

# Quick work can keep invaders from moving in

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## Kia'i Moku

By Wendy Swee

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Kay Deck was puzzled by a strange noise coming from her central Maui garden for several days last July. She finally managed to find the source of the noise--an unusual frog, which she captured by throwing a cloth over it and putting it in a jar. "It doesn't sound like anything you've ever heard," she said of the frog's call, which she described as a low-pitched noise, like a gargle. She called the Maui Invasive Species Committee because she knew "we don't want coquí frogs." MISC staff came out to pick up Deck's frog and recognized it as a green and black dart-poison frog (*Dendrobates auratus*), one of a small number that have been reported on Maui over the last ten years.

The Hawaiian Islands have no native amphibians, but these strikingly marked frogs are not the first to reach our shores. On Maui, we now have established populations of bullfrogs, greenhouse frogs, wrinkled frogs, and giant or *bufo* toads. Our most recent arrival, the coquí frog, is posing problems across the island chain. On the Big Island, realtors must disclose the presence of coquí frogs due to their disturbing, high-decibel calls, and property values and hotel revenues have suffered as a result. Rapid response to the first reports of coquí frogs in Hawai'i could have greatly reduced the amount of resources now being spent to control the invasion.

Green and black dart-poison frogs likely arrived on Maui from the island of O'ahu, where they were purposely introduced in 1932 by one individual as a misguided attempt to control mosquitoes. This intentional introduction apparently took place without testing or consideration of

unintended impacts, unlike official biocontrol releases over the last half-century, which have been subject to rigorous standards to ensure effectiveness and host-specificity.

"They probably arrived on Maui because a resident wanted them for their backyard and knew they could be collected on O'ahu," says Fred Kraus, Vertebrate Zoologist with the Bishop Museum, who recently published a book on alien reptiles and amphibians. Kraus cited several examples of animals originally brought in as pets which ended up escaping or being released into an environment without the natural predators to keep their population in check. Examples are veiled chameleons in Hawaii and pythons in Florida.

Green and black dart-poison frogs are native to the tropical rainforests of Central and South America. Indigenous hunters used the toxic skin secretions of some members of the dart-poison frog family (there are about 160 different species) to poison the tips of their blow-gun darts and bring down small to medium-sized animals. The frog's bright pattern serves as a warning to would-be predators of its toxicity. Humans should be careful not to get these toxins in the bloodstream by ingesting the poison or rubbing it in eyes or mucous membranes. Some vertebrate specialists have suggested that green and black dart-poison frogs in Hawai'i may be less poisonous than wild ones found in their native habitat, apparently due to dietary differences. However, accurate levels of toxicity are poorly known or documented here, raising concerns about health hazards to children and pets who might be attracted to their bright colors.



**LISSA FOX Photo**

**This is the green and black** dart-poison frog that was discovered by Central Maui resident Kay Deck. Its bright pattern serves as a warning to would-be predators of its toxicity. Accurate levels of toxicity are poorly known or documented here, raising concerns about health hazards to children and pets who might be attracted to the frog's bright colors.

At present, the dart-poison frogs appear to be limited to several valleys on O'ahu; however, no one really knows how widely distributed they are on Maui. If you see a frog with unusual markings, please call MISC at 573-MISC (6472) to report the sighting. If you can safely capture it, please do so. Like Kay Deck, you can help with the early detection of new species to our islands. You never know what that unusual gargle might turn out to be, but your report might help stop that next costly invader from getting a toehold on Maui.

- *Wendy Swee is the Education/ Outreach and Data Associate for the Maui Invasive Species Committee. She previously worked for the Hawai'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.*