United States Department of Agriculture
Natural Resources Conservation Service
Plant Guide

# STICKY WHITELEAF MANZANITA

## *Arctostaphylos viscida* Parry

Plant Symbol = ARVI4



*Figure 1. Sticky whiteleaf manzanita growing on serpentine soil in the Sierra Nevada foothills at 600 feet elevation. Photo Lockeford Plant Materials Center.*

**Alternative Names**

*Common Names:* Whiteleaf manzanita, white leaf manzanita

*Scientific Alternate Names:* None

There are currently three recognized subspecies:

Mariposa manzanita, *A. viscida* ssp. *mariposa* (Dudley) P.V. Wells
White leaf manzanita, *A. viscida* ssp. *pulchella* (Howell) P.V. Wells
Smooth white leaf manzanita, *A. viscida* ssp. *viscida*

Sticky whiteleaf manzanita commonly hybridizes with hoary manzanita (*Arctostaphylos canescens*) and greenleaf manzanita (*Arctostaphylos patula*), and likely hybridizes with *A. viscida* ssp. *mariposa* and *A. viscida* ssp. *viscida* and identification may be difficult in overlapping habitats (Ferris, 1968; Howard, 1992 & Sawyer, 2001).

**Description**

*General*: Sticky whiteleaf manzanita is an evergreen shrub in the Ericaceae Family and *Arctostaphylos* genus, consisting of trees and shrubs (Shirley, 2011). It is an erect, tree-like shrub growing from 3 to 12 feet in height with beautiful red bark (Parker et al., 2012; Stuart and Sawyer, 2001) (Figure 1). The stems and twigs can be smooth and hairless, with short, stiff hairs, or have glands, or gland-like structures. The evergreen leaves have an ovate to round shape and the leaf surface can be variable, 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 (Howard, 1992; McMinn, 1939; Parker et al., 2012; Tucker, 2009). Flowers on manzanita are round and often referred to as “urn or bell-shaped” with five pinkish-white lobes (Figure 2). The flowering period is from February to April (Howard, 1992; Keator, 1994; McMinn, 1939). The fruits are round and resemble tiny apples (inspiring the name “manzanita”, meaning little apple in Spanish), these are sticky on the surface and available from early to late summer through early fall (Figure 3) (Keator, 1994; Stuart and Sawyer, 2001). The fleshy fruits contain 2-10 free seeds (stones). Chromosome number is 2n=26 (Parker et al., 2012).

*Distribution:* The species is native to California and Oregon. In California, sticky whiteleaf manzanita ranges from the Tehachapi Mountain Area through the Sierra Nevada foothills to the North Coast Ranges, Klamath Ranges, and the Siskiyou Mountains at elevations of 500 to 5,000 feet (Parker et al., 2012). For current distribution, please consult the Plant Profile page for this species on the PLANTS Website.

*Habitat*: Sticky whiteleaf manzanita is found in chaparral, yellow-pine forests, rocky slopes, woodlands, coniferous forests, sandstone outcrops, shale outcrops, subalpine forests, serpentine soils, ridges, and open areas (Calflora, 2022; Ferris, 1968; Parker et al., 2012). Plant associations include gray pine (*Pinus sabiniana*), California ash (*Fraxinus dipetala*), holly-leaf redberry (*Rhamnus ilicifolia*), fragrant sumac (*Rhus aromatica*), interior live oak (*Quercus wislizenii*), mountain mahogany (*Cercocarpus betuloides*), buck brush (*Ceanothus cuneatus*), blue oak (*Quercus douglasii*), ponderosa pine (*Pinus ponderosa*), and incense cedar (*Libocedrus decurrens*) (Calscape, 2022; Howard, 1992).



*Figure 2. Blooms of sticky whiteleaf manzanita. Photo Lockeford Plant Materials Center.*



*Figure 3. Fruits of sticky whiteleaf manzanita. Photo Lockeford Plant Materials Center.*

**Adaptation**

Sticky whiteleaf manzanita is found on a range of soil types including clay, decomposed granite and serpentine soils with a pH range of 6-7.8 (Calscape, 2022). It has very low water requirements and is hardy to temperatures of 0ºF. It is shade intolerant and often becomes the dominant or co-dominant plant in the landscape (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. Fruits ripen through the summer and are consumed by mammals and birds including: raccoon, California skunk, western chipmunk, California ground squirrel, mantled ground squirrel, rock squirrel, coyote, black bear, and dusky footed woodrat (Martin et al. 1951), California jays, mockingbird, fox sparrow, wild turkey, dusky and blue Grouse, and band tailed pigeon (Kauffman and Martin, 1991; Martin, 1951, Sibley, 2000). In return, animals disperse the sticky whiteleaf manzanita seeds through fecal deposition (Kauffman and Martin, 1991). Deer, including black-tailed deer and mule deer frequently forage on the twigs and leaves (Martin et al., 1951) . Pollinator insects that visit the flowers include bees, moths, and butterflies; the plant is a confirmed host for the moth, *Coleophora glaucella* (Calscape, 2022).

**Ethnobotany**

Sticky whiteleaf manzanita is a plant of cultural significance for California tribes: the berries were, and still are, 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 flavor as it passed through (we can compare this process to making coffee) (Figure 4). 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 cider was sweet and drank within four days. After four days, the beverage would start to ferment, making 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.” The manzanita’s berries (Figure 3) were eaten in a variety of forms. Tribes known to have eaten the berries raw and dried, for winter storage, include the Wintu (Harrington, 1984; Knudtson, 1977). Contrary to this, tribes in the Yosemite region chewed the berries for flavor but did not swallow them (Barrett and Gifford, 1933). Further, the Maidu pounded the berries in mortars and ate them without other treatment (Merriam 1967). The berries were



*Figure 4. 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. Photo courtesy of Yosemite National Park.*

collected from the manzanita bush by handpicking into burden baskets that were hung around the neck or by using flat sifting baskets placed underneath the shrub. For the latter method, the branches would then be shaken, knocking the berries into the baskets below (Barrett and Gifford, 1933; Du Bois, 1935). Sticky whiteleaf manzanita was also used medicinally among Native American tribes. The Wintu tribes used the leaves in tea to alleviate diarrhea and soaked the leaves to relieve poison oak symptoms (Knutdson, 1977). The Miwok tribes chewed the leaves to help ease the pain associated with cramps and stomach aches (Barrett and Gifford, 1933).

Indigenous stewardship methods traditionally used for the management of this plant include frequent cool-temperature prescribed burns. For the North Fork Mono, the burning times were in fall, September or October, after the first fall rains. (Anderson, 2005).

**Status**
Threatened or Endangered: No

**Planting Guidelines**
Container grown plants are available commercially and should be planted with 6 feet spacing, with planting ideally in the fall with the onset of fall rains. The plant is considered moderately easy to establish, and once established, plants are very drought tolerant, limited or no irrigation is recommended in the summer.

**Management**
Sticky whiteleaf manzanita is physiologically adapted to both fuel and survive fire. Manzanitas shred bark and have branches that die off during drought years, creating an increased fuel load under the plant (Minore, 1988). Their leaves and twigs provide optimal air circulation due to their "surface-to-volume" ratio, which helps the plant completely burn and intensifies the fire (Green, 1977). In addition to promoting circulation, the leaves and twigs contain terpenes and flammable oils that readily heat and aid fire ignition (Philpot, 1969). In areas where fire is suppressed, unusually high amounts of debris from sticky whiteleaf manzanita will remain on the ground. Conducting prescribed burns is recommended to avoid severe wildfires in the manzanita plant community (Green, 1977). A hot and forceful fire will wipe out all sticky whiteleaf manzanita and simultaneously stimulate dormant seeds in the soil (Howard, 1992; Hughes et al., 1987). These seeds will germinate during the first growing season after the fire occurred (Howard, 1992) and become dominant in the landscape three to four years after the fire (Hughes et al., 1987). Sticky whiteleaf manzanita stands will eventually reach sexual maturity a decade after the original fire (Detling, 1961).

**Pests and Potential Problems**
Swiecki at el. (2003) found root and crown rot when *A. viscida* habitat overlapped with Ione manzanita (*Arctostaphylos myrtifolia*) on Ione Formation soil. The pathogen was identified as *Phytophthora cinnamomi*. Sticky whiteleaf manzanita is reported as susceptible to sudden oak death, *P. ramorum*, along with 18 other manzanita species. Symptoms and severity varied among species but most exhibited foliar spotting and necrosis, with or without tip dieback and stem lesions (California Oak Mortality Task Force, 2020).

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

**Seeds and Plant Production**
Collect seeds from August through October (Kaufmann, 1991) in a small paper or cloth bag. To sustain the viability of the seeds, completely dry and store them in a cool, dry room with proper air circulation until propagation. Seed propagation can be challenging due to the seed's thick coat (Hart, 2005). The seeds require scarification before germination, either with fire or acid (Stuart and Sawyer, 2001), and need at least two months to germinate (Emery, 1988). Emery (1988) advises if scarifying with acid, place seeds in a glass container with an acid, such as dilute sulfuric acid, and periodically stir with a glass rod for two to four hours. After scarification, sow seeds in a medium and place outside. To scarify with fire, spread seeds in a damp

medium and cover with a layer of pine needles or excelsior to ensure the fire becomes hot enough. After allowing the seeds to burn, water them thoroughly and leave the container outside (caution: never use plastic containers when treating with fire) (Emory, 1988).

For vegetative propagation, cut the semi-mature previous season's growth between December and January. Per Hart (2005), "Treat with a hormone solution for 10 seconds. Place in a medium that is 1 peat: 10 perlite rooting mix" . Place in a shaded area outside, mist and water as necessary. After roots have been established, place them 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 seeds and plants from commercial sources in California.

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