



United States Department of Agriculture

# Tribes and Climate Change Research USDA Forest Service Research

Working with multiple partners to pool climate change resources.

## Research Objectives

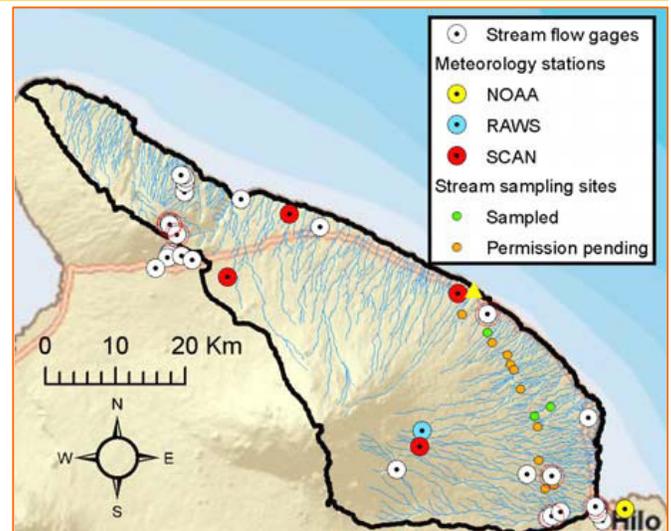
Bringing together state-of-the-art science and native Hawaiian culture and stewardship philosophies for climate change planning and action.



A Hamakua Stream, Hawaii Island. Credit: Richard MacKenzie, USDA Forest Service

## Accomplishments

- Development and maintenance of partnerships with Native Hawaiian and conservation organizations to address climate change effects on natural resources and culture.
- Research Joint Venture Agreement in support of a National Museum of the American Indian workshop and exhibit exploring native Hawaiian culture, environments, and lessons for a changing climate.
- Research Joint Venture Agreement in support of Understanding Impacts of Climate Change on Native Hawaiian and Pacific Island Communities, a workshop of the University of Hawai'i's Center for Island Climate Adaptation and Policy.



*Above Right:* Project area map of the hydrologic framework for 157 stream drainages, showing the location of active stream gages, current climate stations, and biological response measurement sites. The yellow triangle represents the location for modeled water availability changes for a scenario with increased invasive species and no climate change conducted as the pilot phase. Credit: Richard MacKenzie, USDA Forest Service



Forest Service

Research & Development

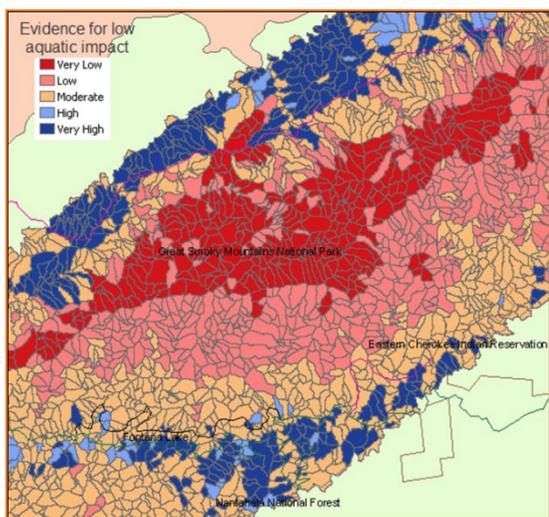
Pacific Southwest Research Station

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## USDA Forest Service

### Ongoing Research and Activities

- Climate Change & Pacific Island Water Resources research uses a network of stream monitoring sites, hydrological modeling, and remote sensing to understand how streams respond to climate variation.
- Collaboration with the National Museum of the American Indian on Aloha 'Āina: Hawai'i in the World, an exhibit exploring native Hawaiian culture, environments, and lessons for a changing climate (co-sponsored with the Northern Research Station) and Culture and Conservation in Hawai'i and the Pacific, a workshop to bring together practitioners of traditional science and culture and western science to develop new tools and strategies for conservation in a changing world.
- Understanding impacts of climate change on Native Hawaiian and Pacific Island Communities workshop modeled on successful Pacific Northwest and Rocky Mountain Research Station events to provide information on climate change for native Hawaiian decision makers as well as a forum for policy discussion.



*Left:* Example of an Ecosystem Management Decision Support application. Blue areas represent high aquatic impact requiring management action (e.g., reforestation, limited timber harvest). Credit: Keith Reynolds, USDA Forest Service  
*Right:* Local high school students present their mural “Conservation of Native Hawaiian Streams” to the Forest, Ocean, Climate and Us Program. Their mural was based upon visits to project sites with Forest Service scientists, where they learned about native stream animals and habitats as well as threats from invasive plant species and climate change. Credit: Christian Giardina, USDA Forest Service

### Selected Partners and Contact

- University of Hawai'i
- US Geological Survey
- Watershed Professionals Network
- Kamehameha Schools
- Pacific Island Climate Change Cooperative
- National Museum of the American Indian

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