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Management of Native Plants in California Hedgerows Incorporating Tribal Ecological Knowledge



Margaret Smither-Kopperl, Manager; Lockeford Plant Materials Center,
21001 N. Elliott Rd., Lockeford, CA 95237. Email: margaret.smither-kopperl@usda.gov

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Introduction

Hedgerows are defined as linear multispecies plantings of native species. The name is from England where hedges originated with indigenous populations as rows of shrubs and trees to define a boundary and through careful harvesting provide resources of food, fiber and cordage, timber and medicines. These early hedges were often associated with a ditch, the benefits extended to working as fences for confining livestock such as cows and sheep (Rackham, 2001). These hedgerows are resilient; some have survived for centuries or even millennia and are still used for gathering food and fiber resources. Additional ecological benefits are now recognized for hedgerows as they function as pollinator and wildlife habitat, ecological corridors, promote carbon sequestration, prevent soil erosion and improve air quality.

Hedgerows in California are of a more recent appearance. John Anderson was inspired by the hedgerows in Europe and saw their potential (Daily Democrat, 2018). Agriculture in California is intensive, with essentially extirpation of native flora. Introduction of hedgerows offered an opportunity to increase native habitat without loss of productivity as the hedgerows would be limited to field borders, riparian corridors and non-farmed areas. He established Hedgerow Farms in 1978 to grow seed of native species and promoted hedgerows in California. The intention was to increase planting of native species in intensive agricultural areas with benefits to pollinator species, beneficial insects and wildlife.

For the indigenous peoples of California, native plant and animal species were the basis of their survival. During the thousands of years that the First Peoples inhabited all regions of California, tribes developed fire as a tool to steward vegetation with frequent and applied use of cultural burns. Aims included avoiding the risk of catastrophic fire while increasing productivity of plants for harvest of food, fiber, fuel, medicinal use and timber. Fire could be applied at various scales depending on circumstance: to areas, specific stands of plants, or at the level of a single plant (Anderson, 2005). Baskets were essential for California tribes, used for harvesting, storage, carrying water, cooking, baby cradles, and many other uses, with appropriate plant materials required for each type of basket (Shanks & Shanks, 2006). The frequent fires in small areas resulted in a mosaic of habitats at different stages of development. This provided abundant forage for animals, such as deer, elk, rabbits and birds that were then hunted and trapped for food. It is these same plant species, utilized by the indigenous peoples in California, that are now being planted in hedgerows throughout the state.

The benefits provided go beyond floral resources for pollinators, beneficial insects, birds and wildlife, providing economic benefits to farmers and landowners. Many high value crops, such as almonds, cherries, and peaches require pollination to provide a crop; the presence of native pollinators increases efficiency of European honeybees. Plus, beneficial insects in hedgerows move out into fields and orchards and reduce the populations of pest species (Morandin et al., 2014). This enhances yield and quality in organic production systems, and in conventional systems reduces the use and cost of pesticides.

The lifespan of a hedgerow under NRCS 422 Hedgerow was 15 years, now reduced to 5 years. With selection of locally adapted species and appropriate management, a hedgerow can survive indefinitely and continue to provide benefits. Even within 5 – 10 years, management will be required to maintain plant health and the dimensions of the hedgerow within required limits. The native plant species used in California hedgerows are fire adapted, however under modern conditions in agricultural areas of California, use of cultural fire is not an option for hedgerow management. Theoretically it is possible, but only with an array of planning and management options requiring numerous agencies, plus support of local fire departments. That leaves the options of trimming to a required shape, pruning, and coppicing, in which the shoots of woody material are cut down to the base, close to the ground. These methods are described later.

This publication provides information about several plants of cultural significance frequently utilized in hedgerows, their uses and indigenous times and methods of harvesting and stewarding the plants to maintain health and vigor. The information presented on specific plants is readily available: plant characteristics, adaptation and distribution through Calflora (2026), Calscape (2026), and the NRCS PLANTS database (2026). Ethnobotanical information sourced through Anderson (2005), Native American Ethnobotany database (2026) and NRCS PLANTS database (2026).

We hope that this information will be helpful for landowners who have installed hedgerows for Practice 422 and want to maintain them for the long term. The information may also be relevant for tribes with limited land areas who wish to include plants of cultural significance, in local plantings. These plantings can be used to improve Soil Health as required by Interim Practice 825 Culturally Significant Plants for Soil Health. A benefit of this interim practice is that when planted as a hedgerow, the plants can be harvested, which as we have seen also serves the purpose of maintaining the health of the plants in the hedgerow.

Major Land Resource Areas of California



PLANT SELECTION

Selecting species of plants that are adapted to the hedgerow location is critical for success. Fortunately, there are several tools available to assist.

- [NRCS eVeg Guide](#). Go to your location on the map, then under Search Criteria, select 422 Hedgerow Planting. This will provide a list of plants approved by NRCS as suitable in planting in a hedgerow for your area.
- [Calflora](#) online database of California plants hosts the eVeg Guide and more information:
 - o Information on individual plants: [Search for Plants](#)
 - o [What Grows Here?](#)
 - o [Planting Guide](#)
- [Calscape](#). California Native Plant Society. Website provides information on plant species, nurseries and care of the plants.

HEDGEROW MANAGEMENT METHODS

Hedgerow maintenance should be carried out when the plants are dormant. The main methods are trimming, pruning and coppicing, in which the plant is cut down to the base. As wildlife, including birds use hedgerows as a favored spot for nesting, management activities should be avoided between the months of April and July, while birds are rearing their young within the hedgerow.

Trimming

A mechanical tool such as a clipper or hedge trimmer is used on the outside of the hedgerow to maintain the overall shape. The trimming action removes growth from the outside of the hedgerow (Figure 1a -1b). New growth occurs from the margins of the hedgerow (Figure1c). An advantage of this method is that it is straightforward and can be repeated annually or as needed to keep the desired dimensions of the hedgerow. Disadvantages are that old growth remains in the center and may become moribund leading to disease and death. These plants will not revert to a juvenile stage for new growth, as happens with coppicing and following fire. Pruning may be required to remove larger branches to the main trunk.

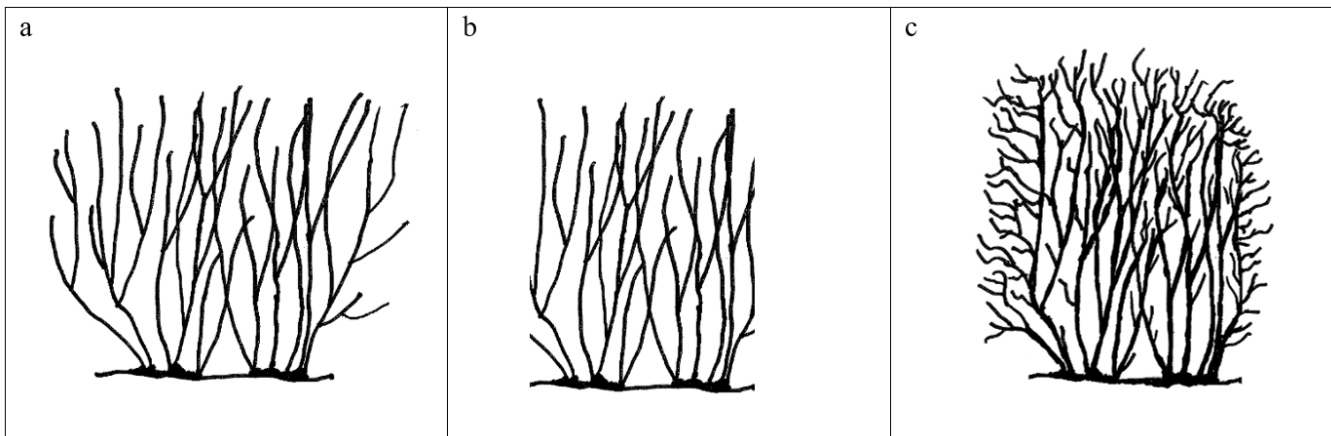


Figure 1. (a) Hedgerow, (b) after trimming with a mechanical cutter and (c) with new growth the following year. Note that new growth is concentrated at the cut edges. The hedgerow center stems will become overgrown, more susceptible to disease and death.

Coppicing

In coppicing, all the stems are cut to near ground level. This is a good method to resuscitate a moribund hedgerow, but significant labor is needed. This is an ancient practice used by indigenous peoples worldwide and by tribal members in California while they were harvesting plant stems for their needs. It removes the above ground plant parts as would happen during a cultural burn. Following coppicing new shoots grow either from the buds at the base of the plant or as shoots from rhizomes, (underground stems) or buds on the root system.

Plants such as California Hazel and Western Redbud grow from buds on the crown, reverting to juvenile growth and sending up straight shoots. The amount of growth depends on species and location, is typically very rapid, and depending on species, may reach 1 – 7 feet in the first year. This process can be repeated for additional harvests.

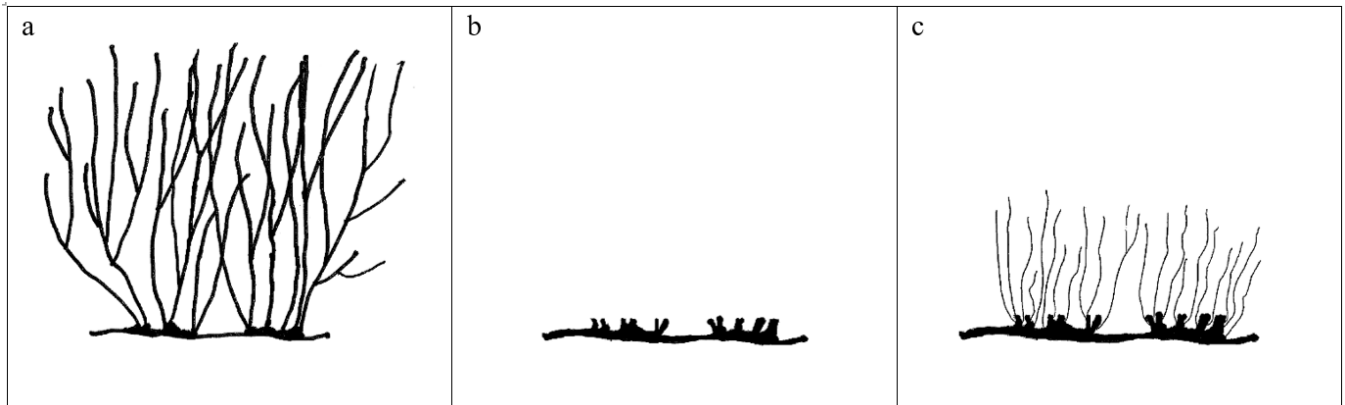


Figure 2. Hedgerow prior to coppicing (a), immediately after with stems cut down to base (b) and with growth of new shoots from the above-ground crown after one growing season. (c).

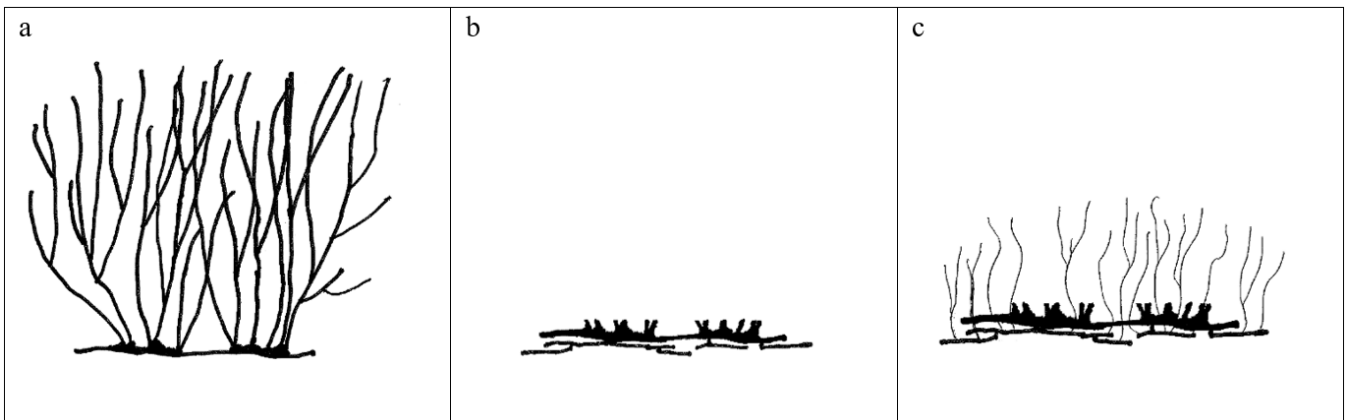


Figure 3. Hedgerow prior to coppicing (a), immediately after with stems cut down to base (b) and with growth of new shoots from underground root or stem systems after one growing season. (c).

Examples of plants that send up growth from shoots from underground rhizomes or roots include Blue Elderberry, Choke Cherry, Golden Current and California Wildrose.

Forbs and Grasses

The forbs in this group are characterized as herbaceous perennials. New shoots grow from the base each spring, producing leaves, flowers and fruits, and die back in the fall. New growth occurs the following spring and the persistence of the old shoots varies between species. Deer Grass is the only grass species included here. For these plants, management can be limited to cutting back dead material and controlling spread for those species that spread through growth of underground rhizomes.



Hedgerow, approximately 6 months after planting. The plants are irrigated with drip irrigation and established through weedmat for weed control. The right row is planted with forbs, grasses and small shrubs including yarrow, in foreground. The left side row is planted with shrubs including elderberry. Photo: M. Smither-Kopperl

DEERGRASS

Muhlenbergia rigens (Benth.) Hitchc.

Alternate Names

Common Names: Deer grass, Deer Muhly

Description

Grass Family (Poaceae). A large perennial, warm season bunch grass. Flowering spikes are produced in the spring and early summer; these appear yellow due to the anthers when blooming.

Adaptation

Found below 7,000 feet through California in canyons and stream bottoms. Grows in wetlands and non-wetland areas. Full sun.

Dimensions

Bunched; 3-5 feet tall and 4 feet wide.

Soil Preference

Grows in a variety of soil types, prefers sandy and gravelly, well-drained soil types. pH 5.1 - 8.2. Will tolerate slight salinity.

Water needs

Grows in areas between 9 – 73 inches annual rainfall. Water once a week in the first 2 years. Drought resilient once established.

Wildlife Use

Bloom: May – June. Flowering spikes provide pollen for pollinators and beneficial insects. Seeds are eaten by insects and birds and small mammals. The dense thatch of the grass provides nesting habitat, and these plants are an overwintering site for lady beetles.

Cultural Uses

Seeds of deer grass were ground and used as food by the Apache, although there is no record of this for California tribes. Flowering spikes are used as foundation material for coiled baskets. These baskets were critical for survival of the California tribes, used for food preparation and storage, collecting water, and cooking with heated stones added to water in the baskets.

Harvest period

July – September prior to fall rains.

Harvest Interval

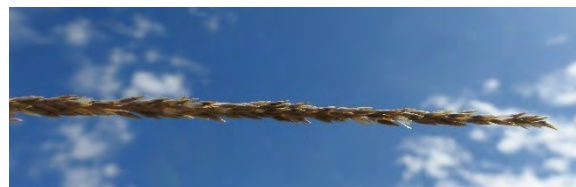
Each summer after first year of growth. Hand harvest flowering spikes for basketry in late summer of fall. Quality is better for basketry if harvested prior to fall rains.

Stewardship Methods

Deergrass responds well to cultural burning; this should be done in late winter or early spring once overwintering insects have emerged and prior to spring growth of the plant. Make sure that there is adequate moisture after a fire for growth. Alternatively, cut back the entire plant to about 6 inches in height in the fall every 2 – 5 years, this will also encourage spring growth, although thatch builds up within the crown.



Deergrass plant with flowering spikes. Photo: M. Smither-Kopperl



Deergrass flowering spike. Photo: Matthew Bronson

GREAT VALLEY GUMWEED

Grindelia camporum Greene.

Alternate Names

Common Names: common gumplant, Great Valley gumplant

Scientific Names: *G. camporum* var. *bracteosa*,
G. camporum var. *camporum*, *G. hirsutula*

Description

Sunflower Family (Asteraceae). A perennial herb with semi-woody stems that die back every winter to a rosette of leaves. Upright branched stems with sticky lance shaped leaves. Flowers are composite heads

Adaptation

Endemic to California, it occurs in Central and Southern Coast and Ranges, and throughout the Central Valley. Grows up to 7,000 feet in elevation. Found in wetland and non-wetland areas. Full sun.

Dimensions

2-8 feet tall

Soil Preference

Tolerates a variety of soil types. pH 5.2 – 9

Water needs

Grows in areas between 10 -73 inches rainfall. Choose an adapted local cultivar, plan to provide irrigation during first summer. Once established annual rainfall is sufficient.

Wildlife Use

Bloom: April – November. A superior pollinator species for bees, butterflies and beneficial insects. Seeds are consumed by birds and wildlife. The leaves are deer resistant.

Cultural Uses

Culturally important as a medicinal plant, with fresh buds used for bronchial disorders and decoctions made from various parts of the plant.

Harvest period

Buds in spring and through the year; seeds in fall.

Harvest Interval

Annually

Stewardship Methods

As a herbaceous perennial, the partly woody shoots die back each fall, new growth occurs in spring.



Great Valley gumweed with erect stems and yellow flowers.
Photo: M. Smither-Kopperl



Great Valley gumweed flowers and buds.
Photo: M. Smither-Kopperl.

MILKWEED, SHOWY

Asclepias speciosa Torr.

Description

Dogbane and Milkweed Family (Apocynaceae, Asclepiadiaceae). An herbaceous perennial. Stems with large ovate leaves appear in late spring. The flowers are complex, rose/purple to pink and aging to yellow. Fruits are produced in seed pods, flat and vase shaped, wind dispersed by means of filaments.

Adaptation

Grows up to 8,000 feet in elevation. In California, it occurs in northern California including Coast Ranges, Sacramento Valley and the Sierra foothills. Wetland and non-wetland sites. Full sun.

Dimensions

To 5 feet tall and wide

Soil Preference

Tolerates a range of soil types. pH 5–9

Water needs

Once established, very drought tolerant, grows in areas with annual rainfall above 9 inches annually.

Wildlife Use

Bloom: May- August. Milkweeds are important pollinator plants for a host of bees and butterflies, including monarch butterflies, which lay their eggs on the stems and serve as food for the caterpillars.

Cultural Uses

A critically important plant for the tough fibers that surround the stems and are used for cordage, fish nets, clothing and regalia. Fibers from the seed pods were used for padding in pillows and cradle boards.

Harvest period

Later fall and winter, when the stalks are dried.

Harvest Interval

Annually

Stewardship Methods

The plants were harvested annually down to the ground, otherwise dead stems build up. The plants are fire adapted: a cultural fall burn is helpful in suppressing weeds.

Issues of Concern

Milkweed plants are toxic to people and livestock, so should not be consumed. Host to the glassy-winged sharpshooter, which carries Pierce's disease toxic to grapes.

Note

There are 14 species of milkweed in California. Locally adapted species should be used in hedgerows. Management will be similar between species.



Showy milkweed in bloom. Photo: M. Smither-Kopperl.



Juvenile showy milkweed plant in spring, prior to bloom. Photo: M. Smither-Kopperl.

MUGWORT, CALIFORNIA

Artemisia douglasiana Besser

Alternate Names

Common Names: Douglas' sagewort

Scientific Names: *A. campestris* var. *douglasiana*,
A. vulgaris ssp. *heterophylla*, *A. vulgaris* var. *douglasiana*

Description

Sunflower family, (Asteraceae). An aromatic herbaceous perennial. It is rhizomatous with numerous slender stems arising from the base. The leaves are green to grey green, silvery white on the undersides and have 3 – 5 lobes. The flowering heads are grey, white or yellow and inconspicuous.

Adaptation

Grows up to 7,000 feet in elevation. Common and distributed throughout California, apart from the southern deserts. Frequently found in riparian areas and wetlands, occasionally in non-wetlands, and, once established, is tolerant of drought.

Dimensions

2 - 10 feet tall, rhizomatous growth with spreading clumps

Soil Preference

Wide variety of soil types. pH 5 – 8.8

Water needs

In natural range grows in areas between 11- and 119-inches annual rainfall. Will become dormant in summer under drought conditions.

Wildlife Use

Bloom period: May - October. Various insects are attracted to the flowers, host to 28 butterflies and moth species. Seeds are foraged by birds.

Cultural Uses

Of cultural importance for California tribes with medicinal and analgesic properties, leaves are prepared as decoctions and poultices or smoked for external applications for wounds, pain and rashes. Revered for protective properties and used in repatriation ceremonies.

Harvest period

Shoots harvested during spring and summer.

Harvest Interval

Annually

Stewardship Methods

Fire adapted. Shoots die back during drought or over the winter and emerge from the base each spring.

Issues of Concern

Mugwort contains neurotoxins and other chemicals with toxicity to human cells. Leaves may cause skin irritation to some people.



Mugwort in spring showing new shoots emerging from base and dead stems from the previous year.
Photo: M. Smither-Kopperl.



Mugwort new growth showing lobed leaves.
Photo: M. Smither-Kopperl

YARROW

Achillea millefolium L.

Alternate Names

Common Names: Common yarrow

Scientific Names: Numerous alternate names and sub-species

Description

Sunflower Family (Asteraceae). An herbaceous perennial plant that produces one to several erect stems. The leaves are finely divided and appear fernlike. Flowers are borne on the erect stems and are composite flat-topped heads of flowers, typically white, but colored cultivars are available. Small fruits develop in the seed heads.

Adaptation

Found on slopes, washes, canyons, and desert mountains. Grows up to 7,000 feet in elevation. In California, it occurs in all areas except for the Mojave Desert. Full sun.

Dimensions

0.5 - 3.5 feet tall and wide

Soil Preference

Well-drained, sandy soil. pH 6 – 8

Water needs

Grows in areas with 14 – 127 inches annual precipitation. Drought resilient once established, irrigate weekly for first summer after planting, will go summer dormant under dry conditions.

Wildlife Use

Bloom period is April – August. They are visited by a range of generalist pollinators including native bees, butterflies and a variety of beneficial insects.

Cultural Uses

Important medicinal plant used by indigenous peoples. Decoctions of leaves, flowers and stems taken for a variety of illnesses, either taken internally or applied externally for wounds.

Harvest period

March - May

Harvest Interval

Annually

Stewardship Methods

Fire adapted. No special stewardship methods needed once established, this plant will tolerate mowing.



Yarrow in bloom in native planting.
Photo: M. Smither-Kopperl



Yarrow plants growing close together and showing serrated leaves. Photo: M. Smither-Kopperl

Small to Medium Shrubs and Vines

The plants in this section are woody and persistent, and their smaller size may make them easier to manage. Shrubs may grow new shoots from the base or as suckers from spreading underground rhizomes or roots.

Management activities are likely to be based upon preventing spread, especially with plants such as California wild rose and golden current. The height of these plants is not typically great, and they can more easily be pruned to shape.

Vine stems will grow up and into neighboring vegetation. With the case of California blackberry, the vines grow up and over vegetation then root at their tips given adequate moisture.



California blackberry vines, growing exuberantly at the end of a hedgerow. Photo: M. Smither-Kopperl.



California wildrose plants in an established hedgerow. Note the bluebird box at the end of the row. Further back into the hedgerow there is an elderberry. Photo: M. Smither-Kopperl

BLACKBERRY, CALIFORNIA

Rubus ursinus Cham. & Schldl.

Alternate Names

Common Names: Pacific blackberry, California dewberry, trailing blackberry

Scientific Names: Numerous alternate names exist, see Calflora.

Description

Rose Family (Rosaceae). A deciduous vine or shrub, the prickly stems (canes) grow up and then fall to the ground, where they may root and expand the colony. Leaves have 3 leaflets (occasionally 5 or 1). Flowers are produced on second year canes, and there are separate male and female plants. Flower petals are white and narrow. Fruit is purple and black when ripe.

Adaptation

Occurs in all areas of California apart from deserts. Common in canyons, coastal areas, stream banks and disturbed areas. Grows up to 4,000 feet in elevation. Shade tolerant.

Dimensions

2-5 feet tall and 6 feet wide

Soil Preference

Tolerant of a range of soil types and decomposed plant material. pH 4.4 – 8.3

Water needs

Grows in areas between 14- and 127-inches annual rainfall. Is drought tolerant once established.

Wildlife Use

Bloom: February – May. Flowers are visited by native bees, bumble bees and hummingbirds. Berries are food for birds and small mammals.

Cultural Uses

Berries eaten fresh, cooked or dried and made into cakes, saved for future use. Leaves and stems used for tea or made into infusions to treat stomach upsets.

Harvest period

When fruit is ripe, June through September. Leaves and vines, anytime.

Harvest Interval

Annually

Stewardship Methods

Fire adapted. Vines will sprout back from underground stems once the plant is well established.

Issues of Concern

Carrier of *Xylella fastidiosa* and glassy-winged sharpshooter, causing Pierce's disease of grapes.



Blackberry vines, female with immature fruit.
Photo: M. Smither-Kopperl



Blackberry flower and immature fruits.
Photo: M. Smither-Kopperl

CEANOTHUS, BUCKBRUSH

Ceanothus cuneatus (Hook.) Nutt.

Alternate Names

Common Names: Buckbrush, Wedgeleaf Ceanothus

Scientific Names: *Ceanothus cuneatus* var. *dubius*

Description

Buckthorn Family (Rhamnaceae). A perennial shrub with evergreen leaves that are stiff, tough and fleshy and vibrant white flowers. The berries are found in rounded bunches.

Adaptation

Found at elevations to 7,500 feet, in dry fans, slopes, and ridges. Native to Oregon, California, and Baja California and in chaparral. Full sun.

Dimensions

Grows 5 – 12 feet tall and wide

Soil Preference

Grows on all soil types including decomposed plant material and rocky sites. Requires quick draining soils. pH 5-8.3

Water needs

Grows in areas of 15 to 123 inches annual rainfall. Very drought resilient once established.

Wildlife Use

Bloom: February – April. Pollinator resources for bees, beneficial insects, butterflies and moths. Birds eat the seed and visit the plant for insects, small mammals consume the seeds and deer browse on the leaves and young shoots.

Cultural Uses

Tribes used this plant for basketry, providing the rim stick for burden baskets and warp sticks for weaving, also spoon shaped scoops, digging sticks and arrows. Wood was used for fuel.

Harvest period

Summer, Winter, Spring

Harvest Interval

Harvested for shoots every 1 – 3 years.

Stewardship Methods

Fire adapted. This required management of harvesting at the base and periodic burning of plants. Will tolerate coppicing with shoots emerging from basal buds. Can be pruned or trimmed to shape.



Buckbrush shrub in bloom. Photo: M. Smither-Kopperl



Buckbrush flowering branch. Photo: M. Smither-Kopperl

CEANOTHUS, DEERBRUSH

Ceanothus integerrimus Hook. & Arn.

Alternate Names

Common Names: Deerbrush Ceanothus

Scientific Names: *Ceanothus andersonii*

Description

Buckthorn Family (Rhamnaceae). A deciduous woody shrub with flexible ascending stems. Leaves are small, simple and alternate, with 1 – 3 ribs growing from the base. The inflorescence is a panicle with numerous white and lavender flowers.

Adaptation

Native to the western United States. In California, mainly found in the Sierra Foothills and Coast ranges, where it grows up to 8,000 feet in elevation. Tolerates full sun and shade.

Dimensions

12 feet tall

Soil Preference

Tolerant of a variety of soil types including clay loam, ilt loam, sandy loam, even bedrock, rocky sites and decomposed plant material. pH 5 – 7.2

Water Needs

Annual rainfall, 17 – 109 inches. A drought tolerant plant once established.

Wildlife Use

Bloom: May – June. Pollinator resource for native bees, beneficial insects, butterflies and moths. Fruits consumed by birds, and small mammals. Deer browse the leaves.

Cultural Uses

Young, flexible shoots used for basketry providing the rim stick. Seeds also reported ground into pinole and eaten.

Harvest Period

For fruits, July – September. Shoots during fall winter or spring.

Harvest Interval

Annually for fruits; shoots every 1 – 3 years, depending on growth stage.

Stewardship Methods

Fire adapted. Will tolerate coppicing, pruning, and may be trimmed to shape.



Deerbrush in bloom. Photo: V. Bullard

GOLDEN CURRANT

Ribes aureum Pursh

Alternate Names

Scientific Names: *Ribes aureum* var. *aureum*,
R. aureum var. *gracillimum*

Description

Currant or gooseberry Family (Grossulariaceae). A deciduous shrub with numerous erect arching branches. Leaves are green and glossy with 3 -5 lobes. Flowers are yellow and trumpet shaped. Berries when ripe are orange, red or black with numerous small seeds.

Adaptation

Found on slopes, washes, canyons, and desert mountains. Grows up to 7,000 feet in elevation. In California, it occurs in Coast Ranges, Sierra foothills, and southern coastal mountains. Full sun on the coast and partial shade inland.

Dimensions

3 – 9 feet tall and wide.

Soil Preference

Grows in a variety of soil types and decomposed plant material. pH 5 – 8

Water needs

Grows in areas with annual rainfall between 11 and 65 inches. Although found in non-wetland and wetland areas, typically found on stream banks. Irrigate once a week for the first summer, may need further irrigation depending on location.

Wildlife Use

Bloom: February – April, depending on elevation. The flowers provide pollen and nectar for bees, butterflies and hummingbirds. The berries are food for birds and small mammals.

Cultural Uses

The fruits are an important food either eaten fresh or dried into cakes.

Harvest period

May - August

Harvest Interval

Annually

Stewardship Methods

Golden currant is fire adapted and will grow new shoots from the base. The plant can be pruned back to control spread, or coppiced as it will regrow with suckers from underground rhizomes.



Established golden current shrub.
Photo: M. Smither-Kopperl



Golden currant blooms and ripe berries.
Photo: M. Smither-Kopperl

GRAPE, CALIFORNIA

Vitis californica Benth.

Description

Grape family (Vitaceae). California grape is a deciduous perennial vine, with strong, woody stems. Tendrils grow opposite leaves, to attach and climb into trees and shrubs. Leaves are roundish with serrated margins and an indentation at the base. The grapes are green when immature, transition to purple when ripe and contains 3-4 seeds with a hard seed coat.

Adaptation

Found in canyons and riparian areas, on flat ground and slopes up to 4,000 feet in elevation. It occurs along the California Coast, the northern Coast Ranges, Sierra foothills, and the Sacramento Valley. In full sun or partial shade and in wetland and non-wetland areas.

Dimensions

Vines grow between 6 and 60 feet in length.

Soil Preference

Tolerant of a range of soil types, prefers heavier soils including clay soils. pH 5-8

Water needs

Needs abundant water to establish, then very drought tolerant.

Wildlife Use

Bloom: May–June. Insect species supported include native bees, butterflies and moths. Numerous large and small animals and birds depend on the fruit.

Cultural Uses

The fruits were eaten fresh, dried and cooked to make jelly. The leaves were used in cookery, placed over hot rocks and bulbs in earth ovens. The vines had a variety of uses, from basketry, cordage, split and used as thread, and construction as binding material for posts, rafters, and thatch. Roots used in basketry.

Harvest period

September - October for grapes. Ideally, harvest vines when dormant.

Harvest Interval

Annually for grapes, vines once they reach an appropriate size, 1 – 3 years.

Stewardship Methods

California wild grapes are fire adapted. Vines may be cut down to the base and will regrow.

Issues of Concern

Carrier of *Xylella fastidiosa* and glassy-winged sharpshooter, causing Pierce's disease of grape.



California grape vine with developing inflorescence.
Photo: M. Smither-Kopperl



Immature cluster of grapes. Photo: M. Smither-Kopperl

SAGEBRUSH, BIG

Artemisia tridentata Nutt.

Alternate Names

Common Names: Basin big sagebrush

Scientific Names: *A. tridentata* ssp. *parishii*,
A. tridentata ssp. *tridentata*, *A. tridentata* ssp. *vaseyana*,
A. tridentata ssp. *wyomingensis*.

Description

Sunflower family (Asteraceae). An aromatic perennial shrub, with branches that are erect to generally spreading. The leaves are blue-grey to blue-green, covered with dense hairs and narrowly wedge shaped and have 3 lobes at the apex. The flowering heads emerge above the canopy and contain 3 – 18 flowers. Abundant seed.

Adaptation

Grows at elevations from 1,800 – 9,415 feet, on the eastern side of the Sierra Nevada, the Great Basin, and limited areas in the Mojave Desert and the Coast Ranges of Southern California. Full sun.

Dimensions

Up to 7 feet tall and broad.

Soil Preference

Wide variety of soil types. pH 5 – 8.8

Water needs

In areas between 9- and 55-inches annual rainfall.

Wildlife Use

Bloom period: August - September. Critically important for wildlife, large and small mammals that forage on the leaves and seeds, birds including sage grouse, and insects including native bees.

Cultural Uses

Major cultural importance for ceremonial and religious ceremonies. Leaves and shoots were dried and used for medicine, as an analgesic, for colds, stomach upsets, and liniment for pain. Wood for drills start fire and for fuel. Paiute tribes used bark for clothing and cordage. Seeds were dried and roasted, then ground, mixed with water and eaten.

Harvest period

Leaves could be collected all year, shoots in late spring, early summer and seeds when ripe.

Harvest Interval

Annually

Stewardship Methods

Fire adapted, cuttings and shoots were taken carefully without disturbing the roots.

Issues of Concern

May cause skin irritation for some people.



Big sagebrush showing flowering heads. Photo: Ling He



Mountain sagebrush, *A. tridentata* ssp. *vaseyana*.
Photo: Ling He

SAGE, BLACK

Salvia mellifera Greene

Description

General: Mint Family (Lamiaceae). A perennial herb, sub-shrub, with pale green stems and simple leaves that are puckered. The flowers are borne in clusters on the flowering shoots and are white to pale blue or lavender. The fruits are small and brown.

Dimensions

Grows 3 – 6 feet tall and up to 10 feet wide.

Adaptation

Native to southwestern coastal California up to 6,000 feet Can be grown successfully further north and inland if tolerances are met. Full sun to partial shade.

Soil Preference

Can handle a wide variety of soils, including clay, sand, bedrock and decomposed plant material, good drainage essential.

Water Needs

Once established very drought tolerant. Can grow in areas of rainfall from 12 to 60 inches.

Wildlife Use

Bloom: March – July. The flowers support many native pollinators including bumblebees and hummingbirds; the seeds are eaten by birds and small mammals.

Cultural Uses

A culturally important plant: shoots, stems, leaves and seeds were all used for food by the southwestern tribes. Leaves are used for a variety of medicinal purposes.

Harvest Period

Seasonal annually

Harvest Interval

Annual, if not over harvested.

Stewardship Methods

Black sage is fire adapted, will send up shoots from the base and resprout from the abundant seeds. Harvesting of flowering shoots and leaves. Pruning back and coppicing are all appropriate methods.



*Black sage shoots in a hedgerow.
Photo: M. Smither-Kopperl*



Black sage in bloom. Photo: M. Smither-Kopperl

SAGE, WHITE

Salvia apiana Jeps.

Description

General: Mint Family (Lamiaceae). A perennial herb, sub-shrub, with grey stems and greyish green simple leaves with minute rounded teeth and dense minute appressed hairs. White to lavender flowers grow in clusters on spike-like inflorescences, the fruits are shiny and brown. New shoots growing from stems at the base annually form the flowering inflorescence each spring.

Dimensions

Grows 3 – 8 feet tall and 3 – 8 feet wide

Adaptation

Native to southwestern coastal California up to 6,000 feet, can be grown successfully further north and inland if tolerances are met. Full sun to partial shade.

Soil Preference

Can handle a wide variety of soils, including clay, sand, bedrock and decomposed plant material, good drainage essential.

Water Needs

Once established very drought tolerant. Can grow in areas of rainfall from 9 to 47 inches.

Wildlife Use

Bloom: April – July. The flowers support many native pollinators including bumblebees and hummingbirds; the fruits are eaten by birds and small mammals.

Cultural Uses

A culturally important plant: shoots, stems, leaves and seeds were all used for food by southwestern tribes. Important medicinal and religious uses with materials traded between tribes. Dried leaves are bunched and used for smudging in ceremonies.

Harvest Period

Seasonal annually

Harvest Interval

Annual, if not over harvested.

Stewardship Methods

Harvesting of flowering shoots and leaves, every fall. When pruning back, do not cut down to the base.

Issues of Concern

Recent overharvesting in its native range has had a negative impact on its distribution in Chapparal and Coastal Sage Scrub communities and the insects, birds and mammals that depend on it.



White sage plant, flowering shoots are present.
Photo: M. Smither-Kopperl



Flowering spikes in bloom.
Photo: M. Smither-Kopperl

SOURBERRY

Rhus aromatica Aiton

Alternate Names

Common Names: Fragrant Sumac, Skunk bush

Scientific Names: *Rhus trilobata* Nutt., *Rhus aromatica* var. *trilobata*

Description

Cashew Family (Anacardiaceae). A winter deciduous perennial shrub that grows in a uniform round shape. Yellow/cream flowers turn into bunches of red berries. Leaves appear in groups of three.

Adaptation

Found on slopes, washes, canyons, and desert mountains. Grows up to 7,000 feet in elevation. In California, it occurs in northern Coast Ranges, Sierra foothills, and southern coastal mountains. Full sun.

Dimensions

8 feet tall and wide

Soil Preference

Tolerant of a range of soil types and decomposed plant material. pH 5 – 8.3

Water needs

Grows in areas of 10 – 89 inches annual precipitation. Can be watered once a week in the summer when first planted. Drought tolerant once established.

Wildlife Use

Bloom: March – April. Flowers are visited by native bees. Berries are food for birds and small mammals.

Cultural Uses

Fruits eaten fresh, or dried and ground into a flour, used to make soups and drinks. Straight flexible shoots used for basketry and cradle boards.

Harvest period

Fruits are harvested when ripe in summer. Shoots for basketry are gathered in late fall, winter or early spring when flexible and the bark is easier to peel.

Harvest Interval

Annually for fruits. Every 1 to 2 years for shoots.

Stewardship Methods

The plant is fire adapted, and after a cultural burn will produce straight flexible shoots used in basketry. Pruning and coppicing are effective.

Issues of Concern

Can cause a similar irritation to the skin as poison oak, take caution when around the shrub.



Sourberry shoot and leaves. Photo: Jesse Bahm



Sourberry shoot with immature berries. Photo: Jesse Bahm

SUGAR BUSH

Rhus ovata S. Watson

Alternate Names

Common Names: Sugar sumac

Description

Cashew Family (Anacardiaceae). Evergreen shrub with simple leathery leaves. Flowering branches are stout with red sepals with white to pink sepals. Fruit is round, hairy and red when ripe.

Adaptation

Found in coastal areas of southern California, generally south facing slopes, washes, canyons, and southern coastal mountains up 6,350 feet. Shade tolerant.

Dimensions

6 - 30 feet tall and wide. Rounded in shape

Soil Preference

Grows on a range of soil types and decomposed plant material. pH 5 – 8.3

Water needs

Found in areas with 11 – 47 inches annual rainfall. Can be watered once a in the summer when first planted.

Wildlife Use

Bloom: April - May. Insect pollinator plant, flowers are visited by native bees. Berries are food for birds and small mammals.

Cultural Uses

Berries harvested and eaten either fresh or dried, sometimes ground into flour for mush. Fruit sap used as a sweetener. Infusion of leaves used for coughs and chest pain.

Harvest period

Fruits are harvested when ripe in summer. Leaf infusions used for medicinal properties.

Harvest Interval

Annually

Stewardship Methods

The plant is fire adapted, can be pruned once established.

Issues of Concern

Host to the bacteria *Xylella fastidiosa* and the Glassy-winged sharp shooter. Can cause a similar irritation to skin as poison oak, take caution when around this shrub.



Sugar bush shrub with flowers. Photo: Lisa Woo Shanks



Sugar bush shrub with fruits. Photo: Lisa Woo Shanks

WILDROSE, CALIFORNIA

Rosa californica Cham. & Schtdl.

Alternate Names

Common Names: California Wild Rose

Scientific Names: *Rosa aldersonii*

Description

Rose Family (Rosaceae). Wildrose grows laterally by basal shoots if water is available. A round evergreen shrub with toothed leaves and pink or white flowers. The round red fruits are called rose hips.

Adaptation

Found in wetlands, yellow pine forest, foothill woodland, chaparral, and valley grasslands throughout California. Grows up to 6,000 feet in elevation. Found in wetland and non-wetland areas. Full sun, partial shade, full shade.

Dimensions

3 – 10 feet tall

Soil Preference

Grows on a variety of soil types, clay, silt, sand and decomposed plant material. pH 5 – 8.3

Water Needs

Grows in areas of between 13 - 107 inches annual rainfall. Drought tolerant once established. Wildrose will go dormant in summer if water is limited.

Wildlife Use

Wildrose is a pollinator resource for bees, butterflies, birds and moths. Fruits and seeds are important forage for wildlife, including birds and mammals.

Cultural Uses

Rose hips, both fresh, dried and ground, were important food for tribes. Unsplit stems used as rims for coiled basketry. An important medicinal plant, with infusion of petals used to reduce fever. Decoctions of leaves, fruits and seeds used to cure a variety of ailments.

Harvest Period

Flower and fruit: May – August

Harvest Interval

Annually for rose hips, stems as needed.

Stewardship Methods

Annual pruning when desired, will survive coppicing with adequate moisture. Fire adapted and resilient to cultural burns.

Note

There are nine species of wildrose native to California—the use of locally adapted species is important.



California wildrose flower and buds. Photo: Annie Edwards



Wildrose mature fruit (hips). Photo: Annie Edwards

Large Shrubs and Trees

The plants in this section are larger woody plants with a typical height of 10 – 25 feet, when mature. As with small and medium shrubs, new shoots grow from the crown or as shoots from spreading underground stems or roots.

The speed at which the new growth occurs will vary with plant species and can be very fast. This attribute was understood by the tribes who utilized them for a variety of purposes. For example, elderberry shoots may grow 5 to 7 feet in a single year with thick shoots that were used for clapper sticks, and a variety of other purposes. Flexible willow shoots were used for basketry as were the straight shoots of redbud, with the white wood of the stems and the red bark both used for basketry.

The image on the right is holly-leaf cherry, six years after a major coppicing event that cut the plant down to the ground. The base of the same plant is shown (Photo below) with new stems that emerged after the previous tree was cut down.

All plants in this section, cherries, elderberry, hazel, redbud, toyon and willow respond well to coppicing. The only exception is California flannelbush, which should be trimmed or pruned and typically grows from seed after a fire.



*Holly-leaf cherry plant, regrown from shoots after coppicing.
Photo: M. Smither-Kopperl*



*Holly-leaf cherry plant, showing the base of the plant and the numerous stems that grew from basal suckers after coppicing.
Photo: M. Smither-Kopperl*

CHERRY, CHOKE

Prunus virginiana L. var. *demissa* (Nutt.) Torr.

Alternate Names

Common Names: Chokecherry, Western choke cherry, Western chokecherry

Scientific Names: *Prunus demissa*, *P. virginiana* var. *melanocarpa*

Description

Rose family (Rosaceae). A deciduous tree/shrub with ovate, rounded at the base. Their small white flowers are produced on racemes. The fruit is ¼ - ½ inch in diameter and dark purple when ripe.

Adaptation

Grows below 6,000 feet in rocky slopes and canyons, equally likely to occur in wetlands and non-wetlands, grows larger with moist areas of chaparral shrublands and foothill woodlands. Widely distributed in California and southwestern US. Full sun to partial shade.

Dimensions

3 – 20 feet tall

Soil Preference

Clay loam to sandy loam soils and decomposed plant material. pH 5 – 8

Water Needs

Grows in areas from 15 -117 inches annual rainfall. Once established, occasional summer watering.

Wildlife Use

Bloom: March – May. The tree is beneficial to pollinators. Its berries serve as a food source and nesting place to numerous bird species and mammals. Mule deer and big horn sheep use this shrub for browsing.

Cultural Uses

The berries are small, when ripe they are black or dark purple, sweet and used for food, either eaten fresh or dried into cakes for future use. The bark and roots used to make infusions for coughs.

Harvest Period

The berries can be harvested from September – October.

Harvest Interval

Annually, after tree matures.

Issues of Concern

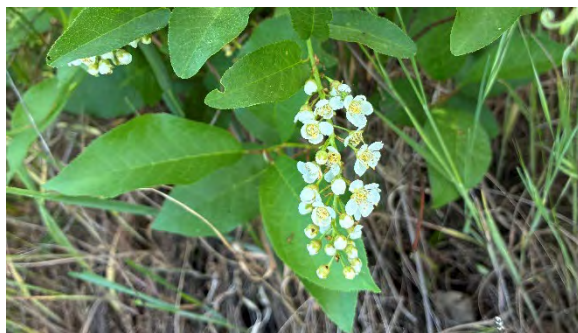
The pits/seed/and fruit flesh (especially when unripe) are toxic if not prepared before eating.

Stewardship Methods

The choke cherry is fire adapted and will grow back after a fire by suckers from the underground root system. Adapts well to coppicing and also may be pruned and trimmed back.



Choke cherry shrub in hedgerow.
Photo: M. Smither-Kopperl



Choke cherry in bloom. Photo: M. Smither-Kopperl

CHERRY, HOLLY LEAF

Prunus ilicifolia (Nutt. ex Hook. & Arn.) D. Dietr.

Alternate Names

Common Names: Holly-leaved cherry, Evergreen cherry

Description

Rose Family (Rosaceae). An evergreen tree/shrub with dark shiny, dark green, spiny margined leaves (resembling holly leaves). Their small white flowers are produced on racemes. The cherries are red to black when ripe and have a thin layer of pulp covering the large seed. Will regenerate from buds on the root system.

Adaptation

Grows below 5,200 feet in moist areas of chaparral shrublands and foothill woodlands. Native to coastal California and northern Baja California. Full sun to partial shade.

Dimensions

19 – 29 feet tall and wide

Soil Preference

Gravely, well-drained soil. pH 5 – 8

Water Needs

Grows in areas with between 13 – 65 inches annual rainfall. Once established, drought tolerant with occasional summer watering.

Wildlife Use

Bloom: March – May. The tree is beneficial to pollinators. Its berries serve as a food source and nesting place to numerous bird species and mammals. Mule deer and big horn sheep use this shrub for browsing.

Cultural Uses

The fruit is thin and not usually eaten, the seeds are large and the extracted kernels soaked to leech out toxins and ground into a powder to be stored. The meal was highly valued used mixed with water to be cooked into cakes or porridge. Medicinal uses for the bark and dormant roots used to make infusions for coughs. The wood had a variety of uses, including for bows for some tribes.

Harvest Period

The berries can be harvested from September – October.

Harvest Interval

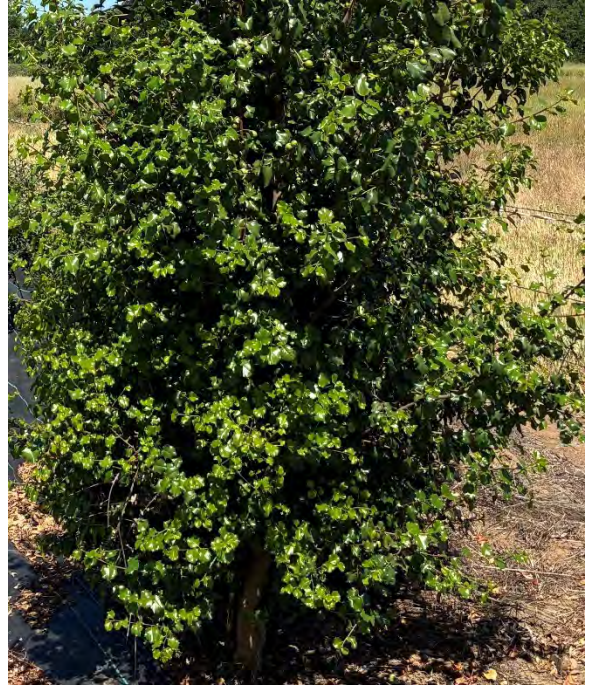
Annually, after berries are produced.

Stewardship Methods

The holly leaf cherry is fire adapted. Will tolerate coppicing, pruning or trimming back.

Issues of Concern

The pits/seed/and fruit flesh are toxic if not prepared appropriately to remove the toxins before eating. They are toxic to livestock as well. Host for the glassy-winged sharpshooter and *Xylella fastidiosa* causing Pierce's disease of grape.



Holly leaf cherry shrub. Photo: M. Smither-Kopperl



Holly leaf cherry shoot showing serrated margins of leaves and ripe cherries. Photo: Lisa Woo Shanks

ELDERBERRY, BLUE

Sambucus nigra L. ssp. *caerulea* (Raf.) R. Bolli

Alternate Names

Common Names: Elderberry, Wild elder

Scientific Names: *Sambucus mexicana*, *S. caerulea*, *S. cerulea*,

Description

General: Adoxaceae Family. Perennial shrub/small tree; mature fruit is purple to black; flowers are white; leaves are dark green on top and lighter on their underside. Short-lived, spreads by sending up suckers from underground rhizomes.

Dimensions

8-24 feet tall and wide

Adaptation

Elevation: 0 - 9,500 feet. Common along stream sides and canyons. Full sun, partial shade, full shade.

Soil Preference

Grows on a variety of soils. pH 5 – 8.4

Water Needs

Grows in areas with from 12 – 121 inches annual rainfall. Once established, is drought tolerant.

Wildlife Use

Bloom: June – August. Habitat for wildlife and pollinators; the fruit and seeds are used as food. Bees use the flowers for pollination, while game birds, rodents and bears eat the berries.

Cultural Uses

Berries harvested eaten fresh and dried, ground, mixed with other plants. Stems used for making flutes, clapper sticks and containers. All parts of the plant including leaves, flowers, fruits, bark and roots used for medicinal purposes to cure a variety of ailments.

Harvest Period

Elderberry flowers 2-3 years after planting. Berries are harvested July - September. Wood is harvested in the winter while the tree is dormant.

Harvest Interval

Annually

Stewardship Methods

Elderberry responds well to pruning and coppicing. Fire interval would be 5 to 10 years. After coppicing or burning, underground rhizomes send up suckers. These retain the elderberry in a juvenile state.

Issues of Concern

Valley elderberry longhorn beetle is listed as threatened by US Fish and Wildlife Service. Due to the status of this beetle, there are restrictions in the Central Valley on pruning and removal of elderberry plants.



Elderberry bush in bloom. Photo: A. Edwards



Elderberry flowers and young berries. Photo: A. Edwards



Ripe elderberries. Photo: Lisa Woo Shanks

FLANNELBUSH, CALIFORNIA

Fremontodendron californicum (Torr.) Coville

Alternate Names

Common Names: Flannel bush, California fremontia

Description

Mallow Family (Malvaceae). A perennial shrub/tree with soft leathery leaves covered in hairs on top and bottom surfaces. Large yellow flowers emerge during bloom.

Adaptation

Found between 600 – 7500 feet in elevation, in chaparral, oak woodland and pine forests. Primarily grows in the foothills surrounding the Central Valley. Low rainfall requirements. Full sun.

Dimensions

6-20 feet in height. Upright and rounded.

Soil Preference

Sandy or rocky well-draining soils, pH 5.6 – 8

Water Needs

Grows in precipitation area of 13 – 77 inches. Drought tolerant once established. Does not like wet-feet.

Wildlife Use

Bloom: May – June. Flowers attract pollinators including bees, moths, and butterflies.

Cultural Uses

Shoots harvested in the spring, with the bark prepared to make cordage. Flannelbush bark rope used for back-pack straps, baby cradles, lashing branches for acorn granaries, bundles for firewood, rafts, and rabbit traps.

Harvest Period

May– August

Harvest Interval

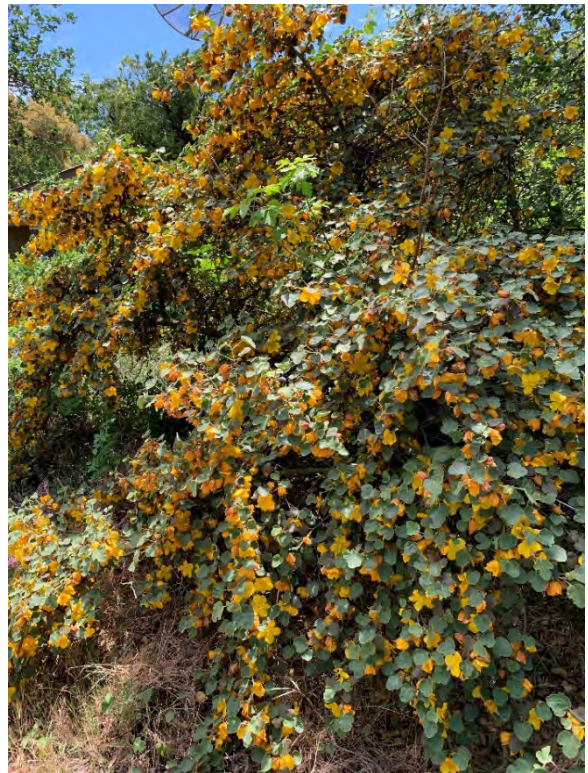
Annually

Stewardship Methods

Pruning back will encourage long new branch growth. This improves the health of the plant. Avoid hard pruning as it will damage the tree. Coppicing is not recommended for this plant.

Issues of Concern

The leaves, stems and fruits are covered with dense stellate hairs and these can cause contact dermatitis when in contact with the skin.



Flannelbush shrub in bloom. Photo: M. Smither-Kopperl



*Flannelbush flowers and leaves.
Photo: Lisa Woo Shanks.*

HAZEL, CALIFORNIA

Corylus cornuta Marshall ssp. *californica* (A. DC.) E. Murray

Alternate Names

Common Names: Beaked hazelnut, Hazel, Hazelnut

Scientific Names: *Corylus californica*, *C. cornuta*

Description

Birch Family (Betulaceae). A deciduous perennial shrub leaves are hairy and round inverted at the petiole with an acute tip. The flowers are a male catkin, producing yellow pollen, and a small female flower with a red stigma. The fruit (nut), enclosed by 2 leafy bracts, is vase shaped.

Adaptation

Grows up to 7,000 feet in elevation. It occurs in Northwestern California, Coast Ranges north of San Francisco and the Sierra foothills, absent from the Central Valley and Southern California. Tolerant of shade.

Dimensions

18 feet tall and wide

Soil Preference

Moist areas, loamy soils, clay, sandy and silt, decomposed plant material. pH 5 – 7

Water needs

In natural range grows in moist areas between 27- 111-inches annual rainfall. In dryer areas, irrigation is essential.

Wildlife Use

Bloom period January – March, wind dispersed produces copious pollen. The shrub provides excellent cover and the nuts are food for wildlife.

Cultural Uses

An important plant for California tribes, nuts eaten fresh or stored, ground and used for food. Hazel stems used for a variety of practices as the stems are flexible, this included basketry, sieves, fish traps and arrows.

Harvest period

Nuts harvested when ripe in late summer or fall. Stems harvested over the winter when plants are dormant.

Harvest Interval

Once mature, nuts can be harvested annually. Stems harvest time would depend on the purpose, generally 1 – 3 years.

Stewardship Methods

Fire adapted. Pruning and coppicing over the winter, sprouts will grow up from the base.

Issues of Concern

Susceptible to Sudden Oak Death caused by *Phytophthora ramorum*.



California hazel. Photo: M. Smither-Kopperl



California hazel leaves and developing nut.
Photo: Ling He

REDBUD, WESTERN

Cercis occidentalis Torr. Ex A. Gray

Alternate Names

Common Names: Redbud, California redbud

Scientific Names: *C. orbiculata*, *C. canadensis*,
C. canadensis var. *orbiculata*

Description

General: Bean or Legume Family (Fabaceae). A winter deciduous shrub/small tree with magenta pink flowers, heart-shaped leaves, and brown legume pods, 3 inches in length.

Adaptation

Found below 4,000 feet, drought tolerant, and does not tolerate temperatures below 15 °F. Full sun.

Dimensions

7 – 20 feet tall and wide

Soil Preference

Tolerates a variety of soil types but must be well drained; it is frequently found in gravelly poor soils. No fertilization requirement, as a legume fixes its own nitrogen. pH 5 – 8.

Water needs

None once established. Avoid flooded sites.

Wildlife Use

Bloom: 2-3 weeks during Feb – April. Hosts beneficial insects and supports pollinators.

Cultural Uses

Bark from the dark red shoots are a decorative item used in basketry. The separated red bark and the white sapwood are used.

Harvest Period

Fall or winter. Early spring harvest when the bark is slipping on one-year-old shoots allows separation of bark from white sapwood and both can be used for basketry.

Harvest Interval

Depends upon the basketry materials required, coppicing in fall every 1 -2 years would provide straight shoots.

Stewardship Methods

Cut back to the ground (coppice) in the fall or winter, ideally two weeks after the first fall rain. This should be done when the plant is mature, at least 10 years old. Cultural burning may be carried out in fall. After coppicing or burning, the crown will send up numerous straight shoots.



Redbud tree in bloom. Photo: M Smither-Kopperl



Redbud leaves and seed pods, August 2021.

Photo: M Smither-Kopperl

TOYON

Heteromeles arbutifolia (Lind.) M. Roem.

Alternative Names

Common Names: Christmas berry, California Holly

Description

General: Rose Family (Rosaceae). An evergreen shrub, with grey stems and green simple leaves with toothed margins. White flowers grow in clusters on one-year-old branches. The berries are red or orange when ripe with a dry pulpy interior and ripen in winter, the fruits are retained on the plant. Will grow new shoots from the base.

Dimensions

Grows 6 – 20 feet tall and 10 – 15 feet wide.

Adaptation

Found at elevations to 5,775 feet. Native to the Sierra foothills, it is found in the coastal sage scrub, chaparral, and mixed oak woodland plant communities. Often do better near a water source or at the bottom of a slope. Full sun to partial shade.

Soil Preference

Adapted to a wide variety of soils, including clay, sand and decomposed plant material. pH 5 -8.6

Water Needs

Grows in areas with 14 - 93 inches annual rainfall. Drought tolerant, although need adequate moisture.

Wildlife Use

Bloom: June – July. The flowers are visited by native pollinators including bees and butterflies, and the fruits are eaten by birds and small mammals.

Cultural Uses

The berries were harvested when ripe by various tribes. The fruits were sometimes eaten fresh although generally eaten after toasting and drying before eating. Leaves and bark were used to prepare medicine for various ailments.

Harvest Period

Berries harvested annually when ripe, winter and spring.

Harvest Interval

Annually for berries.

Stewardship Methods

Toyon is fire adapted and will resprout from the base after fire. May be pruned back and will produce new shoots from the base after coppicing.



Toyon shrub in bloom. Photo: M. Smither-Kopperl



Toyon with ripe red berries. Photo: Lisa Woo Shanks

WILLOW, SANDBAR

Salix exigua Nutt.

Alternate Names

Common Names: Coyote willow, Narrowleaf willow

Scientific Names: *Salix exigua* var. *hindsiana*

Description

General: Willow Family (Salicaceae). A winter deciduous shrub/tree with narrow, lance-shaped leaves. Flowers are yellow and white, and produced in catkins. There are over 20 species of willow trees and shrubs native to California, making the use of locally adapted species important. The plant grows laterally by basal shoots if water is available.

Adaptation

Found in the western half of North America, excluding the southeast and far north. Full sun to part shade.

Dimensions

10 – 23 feet tall

Soil Preference

Soil that drains slowly to allow for steady moisture and/or can access water year-round.

Water needs

Willows require year-round moisture.

Wildlife Use

Bloom: March – April. The willow family attract numerous pollinators including bees, moths, and gall forming wasps. Birds often nest in willow trees.

Cultural Uses

The willow is a corner stone of traditional basket weaving. These baskets provide a wide array of uses; water storage, hunting and fish traps, food preparation and food storage, and baby cradles.

Harvest Period

Spring and winter, when the bark slips.

Harvest Interval

First when plant reaches 2-4 years of age, then annually or biannually depending on the type of plant material required.

Stewardship Methods

Willows are fire resistant, so will resprout from the base after fire. The plant is harvested for basketry in the spring, when the bark slips away from the main stem. Pruning and coppicing will improve the health of the plant.

Note: Numerous other willow species are present in California, stewardship will be similar.



Willow shoot, leaves and catkins. Photo: Matthew Bronson



Willow leaves and fruit. Photo: Annie Edwards



Willow stems. Photo: Annie Edwards

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