FIELD GUIDE TO SHRUBS OF SOUTHWESTERN OREGON

We hope you find this field guide a useful tool in identifying native shrubs in southwestern Oregon.

Oregon State University OSU Extension Service

Middle Rogue Watershed Council

This guide was conceived by the "Shrub Club:" Jan Walker, Jack Walker, Kathie Miller, Howard Wagner and Don Billings, Josephine County Small Woodlands Association, Max Bennett, OSU Extension Service, and Brad Carlson, Middle Rogue Watershed Council.

Photos:
Jan Walker
Max Bennett

Text:
Max Bennett
Jan Walker

Financial support for this guide was contributed by:

- Josephine County Small Woodlands Association
- Middle Rogue Watershed Council
- Althouse Nursery
- Plant Oregon
- Silver Springs Nursery
- Illinois Valley Soil & Water Conservation District
- OSU Extension Service
- Forest Farm Nursery

Acknowledgements

Helpful technical reviews were provided by Chris Pearce and Molly Sullivan, The Nature Conservancy; Bev Moore, Middle Rogue Watershed Council; Kristi Mergenthaler and Rachel Showalter, Bureau of Land Management. The format of the guide was inspired by the OSU Extension Service publication *Trees to Know in Oregon* by E.C. Jensen and C.R. Ross.

Illustrations of plant parts on pages 6-7
are from *Trees to Know in Oregon* (used by permission).

All errors and omissions are the responsibility of the authors.

Book formatted & designed by:
Flying Toad Graphics, Grants Pass, Oregon, 2007

Table of Contents

***Note:**
Species descriptions are listed alphabetically by scientific name.

Cover photos:
Western azalea (pg. 53) from Rogue River trail. Inset photos counterclockwise from top left: red-flowering currant (pg.55), whiteleaf manzanita bark (pg. 24), salmonberry (pg. 61), viburnum (pg. 72), willows (pg. 63), redosier dogwood (pg. 33).

Introduction

Southwestern Oregon's forests and woodlands are home to more than 100 species of shrubs – plants that add immeasurably to the beauty and function of this remarkably diverse ecosystem. This field guide is designed to help you identify 56 of the most frequently encountered shrubs in the area. Most are natives, but a few common non-native, invasive species have been included too. These are identified by a yellow bar at the top of the page.

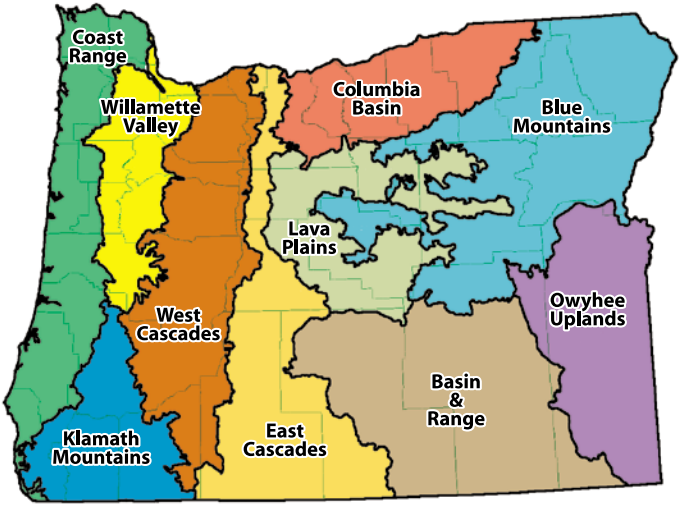
What is a shrub, anyway?

Shrubs are woody plants. They have several trunks and are usually less than 20 feet tall at maturity. In contrast, a tree has a single trunk and is taller than 20 feet when mature. Some of the species included in this guide, such as the Klamath plum *(Prunus subcordata, pg. 48)*, could be considered either trees or shrubs since they sometimes have single trunks or are taller than 20 feet. Also, there are a few tree species, such as canyon live oak *(Quercus chrysolepsis),* that have shrublike growth forms. These species are not included in this guide. We do include a few woody vines, such as honeysuckle *(Lonicera, pg. 41)*.

Geographic coverage

This guide covers shrubs found in the Klamath Mountains Ecoregion of southwestern Oregon. Ecoregions are areas with generally similar ecosystems. Oregon has ten such areas. Stretching from northern Douglas County south to the California border, the Klamath Mountains Ecoregion encompasses most of Curry County, all of Josephine County, Jackson County west of the Cascades, and interior Douglas County. This area is noted for its tremendous diversity of terrain, soils, and climates, which in turn support a high diversity of plants. The Klamath Mountains Ecoregion is also a place where species from California intermingle with flora from the Pacific Northwest, which adds to the area's biological diversity.

Oregon's Ecoregions



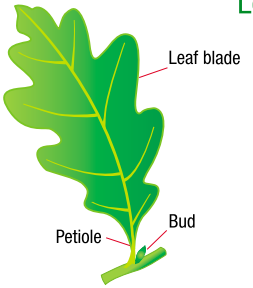
Based on a map produced by the Oregon Biodiversity Project. Accessed at: http://www.biodiversitypartners.org/state/or/obp/005.shtml

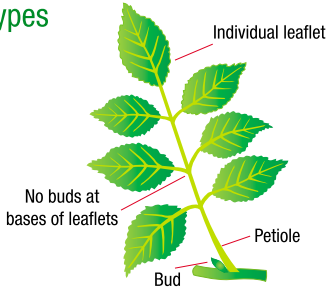
Where shrubs are found

Major forest types of the Klamath Mountains Ecoregion include mixed conifer, typified by a diverse assemblage of coniferous species, and mixed evergreen, which includes both conifers and evergreen broadleaf trees. Shrubs are often found in the understory of these forests. Shrubs can also be found in the region's oak woodlands, in riparian areas, and on the margins of grasslands and rangelands. Worthy of special mention are chaparral communities, which are dominated by evergreen shrubs such as wedgeleaf ceanothus *(Ceanothus cuneatus, pg. 27)* and whiteleaf manzanita *(Arctostaphylos viscida, pg. 24)*. Chaparral often originates after fire.

Plant Parts

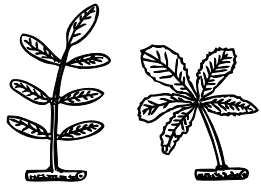
Leaf Types





Simple

Simple leaves have one leaf blade per petiole. The majority of the shrubs in this guide have simple leaves.



Pinnately compound Palmately compound

Compound

Compound leaves have several leaflets emerging from one petiole. Look for a bud at the base of the petiole, but note that there are no buds at the bases of the *leaflets*. Species in this guide with compound leaves include elderberry, Oregon grape, Scotch broom, poison oak, mountain ash, rose, and the blackberries.

Leaf & Branching Patterns

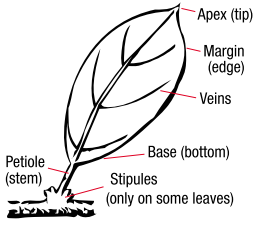
Alternate

Buds Leaves

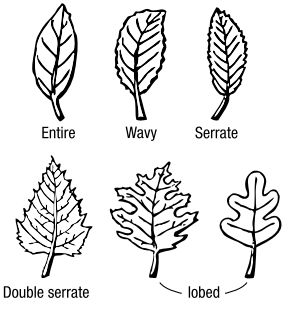
Opposite

Buds Leaves

Parts of a Leaf



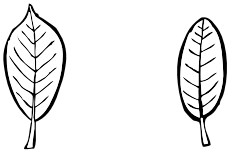
Leaf Margins



Leaf Shapes

Lance-shaped (Lanceolate)

Egg-shaped (Ovate)



Reverse egg-shaped (Obovate)

Elliptical / oblong

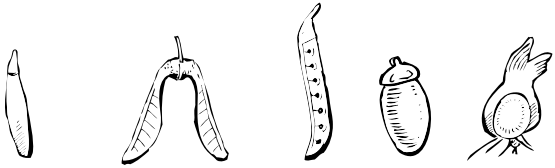
Fleshy Fruits

Drupe (1 seed)

Berry (many seeds)

Pome (apple, pear)

Dry Fruits



Single samara

Double samara

Legume

Acorn

Nut

How to Use the Dichotomous Keys

Pages 9-17 include a series of dichotomous keys you can use to identify shrubs. Here's how they work:

1. Start at the top of the "key to the keys." Choose which of the two statements best describes the shrub you are trying to identify. Follow that path to the next two statements, and again, decide which of these statements best describes your shrub. Continue this process until you arrive at a box with a key number (e.g., Key #1).

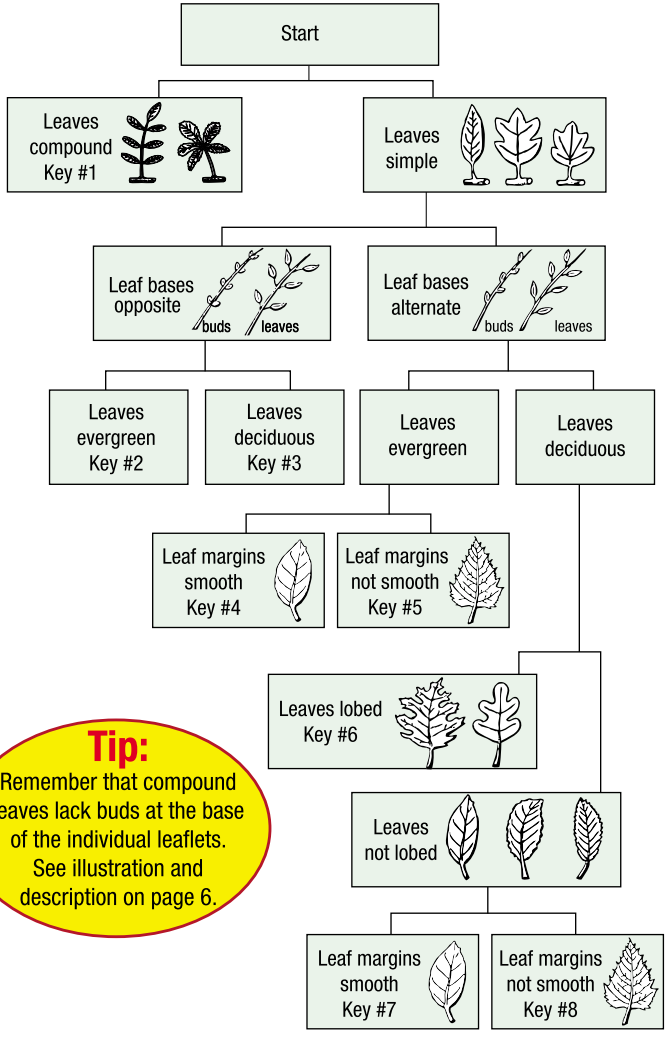
2. Go to the appropriate key. Use the same process to arrive at a plant name. Sometimes the plant name will be of a closely related group of shrubs (e.g., blackberries), and other times of a particular species (e.g., snowberry).

3. Turn to the page(s) listed under the plant name. Compare the photos and descriptions with your shrub. If you have a positive match, you've succeeded. If not, go back to the start of the keys and try again.

4. It may take a few tries to get a positive identification. A little frustration is a normal part of the process!

Note: For the first few levels of the keys, all that is generally required are the leaves and stems of the plant. However, further along in the keys, the flower or fruit may be called for. If these are not present, just make your best guess.

Key to the Keys



Tip:
Remember that compound leaves lack buds at the base of the individual leaflets. See illustration and description on page 6.

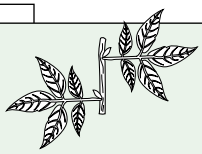
Key #1

Leaves compound

Start

Leaf bases opposite
Elderberry p. 65

Tip:
Alternate & opposite refer to the arrangement of the leaf bases & NOT to the arrangement of leaflets within the leaf.



Leaf bases alternate

Leaflets leathery and/or evergreen

Leaflets have spines
Oregon grape p. 25-26

Fruit is a pod
Scotch broom p. 36

Leaflets not thick & leathery and/or are deciduous

Leaflets lobed

Fruit is a white berry
Poison oak p. 69

Fruit is raspberry-like
Evergreen blackberry p. 58

Leaflets not lobed

Fruit is a white berry
Poison oak p. 69

Fruit is not a white berry

Fruit is raspberry-like
Blackberries & other Rubus p. 57-62

Fruit not like raspberry

White flowers
Mountain ash p. 66

Pink flowers
Rose p. 56

Key #2

Leaves Simple, Opposite, Evergreen

Start

Leaf margins smooth or wavy

Leaf margins toothed or lobed

Leaf margins smooth or wavy
Silktassel p. 37

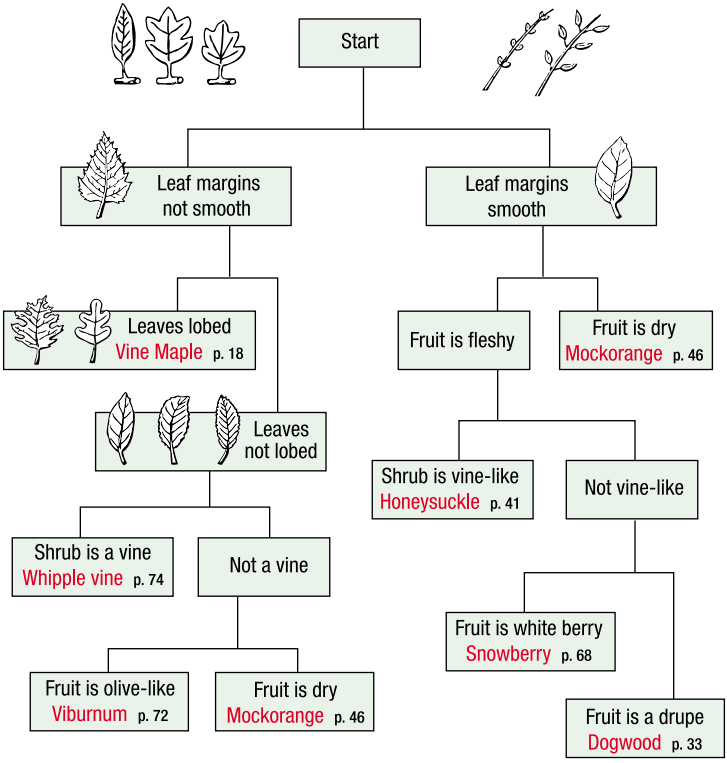
Red inconspicuous flowers
Oregon boxwood p. 45

Leaves wedge shaped, wider at tip than base
Wedgeleaf ceanothus p. 27

White, purple, or blue flowers
Squawcarpet ceanothus p. 29

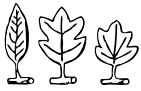
Key #3

Leaves Simple, Opposite, Deciduous



Key #4

Leaves Simple, Alternate, Evergreen, Margins Smooth



Start

Fruit is fleshy

Fruit is a dry capsule

Leaves dark green and shiny above, lighter below
Coffeeberry p. 50

Leaves same color both sides
Manzanita p. 21-24

Flowers are creamy white
Labrador tea p. 40

Flowers rose, or whitish-pink
Rhododendron p. 52

Key #5

Leaves Simple, Alternate, Evergreen, Margins Not Smooth

Start

Fruit is fleshy

Fruit is dry, not fleshy

Flower is a catkin
Pacific waxmyrtle p. 43

Flower not a catkin

Fruit is feathery
Birchleaf mountain mahogany p. 31

Flower white or pink

Flowers greenish
Coffeeberry p. 50

Fruit not feathery

Leaves ovate
Salal p. 38

Leaves oblong, or elliptical
Evergreen huckleberry p. 70

Leaves shiny & aromatic
Snowbrush ceanothus p. 30

Plant is small (<12" tall)
Prince's-pine p. 32

Key #6

Leaves Simple, Alternate, Deciduous, Lobed

Start

Flowers white

Flowers not white
Currant / gooseberry p. 54-55

Twigs / branches have spines or thorns
Hawthorne p. 35

Twigs / branches thornless

Upper surface of leaves hairless
Ninebark p. 47

Upper surface of leaves has soft hairs
Thimbleberry p. 60

Key #7

Leaves Simple, Alternate, Deciduous, Not Lobed, Margins Smooth

Start

- Fruit is fleshy
  - Fruit is a red berry — Red Huckleberry p. 71
  - Fruit is a drupe — Indian plum p. 44
- Fruit is dry
  - Flower is a catkin — Willows p. 63-64
  - Flowers are showy
    - Flowers are white or pink — Azalea p. 53
    - Flowers are blue or purple, like a lilac — Deerbrush ceanothus p. 28

Key #8

Leaves Simple, Alternate, Deciduous, Not Lobed, Margins Not Smooth

- Start
  - Fruit is dry & hard
    - Fruit has distinctive feathery tail — Birchleaf mountain mahogany p. 31
    - Fruit lacks a feathery tail
      - Flower is a catkin
        - Leaves are much longer than wide (lanceolate) — Willows p. 63-64
        - Leaves are elliptical or ovate
          - Fruit is a woody "cone" — Alder p. 19
          - Fruit is a nut — Hazelnut p. 34
      - Flowers white or pink
        - Flowers are white and showy "sprays" — Oceanspray p. 39
        - Flowers pink & steeple-shaped — Spiraea p. 67
  - Fruit is fleshy (like a berry, plum, or apple)
    - Growth habit is vine-like — Wild grape p. 73
    - Growth habit not vine-like
      - Fruit is a berry — Serviceberry p. 20
      - Fruit is not a berry
        - Fruit is a drupe
          - Petiole have glands — Klamath plum / chokecherry p. 48-49
          - Petioles lack glands
            - Stems have thorns — Hawthorne p. 35
            - Stems lack thorns — Cascara p. 51
        - Fruit is an apple — Oregon crabapple p. 42

Vine maple

(Acer circinatum)


Leaves


Flowers


Fruit

Description: Tall, sprawling or vine-like shrub. Forms dense thickets. Found in moist sites in our region.

Leaves: Simple, opposite, deciduous. Seven to 11 lobes per leaf, toothed. Major leaf veins arise from one point. Light green, turning yellow/orange/scarlet in the fall.

Twigs: Opposite buds and twigs. Bark is pale green to dull gray-brown.

Flowers: Tiny whitish-reddish to purplish flowers in clusters at end of shoots.

Fruit: A pair of achenes with two wings, called a double samara ("helicopters" to kids). Green early in the fall, turning brown when mature.

Notable: Beautiful fall colors. A favorite landscape plant. Another less common native of the Klamath Mountains Ecoregion, Douglas maple *(Acer glabrum var. douglasii)*, looks similar but has 3-5 lobes per leaf.

Sitka alder

(Alnus sinuata)


Leaves & Catkins


Twigs


Fruit

Description: Tall, and forms dense, almost impenetrable thickets. Found in open, well-watered sites in mountain areas.

Leaves: Simple, alternate, deciduous. Leaves are thin, oval, sharply toothed, darker green above, light green below.

Twigs: Alternate, smooth, gray, with lenticels.

Flowers: Male flowers are catkins.

Fruit: A woody cone somewhat resembling a pine cone, <1" long.

Notable: The springy twigs withstand burial by tons of snow, hence the abundance of Sitka alder in avalanche tracks throughout western North America.

Back to index

Western serviceberry

(Amelanchier alnifolia)


Leaves


Flowers


Fruit

Description: Medium to tall shrub, found on a wide range of forest sites, but not common on hot, dry sites.

Leaves: Simple, alternate, deciduous. Leaves are elliptical, toothed only on front half of leaf. Hairless.

Twigs: Alternate, red-brown.

Flowers: White, with five separate petals.

Fruit: Small berry, purple-blue to black at maturity.

Notable: Berries are edible. Good shrub for native landscaping; attracts wildlife and has nice fall color.

Hairy manzanita

(Arctostaphylos columbiana)


Leaves


Twigs & Immature Fruit


Flowers

Description: Tall, found on rocky slopes, coniferous forests, usually west of the coastal crest.

Leaves: Simple, alternate, evergreen. Leaves are leathery, oval to elliptical, gray, covered with fine hairs on upper and lower surfaces, with smooth margins.

Twigs: Alternate, covered with hairs.

Flowers: White to pink.

Fruit: Round, red, hairy and sticky.

Notable: Does not sprout after fire or cutting, but grows vigorously from seed following fire.

Greenleaf manzanita

(Arctostaphylos patula)

Leaves

Flowers

Fruit

Description: Medium-sized shrub, found in open coniferous forests.

Leaves: Simple, alternate, evergreen. Leaves are thick and leathery, oval, shiny green on both surfaces, hairless, with smooth margins.

Twigs: Alternate, brown or red-brown, with smooth bark.

Flowers: Pink.

Fruit: Chestnut-brown "berries."

Notable: Like whiteleaf manzanita, this species is well adapted to fire.

Kinnikinnick

(Arctostaphylos uva-ursi)

Leaves

Fruit

Description: Low-growing or prostrate shrub. Found in open, relatively dry sites.

Leaves: Simple, alternate, evergreen. Leaves are leathery, lance shaped to egg shaped, with smooth margins.

Twigs: Red, with thin, peeling bark.

Flowers: White to pink.

Fruit: Round, bright red, hairless.

Notable: Looks almost identical to another manzanita species, pinemat manzanita *(Arctostaphylos nevadensis)*. The latter can be identified by its pointed leaf tips, versus the more rounded tips of kinnikinnick. The two species are known to hybridize.

Whiteleaf manzanita

(Arctostaphylos viscida)


Leaves


Fruit


Bark

Description: Tall, may grow to small tree size. Found in brush-fields, chaparral, dry woodlands.

Leaves: Simple, alternate, evergreen. Leaves are thick and leathery, oval, whitish on both surfaces, with smooth or very finely toothed margins.

Twigs: Alternate, brown or red-brown, with peeling bark.

Flowers: White to pink.

Fruit: Red-brown "berries."

Notable: This species "lives to burn." Typically retains dead leaves, twigs, and loose bark. Foliage contains volatile oils and is very flammable. Seeds can remain in the soil for decades and are stimulated to germinate by fire.

Tall Oregon grape

(Berberis aquifolium)

Leaves

Flowers & Winter Leaves

Fruit

Description: Medium to tall shrub, found in dry forests and woodlands.

Leaves: Compound, alternate, evergreen, with 5-9 leaflets per leaf. Each leaflet has one central vein and 10-12 spines on its margin. Leaves are shiny green, glossy on both sides, turning reddish/purplish in winter.

Twigs: Gray-brown, mottled, thin. Inner bark bright yellow.

Flowers: Yellow, in clusters.

Fruit: Berries mature from green to blue, with waxy covering.

Notable: Bark yields a fine dye, and fruit makes wine and jelly. Readily resprouts after intense wildfires. A common ornamental plant. Piper's Oregon grape *(Berberis piperiana)* is found on dry, rocky sites in the Klamath Mountains Ecoregion. It looks similar except only the upper leaf surface is glossy and leaflets have 6-12 spines.

Dwarf Oregon grape

(Berberis nervosa)

Leaf (with 13 leaflets)

Flowers

Description: A small stature, creeping shrub found in the forest understory. Generally prefers moister sites than tall Oregon grape *(Berberis aquifolium, pg. 25)*.

Leaves: Compound, alternate, evergreen, with 11-23 leaflets per leaf. Each leaflet has one central vein and 6-12 spines on its margin. Leaflets are opposite.

Twigs: Brown, spineless.

Flowers: Yellow, in clusters.

Fruit: Blue berries, with waxy covering.

Notable: Berries are sour, but edible. Cultivated as an ornamental. Pygmy Oregon grape *(Berberis pumilis)* and creeping Oregon grape *(Berberis repens)* are related species found on rocky or poor sites in the Klamath Mountains Ecoregion. Both have dull leaf surfaces. *B. pumilis* has 5-9 leaflets with 3-10 spines each, while *B. repens* has 5 leaflets with 8-20 spines each.

Wedgeleaf ceanothus

(Ceanothus cuneatus)


Leaves


Twigs


Flowers

Description: A multiple-branched, erect shrub that grows to 8' tall. Found in brushfields, chaparral, open rangeland, oak woodlands, and oak-dry conifer transitional woodlands.

Leaves: Simple, opposite, evergreen. Wedge shaped (wider at tip than base). Leaf margin is smooth, upper surface is dull or shiny green, lower surface has fine hairs and one obvious vein down middle.

Twigs: Opposite, very stiff, gray.

Flowers: White to lavender, found in roundish clusters borne on short twigs.

Fruit: Capsules, with "horns."

Notable: Like all ceanothus species, a nitrogen fixer. Commonly known as "Buckbrush" and an important winter food source for deer. An indicator of dry sites. Very flammable.

Deerbrush ceanothus

(Ceanothus integerrimus)

Leaves & Flowers

Leaves, Twigs, & Flowers

Description: Medium to tall shrub. Found in brushfields, woodlands, and openings in mixed conifer forests.

Leaves: Simple, alternate, deciduous. Leaf margins smooth. Lower surfaces have one to three veins.

Twigs: Round, flexible, yellow to pale green.

Flowers: White to blue or purple; resemble lilac flowers in shape and arrangement.

Fruit: Capsule.

Notable: Favored source of browse for deer, hence the name "deerbrush." Fragrant.

Squawcarpet ceanothus

(Ceanothus prostratus)

Leaves

Plant Form

Flowers

Description: A mat-forming or prostrate shrub, found in open coniferous forests.

Leaves: Simple, opposite, evergreen. Holly-like leaves have 3-9 teeth at tips.

Twigs: Older twigs are thick and grayish. New growth reddish brown.

Flowers: Small, flat clusters of purplish blue to light blue flowers.

Fruit: Capsules, with "horns."

Notable: A closely related species, Siskiyou mat *(Ceanothus pumilus),* has 3 teeth at the leaf tips.

Snowbrush ceanothus

(Ceanothus velutinus)

Leaves

Flowers

Description: Erect, medium-sized shrub. Found in open woods and areas recently disturbed by fire or clearing.

Leaves: Simple, alternate, evergreen. Leaves shiny, sticky, with three main veins from the base. Margins finely toothed. Aromatic.

Twigs: Branchlets round. Young stems green. Older growth dark gray.

Flowers: White to bluish late in season.

Fruit: Fruit is a capsule lacking or with minute horns.

Notable: Common following fire. Nitrogen fixer. Also called Tobacco Brush. Other ceanothus species found in the Klamath Mountains Ecoregion include redstem ceanothus *(Ceanothus sanguineus)*, which has red stems, white flowers, and alternate, deciduous leaves, and blue blossom ceanothus *(Ceanothus thyrsiflorus)*, which has alternate, evergreen leaves and is found near the coast.

Birchleaf mountain mahogany

(Cercocarpus betuloides)

Leaves

Leaves & Fruit

Description: Medium to tall shrub, found on brushy hillsides and dry rocky slopes, chaparral.

Leaves: Simple, alternate, evergreen (but sometimes partially deciduous). Leaves wedge shaped with velvet underneath, margins toothed. Leaves clustered on short spurs.

Twigs: Slender, reddish brown. Open structure and branching pattern.

Flowers: White, in clusters along twigs.

Fruit: A single seed (achene) with a white feathery tail.

Notable: Curl-leaf mountain mahogany *(Cercocarpus ledifolius)* is also native to the Klamath Mountains Ecoregion. It is typically found at higher elevations and has leaves with smooth margins.

Prince's-pine - Pipsissewa

(Chimaphila umbellata)

Leaves

Flowers

Description: Small, erect shrub found in the forest understory.

Leaves: Simple, alternate or whorled, evergreen. Margins toothed.

Twigs: Central stalk from which leaves emerge in whorled pattern.

Flowers: White or pink, nodding.

Fruit: Capsule.

Notable: Roots have medicinal properties. A related species, little prince's-pine *(Chimaphila menziesii)* is smaller and has red stems.

Redosier dogwood

(Cornus sericea)


Leaves & Flowers


Twigs


Fruit

Description: Medium to large size. Likes creeks, rivers, and moist areas in the forest. Also called creek or redtwig dogwood.

Leaves: Simple, opposite, deciduous. Leaves ovate, with 4-7 pairs of prominent parallel veins on underside. Margins smooth, ending in a sharp tip. Green to reddish in the fall.

Twigs: Bright red winter twigs.

Flowers: Small creamy white flowers appear in thick terminal clusters.

Fruit: Drupe. Bitter, small, and white.

Notable: Red twigs make it an appealing ornamental. Related species include Pacific dogwood *(Cornus nuttallii)*, a tree, and bunchberry *(Cornus canadensis)*, a trailing, woody herb.

California hazelnut

(Corylus cornuta var. californica)


Leaves


Flowers


Fruit

Description: Medium to large, thicket-forming shrub. Likes moist and partly shaded areas.

Leaves: Simple, alternate, deciduous. Elliptical, with double-toothed margins. Green above, lighter beneath with soft hairs.

Twigs: Tan to dark brown twigs.

Flowers: Female flowers are small and inconspicuous, rounded, scale-like clusters from which bright red stigmas protrude in late winter. Male flowers are on hanging catkins that begin to form in late summer and then continue to grow the following spring.

Fruit: An edible nut covered with hairy, green, leaf-like husks that dry and turn brown. Eventually, the nut falls out (if the squirrels don't get it first).

Notable: Very similar to the domestic filbert.

Black hawthorne

(Crataegus douglasii)

Leaves & Fruit

Thorns

Flowers

Description: Medium to large shrub or small tree. Found in open areas, forest margins, seasonally wet soils.

Leaves: Simple, alternate, deciduous. Toothed or lobed on the upper half of the leaf.

Twigs: Gray to red, with stiff thorns.

Flowers: White with 5 petals.

Fruit: Drupe, red to black (at maturity).

Notable: Attractive fall foliage. Abundant fruit makes this a good wildlife species. A non-native hawthorne, *C. monogyna* is common and a threat to native wet prairie ecosystems, especially in the northern part of the Klamath Mountains Ecoregion. *C. monogyna* has deeply lobed leaves with a yellow-red fruit.

Scotch broom

(Cytisus scoparius)

Leaves & Flowers

Whole Plant

Description: Medium to large shrub. A non-native, invasive species common in disturbed sites such as roadsides, clearcuts, and abandoned fields.

Leaves: Compound, alternate, evergreen (older leaves), deciduous (younger leaves). So small as to be unnoticeable from a distance.

Twigs: Usually many stems near the base giving a round shape to the shrub. Twigs green and strongly angled.

Flowers: Large, fragrant, and a deep golden yellow color.

Fruit: Green to black, flattened pods that warp in different directions as they age. Pods snap apart and shoot seeds in every direction. Seeds remain viable in the soil for many years.

Notable: Introduced, widespread, and very invasive. One of Oregon's most damaging noxious weeds. There are several closely related broom species in the region.

Fremont silktassel

(Garrya fremontii)

Leaves

Flowers ("tassels")

Description: Medium to large, erect shrub found in mixed coniferous forest and chaparral.

Leaves: Simple, opposite, evergreen, leathery. Smooth margins and nearly hairless.

Twigs: Many stems, new growth reddish brown.

Flowers: Male and female flowers on different plants *(dioecious)*. Female tassels shorter than the male tassels. Catkins yellowish or purple.

Fruit: Female plants have clusters of purple or black fruit.

Notable: Coastal silktassel *(Garrya elliptica)* has wavy-edged leaves and dense wooly hair beneath its leaves. It can be confused with greenleaf manzanita. Also found in the region is boxleaf or dwarf silktassel *(Garrya buxifolia).*

Salal

(Gaultheria shallon)

Leaves & Flowers

Fruit

Description: Small to medium shrub, grows in dense thickets in understory of moist conifer forests.

Leaves: Simple, alternate, evergreen. Leaves ovate, leathery, glossy bright green, with fine-toothed margins.

Twigs: Branched, hairy red stems.

Flowers: Small, pinkish urn-shaped flowers.

Fruit: Edible blue-black berry-like fruit. Abundant on reddish stalks in loose clusters.

Notable: Important food for native people and early explorers. Slender salal *(Gaultheria ovatifolia)* has smaller leaves and red fruits.

Oceanspray - creambush

(Holodiscus discolor)


Leaves & Fruit


Flowers


Immature Fruit

Description: Medium to large shrub found in open woods, in sun or shade.

Leaves: Simple, alternate, deciduous. Leaves are deep green, triangular, with toothed margins.

Twigs: Stems arch. Older twigs brownish.

Flowers: Small creamy white flowers in pyramid-like clusters or "sprays." Very conspicuous. Flowers fade to tannish gold and remain on the plant a long time.

Fruit: Tiny, light brown, dry one-seeded fruit.

Notable: The name "oceanspray" comes from the clusters of white flowers that resemble the spray of a breaking wave.

Labrador tea

(Ledum glandulosum)

Leaves

Flowers

Description: Erect, medium-sized shrub found in marshy or boggy areas.

Leaves: Simple, alternate, evergreen. Leaves elliptical, hairless above with fine hairs below. Margins smooth, may be rolled under.

Twigs: Yellow-green, hairy.

Flowers: White, in terminal clusters.

Fruit: A capsule.

Notable: Found throughout the northern hemisphere.

Hairy honeysuckle

(Lonicera hispidula)


Leaves


Flowers


Fruit

Description: A vine. Found in open woods, thickets, and along streams. A common ground cover on drier sites in the region.

Leaves: Simple, opposite, deciduous. Leaves ovate to oblong, hairy, with fused leaf pair below flowering branchlet. Leaf margins smooth.

Twigs: Twining and trailing. Twigs hollow.

Flowers: Asymmetrical, two-lipped petals that are pinkish-purple and united into a tube at base. Several without stalks in whorls at end of terminal branchlets.

Fruit: Inedible reddish fruit.

Notable: Other *Lonicera* species found in the Klamath Mountains Ecoregion include twinberry *(Lonicera involucrata)* and purple-flower honeysuckle *(Lonicera conjugialis),* both shrubs, and trumpet honeysuckle *(Lonicera ciliosa),* another vine.

Oregon crabapple

(Malus fusca)


Leaves


Flowers


Fruit

Description: Large, thicket-forming shrub or small tree. Found in moist open woods and forest margins.

Leaves: Simple, alternate, deciduous. Leaves are elliptical or egg shaped, with toothed or lobed margins. Dark green and hairless above, light green with some hairs below.

Twigs: Red-brown, sometimes with thorns.

Flowers: White to pink.

Fruit: Small apples, yellow to purple-red or black.

Notable: Good cover and food for wildlife. Fruit is edible but sour.

Pacific waxmyrtle

(Myrica californica)

Leaves

Flowers

Description: A large shrub or small tree found in coastal forests.

Leaves: Simple, alternate, evergreen. Margins smooth near base, otherwise coarse toothed with pointed tips. Oblong, with dark green, shiny upper surface and light green lower surface. Hairless.

Twigs: Gray with white patches.

Flowers: Catkins.

Fruit: Egg-shaped "nuts" (drupes) covered with a waxy coating.

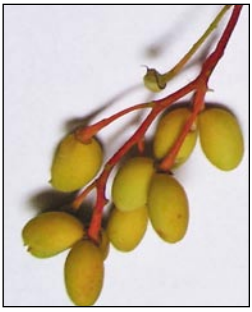
Notable: Nitrogen fixer. Planted as an ornamental.

Indian plum

(Oemelaria cerasiformis)


Leaves


Flowers


Immature Fruit

Description: A medium to large shrub with a tree-like form. A forest understory species, usually found on relatively moist sites in our region.

Leaves: Simple, alternate, deciduous, light to dark green on both upper and lower surface. Margins smooth.

Twigs: Brown to gray, with chambered piths.

Flowers: White, borne in clusters, and fragrant. Usually the first shrub to flower (late winter to early spring).

Fruit: Blue or black when mature, fleshy, with a single seed (a drupe).

Notable: Seldom grows in abundance, but early flowering brightens the forest understory.

Oregon boxwood

(Pachistima myrsinites)

Leaves

Flowers

Description: Low, often sprawling shrub found on rocky sites and in coniferous forest openings.

Leaves: Simple, opposite, evergreen. Leaves elliptical, dark green, shiny and leathery, with toothed margins.

Twigs: Low and spreading. Reddish brown.

Flowers: Tiny fragrant mahogany-red flowers in clusters.

Fruit: Small oval capsules. Seeds covered by fleshy outgrowth.

Notable: It was discovered by Robert Menzies in 1941 on Mt. Tamalpais, Marin County, California, its southernmost known location. Can be confused with evergreen hucklberry, which has alternate, not opposite leaves.

Mock-orange

(Philadelphus lewisii)


Leaves


Flowers


Fruit

Description: Medium-sized, erect shrub with arching branches. Found in streamside and other moist, partially shaded areas.

Leaves: Simple, opposite, deciduous. Leaves ovate with three main veins and some toothed margins.

Twigs: Older growth is tannish with new growth reddish brown. Twigs spread in all directions.

Flowers: Abundant, fragrant, white blooms.

Fruit: Inconspicuous small capsules.

Notable: The name mock-orange comes from the practice of substituting its flower for orange blossoms on the bride's wedding bouquet.

Ninebark

(Physocarpus capitatus)

Leaves & Flowers

Fruit

Description: Medium-sized shrub. Found along streamsides and other moist sites such as springs and lakeshores.

Leaves: Simple, alternate, deciduous. Palmate, with 3-5 lobes. Upper surface hairless, lower surface may have fine hairs.

Twigs: Brown, with bark that shreds.

Flowers: White, borne in roundish clusters.

Fruit: Red-brown capsule.

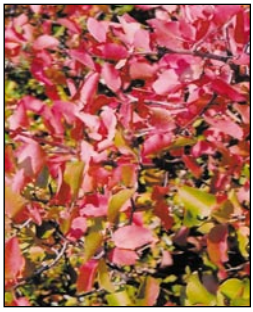
Notable: An important riparian species. Native peoples believed "ninebark" had nine layers of bark shredding on stems.

Klamath plum

(Prunus subcordata)


Leaves


Twig (note thorns)


Fall Colors

Description: Large shrub or small tree. Found in open forests, forest margins, and chaparral.

Leaves: Simple, alternate, deciduous. Leaves are round or elliptical, with fine-toothed margins. Two glands are found on the petiole near the base of the leaf.

Twigs: Stiff, often with thorns.

Flowers: White or pink.

Fruit: Yellow or red plums.

Notable: Plums range from sweet and juicy to dry and bitter. Attractive fall color.

Chokecherry

(Prunus virginiana)


Leaves


Flowers


Fruit

Description: Large shrub or small tree. Pioneer species on open woods and slopes. Likes streambanks, wet soil.

Leaves: Simple, alternate, deciduous. Leaves elliptical to lanceolate, with finely sawtoothed margins.

Twigs: Shiny brown twigs. Bark thin and scaley. Two small glands on the petiole near the base of the leaf.

Flowers: Elongate clusters of 12 or more creamy white flowers.

Fruit: Dark red to black fruits are in drooping clusters of 8-20 cherries. One large pit. Astringent.

Notable: Good for jam, syrup, jelly, and wine - with lots of sugar added. Bitter cherry *(Prunus emarginata)* is another shrub common to mountainous areas of the region. It has 3-10 flowers per cluster.

California coffeeberry

(Rhamnus californica)

Leaves & Flowers

Fruit

Description: A large-sized shrub, may grow to over 6' tall. Grows in mixed conifer forests and chaparral. A subspecies grows on ultramafic soils.

Leaves: Simple, alternate, evergreen. Leaf margins may have fine "teeth" or may be smooth. Upper surface is typically dark green, lower surface is lighter green.

Twigs: Alternate, light gray to brown.

Flowers: Yellow-green, petals inconspicuous.

Fruit: Starts out green, turns red, then black. Fleshy, with two seeds.

Notable: In the same genus as cascara buckthorn *(Rhamnus purshiana, pg. 51)*. Its bark also has laxative properties.

Cascara

(Rhamnus purshiana)


Leaves


Twig & Immature Fruit


Flowers

Description: Large shrub or small tree, often forming thickets. Found on moist, open sites.

Leaves: Simple, alternate, deciduous, and dark glossy green. Distinct, ribbed, elliptical leaves with small teeth on the margins.

Twigs: Silver-gray, smooth, thin, intensely bitter bark. Red stems. Does not have a terminal bud, only side buds along the twig where last year's leaves joined the stem.

Flowers: Inconspicuous green flowers in clusters between the leaf and the stem.

Fruit: Drupe, ripens from green to blue-black. Fruit contains the same chemicals as the bark. Inedible.

Notable: Bark used extensively as a source of laxative.

Pacific rhododendron

(Rhododendron macrophyllum)

Leaves

Flowers

Description: Medium to large shrub. Found in coniferous or mixed forests.

Leaves: Simple, alternate, evergreen. Leaves oblong, with smooth margins that are slightly rolled over at the edges.

Twigs: Bark rough, grayish brown. Stems erect.

Flowers: Pink, bell shaped, with 5 lobes.

Fruit: A woody capsule.

Notable: Sprouts easily after fire. Rhododendron comes from ancient Greek for "rose tree."

Western azalea

(Rhododendron occidentale)

Leaves

Flowers

Description: Medium-sized, erect shrub. Common around springs and along streams and marshy flats.

Leaves: Simple, alternate, deciduous. Leaves elliptical with smooth margins.

Twigs: Gray to bluish, much branched shrub.

Flowers: White or pink, bell shaped, with 5 lobes.

Fruit: Woody capsule.

Notable: "The beauty of western azalea is not restricted to graceful shrubbery or beautiful blossoms but when in flower its beauty pervades the mountains or canyons with a most delicious fragrance" – John Thomas Howell.

Gooseberries

(Ribes spp.)

Leaves & Fruit

Flowers

Description: Small to medium shrub found in moist forests or on dry rocky slopes.

Leaves: Simple, alternate, deciduous. Some are small, shallow-lobed, dark green, and shiny. Others are palmately lobed.

Twigs: Have spines at nodes or along stems. Gooseberries have spines, currants do not.

Flowers: Red, maroon, green or purple, in small, drooping clusters of 7-15 flowers.

Fruit: Smooth or spiny.

Notable: Gooseberry species native to the Klamath Mountains Ecoregion include shiny leaf goosberry *(Ribes cruentum)*, prickly currant *(Ribes lucustre)*, Siskiyou gooseberry *(Ribes binominatum)*, gummy gooseberry *(Ribes lobbii)*, and Applegate gooseberry *(Ribes marshallii)*, among others.

Red-flowering currant

(Ribes sanguineum)

Leaves

Flower

Immature Fruit

Description: Medium-sized, erect shrub, found in open, moist forests and disturbed sites.

Leaves: Simple, alternate, deciduous. Irregularly 3-lobed, dark green, paler and more hairy beneath. Wonderful fragrance.

Twigs: Erect stems. No spines. Reddish-brown bark.

Flowers: Flowers appear from March and April (lowlands) to July *(subalpine areas)*, in clusters of bluish-pink to fiery red blooms.

Fruit: Unpalatable, round blue berries covered by a pale whitish bloom.

Notable: Can be confused with gooseberry. However, gooseberry has spines along the stem. Other currants found in the Klamath Mountains ecoregion include wax currant *(Ribes cercum)*, and sticky currant *(Ribes viscosissimum).*

Baldhip rose – Wood rose

(Rosa gymnocarpa)


Leaves


Flowers


Fruit

Description: Small to medium shrub, found in forests and at forest margins, often near streams.

Leaves: Compound, alternate, deciduous. Leaflets are toothed, with 5-7 leaflets per leaf.

Twigs: Have straight prickles.

Flowers: Pink, one to three in a cluster.

Fruit: Red "rose hips" (an achene).

Notable: California rose *(Rosa californica)*, interior rose *(Rosa woodsii),* and several other species in the genus are also found in the Klamath Mountains Ecoregion. Non-native sweet brier *(Rosa eglanteria)* is common in open fields and roadsides. Its leaves smell like green apples when crushed, and its prickles are olive-green and curved.

Himalayan – Armenian blackberry

*(Rubus armeniacus)**


Leaves


Twigs


Fruit

Description: A medium to large shrub that often forms dense thickets. A non-native, invasive shrub in riparian zones, abandoned fields, fencerows, recently logged areas, and open woodlands.

Leaves: Compound, alternate, deciduous. Three to five leaflets per leaf. Leaflets oval shaped with toothed margins with 3-5 leaflets per leaf.

Twigs: Thick, stems ridged and squarish in cross-section (native trailing wild blackberry is round), with thorns or prickles.

Flowers: White, with 5 petal, in clusters, 6-15 flowers per cluster.

Fruit: Delicious berries, mid-August to September. Turn from light green to bright red to glossy black as they ripen.

Notable: Spreads by underground runners (rhizomes) and tip rooting. Seeds remain viable in the soil for many years.

*Formerly known as *Rubus discolor*

Evergreen blackberry

(Rubus lacinatus)

Leaves

Fruit

Description: A medium to large shrub. A non-native, invasive shrub found in riparian zones, abandoned fields, fencerows, recently logged areas, and open woodlands.

Leaves: Compound, alternate, deciduous. Leaflets lobed or deeply incised, sharply toothed, with 3-5 leaflets per leaf.

Twigs: Thick, reddish canes with prickles.

Flowers: White, with 5 petals, in clusters, many flowers per cluster.

Fruit: Ripens August into September.

Notable: Smaller than Armenian blackberry, so berries take longer to pick but still tasty.

Blackcap raspberry

(Rubus leucodermis)

Leaves & Fruit

Plant Form

Description: Medium-sized, erect shrub. Taller canes arch. Found in clearcuts, disturbed areas, along logging roads, and open forests.

Leaves: Compound, alternate, deciduous. Easily recognized by the whitish underside of the leaf due to dense layer of hairs. Composed of 3 leaflets rounded at base with pointed tips.

Twigs: Leucodermis, which means white skin, refers to stems covered with whitish bloom. Curved, flattened prickles.

Flowers: White to pink, in clusters at the ends of the stems or in the axis of the leaf.

Fruit: Ripen from light green to bright red to purple-black.

Notable: Blackcap raspberry, all blackberries, salmonberries, and thimbleberries belong to the same family and genus *(Rubus)*. All Rubus species are edible.

Thimbleberry

(Rubus parviflorus)

Leaves & Flowers

Fruit

Description: Small stature, erect, found in open woods and slopes, flood plains, and clearcuts, forming dense thickets.

Leaves: Simple, alternate, deciduous. Leaves are lobed with short hairs that give it a velvety feel.

Twigs: Lack prickles. Stems erect.

Flowers: White flowers with 5 petals, yellow centers.

Fruit: Red to scarlet berries that ripen July through August.

Notable: Not as tasty as blackberries or raspberries but still good to eat on a hike. Better eaten off the bush, berries do not keep well.

Salmonberry

(Rubus spectabilis)


Leaves


Flowers


Fruit

Description: Medium to large, thicket-forming shrub. Extensive in forest understory near coast; confined to very moist sites elsewhere in our region.

Leaves: Compound, alternate, deciduous. Three leaflets per leaf. Leaflets toothed, lower leaf surface hairy.

Twigs: Have prickles, and bark comes off in strips.

Flowers: Red.

Fruit: Orange, blackberry-like.

Notable: An indicator of high soil moisture. Fruit edible.

Trailing wild blackberry

(Rubus ursinus)

Leaves & Flowers

Fruit

Description: Low stature, often vine-like or trailing, found in openings, disturbed areas, and in partial shade.

Leaves: Compound, alternate, deciduous. Three leaflets per leaf with serrated margins, densely hairy underneath.

Twigs: Small, short prickles.

Flowers: White, with 5 petals.

Fruit: Black blackberries. Not very large but are juicy and flavorful.

Notable: There are two other *Rubus* species native to the Klamath Mountains Ecoregion that have trailing forms. Dwarf bramble *(Rubus lasiococcus)* has no prickles, while snow bramble *(Rubus nivalis)* has small, hooked prickles.

Willows

(Salix spp.)

Leaves

Fruit

Leaves

Male Flower (catkin)

Female Flower

See page 64 for description.

Willows *(continued)*

(Salix spp.)

See page 63 for photos.

Description: Medium to large shrubs or small trees. Found on wet sites in our region including streamsides, swamps and other wetlands, and lakeshores.

Leaves: Simple, alternate, deciduous. Leaves are highly variable in shape and size, but most are oblong or lanceolate, with smooth, wavy, or toothed margins.

Twigs: Buds are pressed against the twig and have one cap-like bud scale.

Flowers: Catkins. Male and female flowers are on separate plants (dioecious).

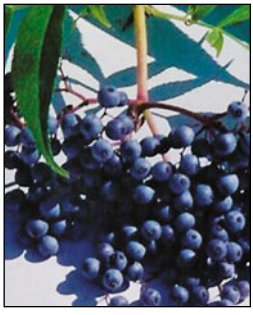
Fruit: Capsules with numerous seeds. Capsules have tufts of hair that aid in wind dispersal of seeds.

Notable: Willows are notoriously difficult to identify to the species level. There are over 20 willow species found in the Klamath Mountains Ecoregion. Among the more common species are Pacific willow *(Salix lucida spp. lasiandra)*, sandbar or coyote willow *(Salix exigua)*, red willow *(Salix laevigata)*, and Scouler willow *(Salix scouleniana).*

Blue elderberry

(Sambucus mexicana)

Leaves



Fruit

Description: Medium to large, erect shrub, likes water and sun, open wooded hillsides.

Leaves: Compound, opposite, deciduous. Leaflets have toothed margins and tapered tips. Tips without teeth.

Twigs: Woody exterior. Stems hollow. Grayish brown.

Flowers: Flowers usually creamy white, with many flowers arranged in flat-topped clusters.

Fruit: Clumps of whitish powder covered, dark blue to black berries. Very edible.

Notable: Use berries in jams, jellies, pies, and wine. Red elderberry *(Sambucus racemosa)* is similar except it has rounded flower clusters and red berries that are toxic to humans. Red elderberry is found closer to the coast as well as in the eastern Siskiyous. Elderberries are the only woody species in the region besides Oregon ash (a tree) that have compound, opposite leaves.

Sitka mountain ash

(Sorbus sitchensis)

Leaves & Flowers

Immature Fruit

Description: Large shrub or small tree, found on moist sites, mostly in the mountains.

Leaves: Compound, alternate, deciduous. Seven to 13 leaflets per leaf. Leaflets are lance shaped or elliptical, with toothed margins.

Twigs: Buds are sticky and have hairs.

Flowers: White, with 5 petals.

Fruit: Orange or red berries.

Notable: The genus *Sorbus* contains several ornamental species with attractive fall foliage.

Douglas spiraea

(Spiraea douglasii)


Plant


Leaves & Fruit


Flowers

Description: Small shrub found on moist sites including wetlands, streamsides, and wet meadows.

Leaves: Simple, alternate, deciduous. Leaves are elliptical with teeth on sides and top but not at leaf base.

Twigs: Brown.

Flowers: Steeple-shaped masses of pink flowers.

Fruit: A follicle (dry, many-seeded fruit that opens along one line).

Notable: An attractive ornamental due to its beautiful flowers.

Common snowberry

(Symphoricarpos albus)


Leaves


Flowers


Fruit

Description: Small-sized, erect shrub, common and widespread on moist, partially shaded woodland or open valley lands.

Leaves: Simple, opposite, deciduous. Leaves elliptical to oval, but leaf shape highly variable, even on the same plant. Leaves often have smooth margins, upper surface without hairs.

Twigs: Thinly branched, twiggy, hairless shrub.

Flowers: Pinkish, bell-shaped terminal flowers in clusters or spikes.

Fruit: Abundant, white, berry-like fruit, each with two seeds.

Notable: The white berries can last through the winter, hence the name snowberry. Creeping snowberry *(Symphoricarpos mollis)* is similar but has a trailing form.

Poison oak

(Toxicodendron diversiloba)

Leaves & Flowers

Fruit

Winter Form

Description: Highly variable growth form, from small to medium, erect shrub, to trailing or climbing vines, found in forest openings, dense woodland, brushy hillsides, or marshy thickets.

Leaves: Pinnately compound, alternate, deciduous. Shiny green with three ovate leaflets. Leaflets have smooth margins or irregular, rounded lobes.

Twigs: Gray or brown, erect or vine-like.

Flowers: Small ivory flowers.

Fruit: White berries in clusters.

Notable: It is not necessary to touch the plant to develop a rash. It can be transferred to your skin from your clothing, boots, pets or smoke. All parts of the plant – roots, stems, leaves, berries – contain the oil urushiol, which most humans are allergic to. Those with severe allergies also react to other members in the family, such as mangoes. However, poison oak is not really poisonous – wildlife doesn't react to it, and it's an excellent browse species.

Evergreen huckleberry

(Vaccinium ovatum)

Leaves & Flowers

Fruit

Description: Medium-sized, erect shrub found in understory of open forests, forest borders, or brushfields. Most abundant west of the coastal crest.

Leaves: Simple, alternate, evergreen. Leaves are shiny dark green, ovate or oblong, with finely toothed margins. New growth is bronzy colored.

Twigs: Thin, fine, dark brown twigs.

Flowers: White to pinkish bell-shaped flowers hanging in clusters.

Fruit: Small, dark blue fruit. Edible and abundant.

Notable: Related species: Thinleaf huckleberry *(Vaccinium membranaceum)* is a large, erect shrub with toothed, deciduous leaves and reddish-purple berries. Grouse huckleberry *(Vaccinium scoparium)* is a low-growing shrub with pink flowers and red berries.

Red huckleberry

(Vaccinium parvifolium)

Leaves & Fruit

Plant

Description: Medium-sized shrub, found in dense woods or in partial shade.

Leaves: Simple, alternate, deciduous. Leaves ovate, light green, with smooth margins.

Twigs: Thin, bright green, strongly angled stems.

Flowers: Pink buds bear single, inconspicuous, pale pinkish-yellow, globular flower.

Fruit: Sparse, bright red berry. Edible.

Notable: Good for jams, jellies, and pies.

Viburnum

(Viburnum ellipticum)

Leaves

Fruit

Description: Medium to large, thicket-forming shrubs. Found in forests and forest margins, usually on moist soils or close to streams.

Leaves: Simple, opposite, deciduous. Leaves are round or elliptical, shiny green above, dull green below, with toothed margins except at the base.

Twigs: Reddish brown.

Flowers: White, in flat-topped clusters.

Fruit: Drupe, ripens from green to black, looks like an olive when mature.

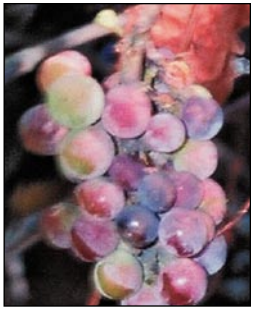
Notable: Many Viburnum species are popular ornamentals due to their showy flowers and attractive fall color.

Western wild grape

(Vitis californica)

Leaves

Flowers



Fruit

Description: Common woody vine that climbs by curled tendrils. Frequently found along streams.

Leaves: Simple, alternate, deciduous. Shiny green, heart shaped, toothed. Tendrils opposite leaves.

Twigs: New growth light green and blotchy. Climbs any available surface – to the very top.

Flowers: Tiny greenish flowers on tendrils.

Fruit: Green to purple. Edible. Not much pulp.

Notable: Leaves of wild grape can be picked and canned for use in Greek recipes that ask for vine leaves.

Whipple vine – Yerba de selva

(Whipplea modesta)

Leaves

Flowers

Description: A vine, found on relatively dry sites in mixed conifer forests.

Leaves: Simple, opposite, deciduous. Leaves are oval to elliptical, hairy, with toothed margins.

Twigs: A vine from which erect, flowering twigs arise.

Flowers: Clusters of 4-12 small, white flowers on upright twigs.

Fruit: A capsule.

Notable: As an ornamental, makes a good groundcover. This species and hairy honeysuckle *(Lonicera hispidula, pg. 41)* are very common groundcovers in dry areas in the Klamath Mountain Ecoregion.

Index to Shrubs - *By Common Name*

Glossary of Botanical Terms

Achene. A dry, one-seeded fruit.

Alternate. Twigs, leaves, and/or buds emerge from alternating points along the branch.

Berry. As used in this guide, a fleshy fruit with many seeds. Technically, "raspberry-like" fruits are known as aggregates.

Capsule. A dry (nonfleshy) fruit, usually containing many seeds, that opens up along many lines. Example: Ceanothus.

Catkin. A drooping cluster of male or female flowers, without petals. Found on willows, alders, hazelnuts, and other species.

Compound. Type of leaf where each leaf consists of two or more leaflets attached to a petiole.

Deciduous. Loses its leaves in winter.

Dioecious. Male and female flowers found on separate plants.

Drupe. A fruit with a singe hard seed surrounded by a pulpy layer. Examples: Cherries and plums.

Evergreen. Stays green all winter. Evergreen shrubs tend to have thick and leathery leaves.

Follicle. A dry, many-seeded fruit opening up along a single line. Example: Ninebark.

Fruit. The part of the plant that bears the seed. Types of fruits include pomes, drupes, berries, achenes, capsules, and follicles.

Lenticel. A circular or eye-shaped spot on the bark of the shrub or tree that serves as a pore for gas exchange.

Margin. The outside or edge of the leaf. Margin shapes are important for identification.

Monecious. Male and female flowers found on the same plant.

Opposite. Twigs, leaves, and/or buds emerge from opposite points along the branch.

Petiole. The part of the stem that attaches the leaf to the twig or branch.

Pistil. The female flower organ, which develops a seed after fertilization. Includes ovary, style, and stigma.

Pome. A fruit with several seeds surrounded by a fleshy layer. Example: Crabapple.

Prostrate. Low growing or mat-like.

Serrate. A toothed leaf margin.

Shrub. A woody plant with multiple stems, up to 20' tall.

Simple. Type of leaf where only one leaf is attached to each petiole.

Stamen. Male organ of flower. Includes filament, anther, pollen.

Stigma. The tip of the pistil, which receives the pollen.

Ultramafic soils. Derived from rocks like serpentine and peridotite, these soils tend to have high concentrations of heavy metals and low concentrations of important nutrients such as calcium and phosphorous. While infertile, ultramatic soils support unique plant communities and make a major contribution to the plant diversity of the Klamath Moutains Ecoregion.

References Used in Creating this Guide

Howell, John Thomas. *Manual of the Flowering Plants and Ferns of Marin County, California.* University of California Press. 1970.

Jensen, Edward C. and Charles R. Ross. *Trees to Know in Oregon.* Oregon State University Extension Service, Corvallis, OR. 2005.

Jensen, Edward C., Warren R. Randall, Robert F. Keniston and Dale N. Bever. *Manual of Oregon Trees and Shrubs.* College of Forestry, Oregon State University. 8th Edition. 2002.

Krumm, Bob and James Krumm. *The Pacific Northwest Berry Book.* Falcon Publishing, Inc. 1998.

Peattie, Donald Culross. *A Natural History of Western Trees.* Houghton Mifflin Co. 1950.

Pojar, Jim and Andy MacKinnon. *Plants of the Pacific Northwest Coast.* Lone Pine Publishing. 1994.

Showalter, Rachel. *The Rogue River Trail Flora Guide.* Bureau of Land Management, Medford District, Medford, Oregon. No date.

Stuart, John D. and John O. Sawyer. *Trees and Shrubs of California.* University of California Press. 2001.

Stuckey, Martha and George Palmer. *Western Trees: A Field Guide.* Falcon Publishing, Inc. 1998.

Sudworth, George B. *Forest Trees of the Pacific Slope.* Dover Publications, Inc. 1967.

Thomas, John Hunter and Dennis R. Parnell. *Native Shrubs of the Sierra Nevada.* Stanford University, California Academy of Sciences, California State University, Hayward. 1974.

Thank you to the following contributors:

Oregon State University OSU Extension Service

IVWC Illinois Valley Watershed Council

forestfarm NURSERY

Silver Springs NURSERY

Notes