<table>
<thead>
<tr>
<th>Name</th>
<th>Sea Level Rise and Changes in Storminess on U.S. High-Island Fringing Reefs</th>
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</table>
| 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                      |
| 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. |