



# UNIVERSITY OF HAWAI'I SEA GRANT COLLEGE PROGRAM

## Hazard Resilience in Coastal Communities

The University of Hawai'i Sea Grant College Program (UH Sea Grant) is part of a national network of 32 university-based programs that promote better understanding, conservation, and use of coastal resources.

As part of the University of Hawai'i's prestigious School of Ocean and Earth Science and Technology (SOEST), we partner with the National Oceanic and Atmospheric Administration (NOAA) to provide links between academia, federal, state and local government, industry, and the local community.

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The University of Hawai'i Sea Grant College Program (UH Sea Grant) supports an integrated program of research, outreach and education that addresses marine and coastal issues of public concern. As the only state that is entirely surrounded by the ocean, Hawai'i faces unique challenges regarding coastal natural hazards.

Awareness  
Preparation  
Response

**UH Sea Grant:** *Helping to reduce the loss of human life, property and natural resources due to natural coastal hazards*

It is vital that coastal communities are prepared for the potential impacts of coastal natural hazards including coastal erosion, tsunamis, coastal storms, and hurricanes. UH Sea Grant is committed to helping communities throughout the state achieve greater awareness, preparation and response to these events.



Sea level rise, increased number and intensity of coastal storms, and other climate-related changes are placing more people and property at risk throughout the state of Hawai'i and the nation. These changes have major implications for human safety and the economic vitality of coastal communities in the coming decades.

UH Sea Grant, with its strong education and outreach capabilities, is dedicated to helping local citizens, decision-makers and businesses understand and plan for coastal natural hazards as well as maximizing community and household preparedness before, during and after a storm.

### Research

UH Sea Grant researchers conduct the cutting-edge research and often develop the engineering tools and models useful in predicting the effects of both natural and anthropogenic changes on natural systems throughout the state.

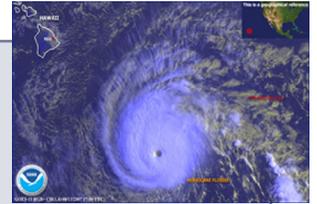
## Extension and Outreach

UH Sea Grant extension agents play a vital role in providing local communities, individuals, businesses and agencies throughout Hawai'i with the resources necessary in making informed plans and decisions regarding coastal natural hazards. When faced with the effects of climate change, often times, the resilience of a coastal community may be best achieved by adapting to such changes.

### THE UH SEA GRANT CENTER OF EXCELLENCE IN ISLAND CLIMATE ADAPTATION AND POLICY

Through UH Sea Grant Centers of Excellence, issues and concerns that impact coastal communities of Hawai'i and the Pacific are addressed.

To facilitate progress toward a sustainable, safe, and climate-conscience future among the islands of Hawai'i and other Pacific island nations, UH Sea Grant has established the Center of Excellence in Island Climate Adaptation and Policy. It is the goal of this center and UH Sea Grant to produce innovative mitigation and adaptation solutions that are consistent with the ideals of the caretaker culture in the areas of law, policy, planning, and science.



## Sea Grant Contributions to Hawai'i and the Pacific Region: Building the Future on Successes of the Past

### • **Beach Restoration**

UH Sea Grant received a 2008 Best Restored Beach Award from the American Shore and Beach Preservation Association for restoration of Kuhio Beach in Waikiki. It was selected as one of only six beaches nationwide to receive this honor.

### • **Shoreline Erosion Setbacks**

The County of Kaua'i adopted the shoreline setback rule outlined in the UH Sea Grant publication *Coastal Hazard Mitigation Guidebook*, which is now one of the strongest in the nation and a model for others to follow. Similar progressive building setbacks were also implemented for the County of Maui with assistance from UH Sea Grant.

### • **Coastal Erosion Mitigation**

UH Sea Grant assisted Maui County in developing progressive coastal management practices including an ordinance prohibiting the grading of coastal dunes.

### • **Sea Level Rise Studies**

UH Sea Grant supported investigations into the potential impacts of higher sea levels on shoreline stability around the state, which has far-reaching implications throughout the Pacific region.

### • **Tsunami Research**

UH Sea Grant has supported cutting-edge tsunami research including an improved prediction model for tsunami run-up and coastal inundation.

This model has already been implemented by the Chilean Navy and adapted by the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory into a tsunami forecasting tool. UH Sea Grant has also contributed to the development of a probabilistic approach for tsunami inundation mapping. This is the first step in assessing vulnerability of infrastructure and buildings impacting future land-use policy.

