

# Rodent threat continues in Hanawi reserve areas

## KIA 'I MOKU

By Lissa Fox



“**F**or above the twists and turns of the Hana Highway is a piece of intact native



Hawaiian rain forest, home to rare plants and animals - the Hanawi Natural Area Reserve. This pocket of pristine forest is remote and steep. Beyond the reach of development and many of its accompanying threats are spectacular forest birds, the iiwi, apapane and amakihi, along with three threatened and endangered species found nowhere else in the world: the akohekohe (crested honeycreeper), kiwikiu (Maui parrotbill) and alauahio (Maui Creeper).

To study and protect these birds, biologists leave behind cellphones, grocery stores and hot showers to spend weeks at a time wading through wet underbrush and crossing treacherous gulches to be rewarded by a glimpse or song of one of these birds. But the ornithologists are not the only visitors here - rats and mice have made Hanawi home. Dinner for a rat in Hanawi comes at a high price: native birds, bird eggs, plants, seeds and insects. Rodents decimate native forest birds and, so long as the rodents multiply without any check, bird populations have little hope of recovering. Protecting Hanawi from rats is no small task. Maui Forest Bird Recovery Project staff place bait in specially designed plastic “stations” that keep the bait dry, but accessible to rats and mice. These bait stations must be refilled regularly to be effective. Unlike rat bait from the hardware store - this rodenticide is low in concentration to minimize risk to other animals. Because rodents are scavengers, they are cautious about what they eat, taking only a small amount and then pausing to see if they become ill. A low-dose rodenticide has to be relatively slow-acting to be effective.

Additionally, the rodenticide breaks down quickly in the environment, and is not water soluble - it won't leach into streams or groundwater. Regular baiting reduces the rodent population in Hanawi, but complete eradication over such a large area may be impossible. Rodents have been removed from small offshore islands, such as the 10-acre islet of Mokapu off the coast of Molokai. These small islets are critical habitats for rare plants and seabirds. Many of these islets are very steep, with some slopes inaccessible, so helicopters are used to drop bait on the island, guided by satellite-aided technology to ensure effective and even coverage. In 2003, resource managers in Hawaii selected two small offshore islets, Mokapu off the coast of Molokai and Lehua off Niihau, as candidates for a rodent eradication program. On Mokapu, there are 29 native species of plants, including 11 of the 14 known individuals of *Pittosporum hillbrandii*, a tree endemic to Molokai. Rats devour the seeds and flowers of these plants, leaving little hope for future populations. Lehua is home to enough seabirds to make a birdwatcher drool: Laysan and black-footed albatross, red-footed and brown boobies, black noddies, Newell's and wedge-tailed shearwaters, red-tailed tropicbirds, Bulwer's petrels and band-rumped storm petrels. All of these birds have trouble nesting and raising their young with rodents snatching hatchlings, eggs and even attacking adult birds.

In late 2008 and early 2009,

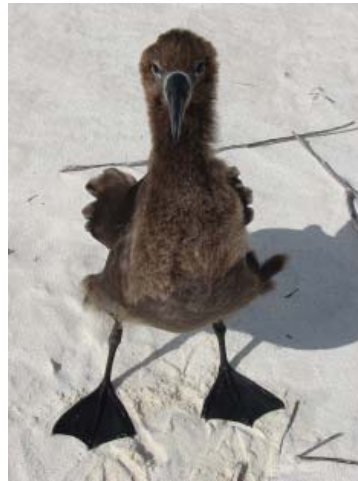


Above Left: The kiwikiu is found in the Hanawi Natural Area Reserve. MIKE NEAL/ NealStudios.net photo

Above Right: The akohekohe is found in the Hanawi Natural Area Reserve. MIKE NEAL/ NealStudios.net photo

Below Right: A black-footed albatross chick is seen. FOREST & KIM STARR photo

Below Left: A red-footed booby and a chick are seen. FOREST & KIM STARR photo



timed during a seasonal lull in seabird activity, the Fish and Wildlife Service, Hawaii Department of Land and Natural Resources and U.S. Department of Agriculture dropped rodenticide pellets twice on each of these islands by helicopters. On both Mokapu and Lehua, scientists monitored environmental conditions and found no sign of the rodenticide affecting anything but the rodents.

Today, Mokapu is rodent-free. In a short time, plants and birds have shown remarkable recoveries. On Lehua, rat populations are dramatically reduced, and their threat to seabirds has been lessened. Several rats were discovered during post-treatment surveys. The explanation for their survival is unclear; they simply may have found other food in the flush of plants after a winter storm.

From high-elevation rain forests like Hanawi to the coastal habitats of offshore islands like Mokapu, rodents inhibit successful restoration of

native Hawaiian ecosystems. While it may be impossible to set the clock back to a pre-rodent time, it is possible to restore offshore islands by removing rodents, and this can be done safely.

To find out more about the use of rodenticide on Mokapu and Lehua, go online to [www.removeratsrestorehawaii.org](http://www.removeratsrestorehawaii.org) and [www.hawaiiirc.org](http://www.hawaiiirc.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.mauiisc.org](http://www.mauiisc.org)