



National Coral Reef Monitoring Program Biological Monitoring

Coral reefs are among the most valuable ecosystems on Earth, providing us with food, protection from storms, and recreational opportunities. These assets are also tied to economic benefits including tourism, fishing, ornamental resources and biomedical products. When coral reefs are threatened by climate change, unsustainable consumption, and land-based pollution, nearby human communities are also threatened.

The National Coral Reef Monitoring Program (NCRMP) is part of NOAA's Coral Reef Conservation Program, and focuses on monitoring four components of coral reef ecosystem condition: biological (benthic composition and reef fish), climate, and socioeconomic. By consistently collecting monitoring data on these four components throughout the 10 U.S. coral reef areas, NCRMP can provide a holistic understanding of the status of U.S. coral reefs. To learn more about NCRMP, visit <https://www.coris.noaa.gov/monitoring/>.

Biological Monitoring

NCRMP uses a stratified random sampling design for hard-bottom areas between 0-30 meters depth to collect data at the island/region, sub-region, and strata-scale, rather than the individual site level.

To download NCRMP Biological data, please visit <https://www.coris.noaa.gov/monitoring/biological.html>.

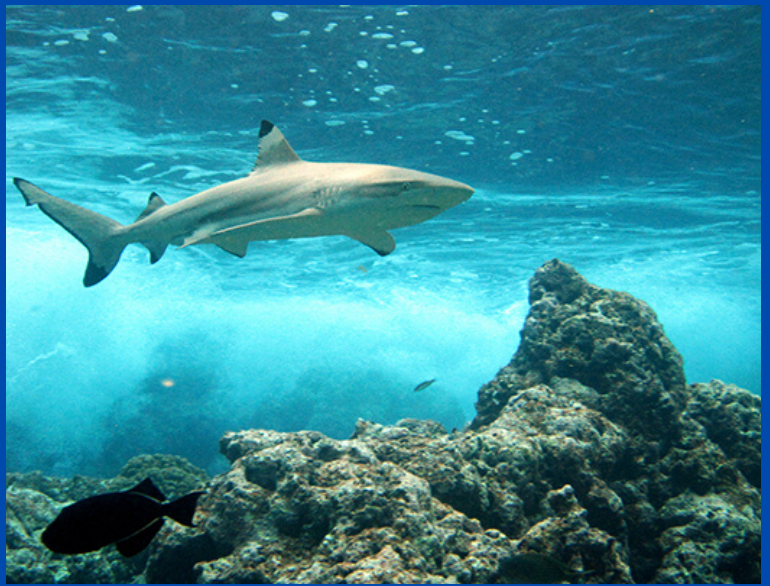
Monitoring Threatened Corals

NCRMP benthic data can be used to inform management of coral species that are listed under the U.S. Endangered Species Act. However, NCRMP sampling is not optimized for rare species, and data for those species are limited.



NCRMP Biological Indicators

- Coral species present
- Corals of reproductive age in a given area
- Size of corals
- Stressed or sick corals
- Coral mortality
- Percentage of bottom that is coral, macroalgae, crustose coralline algae, sponges, or algal turf
- Threatened coral species
- Reef fish species present
- Number of reef fish present
- Size of reef fish
- Ecological balance in reef fish population



Fisheries Management

NCRMP targets a subset of commercial reef fish species for monitoring and records data for other fish groups when they are encountered during surveys. Achieving species-specific population information, especially for rare or patchily-distributed species, may require more intense sampling than is feasible within NCRMP alone.

Monitoring Marine Protected Areas

NCRMP samples both inside and outside different types of management zones, but is not designed to specifically address the effectiveness of management zones.

Biological Monitoring Geographies and Years

Atlantic Ocean	Pacific Ocean	Monitoring Cycle
Florida, Flower Garden Banks	Guam, CNMI	2020
USVI, Puerto Rico	Hawai'i, NW Hawaiian Islands	2019
Florida, Flower Garden Banks	American Samoa, Pacific Remote Islands	2018
USVI, Puerto Rico	Pacific Remote Islands, Guam, CNMI	2017
Florida, Puerto Rico	Hawai'i, NW Hawaiian Islands	2016
USVI, Flower Garden Banks	American Samoa, Pacific Remote Islands	2015
Florida, Puerto Rico	Pacific Remote Islands, Guam, CNMI	2014
USVI, Flower Garden Banks	Hawai'i, NW Hawaiian Islands	2013

