

Title: New Introductions of Maritime Chaparral Manzanitas for the Central California Coast  
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#### Introduction Summary:

The horticulture and landscape industries need more locally native plants that can survive extreme drought and other environmental stressors. Nine California *Arctostaphylos* species were identified for further testing to determine their survival rates and levels of resilience in a variety of anomalous conditions.

Manzanitas are resilient to drought and heat waves associated with regional climate change, as shown by several years of testing in the Arboretum. This demonstrated their hardiness, their beauty and utility as landscape shrubs. Our existing data, along with results from our new efforts in cultural care and propagation have propelled us to name new cultivars.

All of the cultivars from this project meet the objectives of the Saratoga Horticultural Foundation:

1. Facilitate plant survival during periods of extended drought, emphasizing existing and established trees and shrubs with little to no supplemental irrigation.
2. Encourage the transition to more water-conserving plant species for ornamental use by developing propagation protocols for rooting recalcitrant species.
3. Develop and expand the range of available climate-appropriate plants for regional California gardens and landscapes.

Our results are based on our original proposal:

### **New Introductions of Maritime Chaparral Manzanitas**

Manzanitas live in harsh environments and have developed profound adaptations and resilience to extreme conditions which makes them superbly adaptive. With slight attention to cultural conditions many species can thrive in nurseries and gardens. Consider the example of the Vine Hill manzanita, *Arctostaphylos densiflora* 'Howard McMinn'. This cultivar is among the most popular cultivated manzanitas in the world, and yet, *A. densiflora* is extremely rare in the wild. It only occurs in one small population, consisting of 20 to 30 individuals, in western Sonoma County.

Within a 55-acre California Conservation Garden, the UC Santa Cruz Arboretum has set aside several acres to grow and test central coast maritime chaparral species. Since the 1970s the Arboretum has been adding species and collections from new populations every couple of years. The manzanitas established in the site have experienced all the weather regimes over many years and in some cases, decades. All of the species we propose have lived in the garden through the most recent 2013-2015 drought and the wet and dry oscillations on either side. They were not irrigated during the drought.

Our first step was to make selections of individuals within each species and work through the

best asexual (cutting) propagation, the best nursery culture and soon, deliver new cultivars to the local nursery industry.

In addition to bringing new *Arctostaphylos* into the nursery trade, our goal is promoting plant diversity in the nursery trade and promoting central coastal species for central coast urban areas. (We are not recommending that people plant these rare endemics near wild manzanita populations as many biologists are concerned about developing hybrid swarms within native ranges. It is difficult to calculate the probability, but it is a real concern.)

#### RESULTS:

Following are the selections from our trials and the cultivars we are propagating for release to the industry:

*Arctostaphylos cruzensis* 'Chino Creek'  
*Arctostaphylos insularis* 'Ward'  
*Arctostaphylos montereyensis* 'Barloy'  
*Arctostaphylos obispoensis* 'Cuesta Grande'  
*Arctostaphylos pumila* 'Gowen's Companion'  
*Arctostaphylos pumila* 'Jim Griffin'  
*Arctostaphylos silvicola* 'Lockheed Mystery'  
*Arctostaphylos tomentosa* ssp. *tomentosa* 'Parker Flats'  
*Arctostaphylos tomentosa* subsp. *tomentosa* 'Tufted Burl'

Also coming up from behind are several other selections discussed briefly at the end of this report.

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#### **New manzanita cultivars for California landscapes. . .**



*Arctostaphylos cruzensis* 'Chino Creek' — The Arroyo De La Cruz Manzanita, occurs only along the San Luis Obispo County Coast in tiny populations of maritime chaparral and coastal sage scrub. It thrives in the Arboretum with little attention. *A. cruzensis* 'Chino Creek' tops out generally at two to three feet and can spread out 6 or more feet in diameter. It has interesting auriculate-shaped bluish green leaves, reddish stems and white flowers. This is the kind of

shrub valuable to residential gardens and commercial landscapers alike. Very few individuals occur on public lands with most of the stands or patches occurring on Hearst Ranch which is not accessible. Chino Creek is the nearest named watershed a short distance north of the occurrence. Generally speaking, we will not provide exact provenance to the public with introductions from the wild, especially for species as rare as *A. cruzensis*.

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*Arctostaphylos insularis* 'Ward' — *Arctostaphylos insularis*, Santa Cruz Island Manzanita, is an upright manzanita to 10ft or more with great age. It does not have a basal burl, has glossy green leaves and globose fruits. It thrives in the UC Santa Cruz Arboretum and along the central coast, where it enjoys a little more rain than on Santa Cruz Island, where it is restricted to in nature. Its mostly smooth, reddish orange bark (sometimes appearing purplish), contrasts brilliantly with its glossy green leathery leaves. 'Ward' is a selection from Stephen McCabe which he discovered many years ago while conducting *Dudleya* work on Santa Cruz Island. 'Ward', honors Stephen's father. True confessions. *Arctostaphylos insularis* 'Ward' is not a first-time introduction to the trade. We initially introduced it several years ago and it has seen favor in southern California, for some reason it went south instead of lingering in the land of the central coast. We decided, based on our high confidence, that 'Ward' will resonate with our region. It is extremely trouble free and quite good looking. There is nothing about it, not to like.

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*Arctostaphylos montereyensis* 'Barloy' — *Arctostaphylos montereyensis*, Monterey Manzanita, is another upright, mid-sized manzanita and one of the most attractive imaginable. It has bright, luxuriant green foliage and the inflorescences have glandular pedicels that glisten, providing an enchanting and alluring appearance. Another non-burl former (obligate seeder) that forms dense patches in its narrow range in northern Monterey County, mostly on ancient wind-blown dunes in the Fort Ord region. It grows with mixed maritime chaparral stands with several other manzanitas and they are: *A. pumila*, *A. hookeri* subsp. *hookeri*, *A. crustacea* ssp. *crinita*, *A. tomentosa*, and in at least one known place, *A. pajaroensis*, the Prunedale Manzanita. Other associating species include: *Ericameria ericoides*, *Ericameria eastwoodiae*, *Crocanthemum nummularia*, *Horkelia californica*, *Salvia mellifera*, *Lepichinia calycina*, *Ribes speciosum*, *Garrya elliptica*, *Quercus agrifolia* and many others. The cultivar name 'Barloy' honors the canyon from which this cultivar came.



*Arctostaphylos obispoensis* 'Cuesta Grande' — *Arctostaphylos obispoensis*, Bishop Manzanita, occurs on serpentine soils in the southern Santa Lucia Mountains mostly west of Highway 101 in the vicinity of Cuesta Grade. It continues north through the Pine Mt serpentine areas within the upper Hearst Ranch into southern Monterey County occurring along steep ridges in rugged serpentine substrate in the uppermost watersheds of Salmon and Villa Creeks, west of the Coast Ridge and similarly just over on the east side in the Los Burros and Alder Spring areas. *Arctostaphylos obispoensis* is an upright and often mounding species with rounded leaves and grey canescent foliage. Also, a non-burl former with white flowers. It provides a stunning

contrast in foliage when planted near darker green species like oaks, ceanothus, or with a backdrop of cypress as it is on top of Cuesta Ridge Botanical Preserve with Sargent Cypress.

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*Arctostaphylos pumila* 'Jim Griffin' (top two photos) & *Arctostaphylos pumila* 'Gowen's Companion' (bottom two photos) —

*Arctostaphylos pumila*, Sand-Mat Manzanita, occurs on sandstone and ancient wind-blown dunes in the Fort Ord region of Monterey, The Monterey Pine and Bishop Pine stands of Del Monte Forest and south into the sandstones and granites, east of Point Lobos near Gibson Creek in the Carmel Highlands. It is an outstanding prostrate ground-cover with lovely grey foliage and white bell flowers. Among the many individual accessions growing in the Arboretum is one we are naming in honor of Jim Griffin who coined the term "Monterey Bay Maritime Chaparral", mapped and researched its occurrences around Monterey Bay. , He first published maritime chaparral in 1976, in Madrono. It was a plant Dr. Griffin shared with us in the late 1970s while on a field trip near Fort Ord. Dr. Griffin was the Plant Ecologist at Hastings Reservation in Carmel Valley. Another plant planned for introduction is one that occurs near the most southerly extent of the species in Carmel Highlands. This individual is more petite than usual, with shinier and greener than the normal greyish leaves of most *Arctostaphylos pumila*. We are planning to introduce this one as *Arctostaphylos pumila* 'Gowen's Companion' (note: previously we were planning to name it 'Southern Bell' honoring its southernmost known occurrence of the species we know of. However, the name may jog racist connotations around "Southern Belle" which references back to wealthy slave owners

and their bourgeois place in society, prior to Civil War times and beyond. 'Gowen's' Companion' conjures up the super rare natural community that this individual came from, where it grows with the rare and Federally listed Gowen Cypress, *Hesperocyparis goweniana*. Gowen Cypress is restricted to two populations, one in the Del Monte Forest within the Samuel B Morse Reserve and the other in Carmel Highlands, above Gibson Creek. Other associating species include, *Ceanothus rigidus*, *Arctostaphylos hookeri*, *Piperia yadonii*, *Pinus muricata*, *Pinus radiata*, *Lepichinia calycina*, *Calochortus albus*, *Salvia mellifera*, to name but a few.

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*Arctostaphylos silvicola* 'Lockheed Mystery' — The Silver-leaved Manzanita is endemic to the Santa Cruz Mountains, occurring only on Santa Margarita sandstone soils often referred to as the sand hills along Ben Lomond Mt. The vegetation in the sandhills is globally unique and is among the rarest natural communities in California. It's actually made up of a mosaic of many rare communities including a disjunct coastal Ponderosa Pine alliance, several herbaceous alliances and variations on maritime chaparral communities, among them. *Arctostaphylos silvicola* is the essence of Santa Margarita Sandstone maritime chaparral or Sand Hill Chaparral for short or *Arctostaphylos silvicola* Maritime Chaparral. Whatever you wish to call it, *Arctostaphylos silvicola* is a brilliant silvery-foliaged, drop dead gorgeous bush, exploding with contrast or humming with tranquility among a well-designed rock gardens and shrubland

landscapes. Lockheed Mystery is named to honor one of only a handful of individuals occurring well out of range of Santa Margarita Sandstone on Santa Cruz mudstone, often referred to as siliceous shale. The origin of these shrubs is a mystery and it is not known whether they are native to the site or were transported there in a pile of gravel. It's a medium-sized rounded shrub with silvery foliage, reddish-brown smooth bark and white flowers. Like all manzanitas, they are seasonal nutrition for hummingbirds and many species of native bees.

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*Arctostaphylos tomentosa* subsp. *tomentosa* 'Parker Flats' & *Arctostaphylos tomentosa* subsp. *tomentosa* 'Tufted Burl' (top photo)— *Arctostaphylos tomentosa*, Woolly-leaf Manzanita, is the only burl-former in the mix for these introductions. There are very few, if any, burl forming manzanitas regularly offered in the trade. This remains a curiosity, and may have something to do with their difficulty of propagation. We have found many of the semi-mounding forms *A. tomentosa* subsp. *tomentosa* to be easier to propagate and given their beautiful sprawling grey fuzzy appearance, they have been worth the effort to work out their propagation needs. We are confident now that we can produce crops.

The *Arctostaphylos tomentosa* complex including its four subspecies, occurs in very restricted isolated stands of maritime chaparral from Northern Monterey County in Fort Ord, several places in the Monterey Peninsula, mostly on sandstone or granite and reappearing in areas along the Big Sur Coast (Bixby Creek, above Pacific Valley). It reappears as *A. tomentosa* subsp. *daciticola* in San Luis Obispo County near Moro Bay. It is often called the Shaggy Bark Manzanita due to its shreddy bark, which distinguishes *A. tomentosa* from *A. crustacea*, which has smooth bark. 'Tufted Burl' references the tufty or cushion shaped form and it grows to about 3 ft high and 5-6ft wide. It's a very handsome plant. *Arctostaphylos tomentosa* subsp.

*tomentosa* 'Parker Flats' is every bit as handsome as "Tufted Burl" but is more upright. Planted together on a slope or front yard would go a long way towards a very attractive low water and low maintenance landscape.

Also coming up from behind are several other selections including:

*Arctostaphylos andersonii*, Santa Cruz Manzanita— is endemic to the Santa Cruz Mountains where it grows in forest openings as well as in the forest, and among chaparral communities. It is an upright, non, burl-forming species to 15 ft (with great age) and deep green leaves that have auriculate bases. Flowers occur in lush compound panicles in ivory white to pink with a flush of rose. We have several great individuals that we are trialing for introduction.

*Arctostaphylos luciana*, Santa Lucia Manzanita— occurs in a narrow band along a series of ridges on the east side of Cuesta Grade in shale outcrops among chaparral, knob cone pine, oaks and madrones. It is a mid-sized shrub with beautiful grey foliage that stand in wonderful color contrast with its dark red drupes during fruiting season. We have a selection that we've grown and propagated since 2009 with great success both in the growing and in propagation.

*Arctostaphylos ohloneana*, Ohlone Manzanita— is restricted to a small area in the upper Scott Creek watershed in northern Santa Cruz County, growing in nutrient poor, siliceous mudstone soils. It grows in chaparral with another equally rare species, *Arctostaphylos glutinosa* that also occurs only in the headwaters of Scott Creek. Among the other species are *Arctostaphylos sensitiva*, *A. andersonii*, *A. crustacea* subsp. *crinita*, *Quercus parvula* var. *shrevei*, *Quercus agrifolia*, *Q. chrysophylla*, *Arbutus menziesii*, *Pinus attenuata*, and *Pseudotsuga menziesii*. Our introduction of *A. silvicola* 'Lockheed Mystery' co-occurs with *A. ohloneana* in one location. *A. ohloneana* is a rounded mid-sized shrub with round oval bright green leaves. It is one of the rarest manzanitas in California.

*Arctostaphylos insularis* 'Evie'— a mounding form from Santa Cruz Island collected by Stephen McCabe over 10 years ago. It is very similar to the cultivar, 'Ward' but is low and mounding lending itself to planting where a low form below 3 ft. is desired.

*And more...*

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