

Severe hurricanes can cause a 50% or more loss of live coral cover. © Kydd Pollock/TNC

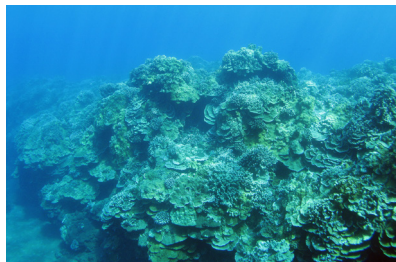
Innovative protection for Hawai'i's coral reefs

In a huge step forward for coral reef conservation, TNC is piloting the first-ever coral reef insurance policy in the United States. The policy will provide funding for rapid reef repair and restoration across the main Hawaiian islands immediately following hurricane or tropical storm damage.

Coral reefs are vital to Hawai'i's culture, coastal protection and economy. But they are increasingly threatened by climate-change induced storms and other human impacts.

Building on a similar policy TNC helped secure in Mexico that covered hurricanes, Hawai'i's policy—valid through the 2023 hurricane season—includes tropical storms and is triggered by windspeeds that exceed

50 knots (57 mph). The Hawai'i policy can provide payouts up to a maximum of \$2 million to allow rapid reef repair and restoration when it is urgently needed.



Reefs diminish 97% of wave energy. © Kydd Pollock/TNC

If a payout takes place, TNC will activate an advisory committee, in coordination with the Hawai'i Division of Aquatic Resources (DAR) and other local partners, to guide the use and distribution of funds. We are also convening partners to develop a

rapid response restoration and management plan and train first responders and reef managers to conduct reef repair work after storm damage.

This pilot policy was made possible by generous donor contributions. It is our hope that tourism-related businesses and others in the private sector who directly benefit from reefs will see the value of this policy and contribute to its continued use.

Insurance is an important tool and TNC is exploring the possibility of insuring other protective coastal ecosystems, such as mangroves and kelp forests, in other parts of the world.

Learn more at nature.org/HawaiiPalmyra.



Technology innovation increases conservation efficiency. © TNC

Technology innovation needed to advance conservation

Conservation must evolve to keep pace with climate change impacts and ongoing challenges such as invasive weeds and animals. While we have been using tools such as remote cameras, drones and FLIR (Forward Looking Infrared), we are now partnering with technologists both inside and outside TNC to identify how technology can accelerate conservation outcomes. Among our biggest challenges in Hawai'i and Palmyra are remote and rugged preserves with limited internet and phone connectivity, highly variable weather conditions, wildfires, poor biosecurity leading to introductions of new invasive species and disease, and limited time and resources to analyze data to better inform management. Technology can help solve these problems.

By partnering with artificial intelligence and machine learning experts, we are developing tools that can analyze massive volumes of imagery and other data quickly. We are also seeking partnerships to identify new ways to use unmanned aerial systems and more sophisticated drones, remote sensing, bioacoustics, e-DNA, robotics, and other aspects of the Internet of Things (IoT) to get conservation work done safer and faster.

Connecting conservation and land managers with technology developers helps drive innovation to potentially solve specific problems in the field, where things are quite different than in a laboratory or experimental setting. To learn more or connect with us to express your interest or offer ideas, please visit nature.org/HawaiiPalmyra.

Drone imagery shows rapid coral growth

By stitching tens of thousands of photos from dozens of drone flights together, we can assess changes in coral reef health. In this image, drone imagery shows rapid coral growth from January 2022 (left) to November 2022 (right) at Palmyra Atoll. The dark patches are young coral colonies in the atoll's East Lagoon.



Coral growth at Palmyra Atoll © TNC

NATURE HAWAII & PALMYRA

A Lightbulb Moment

Eiich Kuwana has helped steer conservation projects in Hawai'i and Palmyra since 2009 through his leadership as a board member in positions of vice chair and global ambassador. He continues to support our work through his 2018 transition to our Ihupani Advisory Council, and he recently joined the New York division board.

A 2020 hike on Maui with Hawai'i Terrestrial Director Alison Cohan led to a lightbulb moment and



The Kuwana family on Maui © Alison Cohan/TNC

collaboration that may help solve a decades-old weed problem. Eiich remembers, "Alison was describing how the invasive weed Himalayan ginger quickly smothers the forest floor, preventing native seedlings from growing. The seeds are spread by birds, and plants grow from root fragments. It is a big problem."

With Eiich's TNC-wide lens he quickly connected the dots to a TNC expert, Niraj Swami, who could add specialized tools like artificial intelligence to find weeds in the forest faster. Eiich acknowledges, "It was an opportune moment to make this introduction, which can potentially change the trajectory of this invasive weed." Director of Philanthropy Lori Admiral reflects, "We have been fortunate to have such inspiring board members who are giving their time and expertise to help solve conservation challenges. We are thankful for Eiich's acumen to make this connection."