

STICKY WHITELEAF MANZANITA

Arctostaphylos viscida Parry

Plant Symbol = ARVI4

Contributed by: USDA NRCS Lockeford Plant Materials Center, Lockeford, CA



Figure 1: *Arctostaphylos viscida*, Walker Ridge CA 2009. Photo Lockeford Plant Materials Center.

Alternate Names

Common Alternate Names: Sticky whiteleaf manzanita

Scientific Alternate Names: There are currently three recognized subspecies:

A. viscida ssp. *mariposa* (Dudley) P.V. Wells

A. viscida ssp. *pulchella* (Howell) P.V. Wells

A. viscida ssp. *viscida*

Sticky whiteleaf manzanita commonly hybridizes with hoary manzanita (*Arctostaphylos canescens*) and greenleaf manzanita (*Arctostaphylos patula*) likely hybridizes with *A. viscida* ssp. *mariposa* and *A. viscida* ssp. *viscida* (Howard, 1992).

Uses

Wildlife

Manzanita not only provides habitat to many Pacific animals, but supplies food to them as well. It has thick foliage (shrubbery) that offers many animals cover from predation. Small mammals, song birds and game birds eat and enjoy the fruits all throughout the summer (Kauffman and Martin, 1991; Martin, 1951) (Table 1). Then through fecal deposition the animals disperse *A. viscida* seeds (Kauffman and Martin, 1991). Deer frequently forage on the twigs and leaves (Martin et al., 1951) (Table 1).

Fruits (Birds)	California Jays (<i>Cyanocitta stelleri</i> and <i>Aphelocoma californica</i>), Mocking Bird (<i>Mimus polyglottos</i>), Fox Sparrow (<i>Passerella iliaca</i>), Wild Turkey (<i>Meleagris gallopavo</i>), Dusky or Blue Grouse (<i>Dendragapus obscurus</i>), and Band Tailed Pigeon (<i>Columba fasciata</i>) (Sibley, 2000)
Fruits (Mammals)	Raccoon (<i>Procyon lotor</i>), California Skunk (<i>Mephitis spp.</i>), Western Chipmunk (<i>Tamias spp.</i>), CA Ground Squirrel (<i>Otospermophilus beecheyi</i>), Mantled Ground Squirrel (<i>Spermophilus lateralis</i>), Rock Squirrel (<i>Spermophilus atricapillus</i>), Coyote (<i>Canis latrans</i>), Black Bear (<i>Ursus americanus</i>), and dusky footed woodrat (<i>Neotoma fuscipes</i>)
Leaves and Twigs (Ungulates)	Black-tailed Deer (<i>Odocoileus hemionus columbianus</i>), Mule Deer (<i>Odocoileus hemionus</i>) (Reed, 2006)

Table 1: Beneficial parts of *Arctostaphylos viscida* for Pacific animals (Howard, 1992; Martin, 1951).

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Family (Ericaceae). The genus *Arctostaphylos* consists of trees and shrubs. Out of the sixty species, fifty-

seven are native to California. Manzanita has beautiful red bark and, like the conifer, holds its leaves year round (Stuart and Sawyer, 2001). Different manzanita species often hybridize with each other because the distribution of species tends to be local, so identification down to species is difficult when habitats overlap (Ferris, 1968; Hickman, 1993; Stuart and Sawyer, 2001).

Sticky whiteleaf manzanita is an erect, tree-like shrub growing from 3 to 12 feet in height. The stems and twigs can be smooth and hairless, have short stiff hairs or have glands or gland-like structures on them. The leaves stand upright and have an ovate to round shape and can be classified as evergreen (Figure 1). The surface of the leaf can be smooth and hairless or have stiff hairs, glands and rounded nipple-like bumps called papilla.

The flowering part of the plant (inflorescence) is panicle-like (Hickman, 1993; Howard, 1992; McMinn, 1939; Tucker, 2009). The flowers on manzanita are round and often referred to as “urn or bell shaped” with five lobes and are pinkish white. The flowering period is from February to April (Howard, 1992; Keator, 1994; McMinn, 1939). The fruits resemble tiny apples (the Spanish name for apple is *manzana*) which are sticky and are available early to late summer through early fall (Keator, 1994; Stuart and Sawyer, 2001).

Ethnobotany

Ethnobotanical: Sticky whiteleaf manzanita is a highly beneficial plant native to California, the berries of sticky whiteleaf manzanita were highly valued by the Maidu, Miwok, Wintu and possibly other tribes for eating and the making of a delicious cider (Merriam 1967). In making cider, the Miwok tribe would crush the berries (*pai*) with a grinding tool. Water was then poured over the crushed berries, collecting the entire flavor as it passed through (we can compare this process to making coffee) (Figure 2).



Figure 2: Making manzanita cider. Crushed manzanita berries are in the top winnowing basket and water is poured over the berries and caught in a water-tight basket below. Photograph courtesy of Yosemite National Park.

If any of the berries passed through, the liquid would be decanted (Barrett and Gifford, 1933; Du Bois, 1935). The Indians at Chowchilla filtered manzanita cider using deep round openwork bowl baskets (Merriam, 1955). The beverage would keep without souring for up to four days. The cider was sweet and always drunk before fermentation because fermentation would make it sour (Barrett and Gifford, 1933; Du Bois, 1935).

Anthropologist Cora Du Bois (1935:20) describes the processing and cooking of the berries among the Wintu: “Berries pounded into coarse flour, dampened, next morning dried and parched with hot rocks. Winnowed. Fine flour boiled with water and made into sweetish soup.”

Tribes known to have eaten the berries raw and also dried and stored for winter include the Wintu (Harrington, 1984; Knudtson, 1977). However, tribes in the Yosemite region chewed the berries for flavor, but did not swallow them (Barrett and Gifford, 1933). The Maidu pounded the berries in mortars and ate them without other treatment (Merriam 1967).

The berries were collected from the manzanita bush by hand picking into burden baskets that were hung around the neck or by using flat sifting baskets placed underneath the shrub. The branches would then be shaken and the berries would collect into the baskets (Barrett and Gifford, 1933; Dubois, 1935).

Sticky whiteleaf manzanita was also used medicinally among Native American tribes. The Wintu tribes used the leaves in tea to alleviate diarrhea and they soaked the leaves to relieve poison oak symptoms (Knudtson, 1977). The Miwok tribes chewed the leaves to help ease pain associated with cramps and stomachaches (Barrett and Gifford, 1933).

Indigenous stewardship methods traditionally used for management of this plant were frequent cool temperature prescribed burns.

Distribution: Sticky whiteleaf manzanita ranges from the Sierra Nevada foothills to the North Coast Ranges, Klamath Ranges and Siskiyou Mountains at elevations of 152 to 1,524 meters. It is “most commonly found in the Sierra Nevada foothills from Shasta County to Amador County” (McMinn, 1939). For current distribution, please consult the Plant Profile page for this species on the PLANTS Website.

Habitat: Manzanita can be found in chaparral, yellow-pine forests, rocky slopes, woodlands, coniferous forest, sandstone outcrops, shale outcrops, subalpine forest, serpentine soils, ridges and open areas (Ferris, 1968; Hickman, 1993).

Adaptation

Sticky whiteleaf manzanita is shade intolerant, and therefore, often becomes the dominant or co-dominant plant in the landscape (Howard, 1992).

Establishment

A hot and forceful fire will wipe out all sticky whiteleaf manzanita, but will also stimulate dormant seeds in the soil (Howard, 1992; Hughes et al., 1987). Seeds will germinate the first growing season after the fire (Howard, 1992). This plant will become dominant in the landscape three to four years after a fire (Hughes et al., 1987). Sticky whiteleaf manzanita stands will then reach sexual maturity a decade after the original fire (Detling, 1961).

Management

To avoid severe wildfires, it is recommended to do prescribed burns in these communities (Green, 1977). Sticky whiteleaf manzanita fuels fire by consistently shredding bark and having branches that die off during drought years (Minore, 1988). The leaves and twigs provide optimal air circulation because of their “surface-to-volume” ratio which helps the plant completely burn and intensifies the fire (Green, 1977). Furthermore, terpenes and flammable oils are found in the leaves and twigs (Philpot, 1969). In areas where fire is suppressed, unusually high amounts of debris from sticky whiteleaf manzanita will be left on the ground.

Pests and Potential Problems

Swiecki et al. (2003) found root and crown rot when *A. viscida* habitat overlapped with lone manzanita (*Arctostaphylos myrtifolia*) on lone formation soil. The pathogen was identified as *Phytophthora cinnamomi*. However, this pathogen has not been reported as causing significant damage to native California stands.

Environmental Concerns

There are no known environmental concerns associated with sticky whiteleaf manzanita.

Seeds and Plant Production

Collect seeds in August through October (Kaufmann, 1991) in a small paper or cloth bag. Seeds should be completely dried and then stored in a cool, dry room with proper air circulation until propagation.

Seed propagation can be challenging because of the thick coat around the seed (Hart, 2005). The seeds require at least two months to germinate (Emery, 1988). Seeds have to be scarified before germination either with fire or acid (Stuart and Sawyer, 2001). For example, seeds can be treated with dilute sulphuric acid for two to four hours. Seeds and acid should be put in a glass container and stirred periodically with a glass rod. After scarification, seeds should be sown in a medium and placed outside. To scarify with fire, spread seeds in a damp medium, then place a layer of pine needles or excelsior on top to ensure the fire becomes hot enough. After the fire, water the seeds thoroughly and leave the container outside (caution: never use plastic containers when treating with fire).

For vegetative propagation, cut the semi-mature previous season's growth between December and January. “Treat with a hormone solution for 10 seconds. Place in medium that is 1 peat: 10 perlite rooting mix” (Hart, 2005). Place in a shaded area outside, mist and water as necessary. After roots have established, place in a medium of “1 sand: 7 peat: 7 perlite.” Whiteleaf manzanita requires proper drainage and aeration in the soil.

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

These plant materials are available as seed and plants from commercial sources in California.

No known cultivar for this species.

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