Projects and ActivitiesThu Mar 28 11:26:25 HST 2024

Name	Sea Level Rise and Changes in Storminess on U.S. High-Island Fringing Reefs
Capability Area: Variability/Changes	- Understanding Climate Variability and Change - Research/Development - Historical Observations (hindcasts/climatologies) - Projections (modeling and downscaling)
ECV	- Surface (e.g., temp, precip, wind) - Surface (e.g., SST, SSH, salinity, ocean color) - Sub-surface (e.g., temp, salinity, nutrients, carbon, phytoplankton)
Timeframe	- Seasonal (outlook) - Intra-annual to Decadal - Multi-decadal (scenarios)
Capability Area: Impacts/Adaptations	- Understanding Climate Impacts and Informing Adaptation - Climate Impacts - Historical Observations (hindcasts/climatologies) - Projections (modeling and downscaling)
Sectors	- Energy - Transportation/Communication and Commerce - Social and Cultural Resources - Agriculture and Fisheries - Recreation and Tourism - Ecosystems
Status	- Ongoing
Focus Area	- Coastal Inundation/Sea Level Rise, Extreme Weather, and Community Resilience - Marine and Terrestrial Ecosystems

Regions	- Central North Pacific - State Of Hawaii - North Western Hawaiian Islands - Western North Pacific - CNMI - FSM - Guam - South Pacific - American Samoa
Description	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.
Objectives/Outcomes	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.
Lead Agencies	USGS
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Partnering Agencies	University of Hawaii (marine resources), USGS Biology Program (terrestrial and marine resources), USGS Water Program (freshwater), NOAA-CCFHR (marine resources), USACE-WIS (climatological hindcasts)
Required Resources	Primary: Operational funds for fieldwork, climatological information. Secondary: Field instrumentation, funding for numerical modeling support.
Projected Timelines	US high-island fringing reef studies: Ongoing through 2015. US atoll studies: Proposed.