



National Coral Reef Monitoring Program

PACIFIC ISLANDS FISHERIES SCIENCE CENTER
OCEAN AND CLIMATE CHANGE TEAM
MISSION REPORT

MISSION SUMMARY

The NOAA Pacific Islands Fisheries Science Center, Ecosystem Sciences Division, Ocean and Climate Change (OCC) Team investigates climate impacts on coral reef ecosystems in Hawaii and across the U.S. Pacific Islands and territories in support of NOAA's National Coral Reef Monitoring Program (NCRMP). From May 18 – July 20, 2021, the OCC Team completed field work via small boats at seven survey sites on Oahu. The team planned and executed their mission objectives while following NOAA safety protocols during the COVID-19 pandemic. They trained new staff, serviced instrumentation sites, conducted CTD casts, collected water samples for dissolved inorganic carbon (DIC) and total alkalinity (TA) analyses, and performed structure from motion (SfM) surveys. Additionally, the OCC team completed the testing phase of an inaugural carbonate budgets project to determine if reefs are growing or eroding. These carbonate budget assessments use transect-based survey methods to measure the abundance of carbonate producers, such as corals and crustose coralline algae, and carbonate eroders, such as parrotfish and sea urchins. The OCC team will develop the carbonate budget project over the next two years to operationalize it at survey sites across the U.S. Pacific Islands.

WORK COMPLETED

Across 7 field survey sites on Oahu (Figure 1), the OCC team completed the following:

- 13 carbonate budget assessments (including benthic cover, urchin and parrotfish surveys)
- 6 SfM surveys in conjunction with carbonate budget assessments
- 58 CTD casts and DIC/TA water samples (collected with assistance from the NCRMP fish and benthic teams)
- 3 subsurface temperature sensors (STR) deployed at new fixed climate sites



Figure 1: Fixed climate sites visited in 2021

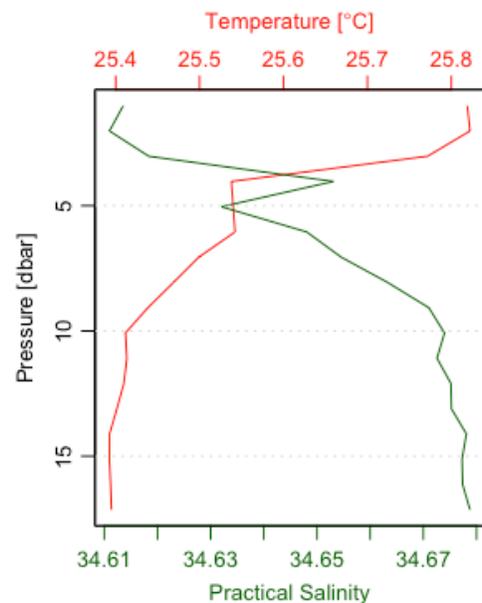


Figure 2: A CTD profile from site 010 on June 14, 2021

Figure 3 (below): The OCC team prepares for dive operations at site 012



Funding for this mission was provided by the NOAA Coral Reef Conservation Program (project #743) and the NOAA Ocean Acidification Program (project #20676). For more information and data requests, contact hannah.barkley@noaa.gov or visit <https://www.coris.noaa.gov/monitoring/climate.html>