

## SENTINEL SITE PROGRAM

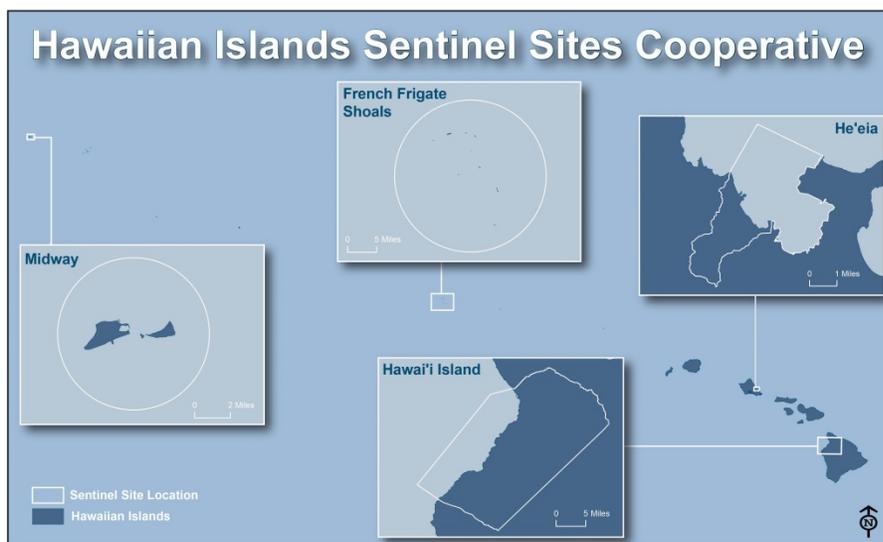
### Hawaiian Islands Sentinel Site Cooperative

**National Website:** [www.oceanservice.noaa.gov/sentinelsites/welcome.html](http://www.oceanservice.noaa.gov/sentinelsites/welcome.html)

**Local Website:** <http://oos.soest.hawaii.edu/pacioos/projects/hawaiisentinel/index.php>

The Sentinel Site Program is an initiative to address climate change impacts in specific areas through partnership and collaboration. There are five designated regions, or Cooperatives: North Carolina, Gulf of Mexico, Chesapeake Bay, San Francisco Bay, and Hawai'i.

The sentinel sites within Hawai'i are depicted in the graphic below. These sites are similar in regards to their circulation patterns, geological origin, and geographic isolation. By establishing federal, state, and local partnerships, climate change impacts are addressed in a more coordinated and effective manner.



**Figure 1.** The Hawaiian Islands Sentinel Site Cooperative is a compilation of sites that includes Midway and French Frigate Shoals in the Papahānaumokuākea Marine National Monument in the Northwestern Hawaiian Islands, the He`eia ahupua`a (He`eia) on the island of O`ahu, and a portion of Hawai`i Island.

NOAA is leading the Sentinel Site Cooperative, with partners identifying the most needed NOAA resources, tools, and services to address climate change. This is a particularly exciting effort, as two of the areas are relatively pristine, while the other two are more heavily impacted by humans. This difference allows researchers to extrapolate the real impact of climate change and to determine how climate change will affect both near pristine and stressed environments. The information obtained and the potential solutions identified for both conditions will be transferrable to other Pacific islands.

The Hawaiian sites were selected, in part, because of the strong and well-established partnerships already in existence. He`eia and Hawai`i Island have a robust and engaged community of local, state, and federal organizations while Midway and French Frigate Shoals is actively managed by several federal agencies. The strength of the Hawai`i Island local partnerships led to the designation as a NOAA Habitat Blueprint.

The Habitat Blueprint is similar to the Sentinel Sites Program in that it focuses on specific issues – in this case habitat degradation – in specifically defined areas. Because the initiatives geographically overlap, the NOAA efforts on Hawai`i Island merged to create a single initiative. The combined effort is leading to a more comprehensive and effective effort. Similarly, the He`eia location is a candidate site for NOAA's National Estuarine Research Reserve System and the Sentinel Sites Program is participating in the drafting of a management plan to ensure that both efforts are coordinated.

The Sentinel Sites Cooperative has been participating in numerous meetings with the communities and with climate change experts. Where gaps and resources are identified, the Sentinel Sites have worked to match the two. For instance, researchers working on anchialine pools (a landlocked body of water fed through groundwater and a subterranean connection to the ocean) identified the lack of elevation data was as a significant information gap. Global Positioning System (GPS) elevation work for several pools and water monitoring wells was conducted through the Sentinel Site Program, with participation and funding by NOAA's Coastal Storms Program and National Geodetic Survey. The information has improved the elevation data for the pools and helped researchers better know the pools' vulnerabilities.

The Sentinel Sites Program is helping to coordinate and guide research on climate change and sea level rise in the Cooperative. The information will lead to a better understanding of potential impacts and ultimately better management decisions.

**Point of Contact**

Douglas Harper  
NOAA's Office for Coastal Management – Pacific Islands  
Douglas.Harper@noaa.gov  
(808) 725-5285