

Alien looks like a local but ruins environment

Kia'i Moku

By Wendy Swee



Forest and Kim Starr, botanists with the U.S. Geological Survey, were completing a comprehensive weed survey on upcountry ranchland when they discovered a small shrub they normally wouldn't have given a second glance. "It looks very similar to the native pukiawe," reports Forest Starr. On closer inspection, they recognized the plant as Spanish heath (*Erica lusitanica*), a serious threat to native Hawaiian forests and to rangelands.

Spanish heath, native to southwestern Europe, has a history of invasiveness in Australia, Tasmania, and New Zealand. All of these places have declared it a noxious weed. Though Spanish heath prefers full sunlight, it will also invade forests. It can completely take over the shrub layer of native ecosystems, particularly in cool, moist climates. This is especially bad news for *mauka* Hawaiian rainforests, which, unlike other rainforests worldwide, have an open canopy letting light down to a diverse shrub layer. Australia's Cooperative Research Centre on Weed Management reports that Spanish heath can also establish along roadsides, requiring expensive control to keep the view open. Pastures provide habitat to invade, too, as shown by the location of the plant's first sighting on Maui. Thus it can affect commercial ranching adversely. And since rainforests in Hawaii protect our water supply, all of its bad habits have a negative effect on our economy.

How could a garden shrub with showy bell flowers be so very bad? The same characteristics that make it attractive as a garden plant are what make it an invasive weed: it's tough, grows fast, lives a long time, produces millions of dust-like seeds that can live in the soil for 4 years or more, and will grow even in infertile soils. What's more, even if a Spanish heath plant is burnt or broken, it will easily grow again. It readily colonizes burned areas, reaching a density that can provide fuel for future fires. It can spread from seed in



FOREST AND KIM STARR Photos

Spanish heath (left) looks much like the native pukiawe (whose flowers are greatly magnified for the photo at right). However, on closer look, differences become apparent. Spanish heath has large, showy flowers, while pukiawe's flowers are much smaller. Spanish heath produces only dry capsules, while pukiawe has fleshy round pink fruit. The leaves on Spanish heath look like lime-green needles. Pukiawe has spiky leaves, too, but they are flat, bluish-green, with parallel veins.

dumped garden waste, in transported soil, and by wind and water. It can also spread on the coats of animals or get tracked on hooves, boots, or tires.

Some of Maui's most costly invaders were brought in as garden ornamentals. They include miconia, pampas grass, Australian tree ferns, and tibouchina. Gardeners can prevent further threats by avoiding species like these and Spanish heath that are known to escape.

As the Starrs discovered, Spanish heath looks much like our native pukiawe (*Leptocophylla tameiameia*), also in the family Ericaceae. Both shrubs have small spiky leaves and a similar shape. However, on closer look, differences become apparent: Spanish heath has large, showy flowers, while pukiawe's flowers are much smaller. Spanish heath produces only dry capsules, while pukiawe has fleshy round pink fruit. The leaves on Spanish heath are so curled they look like needles, lime-green in color. Pukiawe has spiky leaves, too, but they are flat, bluish-green, with parallel veins.

The native plant, pukiawe, in contrast to Spanish heath, produces only a few seeds in each fruit, and these must pass through a bird's digestive system in order to germinate. Like other native plants, it harmonizes with the species in its environment, instead of dominating the landscape. Its uses in Hawaiian culture include making leis with the fruit and dyeing kapa cloth. In pre-contact days under the kapu system, smudging an alii with smoke from burning pukiawe would allow him or her to mingle with commoners.

After the Starrs reported sighting

the Spanish heath, the Maui Invasive Species Committee requested an evaluation using the Hawaii Pacific Weed Risk Assessment, a process that uses the answers to questions about a plant's characteristics and history elsewhere to generate a score. This score has proven accurate in determining which plants are invasive 95 percent of the time. Based on the HP-WRA score for Spanish heath and its limited distribution on Maui so far, concern about its spread led MISC to add the plant to its target list.

If you spot Spanish heath, please contact the Maui Invasive Species Committee at 573-MISC (6472). If you suspect that a plant you are considering for your garden could be invasive, check the Hawaii Pacific Weed Risk Assessment tool website at <http://www.botany.hawaii.edu/faculty/daehler/WRA/> to see if it has already been listed or to request an evaluation. You can also contact MISC for alternative planting suggestions. Don't let another beauty become Hawaii's latest beast.

- Wendy Swee is the Education/ Outreach and Data Associate for the Maui Invasive Species Committee. She previously worked for the Hawaii'i Natural History Association at Haleakalā National Park and recently returned to Maui after working as a historical interpreter on the mainland. "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.