Projects and ActivitiesThu Mar 28 12:10:03 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<br>- Research/Development<br>- Historical Observations (hindcasts/climatologies)<br>- Projections (modeling and downscaling) |
| ECV | - Surface (e.g., temp, precip, wind)<br>- Surface (e.g., SST, SSH, salinity, ocean color)<br>- Sub-surface (e.g., temp, salinity, nutrients, carbon, phytoplankton) |
| Timeframe | - Seasonal (outlook)<br>- Intra-annual to Decadal<br>- Multi-decadal (scenarios) |
| Capability Area: Impacts/Adaptations | - Understanding Climate Impacts and Informing Adaptation<br>- Climate Impacts<br>- Historical Observations (hindcasts/climatologies)<br>- Projections (modeling and downscaling) |
| Sectors | - Energy<br>- Transportation/Communication and Commerce<br>- Social and Cultural Resources<br>- Agriculture and Fisheries<br>- Recreation and Tourism<br>- Ecosystems |
| Status | - Ongoing |
| Focus Area | - Coastal Inundation/Sea Level Rise, Extreme Weather, and Community Resilience<br>- Marine and Terrestrial Ecosystems |

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| Regions | - Central North Pacific<br>- State Of Hawaii<br>- North Western Hawaiian Islands<br>- Western North Pacific<br>- CNMI<br>- FSM<br>- Guam<br>- South Pacific<br>- 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 |
| Contacts | Curt Storlazzi, cstorlazzi@usgs.gov |
| 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.<br>US atoll studies: Proposed. |