

Pacific Reef Assessment and Monitoring Program

Fish Monitoring Brief: Hawai'i, 2024

About this summary brief

The NOAA Pacific Islands Fisheries Science Center conducts the long-term Pacific National Coral Reef Monitoring Program (Pacific NCRMP) to track the status and trends of coral reef ecosystems of the U.S. Pacific Islands. This brief provides an overview of the most recent fish survey efforts and preliminary data summaries. These data will undergo one more round of quality control – this brief is just a first look. More detailed results will be available in a forthcoming report. For a formal data request, please email Tye Kindinger: tye.kindinger@noaa.gov

Sampling effort

- The most recent fish surveys took place in Hawai'i from May 13 to July 28, 2024.
- At each site, divers visually surveyed the fish assemblage using the stationary point count method. See the sampling methods section for more details.
- The goal is for even coverage of sites around each island, but weather and logistics dictate the final spread.

Overview of data collected

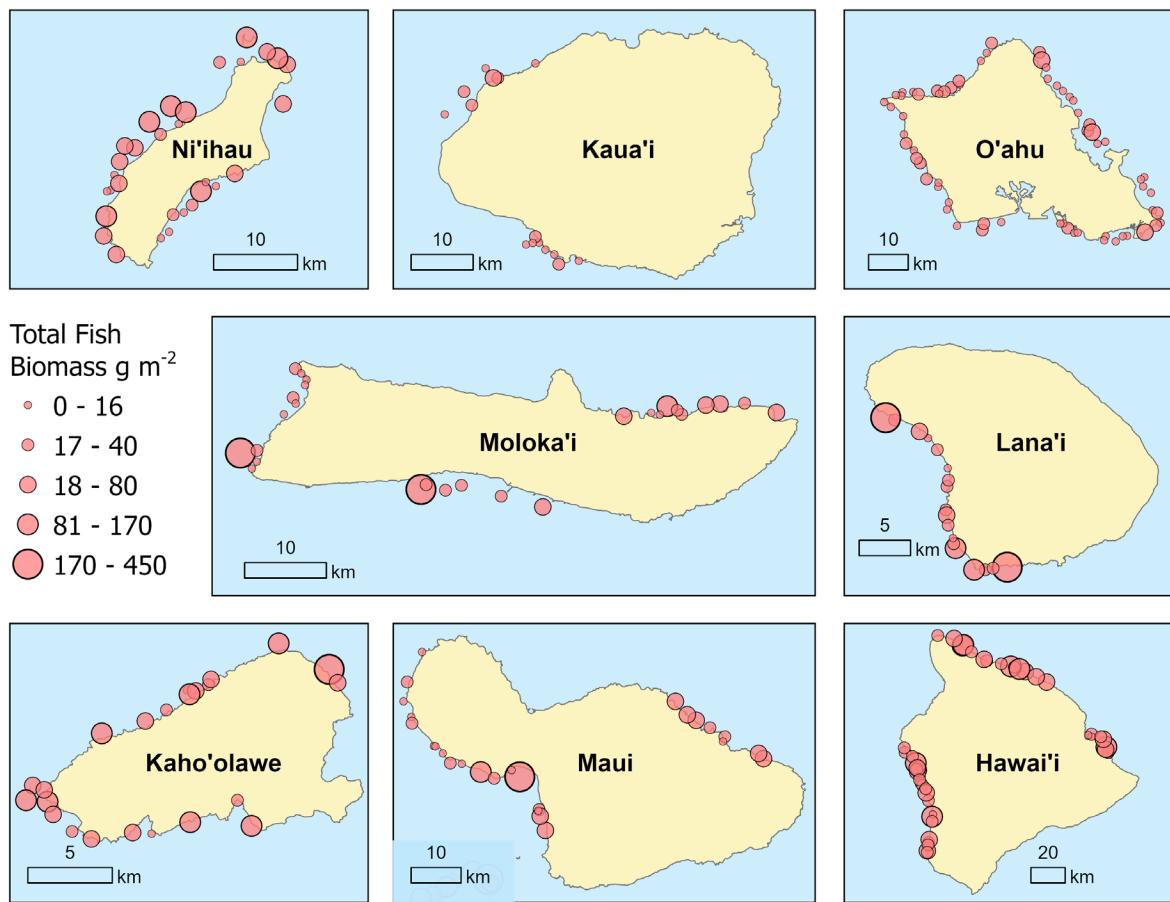


Figure 1. Mean total fish biomass at sites surveyed. Data were collected at 251 sites. Surveys were conducted at Ni'iha (n=31), Kaua'i (n=15), O'ahu (n=64), Moloka'i (n=27), Lāna'i (n=18), Kaho'olawe (n=23), Maui (n=26), and Hawai'i (n=47).

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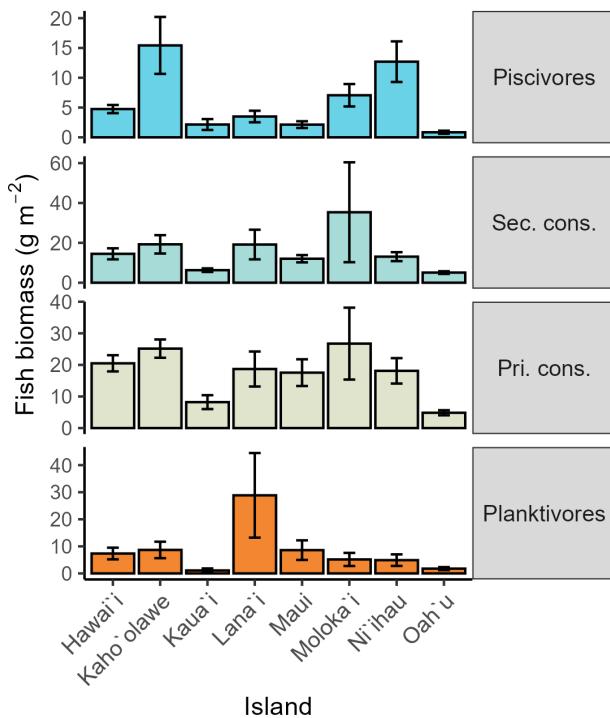


Figure 2. Mean fish biomass (\pm standard error) of consumer groups. Secondary consumers (Sec. cons.) are largely omnivores (which eat a variety of fish and invertebrates) and invertivores. Primary consumers (Pri. cons.) include herbivores (which eat plants) and detritivores (which bottom-feed on detritus).

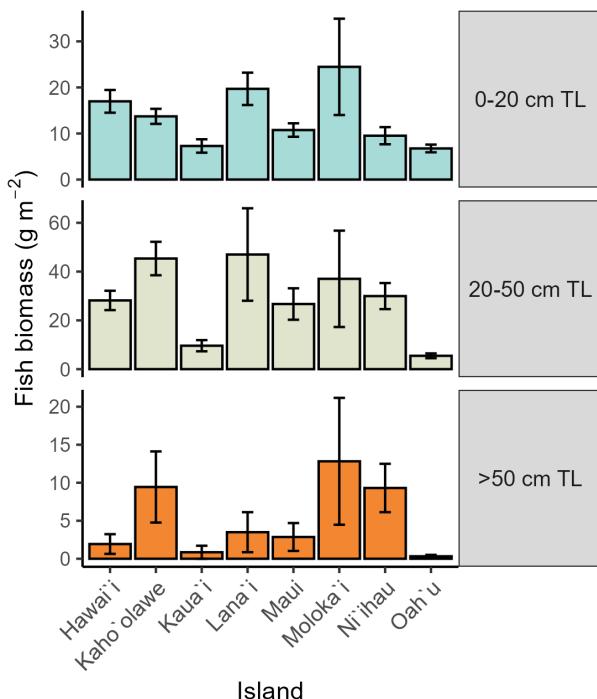


Figure 3. Mean fish biomass (\pm standard error) of size classes measured in centimeters (cm) total length (TL).

Spatial sample design

Survey site locations were randomly selected using a design stratified by reef zone and depth. The geographic coordinates of sample sites were randomly drawn from a map of the area of target habitat (hard-bottom reef) per study area (typically an island or atoll or, in the case of larger islands, sectors per island), within the depth strata of shallow (0-6 m), mid (6-18 m), and deep (18-30 m). Logistics and weather conditions further constrain the final allocation of monitoring effort around each island or atoll.

Sampling methods

A pair of divers surveyed the fish assemblage at each site using a stationary-point-count method (Fig. 4). Each diver identified, enumerated, and estimated the total length of fishes within a visually estimated cylinder (7.5-m radius) with the diver stationed in the center. These data were used to calculate fish biomass per unit area (g m^{-2}) for each species. Mean biomass estimates per island were calculated by weighting averages by the area per stratum.

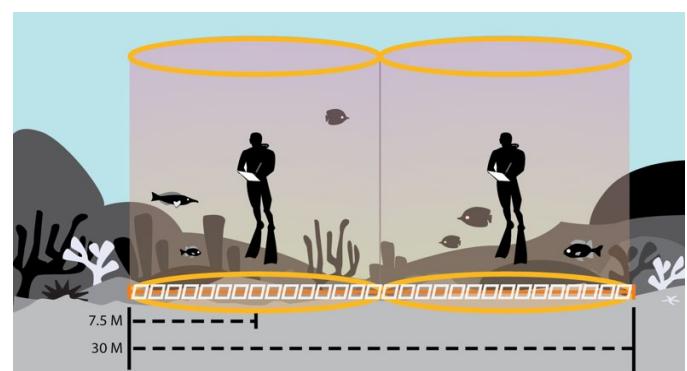


Figure 4. Method used to monitor fish assemblages at each survey sites.

For more information

National Coral Reef Monitoring Program:

- <https://www.coris.noaa.gov/monitoring/>
- Data Visualization Tool: <https://ncrmp.coralreef.noaa.gov/>

NMFS Pacific Islands Fisheries Science Center:

- <https://www.fisheries.noaa.gov/about/pacific-islands-fisheries-science-center>
- <https://www.fisheries.noaa.gov/pacific-islands/science-data/coral-reef-monitoring-pacific>