

Name	Sea Level Rise and Changes in Storminess on U.S. High-Island Fringing Reefs
Capability Area: Variability/Changes	<ul style="list-style-type: none"> - Understanding Climate Variability and Change - Research/Development - Historical Observations (hindcasts/climatologies) - Projections (modeling and downscaling)
ECV	<ul style="list-style-type: none"> - Surface (e.g., temp, precip, wind) - Surface (e.g., SST, SSH, salinity, ocean color) - Sub-surface (e.g., temp, salinity, nutrients, carbon, phytoplankton)
Timeframe	<ul style="list-style-type: none"> - Seasonal (outlook) - Intra-annual to Decadal - Multi-decadal (scenarios)
Capability Area: Impacts/Adaptations	<ul style="list-style-type: none"> - Understanding Climate Impacts and Informing Adaptation - Climate Impacts - Historical Observations (hindcasts/climatologies) - Projections (modeling and downscaling)
Sectors	<ul style="list-style-type: none"> - Energy - Transportation/Communication and Commerce - Social and Cultural Resources - Agriculture and Fisheries - Recreation and Tourism - Ecosystems
Status	<ul style="list-style-type: none"> - Ongoing
Focus Area	<ul style="list-style-type: none"> - Coastal Inundation/Sea Level Rise, Extreme Weather, and Community Resilience - Marine and Terrestrial Ecosystems

Regions	<ul style="list-style-type: none"> - Central North Pacific - State Of Hawaii - North Western Hawaiian Islands - Western North Pacific - CNMI - FSM - Guam - South Pacific - American Samoa
Description	<p>We are actively conducting USGS-funded research on sea-level rise and changes in storminess on US high-island fringing reefs in the US and US-territories, primarily in US National Parks. Tasks include in situ data acquisition and development of coupled wave-current-sediment transport numerical models to investigate potential future climate change impacts on coral reef ecosystems. We have proposals into the USGS, USFWS, and DOD investigating sea-level rise and changes in storminess on US atolls in the US and US-territories. Proposed tasks include in situ data acquisition and development of coupled wave-current-sediment transport numerical models and hydrologic models to investigate potential future climate change impacts on natural resources, freshwater availability, and infrastructure.</p>
Objectives/Outcomes	<p>USGS peer-reviewed reports describing data and results, peer-reviewed journal articles documenting new scientific findings, and maps describing infrastructure and natural resources potentially impacted by sea-level rise and changes in storminess.</p>
Lead Agencies	USGS
Contacts	Curt Storlazzi, cstorlazzi@usgs.gov
Partnering Agencies	<p>University of Hawaii (marine resources), USGS Biology Program (terrestrial and marine resources), USGS Water Program (freshwater), NOAA-CCFHR (marine resources), USACE-WIS (climatological hindcasts)</p>
Required Resources	<p>Primary: Operational funds for fieldwork, climatological information. Secondary: Field instrumentation, funding for numerical modeling support.</p>
Projected Timelines	<p>US high-island fringing reef studies: Ongoing through 2015. US atoll studies: Proposed.</p>