ASK A MASTER GARDENER What's affecting madrone trees?



Bonnie Courter Master Gardener

uestion: Why are so many madrone trees declining in Douglas County?

A nswer: Pacific madrone (Arbutus menziesii) is a unique native to the Pacific coast, ranging from San Diego all the way up to Vancouver Island in Canada. It is especially abundant in Josephine, Jackson and Douglas counties.

Madrone is an evergreen with a distinctively smooth, twisting, reddish-brown bark and large waxy leaves. These trees are very drought tolerant, but intolerant of shade, requiring full sunlight and well-draining soil.

They are adapted to survive long, hot summers with minimal rain, but extended periods of drought may reduce tree vigor and increase susceptibility towards disease. Due to a cycle of extended drought over the past decade or so, we began to see a lot of distressed and dying madrone in our area.

The three major groups of diseases affecting madrone are foliage diseases, twig dieback and trunk canker diseases, and root diseases. (Insects are not generally a serious threat to tree health).

Foliage diseases: There are more than a dozen foliage diseases found in madrone trees including leaf spot, tar spot, anthracnose and blister blight. These infect leaves in spring when airborne spores are splashed on them during rainy weather.

As the summer progresses, the leaves often show these spots or discoloration resulting from foliar diseases and pathogens. Though appearing unsightly, it's part of the normal cycle of madrone to shed



PHOTO COURTESY OF NORTH CAROLINA STATE EXTENSION Madrone is an evergreen with a distinctively smooth, twisting, reddish-brown bark and large waxy leaves.

most or all their leaves by midsummer, leaving only the new growth from spring.

These types of diseases rarely result in serious injury, but may increase tree stress.

Pruning dead branches and raking and destroying fallen, infected leaves before fall rains can help minimize the spread of fungal spores to new emerging leaves. Since madrone is intolerant to shade, thinning out trees around your madrone so they are not shaded by the taller canopy of Douglas-fir or other trees, thus exposing them to more sunlight, should also be beneficial.

Twig dieback and trunk cankers: These fungal diseases kill part of the cambium inside the bark, resulting in the bark looking discolored, then peeling off to reveal blackened, cracked wood that looks burned. The dieback moves from the tips of branches and works down the trunk.

Canker develops on the main trunk or major branches and usually happens after bark injury. The canker spirals around the trunk or branch, girdling and killing it. Often twig dieback and cankers can occur on the same tree. The result is often rapid decline leading to tree death within a few years.

Once these diseases are established in the main trunk, there's not much that can be done – no fungicide is known to be effective. It's important to minimize bark injury since the bark on madrone is very thin.

When the bark is suddenly exposed to sun in the case of thinning, it can easily be damaged by sun scald. Trunk wraps



PHOTO COURTESY OF NORTH CAROLINA STATE EXTENSION

The upper red-brown bark of a madrone peels each summer in thin strips to reveal smooth, greenish-yellow bark that ripens into a deep, dark red color.



PHOTO COURTESY OF WASHINGTON STATE

UNIVERSITY EXTENSION There are more than a dozen foliage diseases found in madrone trees including leaf spot such as this.

may help if placed before the tree is exposed to direct sun.

If caught early, pruning and burning cankered branches, shoots and flowering stalks can be worthwhile too. If the canker is partway up a branch, you can cut it 1 foot below the canker margin to include any fungus that may have spread into the wood.

Root disease: The main culprit in root diseases is a fungus called Phytophthora ramorum, the cause of sudden oak death. Root disease affects the roots and tree trunk, with cankers developing at the base of the tree or further up. The infected bark turns brown, with loss of foliage and small, curled leaves.



PHOTO COURTESY OF WASHINGTON STATE UNIVERSITY EXTENSION

When the bark of a madrone is suddenly exposed to sun in the case of thinning, it can easily be damaged by sun scald.

Moist soil conditions are a breeding ground for root fungus, so overwatered trees that grow in poorly drained soils are most susceptible. Wood-decay fungi invade madrone through wounds and are often identified by the presence of conks (shelf-like fruiting fungal bodies) and exposed heart rot.

Avoid overwatering madrone. However, deep waterings every two weeks or so during extended hot spells, underneath the drip line and away from the trunk, may promote tree vigor.

To sum up, madrone trees will stay healthier in sunny, open spaces with well-drained soil. Proper care for them should add years of life to these beautiful native trees.

Do you have a gardening or insect question? Contact the Douglas County Master Gardeners at douglasmg@ oregonstate.edu, 541-672-4461 or 1134 SE Douglas Ave., Roseburg. Master Gardeners are trained volunteers who help the OSU Extension Service serve the people of Douglas County.