Cirsium vulgare</i>	.....	bull thistle
<i>Clarkia purpurea</i>	.....	wine cup clarkia
<i>Collinsia linearis</i>	.....	blue-eyed Mary
<i>Collomia grandiflora</i>	.....	grand collomia
<i>Cynoglossum grande</i>	.....	hound's tongue
<i>Delphinium decorum</i>	.....	larkspur
<i>Dichelostemma capitatum</i>	.....	blue dicks
<i>Dodecatheon hendersonii</i>	.....	shooting star
<i>Draba verna</i>	.....	spring whitlow grass
<i>Eriophyllum lanatum</i>	.....	woolly sunflower

Herbs:

<i>Erythronium hendersonii</i>	.....	fawn lily
<i>Eschscholzia californica</i>	.....	poppy
<i>Fritillaria gentneri</i>	.....	Gentner's fritillaria
<i>Fritillaria recurva</i>	.....	scarlett fritillary
<i>Galium aparine</i>	.....	goose grass, bedstraw
<i>Hypericum perforatum</i>	.....	St. Johns wort
<i>Hypochoeris radicata</i>	.....	false dandelion
<i>Iris chrysophylla</i>	.....	yellow-flowered iris
<i>Lathyrus latifolius</i>	.....	everlasting sweet pea
<i>Linanthus bicolor</i>	.....	true baby stars
<i>Lithophragma affine</i>	.....	woodland star
<i>Lomatium triternatum</i>	.....	Lewis's lomatium
<i>Micropus californicus</i>	.....	slender cottonweed
<i>Plectritis congesta</i>	.....	sea blush
<i>Potentilla glandulosa</i>	.....	sticky cinquefoil
<i>Ranunculus occidentalis</i>	.....	western buttercup
<i>Senecio integerrimus</i>	.....	tower butterweed
<i>Sidalcea malvaeflora</i>	.....	checker mallow
<i>Silene hookeri</i>	.....	Indian pink
<i>Torilis arvensis</i>	.....
<i>Trifolium dubium</i>	.....	little hop clover
<i>Triteleia hendersonii</i>	.....	Henderson's triteleia
<i>Verbascum blattaria</i>	.....	moth mullein
<i>Verbascum thapsus</i>	.....	woolly mullein
<i>Vicia americana</i>	.....	American vetch
<i>Vicia cracca</i>	.....	vetch
<i>Zigadenus micranthus</i>	.....	death camas

Grasses:

<i>Achnatherum lemmonii</i>	.....	Lemmon's needlegrass
<i>Bromus carinatus</i>	.....	California brome
<i>Bromus laevipes</i>	.....	brome
<i>Bromus tectorum</i>	.....	cheat grass
<i>Cynosurus echinatus</i>	.....	hedgehog dogtail
<i>Elymus glaucus</i>	.....	blue wild rye
<i>Festuca idahoensis</i>	.....	Idaho fescue
<i>Holcus lanatus</i>	.....	velvet grass
<i>Koeleria macrantha</i>	.....	June grass
<i>Phleum pratense</i>	.....	timothy
<i>Poa bulbosa</i>	.....	bulbous bluegrass
<i>Poa pratensis</i>	.....	Kentucky bluegrass
<i>Taeniatherum caput-medusae</i>	.....	medusa head
<i>Vulpia microstachys</i>	.....
<i>Vulpia myuros</i>	.....

RIPARIAN

Trees, Shrubs and Woody Vines:

<i>Acer macrophyllum</i>	.....	big-leaf maple
<i>Alnus rhombifolia</i>	.....	white alder
<i>Corylus cornuta</i>	.....	filbert, hazelnut
<i>Fraxinus latifolia</i>	.....	Oregon ash, black ash
<i>Holodiscus discolor</i>	.....	oceanspray
<i>Juglans</i> spp.	.....	walnut
<i>Oemleria cerasiformis</i>	.....	oso berry
<i>Philadelphus lewisii</i>	.....	mock orange
<i>Physocarpus capitatus</i>	.....	ninebark
<i>Populus balsamifera</i>	.....	black cottonwood
<i>Robinia pseudoacacia</i>	.....	black locust
<i>Rubus discolor</i>	.....	Himalayan blackberry
<i>Rubus ursinus</i>	.....	California blackberry
<i>Salix</i> spp.	.....	willow
<i>Toxicodendron diversilobum</i>	.....	poison oak

Herbs:

<i>Adenocaulon bicolor</i>	.....	trail plant
<i>Anthriscus caucalis</i>	.....	bur-chervil
<i>Artemisia douglasiana</i>	.....	mugwort
<i>Claytonia perfoliata</i>	.....	miner's lettuce
<i>Dicentra formosa</i>	.....	bleeding heart
<i>Disporum hookeri</i>	.....	Hooker's fairybell
<i>Galium aparine</i>	.....	goose grass, bedstraw
<i>Heuchera micrantha</i>	.....	crevice heuchera
<i>Lamium purpureum</i>	.....	dead nettle
<i>Lapsana communis</i>	.....	nipplewort
<i>Lathyrus polyphyllus</i>	.....	Oregon pea
<i>Melissa officinalis</i>	.....	lemon balm, bee balm
<i>Osmorhiza chilensis</i>	.....	sweet cicely
<i>Plectritis congesta</i>	.....	sea blush
<i>Prunella vulgaris</i>	.....	self-heal
<i>Smilacina racemosa</i>	.....	western false Solomon's seal
<i>Smilacina stellata</i>	.....	starry false Solomon's seal
<i>Stachys ajugoides</i>	.....	rigid hedge nettle
<i>Stellaria media</i>	.....	common chickweed
<i>Tellima grandiflora</i>	.....	fringe cups
<i>Tonella tenella</i>	.....
<i>Trillium albidum</i>	.....	wakerobin
<i>Urtica dioica</i>	.....	stinging nettle

Herbs:

Verbena lasiostachys western verbena
Vinca major greater periwinkle

Ferns and Fern Allies:

Cystopteris fragilis fragile fern
Equisetum hyemale common scouring rush
Equisetum telemateia giant horsetail
Polystichum munitum sword fern

GLOSSARY OF TERMS

Achene. Small, dry, indehiscent, 1-seeded fruit from a 1-chambered ovary, often appearing to be a naked seed.

Acute. Having a short-tapered, sharp tip, the sides of which converge at less than a right angle (p.115).

Annual. Completing the life-cycle (germination through death) in one year or growing season, essentially non-woody.

Anther. Terminal, pollen forming part of a stamen (p.121).

Apex. The part farthest from the base or place of attachment.

Appendage. An attached, supplementary part.

Appressed. Lying flat on the surface or on the axis of attachment.

Ascending. Curving upward from base.

Auricle. A projecting ear-like lobe or appendage.

Awn. Bristle-like appendage at the tip of a larger structure (p.115).

Axil. Axillary (adj.). Upper angle between branch and stem (p.117).

Barb. Sharp, often downward, or backward pointing projections, like a fish hook.

Basal. Found at or near the base of a plant or a plant part.

Bilateral. Divisible into mirror image halves in only one way (p.118).

Blade. The broadened portion of a leaf, sometimes divided into separate leaflets (p.117).

Bract. Reduced leaf at the base of an inflorescence (p.118).

Bulb. Short underground stem and the fleshy leaves or leaf bases attached to and surrounding it, like an onion.

Callus. The enlarged, thickened base of a floret (p.119).

Calyx. Collective term for sepals; the lowest outermost whorl of flower parts, generally green and enclosing the bud. Sometimes indistinguishable from corolla (p.121).

Capsule. Dry, many seeded fruit from a compound pistil.

Catkin. A condensed spike of flowers that lack petals, as found in willows, birches and alders (p.118).

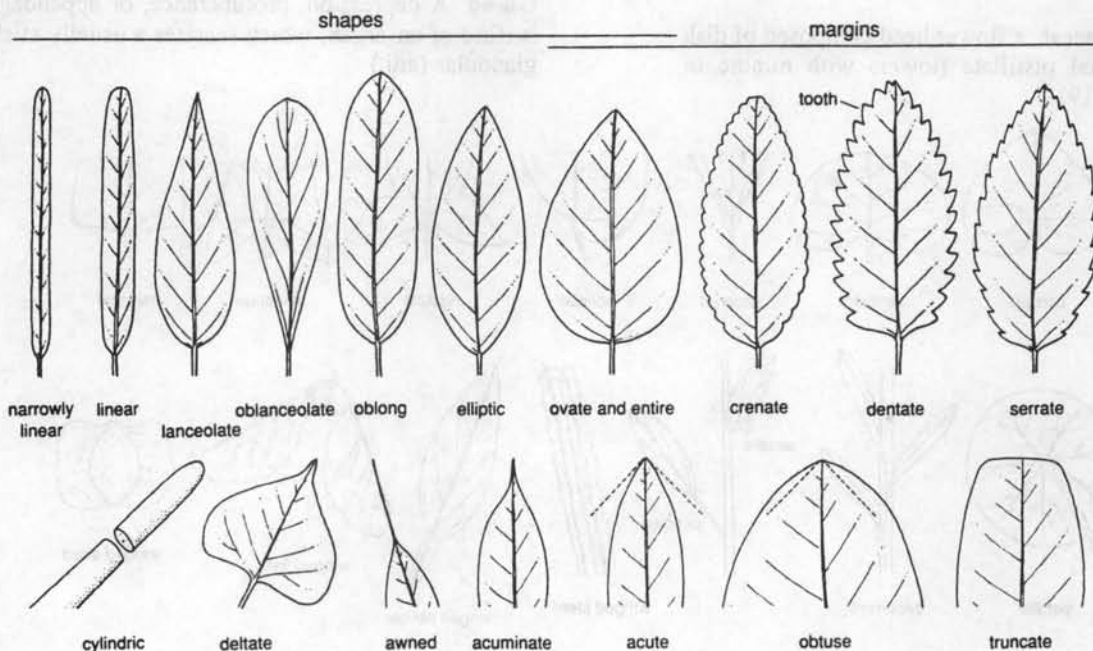
Caudex. Short, sometimes woody, base of the stem of an otherwise herbaceous perennial.

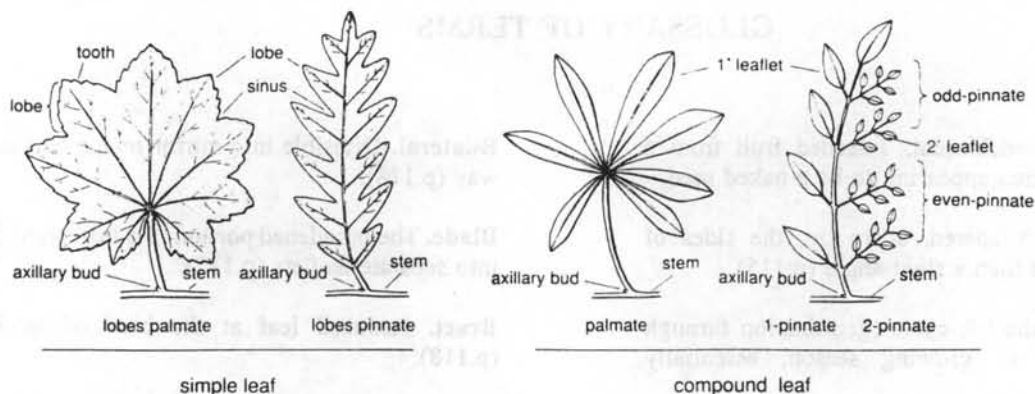
Cauline. Borne on the stem above the base, not basal.

Chaff. Dry bracts. In Asteraceae, generally papery or scaly, often persistent bracts on receptacle (p.119).

Ciliate. Having hairs along the edge (p.120).

Collar. The back of a grass leaf at the junction of the sheath and blade (p.119).





Compound. Composed of two or more parts as in a compound leaf composed of leaflets (p.116) or a compound pistil.

Cordate. Heart-shaped, with a notch at the base (p.116).

Corm. A short, thick, unbranched underground stem, often surrounded by dry leaves or leaf bases.

Corolla. Collective term for petals; whorl of flower parts immediately inside or above the calyx, often large and brightly colored. Sometimes indistinguishable from the calyx (p.121).

Cyme. A flat-topped or convex flower cluster with central flowers opening first (p.118).

Deciduous. Plants that are seasonally leafless.

Decumbent. Lying down with the tip ascending.

Dehiscent. Splits open at maturity to release contents.

Dioecious. Male and female plants separate. Individual plants produce only unisexual flowers.

Disciform. In Asteraceae, a flower head composed of disk flowers and marginal pistillate flowers with minute or missing ligules (p.119).

Disk flower. In Asteraceae, one of the tube-shaped flowers which make up the central portion of the flower head (p.119).

Ellipsoid. An elliptic solid.

Endemic. Native to a well defined geographic area and growing only in that area.

Exserted. Protruding, usually refers to stamens which extend past the corolla (p.121).

Filament. Thread-like portion of the stamen; the stalk of the anther (p.121).

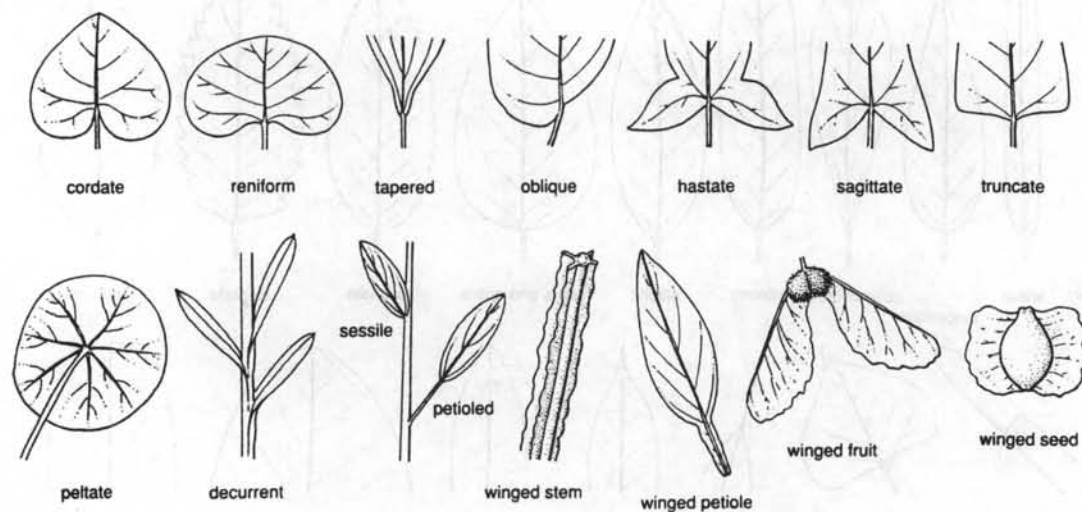
Floret. In Poaceae, a single flower and its immediately subtending bracts (generally lemma and palea) (p.119).

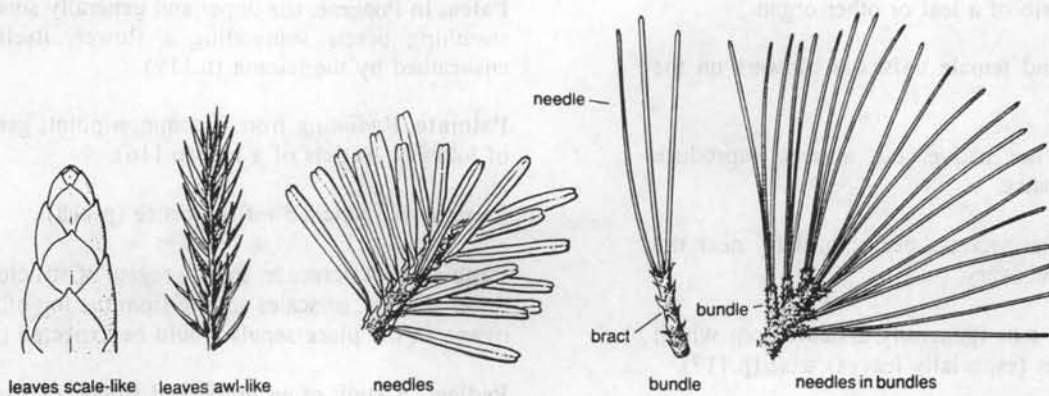
Follicle. Dry, generally many seeded fruit from a simple pistil, dehiscent on only one side, along a single suture.

Fruit. A ripened pistil with all its accessory parts.

Glabrous. Without hairs.

Gland. A depression, protuberance, or appendage on the surface of an organ, which secretes a usually sticky fluid; glandular (adj.)





Glaucous. Covered with a whitish or bluish waxy or powdery film, sometimes easily rubbed off.

Glume. In Poaceae, one of generally two bracts at the base of a grass spikelet (p.119).

Herb. A plant that is soft, rather than woody; herbaceous (adj.)

Hirsute. Rough, with coarse or shaggy hairs.

Hispid. With stiff, somewhat pungent hairs.

Hybrid. A cross between two species.

Hypanthium. A cup-shaped structure from which the petals, sepals and stamens arise; characteristics of the Saxifragaceae and Rosaceae (p.121).

Indusium. An outgrowth that covers and protects a spore cluster in ferns (p.120).

Inflorescence. A cluster of flowers.

Involucre. Whorl of bracts at the base of an inflorescence. In Asteraceae, the combined phyllaries (p.119).

Keel. A prominent dorsal ridge, like the keel of a boat; in Fabaceae the middle boat-shaped petal (p.118).

Lanceolate. Length 3 or 4 times the greatest width with a narrowing toward either end (p.115).

Lateral. Referring to the sides of a structure.

Leaflet. A leaf-like unit of a compound leaf (p.116).

Lemma. In Poaceae, larger of the two sheathing bracts that subtend a flower; the lowermost part of the floret (p.119).

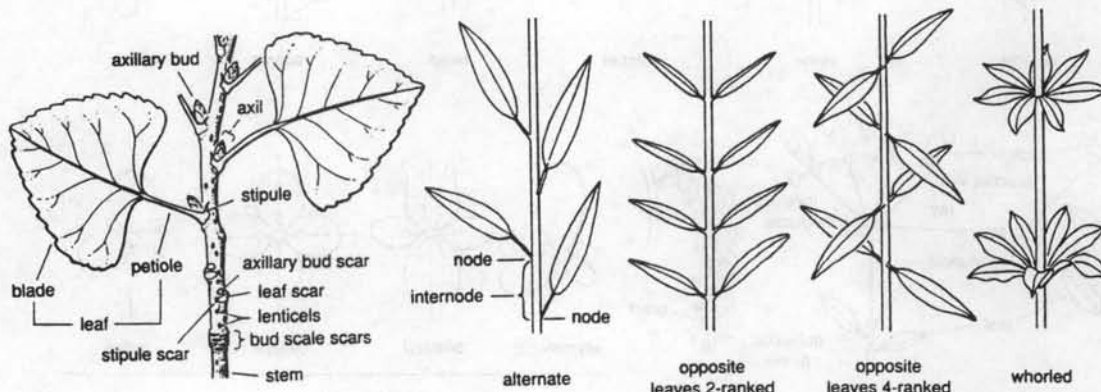
Lenticil. A spongy area (pore); common on surfaces of twigs or fruits (p.117).

Ligulate flower. In Asteraceae, a bisexual flower with the long, outer portion of the corolla (ligule) 5-lobed. Found in a ligulate flower head (p.119).

Ligule. 1) In Asteraceae, the strap- or blade-like outer portion of the corolla in ligulate or ray flowers (p.119). 2) In Poaceae and other grass-like plants, an appendage at the juncture of leaf sheath and blade, generally with a membranous or fringed margin (p.119).

Lobe. A major expansion or bulge, such as on the margin of a leaf or petal. Also the free tips of otherwise fused structures, such as sepals or petals (p.116).

Margin. The edge, usually of a leaf (p.115).



Midrib. The central rib of a leaf or other organ.

Monoecious. Male and female unisexual flowers on the same plant.

Naturalized. Alien, not native, but able to reproduce without human assistance.

Nectary. Structure that secretes nectar; usually near the base of the perianth or ovary.

Node. Position on an axis (generally a stem) from which one or more structures (especially leaves) arise (p.117).

Nutlet. Small, dry nut (or nut-like fruit), generally one of several produced by a single flower.

Ob-. A prefix indicating an inversion of shape.

Obtuse. Having a short tapered, blunt tip or base, sides converging at more than a right angle (p.115).

Ovary. Ovule bearing, generally wider portion of a pistil, normally developing into fruit (p.121).

Ovate. Egg shaped.

Ovoid. Egg shaped in three dimensions, widest below the middle.

Ovule. Structure containing an egg; a seed prior to fertilization (p.121).

Palea. In Poaceae, the upper and generally smaller of two sheathing bracts subtending a flower, itself generally ensheathed by the lemma (p.119).

Palmate. Radiating from a common point; generally said of lobes or leaflets of a leaf (p.116).

Panicle. A branched inflorescence (p.118).

Pappus. In Asteraceae, the aggregate of structures such as awns, bristles, or scales arising from the top of the inferior ovary, in the place sepals would be expected (p.119).

Pedicel. A stalk of an individual flower or fruit (p.118).

Peduncle. Stalk of an entire inflorescence or of a flower or fruit not borne in an inflorescence (p.118).

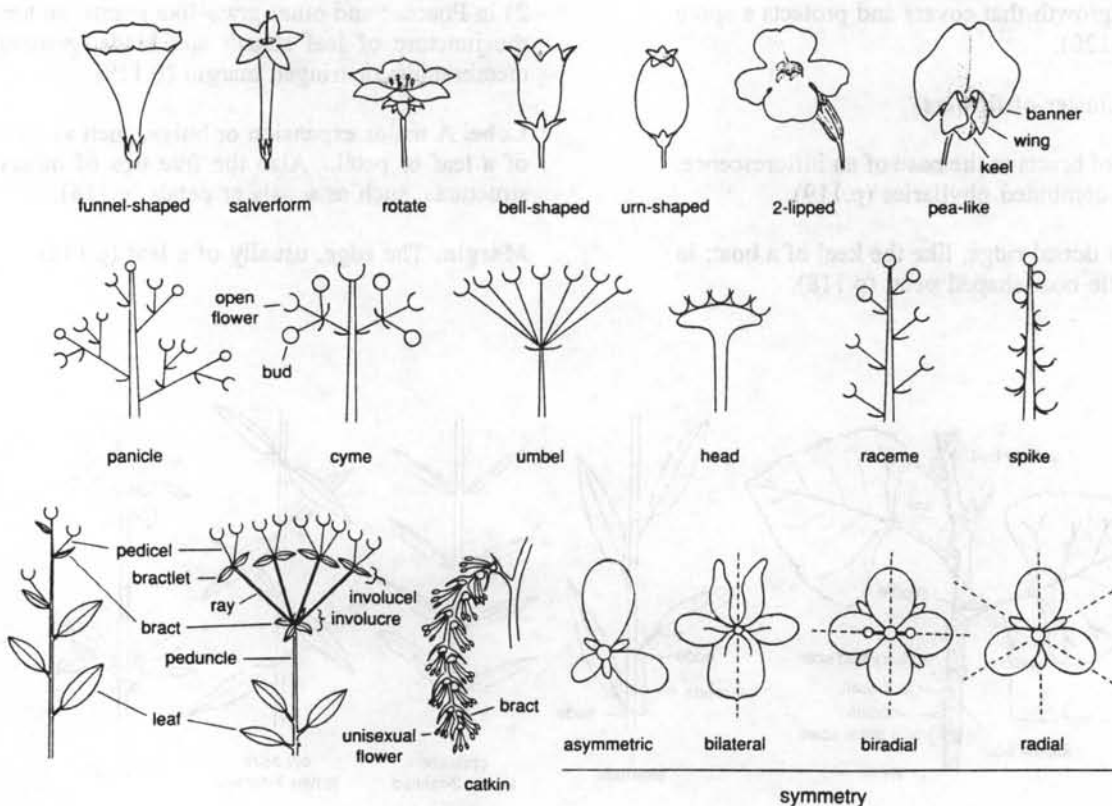
Peltate. With the stalk attached toward the middle of a structure (leaf, scale, etc.), not at a margin (p.116).

Pendent. Drooping, nodding or hanging from a point of attachment above.

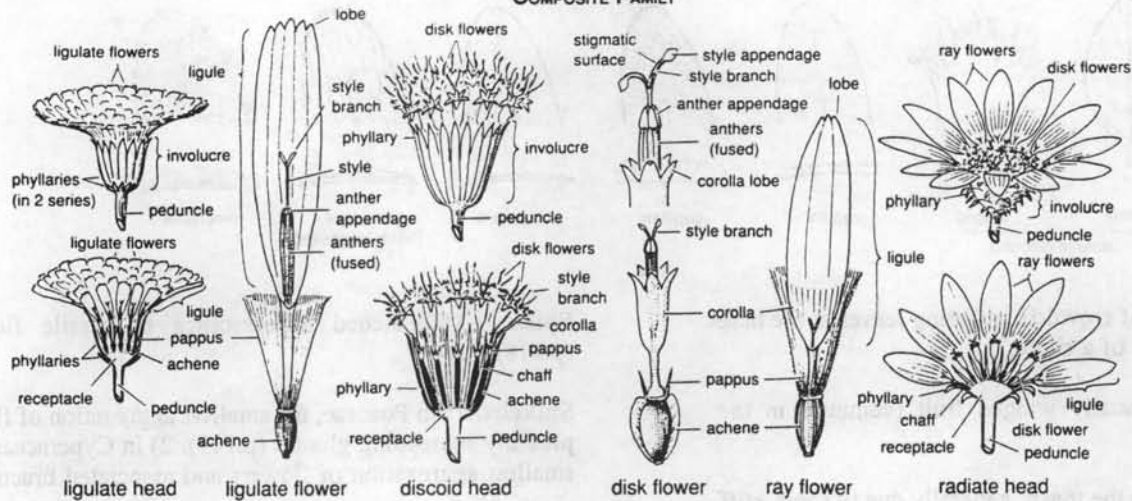
Perennial. Living more than two years or growing seasons.

Perianth. The calyx and corolla combined, whether distinguishable or not (p.121).

Persistent. Not falling off; remaining attached.



COMPOSITE FAMILY



Petal. One of the inner floral leaves, usually brightly colored (p.121).

Petiole. The stalk of an individual leaf, connecting leaf blade to stem (p.117).

Phyllary. In Asteraceae, a bract of the involucre that subtends a floral head (p.119).

Pinnate. A compound leaf, having the leaflets arranged on each side of a common petiole; feather-like. Odd-pinnate is pinnate with a single terminal leaflet (p.116).

Pinnatifid. Pinnately cleft into narrow lobes not reaching to the midrib.

Pistil. Female reproductive structure of a flower, composed of ovary, style, and stigma (p.121).

Pistillate. Having fertile pistils but sterile or missing stamens.

Plumose. Plume-like, feathery; having fine hairs arranged around an axis.

Prickle. Superficial, sharp-pointed projection.

Prostrate. Lying flat on the ground.

Puberulent. Minutely pubescent (p.120).

Pubescence. Short soft hairs. Pubescent (adj.), downy.

Raceme. A simple, elongated flower-cluster (p.118).

Rachis. The axis of a pinnate leaf or of a flower cluster.

Radial. Divisible into mirror image halves in three or more ways (p.118).

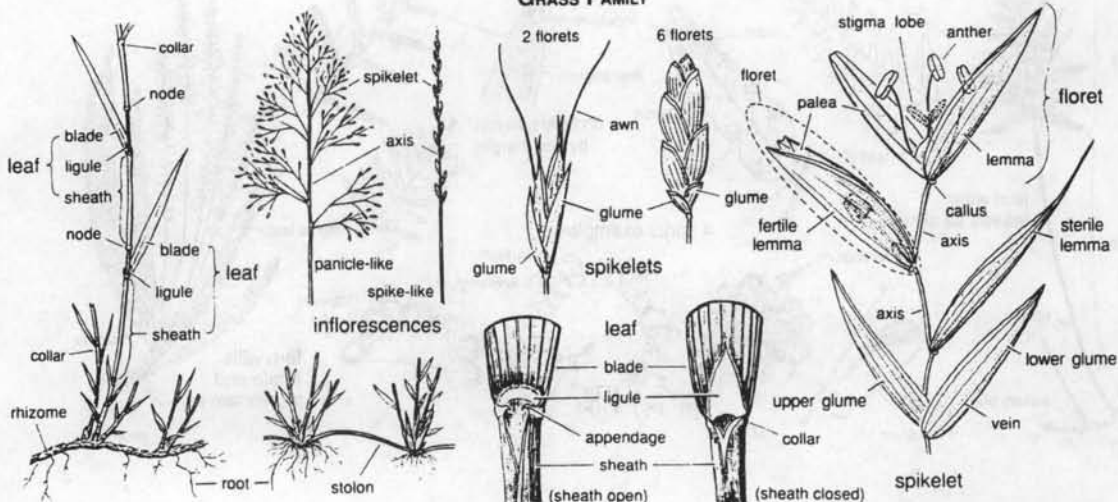
Ray flower. In Asteraceae, the flower corolla which resemble one long strap-shaped petal (but which is actually several fused petals); often found along the edges of the flower head (p.119).

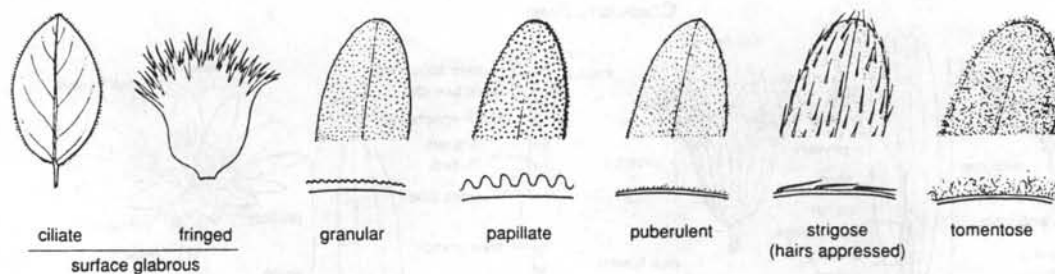
Receptacle. In individual flowers, the structure to which flower parts are attached (p.121).

Recurved. Bent backwards.

Rhizome. Underground, often elongated, more or less horizontal stem. Distinguished from root by presence of leaves, leaf scars, scales, buds, etc. (p.119).

GRASS FAMILY





Rosette. A cluster of crowded, radiating leaves at the base of a stem or the tip of a shoot.

Samara. A dry, usually winged fruit (common in the Aceraceae) (p.116).

Scabrous. Rough to the touch, generally due to short, stiff hairs.

Scale. Any thin, scarious bract, usually a modified leaf.

Scape. A leafless stalk bearing an inflorescence.

Scarious. Thin and dry, not green.

Sepal. Individual segment of the calyx, whether fused or not, generally green (p.121).

Serrate. Having edges with sharp teeth, usually pointing upward (p.115).

Sessile. Stalkless (no petiole, pedicel, etc.) (p.116).

Sheath. Structure that surrounds or partially surrounds another structure, often tubular, such as a leaf base (p.119).

Siliqua. A narrow many-seeded fruit (capsule) of the Brassicaceae, with two halves splitting from the bottom with a partition between.

Sorus. A cluster of small spore cases (sporangia) on the underside of a fern leaf; sori (pl.) (p.120).

Spike. Unbranched inflorescence of sessile flowers (p.118).

Spikelet. 1) In Poaceae, the smallest aggregation of florets plus any subtending glumes (p.119). 2) In Cyperaceae, the smallest aggregation of flowers and associated bracts.

Spine. Sharp-pointed projection, derived from a leaf or other organ.

Sporangium. A spore case; sporangia (pl.) (p.120).

Spore. A 1-several celled reproductive body produced in sporangia of ferns and fern allies (see sporangium).

Stamen. Male reproductive structure of a flower, composed of filament and anther (p.121).

Staminate. Having fertile stamens but sterile or missing pistils.

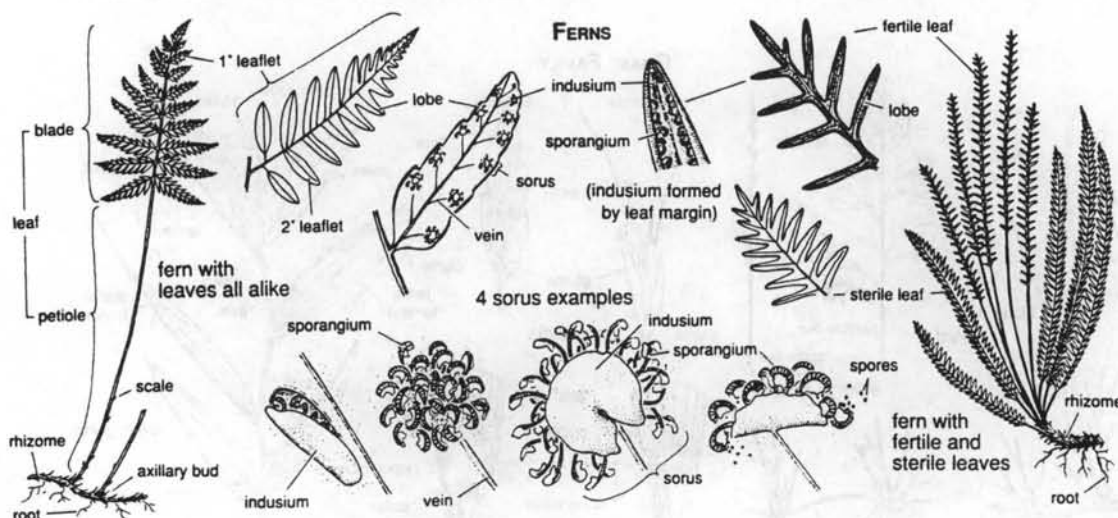
Staminode. Sterile stamen, often modified in appearance, sometimes petal-like or elaborate in structure.

Stellate. Star-like, generally said of a hair with 3 or more branches radiating from a common point.

Sterile. Not reproductively functional.

Stigma. The terminal part of the pistil (p.121).

Stipe. A stalk-like support.



Stipule. Appendage at base of petiole, generally paired, often leaf- or scale-like, sometimes a spine (p.117).

Stolon. Runner; a normally thin, elongated stem lying more or less flat on the ground and forming roots as well as erect stems or shoots (p.119).

Stomate. Minute pore on a leaf or stem which gases such as carbon dioxide and oxygen pass through by diffusion.

Striate. With fine longitudinal lines, channels or ridges.

Strigose. Having stiff, straight, appressed hairs (p.120).

Style. The contracted part of the pistil between the ovary and the stigma (p.121).

Subtend. Occurring directly below, such as sepals subtending petals.

Succulent. Juicy, fleshy and soft.

Taproot. Main, tapered root that generally grows straight down into soil and has smaller, lateral branches.

Tendril. A slender coiling structure (generally stem, stipule or leaf tip) by which a climbing plant becomes attached to its support.

Tepal. One of the perianth segments (petal or sepal) in those flowers where there is no distinction between calyx and corolla (common in the Liliaceae).

Terminal. At the tip of a structure.

Ternate. Once or repeatedly lobed or compound in three parts, such as a clover leaf.

Tomentose. Covered with densely interwoven, generally matted hairs (p.120).

Translucent. Transparent enough for light to pass through.

Truncate. As if cut off squarely at the end (p.115).

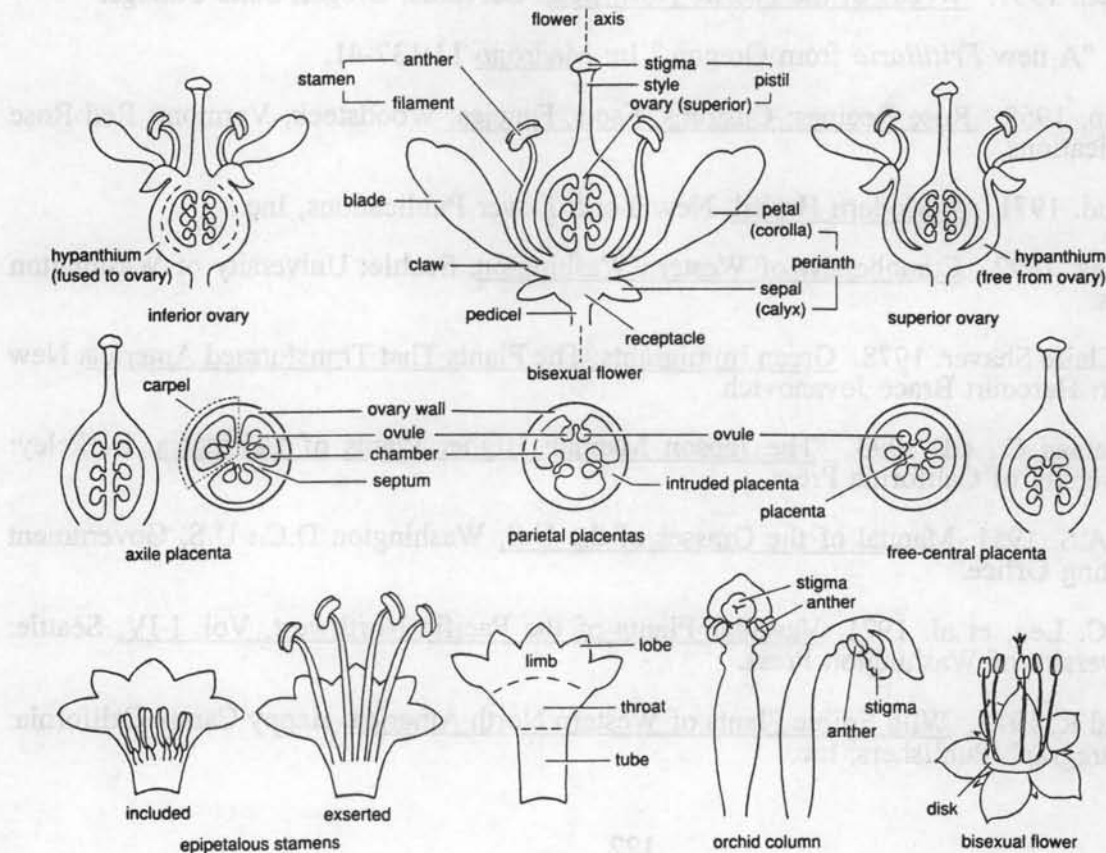
Umbel. A inflorescence in which the pedicels all arise from a common point (p.118).

Vernal. Pertaining to the spring; vernal moist areas are wet in the spring but usually dry up later in the year.

Viscous. Sticky, glutinous.

Whorl. Group of three or more structures of the same kind (generally leaves or flower parts) at one node (p.117).

Wing. 1) Thin, flat extension or appendage of a surface or margin (p.116). 2) In many members of the Fabaceae family, each of the two lateral petals (p.118).



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