

# Biodiversity of islands worldwide is in peril, scientists warn

October 21 2021, by Marc Arakaki

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This yellow-faced bee (*Hylaeus mamo*), found in an O‘ahu forest, is the only known individual of its species. Credit: Karl Magnacca

Scientists are sounding the alarm. The biodiversity of islands around the world is becoming increasingly threatened, due in large part to habitat loss, overexploitation, invasive species and climate change. If healthy island environments are to be conserved and restored, immediate action is needed by everyone, from policymakers to the general population.

These findings and recommendations are in "Scientists' warning—The outstanding biodiversity of islands is in peril," published in *Global Ecology and Conservation* in September 2021 and co-authored by a University of Hawai'i at Mānoa professor.

Islands contribute only 6.7% of the world's land surface area, but they harbor roughly 20% of the Earth's [biodiversity](#), 50% of the world's [threatened species](#) and 75% of the known extinctions.

"Sadly, humans have had huge impacts on islands," said School of Life Sciences Professor Donald Drake. "In the last 500 years, three-quarters of the species that have gone extinct are island species, and the reason this is a warning paper is that about half of the world's endangered species are also island species."

Drake said we all have a responsibility to help protect the world's threatened species from becoming extinct, including here in Hawai'i, which is home to hundreds of threatened and endangered plants and animals.

Some of the most recognizable species in the state include Hawai'i's state bird, nēnē (*Branta sandvicensis*); Hawai'i's state flower, ma'ō hau hele (*Hibiscus brackenridgei*); and the Haleakalā silversword, or 'āhinahina (*Argyroxiphium sandwicense macrocephalum*).

"The Hawaiian Islands are among the world's most renowned for biodiversity. They are famous for the unique species of plants and animals that are found only here," Drake said. "Just as on other islands around the world, we have this amazing biodiversity but it has come under threat from all sorts of human activities and so we've had a lot of species here go extinct, but we also have a huge number of species that are endangered that we can still pull back from extinction."



The 'i'iwi (*Drepanis coccinea*) is one of the most striking of the Hawaiian honeycreepers, all of which exist only in Hawai'i. Credit: Jack Jeffrey Photography

## **Public's help to save Hawai'i's biodiversity**

Drake noted that participation from the public can help to turn the tide.

"It's actually surprising how many opportunities there are in the state to do work to conserve and restore native biodiversity. There are projects of just about every scale in just about every kind of habitat all across all of the islands. There are opportunities available to people of any age and any ability. There's way more work to be done than there are people to do it," Drake said.

Some examples of conservation programs, Drake said, include UH Mānoa's Lyon Arboretum, the Mānoa Cliffs Restoration Project, Hawaii Audubon Society, and other community and school groups.

## **Research started at UH**

The paper is authored by members of the board of the Society of Island

Biology, a relatively new scientific society that has grown out of a series of conferences on different islands around the world, the first of which was hosted by UH Mānoa in 2014.

"The research and educational capacity of UH Mānoa places the university in a position to play a leading role in the conservation of Hawai'i's biodiversity," Drake said.

This work is an example of UH Mānoa's goals of Building a Sustainable and Resilient Campus Environment: Within the Global Sustainability and Climate Resilience Movement and Excellence in Research: Advancing the Research and Creative Work Enterprise, two of four goals identified in the 2015–25 Strategic Plan, updated in December 2020.

**More information:** José María Fernández-Palacios et al, Scientists' warning—The outstanding biodiversity of islands is in peril, *Global Ecology and Conservation* (2021). [DOI: 10.1016/j.gecco.2021.e01847](https://doi.org/10.1016/j.gecco.2021.e01847)

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