

The Bigger Picture: Building Resilience to Coastal Hazards and Climate Change in Hawai'i

As an island community where much of the population and infrastructure is concentrated along low-lying shores, Hawai'i is uniquely vulnerable to sea level rise and coastal hazards. Scientists and policy makers are responding to these risks with a variety of innovative projects, plans, and technologies.

The Hawai'i Sea Level Rise Vulnerability and Adaptation Report

In 2014, the Hawai'i State Legislature passed the Hawai'i Climate Adaptation Initiative Act (Act 83, Session Laws of Hawai'i) declaring that climate change poses both an urgent and long-term threat to the state's economy, sustainability, security, and way of life. This legislation created an Interagency Climate Adaptation Committee and called for the development of a statewide Sea Level Rise Vulnerability and Adaptation Report. This report, completed in December 2017, is helping Hawai'i prepare for the impacts of sea level rise and is also intended to serve as a model for future efforts to address other climate related threats and climate change adaptation priorities, ultimately leading to a Climate Adaptation Plan for the State of Hawai'i. In 2017, the State Legislature passed Act 32 further solidifying Hawai'i's commitment to climate change mitigation and adaptation and created a Hawai'i Climate Change Mitigation and Adaptation Commission to further the work of the Committee established in 2014. The Report is available at climateadaptation.hawaii.gov.

Resilience-Focused Disaster Reconstruction Planning

With climate change and rising sea levels, Hawai'i is expected to experience more severe impacts from coastal disasters such as hurricanes, tsunamis, and extreme high wave events. A critical aspect of community resilience is the ability to build back safer, stronger, smarter, and faster after a damaging disaster. This project works with state and county government to promote resilience-focused recovery practices that enable communities to rebuild quickly while also protecting sensitive environmental and cultural resources, and increasing preparedness for future disasters. This project is under the direction of Hawai'i Sea Grant and the State of Hawai'i with funding from the NOAA 2016 Regional Coastal Resilience Grant and the Hawai'i Department of Land and Natural Resources.

Integrating Coastal Hazards and Sea Level Rise Resilience in Community Planning

It can be challenging to translate statewide policy into action at the local level. This project focuses on developing practical guidelines for incorporating recommendations from the Hawai'i Sea Level Rise Vulnerability and Adaptation Report and the Hawai'i Climate Adaptation Priority Guidelines into the community planning process. Ultimately, this project will build capacity in state and county government to address climate change, sea level rise, and coastal hazards through appropriate entry points in the comprehensive community planning process.

Assessing the Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas

The Hawai'i State Office of Planning, Coastal Zone Management Program, as part of its implementation of the Ocean Resources Management Plan, is leading this project to facilitate discussion on the feasibility of managed retreat as a strategy for climate change adaptation in Hawai'i. Research on strategic retreat options and lessons learned from communities around the globe will be compiled into a background report. The project also explores the potential nexus and additional benefits of a managed retreat framework to provide and enhance public access to the shoreline and state land-use management policies. Stakeholder consultations, local case studies, and a statewide symposium will contribute to a final report on the feasibility of managed retreat in Hawai'i.



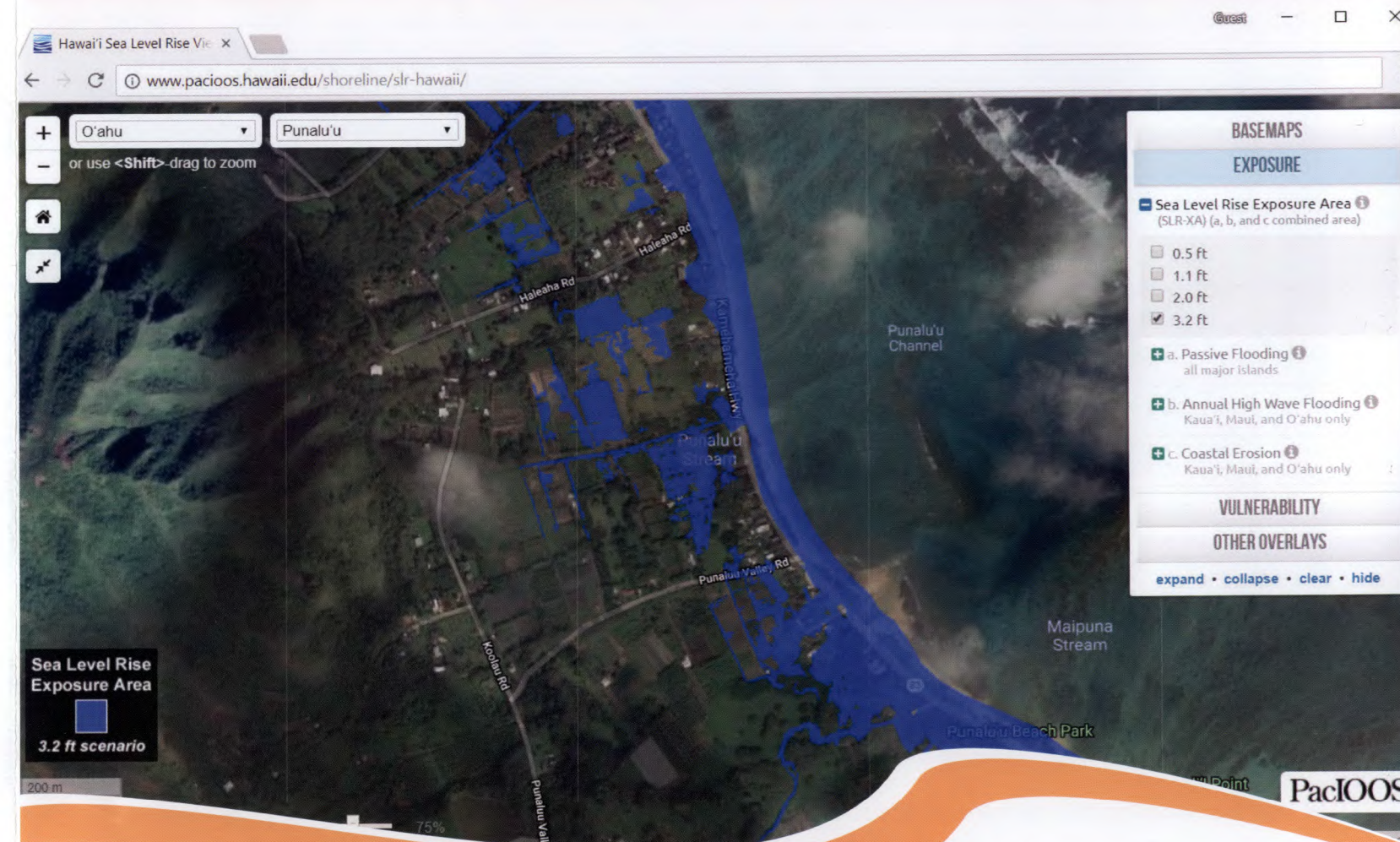
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Hawai'i Sea Level Rise Viewer

www.hawaii.sealevelriseviewer.org



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Support for this project is provided by the National Oceanic and Atmospheric Administration (NOAA) 2016 Regional Coastal Resilience Grants Program and the Department of Land and Natural Resources through the Hawai'i Climate Adaptation Initiative. The Hawai'i Sea Level Rise Viewer was developed by the Pacific Islands Ocean Observing System (PacIOOS) at the University of Hawai'i.

Cover image: Hawai'i Sea Level Rise Viewer showing 3.2 ft Sea Level Rise Exposure Area (SLR-XA) www.hawaiisealevelriseviewer.org



High tide flooding at Ala Moana Regional Park, O'ahu in April 2017. Hawai'i Sea Grant King Tides Project

Across the Hawaiian Islands vulnerability to coastal hazards is increasing with climate change and sea level rise and as development along our shorelines continues to expand. Access to high-resolution local hazard exposure and vulnerability data and maps is critical for communities to understand and plan for increased coastal flooding and erosion with sea level rise. The Hawai'i Sea Level Rise Viewer serves as an online interactive atlas accompanying the Hawai'i Sea Level Rise Vulnerability and Adaptation Report, completed in December 2017¹. The Report and map data in the Viewer incorporates the best-available science on sea level rise and potential impacts.

¹Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. Hawai'i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai'i Department of Land and Natural Resources Contract No: 64064. Available at: <http://climateadaptation.hawaii.gov/>

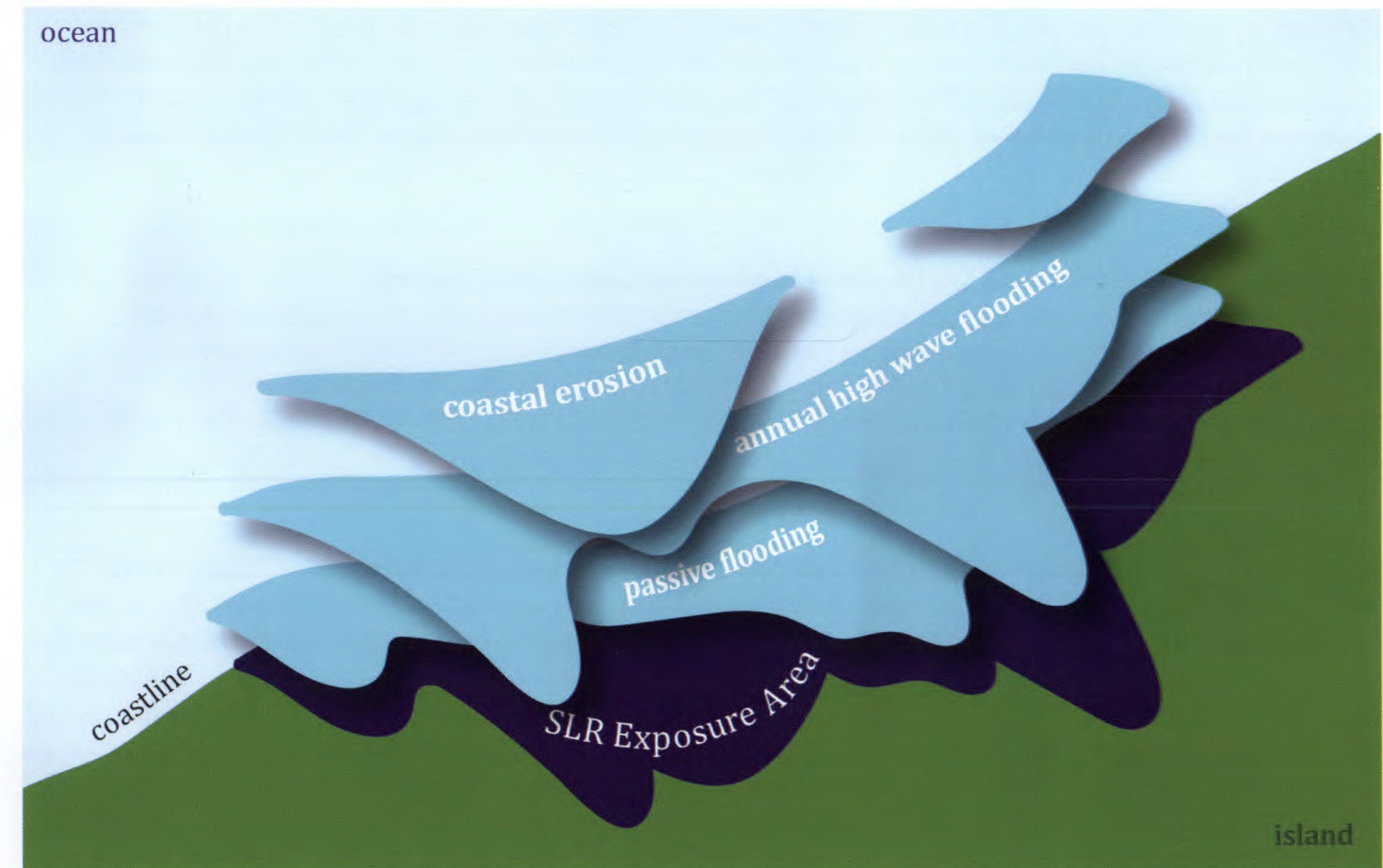
Project Description

The Hawai'i Sea Level Rise Viewer provides interactive maps of projected exposure and vulnerability to coastal hazards with sea level rise. Users will be able to view data and map layers for:

- Coastal hazard exposure areas with sea level rise including passive flooding (still water high tide flooding), annual high wave flooding (over-wash during the largest wave events of the year), and coastal erosion.
- A combined Sea Level Rise Exposure Area integrating the individual hazard layers above and coastal hazards.
- Vulnerability assessment layers showing potential economic loss of land and structures with sea level rise.
- A variety of base maps and other overlays to support adaptation planning.

Project Outcomes

This project developed an online interactive map viewer for Hawai'i depicting exposure and vulnerability to coastal hazards, including erosion and flooding with sea level rise. The viewer is empowering communities, planners, and decision makers across Hawai'i to prepare for increasing vulnerabilities to coastal hazards with sea level rise at various spatial and temporal scales.



Sea Level Rise Exposure Area (SLR-XA) Tetra Tech Inc.