

Background checks for can ensure secure homeland for environment

Kia'i Moku

By Chuck Chimera



Despite the well-known environmental and economic problems caused by nettle caterpillars, wiliwili gall wasps, fireweed, pampas grass, and other

harmful plants and animals, the Hawaiian Islands continue to be swamped with intentional and accidental introductions of invasive species. Although many seeds or other viable plant parts have been inadvertently brought into the islands in contaminated soil, in shipping containers or cargo, or as unwanted hitchhikers on clothing and luggage, the majority of our most notorious plant invaders got their start in these islands as invited guests—intentionally brought here for agricultural, forestry, or horticultural purposes.

Wouldn't it be great if we could have run a background check on miconia that would have told us it would become a serious invasive pest before it was brought here? Although it's too late to prevent miconia from coming to the islands, there is a system in place that hopes to prevent the "next miconia" from reaching our shores and escaping into our forests. The Hawai'i Pacific Weed Risk Assessment (HPWRA) is a system of 49 questions about a plant's biology, ecology and weediness in other parts of the world that allows us to predict whether a plant might become a problem in our islands.

First developed for screening out plant pests in Australia and New Zealand, the system was later modified for Hawai'i by University of Hawaii Botany Professor Curt Daehler. Tests show that the HPWRA correctly identifies which plants are invasive about 95% of the time. It does this by using information from the scientific literature, horticulture books and the internet to answer questions such as: what types of climate a plant can tolerate, what types of natural defenses it might have (e.g. spines, thorns, toxic sap), whether it produces viable seeds, and whether it is invasive elsewhere in the world. After a certain number of questions are answered, a score is generated that predicts whether a plant will have a low or high risk of becoming invasive. In some cases, certain plants fall in a "gray area" indicating more information is needed before a confident prediction can be made. It typically takes one or two days to finish an assessment on a single plant species and make a prediction.

In addition to miconia, plants already on Maui that score as bad invaders include fire-carrying fountain grass, barb-wire-like gorse, and fireweed, a toxic plant that takes over pastures and poisons horses and cattle. On the other end



Forest and Kim Starr photos

These are examples of a non-invasive plant, plumeria, above and an invasive plant, gorse.

of the spectrum, "well-behaved" ornamentals or fruit trees like plumeria, breadfruit, lychee, and Tahitian gardenias have scored as low risk plants that haven't cause any problems in the islands and probably never will. For plants like these that are already in Hawaii, the HPWRA is a useful tool for deciding which plants to use in the home garden or landscape, as well as which ones to avoid because of their invasive tendencies. For plants not yet in the islands, the HPWRA can provide the information to decide whether or not a plant should even be brought into the state.

Almost 700 plant species have already been screened using the HPWRA, mostly through the dedicated work of Shahin Ansari and Huang Chi Kuo, former and current UH Botany graduate students. In the past year, I and another screener picked up where they left off and are completing new assessments on a weekly basis.

The service is free and is completely voluntary. Organizations such as the Maui Association of Landscape Professionals, among others, have agreed to use the system as part of a voluntary "Codes of Conduct." They also have pledged to screen new plant introduc-

tions using the HPWRA for their invasive potential. Sale and use of invasive plants will be discontinued wherever possible. Requests for assessments can be e-mailed to hpwra@yahoo.com.

In an ideal world, we would never import invasive species into the islands. In reality, new plants will continue to be brought in for personal or commercial uses. The HPWRA, although not perfect, is the best available tool we currently have to predict and hopefully prevent the next plant plague from getting to Hawai'i and harming our economy and fragile environment.

If you'd like to learn more about the Hawaii-Pacific Weed Risk Assessment system, a free presentation will be given at the meeting of the Native Hawaiian Plant Society on Friday, June 13. The meeting starts at 7:00 p.m. in the Pool Room of the Pukalani Community Center.

- Chuck Chimera is a weed risk assessment specialist with the Hawaii Invasive Species Council on behalf of the Maui Invasive Species Committee, or MISC. "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.