

Invasive vegetation creates cycle of fire around islands

KIA'I MOKU

By Lissa Fox



The Hawaiian Islands were born of fire, but a “natural” spark in Hawaii is rare. Before people lived here lightning strikes and volcanic eruptions caused all fires. Lightning storms are sporadic, and a lightning strike that ignites a wet rainforest is even more unusual. Throughout the state, volcanic eruptions are limited to a relatively small area, as are any fires they start. But humans have changed the equation in Hawaii: fireworks, cigarettes, unattended campfires, and arson now cause most unplanned blazes--and the alien vegetation that dominates the landscape only exacerbates the problem.

Many alien species have the ability to alter an ecosystem, in some cases, making it more likely to flare up in flames with the slightest spark.

Grasses epitomize a species capable of transforming the landscape through fire. “After a fire, grass is the first one in,” explains Glenn Shishido, Maui’s forest management supervisor for the state’s Department of Land and Natural Resources. Grasses perpetuate a cycle of fire: once established, they dry out with the summer heat. Dry grass is low in humidity and ready to burn. Easily ignited wildfires burn beyond the grasses, into surrounding vegetation. Grass seedlings then sprout up in scorched areas.

In Hawaii, grass invasion alone is sufficient to start a cycle that converts forest into grassland.

Alien species that evolved in fire-prone ecosystems--

such as the North American plains--have adaptations that help them not only withstand a wildfire, but benefit from a blaze. For example, many pine trees have thick bark that insulates the inner flesh. Meanwhile, their waxy pinecones pop open with the heat, revealing seeds primed to colonize burned areas.

Since naturally occurring wildfires were uncommon in these Islands, native Hawaiian plants are not fire-adapted. They don’t need heat to regenerate as some alien species do, and they don’t withstand it as well. After a forest fire, ecologists working in Hawaii Volcanoes National Park have seen non-native grasses spread into the understory of native forests. Some large ohia trees survive the flames, but their keiki have a hard time settling in a thick mat of grasses--especially if a second round of fire comes through.

The Island of Hawaii is covered hundreds of thousands of acres of invasive, alien fountain grass. Big stature grasses—the bunch grasses like fountain grass, pampas grass, and guinea grass—actually promote fire. They create more fuel and burn hotter than low-lying grasses and other types of vegetation. “Fountain grass really carries a fire,” says Shishido. “I’ve fought fountain grass fires on the Big Island. There’s a lot of biomass there that’s easily ignited. It’s a fine fuel and will burn for acres. On the Big Island, 6,000-acre fires are not uncommon.”

These grass-fueled infernos threaten homes, agriculture, and native ecosystems. The impacts extend beyond Hawaii. The spread of grasses and hence the increase of fires contributes to atmospheric change regionally and globally. Fountain grass and pampas grass were introduced to Maui, intentionally for



Above: Makua Valley on Oahu shown in the 1970s. U.S. Army Garrison Hawaii photo

Below: Makua Valley in 2010 after a fire helped the spread of alien grass. Historically, native plants in Hawaii were not often burned by fires caused naturally, such as by lightning. As a result, native species tend not to do well after forest or range fires. LISA ELLSWORTH photo



landscaping and accidentally as seeds in contaminated soil. All known populations of both grasses have been contained or are under active control. Maui has other fire-adapted invaders: wattle, certain types of eucalyptus, and some of the pine species. According to Shishido “It’s a blessing we don’t have fountain grass...the thought makes me nervous. If we had it here we’d have problems quite often.”

Before planting any ornamental plants, make sure you aren’t introducing a high-risk ornamental grass or invasive fire-adapted plant. Consult with the Hawaii Pacific Weed Risk Assessment team at hpwra@yahoo.com. Report any infestations of pampas grass and fountain grass to the Maui

Invasive Species Committee at 573-6472. Learn more about how to identify these grasses at www.mauisc.org

■ 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. For more information visit www.mauisc.org