



## A Century of Melaleuca in South Florida

For more information on melaleuca and its management, visit the TAME Melaleuca Web site

<http://tame.ifas.ufl.edu>

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### *The Green Menace from Down Under*

First brought to Florida from Australia around 1900, melaleuca (MEL-ah-LUKE-ah) found widespread use as an ornamental tree and as a soil stabilizer on levees and spoil islands. It was even used in early attempts to dry up the Everglades. However, as is often the case when species are introduced beyond their natural range without the associated enemies (e.g. insects, viruses) that control their population, the plant soon became a nuisance. It faced little opposition and quickly spread beyond the areas where it was intentionally planted. Melaleuca was first reported in Everglades National Park in 1967, and by 1993 was estimated to cover 488,000 acres in South Florida. Eventually, melaleuca colonized up to 20 percent of all natural land south of Lake Okeechobee. Melaleuca is now listed by federal and state agencies as a noxious weed, making it illegal to possess, sell, cultivate, or transport melaleuca in Florida.



## Identification of Melaleuca

Scientific name: *Melaleuca quinquenervia*

The most distinguishing characteristic of melaleuca is its pale, papery bark that peels easily – hence its common name in Australia, paperbark tree. This medium-sized tree averages 50 to 70 feet in height



The distinctive bark of melaleuca trees.

## The Pest That Infests

Melaleuca invades treeless sawgrass marshes and other plant communities, outcompeting native vegetation. No native animals are known to feed on it, and it gradually forms an ecological wasteland where little exists but melaleuca trees. The habitat degradation resulting from invading melaleuca affects wildlife across Florida south of Orlando, including endangered species such as the Cape Sable seaside sparrow, wood stork, red-cockaded woodpecker, and Florida panther. Furthermore, South Florida is important to millions of birds every spring and fall as they migrate to and from the Caribbean and Central America to breed in North America. Natural vegetation is crucial to them, as it provides the fruits, seeds, and insects needed to fuel their journey. Melaleuca forests may look completely natural, but their quality as habitat may not be much better than that of a parking lot. And in the development-driven South Florida environment, it is imperative to keep natural areas as pristine as possible if we want to maintain wildlife for future generations.

and retains its leaves year-round. It flowers several times per year with white, bottlebrush-type flowers. Seeds are contained within woody capsules that cluster on stems. In wetland areas, such as the Everglades, melaleuca forms dense stands of thin trees. One acre can contain as many as 132,000 melaleuca saplings and trees.

Melaleuca trees are relatively fragile and shallow-rooted, and thus are potential hazards during windstorms. However, the greatest threat to people living near melaleuca stands is fire. Due to the high levels of essential oils in its leaves, melaleuca trees burn extremely hot and are difficult to extinguish. Allowing melaleuca trees to grow near houses may increase the threat of fire to homes during dry years. Melaleuca trees are fire-adapted: not only does fire often not kill them, but fire also promotes their spread by inducing the release of seeds and creating ideal soil conditions for seedling establishment.



The oil in *M. quinquenervia* leaves promotes hot catastrophic wildfires.

Melaleuca grows in upland habitats as well as it does in wetlands, and because nothing grazes its leaves, it can become quite a weed in pastures. South Florida ranchers must keep their pastures mowed to suppress melaleuca seedlings.

## Harboring Another Invasive Pest

Another reason to remove melaleuca from your property is that the tree harbors lobate lac scale. This tiny insect, first found in Florida in 1999 and native to India, attacks over 150 species of trees and shrubs in this state. The effects of this insect are potentially devastating to many ornamental and fruit-producing trees and to natural communities. Melaleuca trees can act as a reservoir for this insect, allowing the scale to infest surrounding trees.

## Melaleuca Mulch

Commercial melaleuca mulch, which has been composted for 90 days before bagging in order to kill the seeds, is some of the most environmentally-friendly and termite-resistant mulch on the market. But producers are having a difficult time convincing consumers to buy it because it is not the mulch that they have become accustomed to. The majority of mulch comes from cypress; unfortunately, thousands of cypress trees are cut annually solely for landscape mulch. A market for melaleuca products would provide another incentive for melaleuca removal from natural lands.

## We Have Paid the Price

To date, agencies in Florida have spent \$35 million to control this noxious weed. The Florida Department of Environmental Protection has determined that its uncontrolled spread would significantly restrict the use of parks and recreation areas. It has been estimated that reduced ecotourism alone could result in an estimated loss of \$168.6 million per year to Florida's economy. The



Melaleuca trees are closely related to bottlebrush trees, and have similar flowers. They flower up to five times a year.

good news is that something can be and has been done. During the 1990s, land management agencies reduced melaleuca coverage on South Florida public lands by approximately 35 percent. The South Florida Water Management District estimates that the melaleuca problem could be contained within the Everglades Water Conservation areas and marshes of Lake Okeechobee by 2009. However, the tree continues to spread on private lands.

## Getting Rid of Melaleuca

Seeds produced by melaleuca trees are retained in capsules, and any environmental stress (such as herbiciding, cutting, or burning) causes the capsules to open and release their seeds. Attempts meant to control melaleuca must take into account the staggering numbers of seedlings that will appear within months, as a single mature tree can hold up to 100 million seeds. As is the case with any invasive species, successful control of melaleuca requires using several tactics in an integrated approach. One of these tactics is the deliberate introduction of biological controls—natural enemies from the pests' home range. Already, two such insects, the melaleuca weevil and the melaleuca psyllid, have cleared rigorous screening trials and have been released across southern Florida. As of winter 2003, the insects have established themselves across South Florida, and the results have been impressive. Property owners wishing to protect Florida's natural areas from this threat should remove their melaleuca trees. The first step involves becoming more educated about this weed and other invasive pests. The second step is deciding how to manage existing stands and trees. Dispose of any debris in such a way that melaleuca seeds will not be introduced to new areas. When a melaleuca tree is cut down, the remaining stump must be treated with an appropriate herbicide to prevent regrowth. Remember, it is illegal to possess melaleuca, and any existing tree can be a source of millions of seeds.



A day after this melaleuca branch was cut and brought into the lab, the seed capsules began opening and releasing their contents.