



Hawaiian Islands Terrestrial Adaptation Initiative

The Hawaiian Islands, from the seashores to the mountain peaks, are home to unique, iconic species facing a number of stresses. Climate change, coupled with threats such as invasive species and land use changes, will have important impacts on these resources and the ecosystem services upon which over 1.4 million people rely. How should managers of Hawai'i's natural assets prepare for the impacts of climate change?

The [Pacific Islands Climate Change Cooperative](#) (PICCC) created the [Hawaiian Islands Terrestrial Adaptation Initiative](#) (HITAI) to facilitate climate adaptation throughout Hawai'i by supporting key management and research partners in incorporating climate change science and information into their management and planning activities. The HITAI will provide resource managers and decision-makers with the shared strategies, tools, and information necessary to address current climate change stressors and prepare for significant changes to come.

In order to place the HITAI on a firm scientific foundation, the PICCC has contracted with EcoAdapt to develop science-based syntheses of climate impacts on, and adaptation options for, terrestrial and freshwater resources on each of the main Hawaiian Islands. This project will bring together Hawai'i's resource managers and conservation planners to discuss challenges, share knowledge, identify needs, and prioritize key actions to reduce the vulnerability of resources to climate change.



The 'I'iwi, a bird native to the Hawaiian Islands, is expected to experience habitat loss due to climate change impacts. (Photo credit: Robby Kohley)

Through interviews, literature reviews, expert elicitation, vulnerability mapping, and on-island workshops, this project will provide information that will improve understanding of climate change and capacity to reduce the effects on key resources; identify opportunities for minimizing climate-related losses through management and collaboration; and create products to facilitate decision-making in a climate change context by land managers.

The objectives for this project include:

1. Convene an effective **science-management partnership** involving multiple agencies and organizations to evaluate climate impacts to and adaptation options for Hawaiian biocultural resources and to support integration and implementation;
2. Identify the current climate science available to and used by managers and conservationists, as well as **critical needs and gaps** that may be filled by this project;
3. Identify and **synthesize best available climate science** to support reliable and timely decision-making and stewardship;
4. Increase **understanding of climate-related vulnerabilities** of biocultural resources of the main Hawaiian Islands, in addition to the compounding effects of non-climatic stressors;
5. Facilitate the **creation of adaptation options** to reduce these vulnerabilities; and
6. Create a **climate-engaged public** that can make informed decisions to support sustainable biocultural terrestrial and freshwater resources.

The objectives will be met by the several activities over the course of two years. First, a **Stakeholder Working Group** has been convened, comprised of scientists, land and resource managers, and conservation

practitioners from federal agencies, state agencies, NGOs, and other partners, to ensure project products meet the decision-making needs of the focal region.

A **needs assessment** will be conducted in order to identify existing data, resources, and critical needs and information gaps. Using this information, comprehensive **science-based syntheses** will be developed focusing on potential future climate changes and their impacts to terrestrial and freshwater resources of the main Hawaiian Islands. These syntheses will rely upon a thorough review of peer-reviewed data and literature, agency and non-governmental reports and assessments, observed changes, and expert knowledge and opinion. Each selected resource will also be assessed for sensitivity and exposure, scoring for overall vulnerability and confidence in order to inform prioritization for conservation actions.

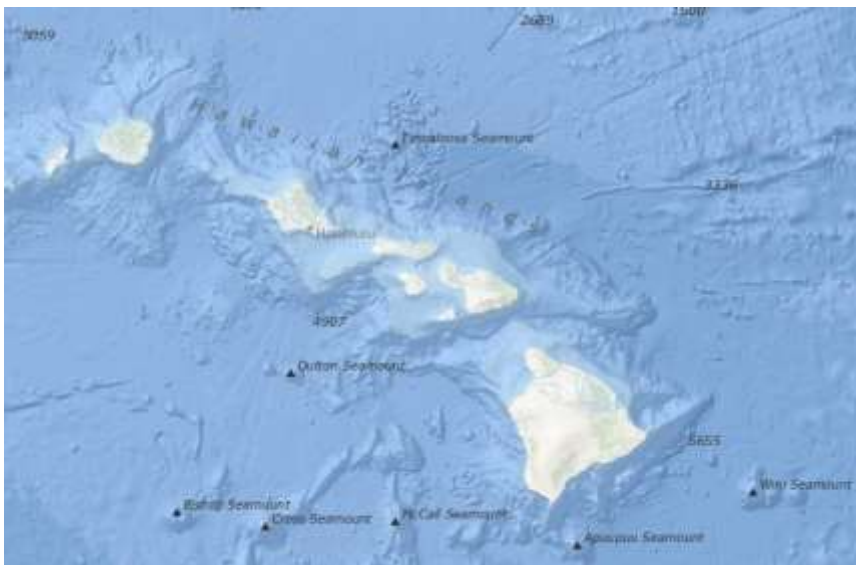


The 'Ōhi'a, endemic to the Hawaiian islands, is vulnerable to multiple environmental impacts including climate change. (Photo credit: Deanna Spooner, USFWS)

After the syntheses are developed, **on-island workshops** will be convened with scientists, managers, conservation practitioners, and others to review the initial products, suggest changes or additions to address key information gaps, and identify adaptation opportunities for minimizing climate-related losses of resources. These workshops will help to generate **vulnerability maps** to improve understanding of what climate changes mean for conservation lands and facilitate decision-making by land managers.

Final climate vulnerability and adaptation synthesis products will be developed to support informed decision-making and the long-term sustainability of biocultural terrestrial and freshwater resources.

The PICCC will aim to leverage these syntheses, as well as the awareness of climate change adaptation that the HITAI process generates, to help inform adaptation activities and motivate resource management that better reflects a changing environment. By developing these actionable products, the HITAI is aiming to ensure that climate change research and information is fully integrated into resource management throughout Hawai'i. For more information, visit the PICCC projects page: <http://piccc.net/our-projects/>



A map of the main Hawaiian Islands

Project Consultant



About the PICCC:

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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