

Madronas

Madrona trees (*Arbutus menziesii*) are an evergreen, broadleaf tree belonging in the genus "Arbutus", in the family "Ericaceae"; Commonly referred to as the "heath" or "heather family" which includes, among others, the "Strawberry" trees, "Sourwood" trees, Manzanita and, of course, the Rhododendrons.

Madronas are a native plant of the Western coast of North America, where their natural range is from SW. British Columbia south to W. Oregon and in the coast ranges of S. California; it is also found in the Sierra Nevada range of central California and Santa Cruz island.

The botanical name is honorary to the discoverer: Dr. Archibald Menzies (1754-1842), a Scottish physician and naturalist.

Size:

Generally these trees reach a height of 30-80ft. with a trunk diameter of 1.5-2 ft. The National Champion in Humboldt County, California was last measured at 96ft. in height, 10.8ft. trunk diameter and with a crown spread of 113ft., sadly this tree collapsed in the late 1990's.

Here in Washington State, the following trees were recognized as State Champion trees when they were last officially measured by Robert Van Pelt, director of the Washington State big tree program.

Location	Yr. Measured	Circumference	Height	Crown Spread	AFA Points *
Tacoma, Pt. Defiance Park	1993	23'4"	78'	55'	372
Port Angeles, 231	1993	21'0"	85'	95'	361
Seattle, Seward Park	1987	20'2"	97'	84'	360
Seattle, Seward Park	1987	15'9"	111'	85'	321

*AFA (American Forestry Association) rating system awards,

One point for each inch in circumference.

One point for each foot of height.

One point for every four feet of crown spread.

I believe that if all these four trees were re-measured now, the Port Angeles tree would far surpass the Point Defiance tree.

Sites and Soils:

Madronas generally thrive on very well drained sandy soils, though often seem to prefer areas where there is high humidity such as along coastal bluffs where fog precipitation is high, or in sheltered ravines where wind desiccation is low. A common soil characteristic is good internal drainage and low moisture retention in summer. Pacific madrone grows on a variety of terrain from nearly level flats and gently sloping benches to steep mountainsides. Often it is found in canyons near creeks and rivers. In general, madrone grows on all aspects but is found most often on those facing south and west. In the northern part of its range, Pacific madrone grows at or near sea level, extends up rivers, and inhabits mountain slopes to the 915 m (3,000 ft) elevation.

Problems and Sensitivities:

These trees are very intolerant of root soil disturbances; even minor changes in soil grade can have serious adverse effects. They are also very intolerant of changes to irrigation and drainage. They do not require much water but need to be kept out of drought stress. Water logging of the soil, such as could be caused by irrigating a lawn growing over the root system, should be avoided. They are also very sensitive to Pesticides and Nitrates.

Some of the pest and disease problems frequently found to cause stress or death to Madronas are:

Pest Problems:

Common Name	Latin Name
Madrone shield bearer	<i>Coptodisca arbutiella</i>
No Common Name	<i>Gelechia panella</i>
Fall webworm	<i>Hyphantria cunea</i>
Western tent caterpillar	<i>Malacosoma californicum pluviale</i>
No Common Name	<i>Marmara arbutiella</i>
No Common Name	<i>Wahigreniella nervata</i>

Disease Problems:

Root Rots

Damping Off.	<i>Pythium spp.</i>
Phytophthora Root Rot	<i>Phytophthora cactorum</i>
Phytophthora cactorum	<i>Heterobasidion annosum</i>

Stem and Branch Cankers

Twig Dieback	
Arbutus Canker	

Branch Dieback

Madrona Canker	<i>Fusicoccum aesculi</i>
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Wood Decay

White Rot	<i>Phellinus ignarius</i>
Brown Top Rot	<i>Fomitopsis cajenderi</i>
Yellow Root Rot	<i>Poria subacida</i>

Foliage Diseases

Leaf Spots	<i>Asochyta banseni</i>
	<i>Cryptostictis arbuti</i>
	<i>Didymosporium arbuticola</i>
	<i>Diplodia maculata</i>
	<i>Mycosphaerella arbuticola</i>
	<i>Phyllosticta fimbriata</i>
Tar Spot	<i>Coccomyces quadratus</i>
Speckled Tar Spot	<i>Rhytisma arbuti</i>
Spot Anthracnose	<i>Elsinoe mattriolianum</i>
Blister Blight	<i>Exobasidium vaccinii</i>
Rust	<i>Pucciniastrum sparsum</i>

Plant Interactions

Generally, plants growing in their natural environment are a part of a community are interacting with each other, possibly in ways which are not fully understood or documented. It is highly probable that there are many exudates being released into the soil from the roots of these plants, which interact with each other chemically and with micro-flora in the soil, in a mutually beneficial manner. This would be the opposite effect of allelopathy, whereby toxins are released by plants to discourage other species.

Madrona Plant Communities (trees):

In western British Columbia, Washington, and Oregon, Pacific madrone intermingles extensively with Douglas-fir (*Pseudotsuga menziesii*), Western hemlock (*Tsuga heterophylla*), Oregon white oak (*Quercus garryana*), Red alder (*Alnus rubra*), and Bigleaf maple (*Acer macrophyllum*).

Madrona Plant Communities (Shrubs):

Shrub associates are fairly numerous, as could be expected for a species with a large natural range; they are, Greenleaf manzanita (*Arctostaphylos columbiana*), Whiteleaf manzanita (*A. viscida*), Bearberry (*A. uva-ursii*), Dull Oregon grape (*Mahonia nervosa*), Tall Oregon grape (*Mahonia aquifolium*), Buckbrush (*Ceanothus cuneatus*), Deerbrush (*C. integerrimus*), Squawcarpet (*C. prostratus*), Snowbrush (*C. velutinus*), Salal (*Gaultheria shallon*), Oceanspray (*Holodiscus discolor*), Pachistima (*Pachistima myrsinites*), Huckleberry oak (*Quercus vacciniifolia*), Western poison-oak *Toxicodendron diversilobum*), Sierra gooseberry (*Ribes roezlii*), Wood rose (*Rosa gymnocarpa*), Thimbleberry (*Rubus parviflorus*), Salmonberry (*R. spectabilis*), Trailing blackberry (*R. ursinus*), Spreading snowberry (*Symphoricarpos acutus*), Creeping snowberry (*S. mollis*), and Evergreen huckleberry (*Vaccinium ovatum*). Both the shrub and herb communities tend to be sparse under mature stands.

"God has cared for these trees, saved them from drought, disease, avalanches, and a thousand tempests and floods. But he cannot save them from fools.

John Muir.

Note: This information has been gathered from a lot of different sources. I do not claim it as my own work.

References:

Marianne Elliot. "The Decline of the Pacific Madrona".

Sinclair, Lyon and Johnson. "Diseases of Trees and Shrubs."

USDA. "Silvics of North America".