

Data Documentation

Dataset Information

Dataset Title:

National Coral Reef Monitoring Program: Assessment of coral reef fish communities in Flower Garden Banks National Marine Sanctuary from 2013-09-02 to 2013-09-06 and from 2015-08-24 to 2015-08-28

Description:

The National Coral Reef Monitoring Program (NCRMP) assessed coral reef fish communities at Flower Garden Banks National Marine Sanctuary (FGBNMS) in the Gulf of Mexico using the 25m Fish Transect method.

This method collects and reports information on species composition, density, size structure, abundance and derived metrics (e.g., species richness, diversity). Data are collected using stratified random survey design in hardbottom and coral reef habitats less than 30m in depth.

Data provided in this dataset are from East Bank and West Bank within FGBNMS. Lead agencies involved include the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Coastal Ocean Science (NCCOS), NOAA Southeast Fisheries Science Center (SEFSC) and Office of National Marine Sanctuaries (ONMS).

Purpose:

The National Coral Reef Monitoring Program (NCRMP) details a long-term approach to provide an ecosystem perspective via monitoring climate, fish, benthic, and socioeconomic variables in a consistent and integrated manner. The NCRMP is intended to coordinate various Coral Reef Conservation Program (CRCP) biological, physical, and human dimensions activities into a cohesive NOAA-wide effort. Through the implementation of the NCRMP, NOAA will be able to clearly and concisely communicate results of national-scale monitoring to national, state, and territorial policy makers, resource managers, and the public on a periodic basis.

The National Coral Reef Monitoring Program (NCRMP) is a framework for conducting sustained observations of biological, climate, and socioeconomic indicators at 10 priority coral reefs across the U.S. and its territories. This integrated approach will consolidate monitoring of coral reefs under a uniform method in the Pacific, Atlantic, Caribbean, and the Gulf of Mexico for the first time. NCRMP is funded by the NOAA Coral Reef Conservation Program (CRCP) under CRCP Project #743 "National Coral Reef Monitoring Plan (NCRMP) Implementation," and supported by NOAA's National Centers for Coastal Ocean Science (NCCOS) under NCCOS Project #180 "National Coral Reef Monitoring Program Implementation: Biological and Socioeconomic Monitoring" and NOAA Southeast Fisheries Science Center (SEFSC). These biological monitoring missions gather data on coral reef benthic and fish communities in the U.S. Caribbean, Florida, and the Gulf of Mexico. Each year, NOAA scientists work closely with CRCP and local partners to collect biological data from strategically selected sites. We then develop products that give fellow scientists, managers, decision makers and the public a better understanding of a region's resources and how they are changing over time. The biological component of NCRMP provides a biennial ecological characterization at a broad spatial scale of general reef condition for reef

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fishes, corals and benthic habitat (i.e., fish species composition/density/size, benthic cover, and coral density/size/condition). Data collection occurs at stratified random sites where the sampling domain for each region is partitioned by habitat type and depth, sub-regional location (e.g., along-shelf position) and management zone.

Methods:

2013 - 2015 fish transect survey locations were selected using a stratified random sampling design within the FGBNMS study area for East and West Banks. Locations selected for coral demographic surveys are a subset of fish and benthic assessment survey sites. Detailed information describing the sampling design is provided in the NCRMP Sample Frame Generation Protocols and Workflow document.

Briefly, surveys were located on shallow-water coral reefs and hardbottom habitats to a depth of 30 meters. Survey site selection was stratified according to depth classes, benthic habitat types, large marine biotopes and administrative zones. Samples were allocated disproportionate to area and consequently sampling weights are an integral component of data analysis. Variables addressing the sampling design process such as stratum documentation and sampling weights are provided in all data tables as survey attributes

Data provided from this process are provided in all data tables as station information in addition to a main survey attribute table (sample strata, sampling weights).

Refer to data dictionary for complete listing of terms and descriptions.

2015 Updates and Modifications:

The Belt Transect fish protocols were modified for the 2015 FGB sampling year. Changes from 2013 Belt Transect fish protocols are listed below and are reflected in the 2015 FGB data sets.

In 2015, the fish species *Pterois volitans* (red lionfish) was added to the list of key species requiring actual size measurements.

The 2013 protocols for topographic complexity surveys were attached as appendices in the 2013 Belt Transect fish census protocols as part of the data collection responsibilities of the fish diver.

In 2015, the topographic complexity protocols were published as a separate protocol document. Topographic complexity surveys continued to be the responsibility of the fish diver for collection.

Quality Control:

Quality control procedures are implemented in four main stages: (1) ongoing routine training of observers (initial detailed training, annual refresher training); (2) data check following data collection, where divers trade datasheets immediately upon returning to boat after dive, to ensure all data were collected accurately and required information is complete; (3) independent reviewers compare datasheets with database entries; and (4) statistical analyses are conducted as the final check before distribution.

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Before implementation the sampling design was reviewed and agreed upon by representatives from program partners, as well as NCCOS scientists.

For more information, see metadata and protocols included in this accession.

In 2017, NCRMP developed a new data template and structure for data delivery/archiving. All prior year packages have been updated to reflect these changes. Any future data packages will follow this new structure for consistency across years.

Associated Datasets:

- NOAA National Centers for Coastal Ocean Science and NOAA Southeast Fisheries Science Center. 2019. National Coral Reef Monitoring Program: Assessment of coral reef fish communities in National Coral Reef Monitoring Program: Assessment of coral reef fish communities in Flower Garden Banks National Marine Sanctuary. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.7289/V5057D81>. [access date]
- National Centers for Coastal Ocean Science; Southeast Fisheries Science Center. 2019. National Coral Reef Monitoring Program: Assessment of coral reef fish communities in Flower Garden Banks National Marine Sanctuary from 2018-06-11 to 2018-06-14 (NCEI Accession 0208240). NOAA National Centers for Environmental Information. Dataset. [access date]
- NOAA National Centers for Coastal Ocean Science and NOAA Southeast Fisheries Science Center. National Coral Reef Monitoring Program: Assessment of coral reef benthic communities in Flower Garden Banks National Marine Sanctuary. [indicate subset used]. NOAA National Centers for Environmental Information. Dataset. <https://doi.org/10.7289/v5vd6wts>. Accessed [date].
- National Centers for Coastal Ocean Science (NCCOS) and Southeast Fisheries Science Center (SEFSC). 2020. National Coral Reef Monitoring Program: Assessment of coral reef benthic communities in Flower Garden Banks National Marine Sanctuary from 2013-09-02 to 2013-09-06 and from 2015-08-24 to 2015-08-28 (NCEI Accession 0224589). NOAA National Centers for Environmental Information. Dataset.
- NOAA National Centers for Coastal Ocean Science; NOAA Southeast Fisheries Science Center (2020). National Coral Reef Monitoring Program: Assessment of coral reef benthic communities in Flower Garden Banks National Marine Sanctuary from 2018-06-11 to 2018-06-14 (NCEI Accession 0208241). [indicate subset used]. NOAA National Centers for Environmental Information. Dataset.
- Coral Reef Conservation Program. 2016. Documentation for NOAA's Coral Reef Conservation Program (CRCP) National Coral Reef Monitoring Program (NCRMP) data archived at NCEI (NCEI Accession 0157633). NOAA National Centers for Environmental Information.

People & Projects

Dataset Authors:

- National Centers for Coastal Ocean Science (NCCOS); Southeast Fisheries Science Center (SEFSC).

Principal Investigator:

- Kimberly Edwards, kimberly.edwards@noaa.gov, National Centers for Coastal Ocean Science (NCCOS)

Additional Principal Investigators:

- Jay Grove, jay.grove@noaa.gov, Southeast Fisheries Science Center (SEFSC)

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Primary Point of Contact:

- Kimberly Edwards, kimberly.edwards@noaa.gov, National Centers for Coastal Ocean Science (NCCOS)
- NCCOS Data Manager, nccos.data@noaa.gov, NCCOS

Partners:

- US DOC; NOAA; NMFS; Southeast Fisheries Science Center (SEFSC)
- US DOC; NOAA; NOS; Office of National Marine Sanctuaries (ONMS)

Funding:

- US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)
- US DOC; NOAA; NOS; Coral Reef Conservation Program (CRCP)

Associated Online Resources:

- NCCOS Project #180, National Coral Reef Monitoring Program Implementation: Biological and Socioeconomic Monitoring, <https://coastalscience.noaa.gov/project/national-coral-reef-monitoring-program-biological-socioeconomic/>
- CRCP Project #743, National Coral Reef Monitoring Plan (NCRMP) Implementation, <http://www.coris.noaa.gov/monitoring/>

Extents

Extent Group 1

Start Date: 2013-09-02

End Date: 2013-09-06

Northern Boundary: 27.9224

Southern Boundary: 27.8725

Western Boundary: -93.823

Eastern Boundary: -93.5966

Extent Group 2

Start Date: 2015-08-24

End Date: 2015-08-28

Northern Boundary: 27.9197

Southern Boundary: 27.8723

Western Boundary: -93.823

Eastern Boundary: -93.5966

Keywords

Sea Areas, Water Bodies, Marine Protected Areas:

- Gulf of Mexico
- Flower Garden Banks National Marine Sanctuary (FGBNMS)

NOAA Ships, Other Ships, Platforms:

- R/V Manta

NCCOS Keywords: (see [Appendix](#) for NCCOS Keywords)

- NCCOS Research Priority > Marine Spatial Ecology

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- NCCOS Research Topic > Ecological and Biogeographic Assessments
- NCCOS Research Locations > Regions > Gulf of Mexico
- NCCOS Research Data Type > Field Observation
- NCCOS Research Data Type > Long-term Monitoring

CoRIS Keywords: *Required if CRCP-funded, see [link](#) for CoRIS keywords.*

- CoRIS Discovery Thesaurus:
 - Numeric Data Sets > Fish Census
- CoRIS Theme Thesaurus
 - EARTH SCIENCE > Biosphere > Zoology > Corals > Reef Monitoring and Assessment > Reef Fish Census > Transect
 - EARTH SCIENCE > Oceans > Marine Biology > Fish
 - EARTH SCIENCE > Oceans > Marine Biology > Fish > Fish Census > Belt Transect
 - EARTH SCIENCE > Biosphere > Ecological Dynamics > Species Richness
- CoRIS Place Keywords:
 - COUNTRY/TERRITORY > United States of America > Texas > East Flower Garden Banks (27N093W0001)
 - COUNTRY/TERRITORY > United States of America > Texas > West Flower Garden Banks (27N093W0002)
 - OCEAN BASIN > Atlantic Ocean > Gulf of Mexico > Flower Garden Banks > East Flower Garden Banks (27N093W0001)
 - OCEAN BASIN > Atlantic Ocean > Gulf of Mexico > Flower Garden Banks > West Flower Garden Banks (27N093W0002)
- CRCP Project:
 - 743

GCMD Keywords:

- Science Keywords:
 - EARTH SCIENCE > Biosphere > Ecosystems > Marine Ecosystems > Benthic
 - EARTH SCIENCE > Biosphere > Ecosystems > Marine Ecosystems > Reef > Coral Reef
 - EARTH SCIENCE > Solid Earth > Geomorphic Landforms/Processes > Coastal Landforms > Coral Reefs
- Instrument:
 - Visual Observations
- Location:
 - OCEAN > Atlantic Ocean > North Atlantic Ocean > Gulf of Mexico
- Stratum:
 - VERTICAL LOCATION > Sea Floor

National Coral Reef Monitoring Program (NCRMP) File Information

File Information

Total File Size: 4.45 MB total, 32 files in 7 folders (unzipped), 3.59 MB (zipped)

Data Files:

- NCRMP_FGB2013_Fish_Data01_AnalysisReady.CSV
- NCRMP_FGB2013_Fish_Data02_NTOT.CSV
- NCRMP_FGB2013_Fish_Data03_Boatlog.CSV

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- NCRMP_FGB2013_Fish_SampleFrame.SHP (and ancillary files .CPG, .DBF, .PRJ, .SBN, .SBX, .SHX, .XML)
- NCRMP_FGB2015_Fish_Data01_AnalysisReady.CSV
- NCRMP_FGB2015_Fish_Data02_NTOT.CSV
- NCRMP_FGB2015_Fish_Data03_Boatlog.CSV
- NCRMP_FGB2015_Fish_SampleFrame.SHP (and ancillary files .CPG, .DBF, .PRJ, .SBN, .SBX, .SHX, .XML)

Data File Format: Comma-separated value (.CSV)

Documentation Files:

- NCRMP_FGB2013_2015_Fish_BrowseGraphic.JPG
- NCCOS_Archive Submission_NCRMP_FGB2013-2015_Fish.PDF
- NCRMP_FGB2013-2015_Fish_DataDictionary01_AnalysisReady.ODS
- NCRMP_FGB2013-2015_Fish_DataDictionary02_NTOT.ODS
- NCRMP_FGB2013-2015_Fish_DataDictionary03_Boatlog.ODS
- NCRMP_FGB2013-2015_Fish_DataDictionary04_Codes.ODS
- NCRMP_CaribGOM_Protocol_Fish_BeltTransect_2013.PDF
- NCRMP_CaribGOM_Protocol_Fish_BeltTransect_2015.PDF
- NCRMP_CaribGOM_Protocol_Fish_TopographicComplexity_2015.PDF
- NCRMP_CaribGOM_Protocol_SampleFrame_2013-2015.PDF

Parameter Information

List of major parameters included in this accession:

- FISH - CORAL REEF
- REEF AND/OR BOTTOM REGIME - RUGOSITY

Parameter Description:

Parameter: FISH - CORAL REEF

Property Type: measured

Units: count

Observation Category: *in situ*

Sampling Instrument: visual observation

Sampling and Analyzing Method:

Size and abundance of fish using the Belt Transect Fish Survey Protocol for the U.S. Caribbean and Flower Garden Banks National Marine Sanctuary (2013; 2015)

Data Quality Method:

Quality assurance checks for every data sheet and entry into database, as well as analytical checks for using query outputs.

Parameter Description:

Parameter: REEF AND/OR BOTTOM REGIME - RUGOSITY

Property Type: measured

Units: n/a

Observation Category: other

Sampling Instrument: ruler

Sampling and Analyzing Method:

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Rugosity and topographic complexity variable was recorded using Belt Transect Fish Survey Protocol for the U.S. Caribbean and Flower Garden Banks National Marine Sanctuary (2013) and Topographic Complexity Survey Protocol for the U.S. Caribbean and Flower Garden Banks National Marine Sanctuary (2015)

Data Quality Information:

Quality assurance checks for every data sheet and entry into database, as well as analytical checks for using query outputs.

All Parameters:

Property Type: measured

Data Quality Method:

Quality assurance checks for every data sheet and entry into database, as well as analytical checks for using query outputs.

Document Information

Date: 2020-12-29

Resource Provider: NCCOS Data Manager, nccos.data@noaa.gov, US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

Comment: This data documentation describes data files archived as a NOAA NCEI data accession, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.

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Cite as:

National Centers for Coastal Ocean Science (NCCOS) and Southeast Fisheries Science Center (SEFSC). 2020. National Coral Reef Monitoring Program: Assessment of coral reef fish communities in Flower Garden Banks National Marine Sanctuary from 2013-09-02 to 2013-09-06 and from 2015-08-24 to 2015-08-28. (NCEI Accession 0224405). NOAA National Centers for Environmental Information. Dataset.
<https://doi.org/10.7289/V5057D81> [access date]

Additionally, knowledge of how this dataset has been of use and which organizations are utilizing it is of great benefit for ensuring this information continues to meet the needs of the management and research communities. Therefore, it is requested but not mandatory, that any user of this data supply this information to the Project Co-Investigators (Atlantic/Caribbean): Kimberly Edwards (kimberly.edwards@noaa.gov) and Jay Grove (jay.grove@noaa.gov).