



CALIFORNIA WILD GRAPE

Vitis californica Benth.

VICA5

Description

General: California grape is a deciduous, perennial vine in the Vitaceae, grape family. The stems are strong and woody with shredding bark and grow 6 to 60 feet in length by climbing on trees and shrubs or trailing along the ground (Figure 1). The 3 – 5 lobed roundish leaves may be entire and 2.8 – 5.6 inches broad, with a deep indentation at the base (Figure 2). The leaf margins have shallow teeth that may be blunt or sharp (Howard, 1993; Wada & Walker, 2012). The leaves are softly hairy, with dense hairs especially on the lower surface. Leaf petioles are 1-5 inches in length and stipules are small and shallow. Tendrils, when they occur, are opposite the leaves and used for attaching to vegetation. Plants are generally dioicous and flowers are unisexual, greenish-yellow and small, growing in panicles that are generally 3 – 6 inches in length. The bloom period is May or June. The fruits are round and grow up to ½ inch in diameter (Figure 3). They are green when immature, and transition to purple when ripe, with the skin separating from the pulp. Each fruit typically contains 3-4 seeds. The seeds have a thick hard seed coat with a round, frequently raised structure opposite the attachment scar, which is diagnostic for the species (Wada & Walker, 2012). Chromosome number is $2n=38$.



Figure 1. California wild grape vines overgrowing a small tree (California buckeye) in a riparian area of the Sierra Nevada foothills. Photo: Margaret Smither-Kopperl.

Distribution: California wild grape is endemic to California and southern Oregon. It is distributed in the North Coast, Klamath and North Coast Ranges, Cascade Range Foothills, Sierra Nevada Foothills, Sacramento and San Joaquin Valleys, the Central Coast and South Coast Ranges (Howard, 1993; Wada & Walker, 2012). For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: California wild grape grows in canyons, alongside springs, streams, and riparian areas. It is present on both flat ground and on slopes in wetland riparian habitats, foothill woodland, northern oak woodland and mixed evergreen forest (Calflora, 2022). It is an important component of riparian woodlands and common species associations include Valley oak (*Quercus lobata*), California sycamore (*Plantanus racemosa*), Fremont cottonwood (*Populus fremontii*), black cottonwood (*P. trichocarpa*), red alder (*Alnus rubra*) and white alder (*A. rhombifolia*) communities. It typically occurs in lower and mid-stories of riparian communities but can reach into the canopy of Valley oak and Fremont cottonwood (Howard, 1993).

Adaptation

California wild grape is found at elevations below 4,000 feet. It is tolerant of a range of soil types but prefers heavier soils including clay soils with a pH range from 5-8 (Calscape, 2022). California wild grape needs abundant water to establish and will survive seasonal flooding, however once established is very drought tolerant (Calscape, 2022; Howard, 1993). It will survive cold temperatures to 25°F and prefers full sun or partial shade (Theodore Payne Foundation, 2014).



Figure 2. Leaves, tendrils and developing inflorescence of California wild grape. Photo, Margaret Smither-Kopperl.



Figure 3. Cluster of immature California wild grapes. Photo, Margaret Smither-Kopperl.

Uses

Wildlife: An extremely important plant for birds and mammals, both as cover, and for food as fruit and browse. Animals that depend on the fruit in the autumn include coyote, black bear, opossum, skunks, wood duck, band tail pigeon, California quail, mountain bluebird and passerines (Howard, 1993). The stems and leaves are browsed by black tail deer and livestock, although the quality of livestock forage, especially for cattle and horses is low (Sampson & Jespersen, 1963). A number of insect species are also supported by California wild grape including butterflies and moths such as the white-lined sphinx, polyphemus moth, elegant sheep moth, and Isabella tiger moth (Calscape, 2022).

Restoration: California wild grape is easily established from cuttings and provides rapid cover to reduce erosion in riparian areas (Howard, 1993). Although the vines prefer to climb, they will provide ground cover. If established vines are killed by fire, the plant will resprout from the roots and crown.

Ethnobotany

California wild grape is a culturally significant plant with multiple uses for native tribes in California. It is used for food, for cooking, cordage, basketry, and production of structures. Use of raw fruit as food is prevalent in areas where California wild grape is abundant. Historical references to consumption of the fresh fruit are included from the, Karok, Miwok, Numlaki, Ohlone (Costanoan), Pomo, Tolowa, Wintu, Yuki, and Yurok (Baker, 1981; Barrett & Gifford, 1933; Bocek, 1982; Chesnut, 1902; Du Bois, 1935; Schenk & Gifford, 1952). Du Bois (1935) records the Wintu mashing grapes in a small basket and adding flour from manzanita berries if too sour; they would be eaten prior to fermentation. Layers of leaves were used with hot coals in earth ovens or pits by the Karok and Miwok (Baker, 1981; Barrett & Gifford, 1933). The Karok used the roots for basketry material, mostly on the bottom of baskets (Baker, 1981; Schenk & Gifford, 1952). The Pomo also used California wild grape vines in basketry in the rims of their large carrying baskets (Chesnut, 1906). The Pomo also made thread from smaller flexible vines that were soaked in water and hot ashes, and after the bark was removed split into threads. The vines were frequently used for lashings, for such diverse objects as snowshoes for the Wintu (Du Bois, 1935), to boat moorings by the Yurok and Karok (Baker, 1981; Schenk & Gifford, 1952). They were also used in house construction to secure brush and branches together. A modern-day example of the use of California wild grape vines is provided by Sierra Miwok tribes who used vines to secure wooden posts in the roof a ceremonial Roundhouse (Figure 4). After harvest in the winter, the vines were coiled and stored in a lake to maintain flexibility prior to construction of the roundhouse in the summer. The building was finished with cedar bark on the roof.

California wild grape continues to be locally abundant. Hybrid cultivars between California wild grape and cultivated grapes (*Vitis vinifera*) are common in riparian areas around vineyards (Wada & Walker, 2012), these hybrids serve the same function as wild grape.



Figure 4. Miwok Ceremonial Roundhouse under construction in 2015. Note the California wild grape vines threaded through the wooden poles (incense cedar) and used to stabilize the structure. Chaw'se, Indian Grinding Rocks State Park, Volcano, CA. Photo, Margaret Smither-Kopperl.

Status

Wetland Indicator: FACU, Facultative wetland plant.

Weedy or Invasive: As a native species and important component of California riparian habitat it is not classified as weedy or invasive. However, when growing up into the crowns of Valley oak and Fremont cottonwood, it may result in the death of these trees (Howard, 1993). The vines may act a ladder fuel into the canopy during fire. This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, state natural resource, or state agriculture department regarding its status and use.

Please consult the PLANTS Web site (<http://plants.usda.gov/>) and your state's Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Planting Guidelines

Planting materials are generally rooted cuttings and should be planted in fall or winter while dormant (Howard, 1993). The plant needs adequate moisture to become established, it is advised to irrigate over the first summer unless planted in a wet area (Calscape,2022).

Management

Once established California wild grape can be pruned into the required shape, this should occur in winter when the plant is dormant and can be done annually back to the main stem. If unchecked the vines will ramble over vegetation and up into the crowns of trees (Theodore Payne Foundation, 2014).

Pests and Potential Problems

Grapes are susceptible to a range of pests including invertebrates such as grape phylloxera, mites, sharpshooters and fungal diseases (UC IPM, 2022). California wild grape is tolerant of most pests and diseases, although it may be a host to pests and diseases of commercial grapes. Recommendation for control through Integrated Pest Management includes removal of plants that may be carriers from field borders (Flint, 2012).

Environmental Concerns

The fruits of California wild grape are toxic to dogs (Theodore Payne Foundation, 2014).

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method.

Seeds and Plant Production

Fruits are collected from California wild grape when purple and mature, they can be stripped from the vines by hand or shaken onto sheets. The seed must be separated from the pulp, and this can be done by macerating the fruits and washing the pulp away (Bonner & Crossley, 1974). California wild grape is out crossed with separate male and female vines, so the seedlings do not run true to type and are usually vegetatively propagated from the desired parent material. Robbins & Burger (1986) found California wild grape easy to propagate, they recommend that cuttings are taken in late winter or early spring to avoid problems with bud dormancy. Material from 1- to 2-year-old dormant canes were cut into sections with 2 to 4 nodes and planted in flats either with coarse sand or a peat/vermiculite mix. The cuttings were maintained on a mist bench with deionized water applied for 2.5 seconds every 2.5 minutes, with bottom heat from propagation mats at 77°F and the greenhouse temperature maintained at 75°F during the day and 68°F at night. Rooting was faster in sand, but the roots were finer and less numerous than those in peat/vermiculite after 60 days.

Cultivars, Improved, and Selected Materials (and area of origin)

‘Roger’s Red’, a hybrid of California wild grape and a European grape, is a selection that grows to 20 feet, with fruits that turn purple in fall and leaves that turn bright red. Adapted for northern and central California, it has high-water needs (Theodore Payne Foundation, 2014). ‘Walkers Ridge’, is a selection with a more moderate size, growing only 6 – 10 feet, with greyish green leaves that turn yellow and orange in fall (Theodore Payne Foundation, 2014).

Cultivars should be selected based on the local climate, resistance to local pests, and intended use. Consult with your local land grant university, local extension or local USDA NRCS office for recommendations on adapted cultivars for use in your area.

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