

Pacific Islands Climate Change Cooperative



Learning from Traditional Ecological Knowledge to understand climate change impacts and preserve key resources in Hawai‘i

There is a rising interest in Traditional Ecological Knowledge to help scientists not only understand the effects of climate change but also help ensure the protection of culturally sensitive resources and associated impacts that put communities at risk. Place-based observations are critically needed to complement global climate change models by explaining in more detail how climate is changing locally, what the ecological and social impacts are, and how people can adapt.

Traditional Ecological Knowledge, or TEK, is “a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationships of living beings (including humans) with one another and with their environments.” With support from the [Pacific Islands Climate Change Cooperative](#), scientists at the University of Hawai‘i at Mānoa have undertaken research that is documenting baseline Traditional Ecological Knowledge for [Ka‘ūpulehu Ahupua‘a](#), in the north Kona region of Kekaha on Hawai‘i Island. They are focusing on biological and cultural resources most valued by the community, the challenges they face, and potential coping mechanisms.

Innovative means of capturing local ecological knowledge

Through a series of workshops, investigators are partnering with local community members, local resource managers and scientists to develop a variety of tools that will document and share the area’s TEK (with

appropriate protections for sensitive information). Tools, programs and information under development include:

- a seasonal calendar, which will establish a reference point for evaluating future change while also communicating place-based and traditional knowledge to resource managers and policy makers;
- a timeline of adaptation that records a chronology of significant change events and integrates existing cultural, historical and natural history data with information provided by the community during workshops;
- a series of maps showing native vegetation, sea level rise, coral reef acidification and bleaching, fire frequency and risk, and place names. The maps illustrate the potential effects of climate change on key resources;

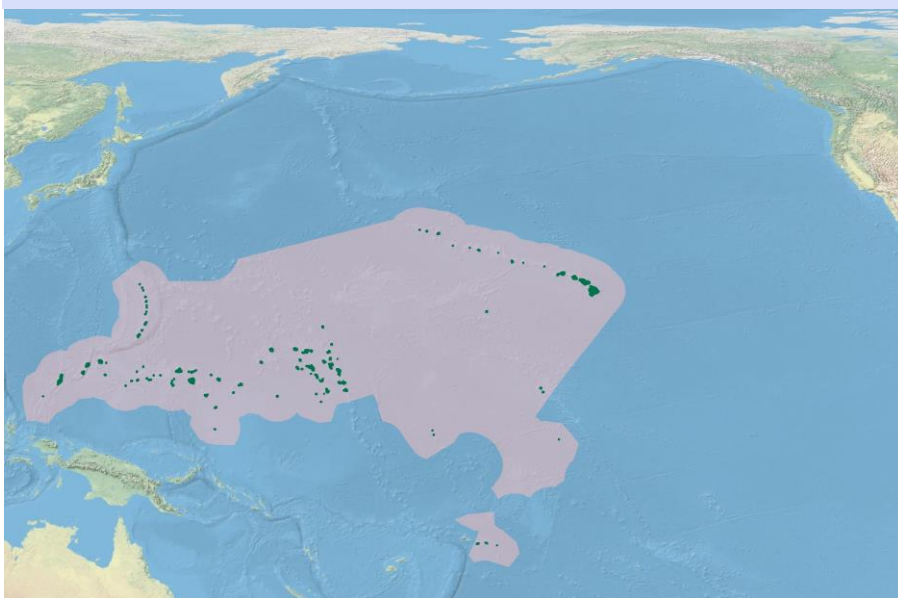


- a knowledge base and observation network, the Na Kilo 'Āina, which will facilitate the sharing of information across users and environments and also provide graphics and mapping of data that are linked to short- and long-term cycles (seasonal/annual);
- a project website for sharing project information, established by the [Center for Conservation Research and Training](#); and
- a protocol for community monitoring that expands on an existing phenology (seasonal cycle) monitoring database, which includes observations of the sky, land, and sea; tracks natural cycles and correlations between them; and supports adaptive management strategies by using natural indicators to guide activities.

For more information, visit the PICCC projects page: piccc.net/our-projects.



The map below depicts the PICCC geography, which includes Hawai‘i, American Sāmoa, Guam, the Northern Mariana Islands, the Marshall Islands, the Federated States of Micronesia, Palau and 4 Marine National Monuments.



Banner photo of taro by Starr Environmental; Pounding breadfruit by Kanu Hawai‘i; Hawaiian hula dancers by Belindah all on Flickr

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[NOAA](#)

[PICCC Culture & Communities Working Group](#)

[The Pacific Islands Climate Change Cooperative \(PICCC\)](#) was

established in 2009 to assist those who manage native species, island ecosystems, and key cultural resources in adapting their management to climate change for the continuing benefit of the people of the Pacific Islands. The PICCC provides a range of services and tools to help managers in Hawai‘i, the Mariana Islands, American Sāmoa, and other Pacific Island groups make informed decisions for conservation of natural and cultural resources including climate models at the scale of islands and archipelagos, ecological response models, and implementation and monitoring strategies for island species, resources, and communities. Our goal is to help managers reach explicit biological and cultural conservation objectives in the face of climate change and ongoing threats such as fire, land conversion, and invasive species.

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