

Used in reforestation, albizia now poses threat

KIA'I MOKU

By Lissa Fox



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Last year 850 fast-growing invasive trees covered the platforms where ancient Hawaiians played games as part of the makahiki festival, the annual celebration marked by several months of peace, thanksgiving, and feasting.

These trees originated from the jungles of the Moluccas, five-thousand miles away in Indonesia. The islands are part of the Wallacea “hot spot,” an area in Indonesia with some of the highest levels of biodiversity in the world. In this area there are over 10,000 species of plants and 650 different species of birds. Albizia, or *Falcataria moluccana*, has at least one trait that give it an advantage of Hawaii’s native plants.

Albizia is a nitrogen-fixing tree—bacteria in the roots of albizia convert nitrogen from the atmosphere into a form available for the tree. These fertilizer factories built into the roots give albizia an extra boost—albizia can reach 30’ tall in just two years. In Hawaii, many soils are nitrogen poor, particularly on new lava flows. Albizia can establish on these nutrient-poor soils, altering the soil function and structure, and then pave the way for other invasive plants such as strawberry guava to invade these areas.

Albizia were first introduced to Hawaii in 1917 for reforestation and as an ornamental. By 1960, about 138,000 trees had been planted throughout the state, the bulk of which were planted on Kauai. In Maui County, four were planted on Molokai, and 14 on Maui. These practices were all part of early attempts at watershed protection.

Hawaii’s foresters and agriculturalists realized the fragility of the watersheds. Native plants were being heavily grazed and roots trampled by cattle. Erosion was increasingly widespread in low-elevation forests. Fencing to protect areas from cattle was one part of the solution, but foresters felt more needed to be done. In 1851, German botanist, William Hillebrand noted the loss of Hawaiian forests and called for action, saying “large tracts now lying waste may be speedily covered with forests.”

At the turn of the century, the first territorial governor, Sanford B. Dole, encouraged reforestation efforts as a conservation measure. He felt that some forests would recover with the exclusion of cattle, but those forests “denuded of trees for a considerable time,” and “covered with a heavy growth of grass, artificial assistance is essential to reforesting.” Trees from throughout the world were introduced to preserve forest cover and to prepare for a potential timber industry.

Unfortunately, many of the characteristics that foresters sought in trees to prevent erosion are now recognized as characteristics that make a plant invasive. Hawaii’s native trees are much smaller



Above: Albizia tree seed pods cover the ground. Forest and Kim Starr photo.

Left: A stand of albizia is seen on Maui. The trees were first introduced to Hawaii in 1917 for reforestation and as an ornamental. They are now considered invasive. Forest and Kim Starr photo.

and slower growing than albizia. For example, ohia, the predominant native tree of lowland forests where albizia can live, is much slower growing. On areas of Hawaii Island, researchers have noticed that when albizia invades an area, 100% of the ohia die. The structure and function of forest soils is altered by albizia and a once-diverse native forest is transformed into an alien-dominated ecosystem.

On Molokai, the Molokai/Maui Invasive Species Committee is working to eradicate this invasive tree. All 850 trees were controlled by a small army of field crews from The Nature Conservancy, U.S. Fish and Wildlife Service, the Department of Land and Natural Resources, and the Maui Invasive Species Committee. In keeping with the site’s cultural significance, cultural advisors did a blessing in the area, called for support from the site’s ancestors and

thanked the trees for the shade and oxygen they had provided, but asked them to go.

The project was both safe and successful. One year later only four trees required another treatment.

Unlike Molokai, albizia on Maui is too widespread to eradicate with current resources. Albizia is an abundant seeder and plants naturally become established in abandoned lands and forests. You can help prevent its spread and protect native areas by not planting any new trees in your area.

■ *Lissa Fox is the public relations and education specialist for the Maui Invasive Species Committee. “Kia’i Moku,” (Guarding the Island) is prepared by the Maui Invasive Species Committee to provide information on protecting the island from invasive plants and animals that can threaten the island’s environment, economy and quality of life.*