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**CORAL REEF**  
CONSERVATION PROGRAM

# Puerto Rico Coral Reef Monitoring Program (PRCRMP) - Data Dictionary

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*Submitted to the Department of Natural and Environmental Resources (DNER)  
Puerto Rico Coastal Zone Management Program (PRCZMP) and the Coral Reef  
Conservation and Management Program (CRCMP)*

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## Puerto Rico Coral Reef Monitoring Program (PRCRMP) Data Abstract:

The Puerto Rico Coral Reef Monitoring Program data files include all raw data (by transect) for 86 stations where substrate cover by sessile-benthic categories and fish and motile megabenthic invertebrate taxonomic composition and densities have been characterized from 1999-2020. At present, 42 of these stations are permanent and are surveyed biannually. For the benthic characterization, at each reef station, a set of five 10 meters long permanent transects are surveyed. Sessile-benthic reef communities are characterized by the continuous intercept chain-link method, following the CARICOMP (1994) protocol. Demersal diurnal non-cryptic reef fish populations and motile megabenthic invertebrates are surveyed by sets of five 10 meters long by 3 meters wide (30 m<sup>2</sup>) belt-transects centered along the reference line of transects used for sessile-benthic characterizations at each reef station. Upon completion of the 10 meters belt-transect survey the diver swims along the same depth and physiographic reef zone for an extra 10 meters to identify fishes and megabenthic invertebrates of commercial value (snappers, groupers, hogfishes, barracuda, mackerels, sharks, lobsters and queen conch) and/or fish species that are considered important reef herbivores (parrotfishes, doctorfishes). For each fish individual within belt-transects, a visual total length (TL) estimate in centimeters was recorded. The cephalothorax length (measurement from the tip of the rostrum to end of the thorax), also known as carapace length (CL) in centimeters was used to report the size of lobsters (*Panulirus* spp., *Scyllarides* sp) within belt-transects. Queen conch (*Strombus gigas*) length was reported as the total (diagonal) shell length in centimeters. With the length-weight relationship information available in FishBase.org, biomass estimates have been calculated for commercially and ecologically important species. The PRCRMP data files also include a site classification spreadsheet with descriptors for each monitoring station, some of which can be used as spatial and temporal factors for statistical analyses. These descriptors include information about depth, habitat type, distance from shore, marine protected areas attributes, coordinates, and other metadata.

## Monitoring Design Factors, Site Classification Descriptors, and Indicators

### Factors, Descriptors, and Indicators Description:

The PRCRMP factors and descriptors include categorical variables and other metadata to stratify and/or classify monitoring stations based on spatiotemporal characteristics, sampling effort, and other descriptors relevant to assess management and biological condition questions. These are essential in evaluating the publication of the PRCRMP Database Compilation in a Geographical Information System (GIS) based platform as it includes coordinates for each monitoring station and attributes for data visualization related to distance from shore gradients, habitat types, depths, proximity to watersheds, stations within Marine Protected Areas (MPAs), etc. References used for some labels are included in the [references section](#).

In addition, the data files include a list of indicators that serve to classify or group species and categories. Indicators include the taxonomic classification of species to the lowest level possible (i.e., phylum, class, order, family, genus, and species) and other classifications like functional groups and/or targeted categories. Taxonomic classifications were obtained using the [World Register of Marine Species](#)

([WoRMS](#)) [Taxon-Match Tool](#) developed by Tony Rees, Michael Giddens, and Dmitry Mozzherin. These indicators allow for statistical analyses at the functional, community, and taxonomic levels.

The following list of label definitions apply to all PRCRMP datasets (sessile-benthic, fish and macroinvertebrates) and the PRCRMP Site Classification Database.

## **Factors, Descriptors, and Indicators Label Definitions:**

### **Factors and Descriptors in PRCRMP data files and/or PRCRMP Site Classification Database**

#### **SAMPLE CODE**

A label that identifies each unique sample in the data files of the PRCRMP Database Compilation. It consists of the sample year, site name, and transect number.

#### **Site Name**

Name of monitoring stations. Each site name belongs to a specific coordinate. Specifications: Site names include a year in parenthesis if the station coordinates shifted over time because of transect re-establishment. Site names include depth (in meters) if there are multiple stations with the same site name at different depths. Site names include the location in parenthesis if there are stations with the same site name in different locations. The purpose of this site name nomenclature is to differentiate each monitoring station while being consistent with site names in PRCRMP reports. However, site names in PRCRMP reports do not make the specifications explained here.

#### **Site Code**

An abbreviation of site name. Specification: Site Code includes two letters representing the last 2 digits of the baseline year for the site, followed by four letters of the site name, followed by two numbers that represent station mean depth (standardized to CARICOMP depth intervals).

#### **Transect**

A spatial replicate within each site. From 2004-2013 Fish and Macroinvertebrate Size Frequency data was not replicated by transect because there was one Active Search Census (ASEC Survey) done per site.

#### **Fish-Benthic Match**

Whether there is a match between factor labels of the fish and invertebrate abundance and the benthic data that allows for biological correlation analyses.

<b><u>Location</u></b>	The geographical area where monitoring stations are located. Most locations are municipalities of Puerto Rico, others are oceanic islands of the Puerto Rican archipelago.
<b><u>Region</u></b>	<p>The geographical area where monitoring stations cluster together considering potential bioregions in Puerto Rico (i.e. sites belonging to isolated oceanic islands, continuous reef systems of the insular platform isolated by a submarine canyon, etc.) as well as site replicates.</p> <p>Specification: There is a minimum of 2 current stations in the Southeast Region and a maximum of 14 current stations in the West Region, with an average of 6 (<math>\pm</math> 4) stations per Region.</p>
<b><u>Geographic Zone</u></b>	<p>The cardinal geographical area where monitoring stations are located.</p> <p>Specification: There are a minimum of 2 current stations in the North Geographic Zone and a maximum of 17 current stations in the West Geographic Zone, with an average of 8 (<math>\pm</math> 6) stations per Geographic Zone.</p>
<b><u>Latitude</u></b>	Latitude of monitoring station in decimal degrees. Specification: Taken at the center (5m) of Transect 3.
<b><u>Longitude</u></b>	Longitude of monitoring station in decimal degrees. Specification: Taken at the center (5m) of Transect 3.
<b><u>Status</u></b>	Status of the monitoring station. Specification: Previous = monitoring station no longer visited; Current = monitoring station currently being monitored once every two years (biennial).
<b><u>Baseline Year</u></b>	Year when the station was first visited for a benthic characterization as part of PRCRMP surveys.
<b><u>Most Recent Survey</u></b>	Year of most recent PRCRMP survey. Specification: Latest revision in March 2020.
<b><u># Surveyed Years</u></b>	# of visits or PRCRMP surveys since the station was first visited as part of PRCRMP. Specification: Latest revision in March 2020.
<b><u>Surveyed Years</u></b>	Specific years that the stations have been visited (separated by commas).
<b><u>Insular Shelf Zone</u></b>	Station position relative to the Puerto Rico insular shelf as seen in bathymetric features when projecting monitoring stations on Esri's Ocean Basemap (2012) * and NOAA's Office of Coast Survey's Electronic [Nautical] Charts (ENC) (2014-2019) *.
<b><u>Reef Zonation</u></b>	Station position relative to the reef structure as determined by PRCRMP fieldwork contractor in PRCRMP reports * and/or satellite imagery.

**Mean Depth (m)**

All-years site average depth in meters. Specification: Mean depth is standardized to CARICOMP (2001) \* fore reef depth intervals (0-5m, 5-10m, and >10m). For >10m mean depths, depth was standardized to 15, 20, and 30m depths ad hoc.

**Z – true (m)**

All-years site average depth in meters recorded in the field by DNER fieldwork contractor.

**Depth Zone**

Categorical depth range in meters selected based on the distribution of Z- true (m) across stations. Specification: Depth Zone levels were selected to have at least 24 stations level (except Mesophotic with n=5).

**Habitat Type**

Categorical station habitat description. Specification: Habitat Types are based on NCRMP habitat type definitions (Kendall et al., 2002; NCCOS, 2018) \*, except "Spur and Groove", which is adapted from Morelock et al. (1977) \* and Storlazzi et al. (2003) \* to identify a [typical] shelf-sedge habitat in Puerto Rico. In addition, DNER fieldwork contractor provided the habitat type for some stations in the physical description narrative of PRCRMP reports \*.

**Mean Rugosity (m)**

The all-years rugosity station average. It is an index or measure of topographic complexity for habitats intercepted by transects. It is estimated as the total length of the transect chain divided by the horizontal distance covered (10m). Specification: The method was adopted by DNER fieldwork contractor from the CARICOMP (2001) \* protocol. The original reference for the method is Rogers et al. (1982) \*.

**Topographic Complexity**

Categorical rugosity range for each station selected based on the distribution of Rugosity (m) across stations. Specification: Ranges were selected to have at least 20 stations per Topographic Complexity Level.

**Coral Biotope**

Categorical coral community site descriptor that incorporates before and after the 2005 coral bleaching event data, if available. The purpose of the all-years average in the rules is to identify what type of coral community can describe the station, not only in terms of recent data but considering historical data as well. To see the sites which Coral Biotope descriptor includes data from before and after 2005 bleaching event, verify column Surveyed Years. Specification: Coral Biotope levels are defined by the all-years (1999-2018) site average cover % of the following coral hierarchical rules: **O. annularis complex** = O. ann >16%; **A. palmata** = A. palmata >25%; **High-Moderate Hard Coral** = total hard coral >15% + O. ann <16% + A. palmata <25%; **Octocoral canopy** = >20 col/10m<sup>2</sup> + <15% O.ann + <20% A.pal + <15 hard coral%; **Low Coral** = <15% hard coral + <20 col/10m<sup>2</sup> octocoral. Definitions were established by

contractor Miguel G. Figuerola Hernández during the creation of the PRCRMP Site Classification Database.

**Coral cover % change since baseline**

The site percent change in coral cover since the baseline survey (1999-2018). Specification: % Cover Change = [(most recent survey average cover %) - (baseline survey average cover %)] / baseline survey average cover %

**Distance from PR Shoreline (km)**

The minimum linear distance between site and shoreline of P.R. mainland. Specification: For stations located in oceanic islands (Mona, Desecheo, Caja de Muertos, Vieques, and Culebra) the distance from PR Shoreline is the minimum linear distance of the station to the P.R. “mainland”.

**Distance from PR Shoreline (km)[Binned]**

The categorical minimum linear distance between station and shoreline of P.R. mainland.

**Distance Nearest River Mouth (km)**

The minimum linear distance between the station and the nearest river mouth. Specification: Nearest river mouth might be upstream or downstream from the station.

**Distance Nearest River Mouth (km) [Binned]**

The categorical minimum linear distance between the station and the nearest river mouth.

**Nearest River Mouth Direction**

Cardinal direction from the station to the nearest river mouth.

**Nearest Main Watershed**

Name of nearest main watershed associated with the monitoring station.

**# of Waterways Inputs (<10km)**

The # of "river mouths" or waterways inputs 10km or less from the station. Specification: Calculated using measurement tools of ArcGIS online and HOTOSM PRI Waterways shapefile (HOTOSM PRI, 2017) \*.

**# of Waterways Inputs (<10km) [Binned]**

Categorical number of river mouths or waterways inputs 10km or less from the station. Specification: Calculated using measurement tools of ArcGIS online and HOTOSM PRI Waterways shapefile (HOTOSM PRI, 2017) \*. w = waterways.



<b><u>Watershed Region</u></b>	The geographical descriptor of regions with monitoring stations with a higher number (#) of Waterways Inputs (<10km).
<b><u>PRASA Wastewater Treatment Plant in Near Waterway Inputs</u></b>	Presence/absence of a PRASA Wastewater Treatment Plant in one of the Near Waterways Inputs (<10km). Specification: Information retrieved from an Esri's ArcGIS online dataset compiled by Sarah Spalding, containing data on wastewater treatment plants, based on EPA's Facility Registry Service (FRS) (EPA, 2015) *.
<b><u>Station Within MPA?</u></b>	Identifies stations inside MPAs. Specification: Yes = station is located within MPA boundaries; No = station is outside MPA boundaries. MPA boundaries obtained from GIS file Natural Protected Areas of Puerto Rico (CLCC and DNER, 2016) * and NOAA's Marine Protected Areas Inventory [GIS Data] (revised in 2017) *.
<b><u>Distance to nearest MPA (km)</u></b>	The minimum linear distance between the station and the nearest MPA boundary. Specification: MPA boundaries obtained from GIS file Natural Protected Areas of Puerto Rico (CLCC and DNER, 2016) * and NOAA's Marine Protected Areas Inventory [GIS Data] (revised in 2017) *.
<b><u>Nearest MPA Name</u></b>	The name of MPA near monitoring station. Specification: In the case of monitoring station inside an MPA, the MPA name is provided.
<b><u>MPA Designation Year</u></b>	MPA designation year. Specification: Taken from Table 2 in Aguilar-Perera et al. (2006) *, DNER Office of Coastal Zone Management (2009) *, and the NOAA's Marine Protected Areas Inventory [GIS Data] (revised in 2017) *.
<b><u>MPA Years Since Designation</u></b>	Years since MPA designation year. Specification: Latest revision in 2019.
<b><u>MPA Seafloor Surface Area (Km^2)</u></b>	MPA Seafloor Surface Area in km <sup>2</sup> . Specification: Taken from Table 2 in Aguilar-Perera et al. (2006) * and the NOAA's Marine Protected Areas Inventory [GIS Data] (revised in 2017) *
<b><u>MPA Fishing Restrictions</u></b>	Fishing restrictions within MPA boundaries. Specification: Identified in NOAA's Marine Protected Areas Inventory [GIS Data] (revised in 2017) *
<b><u>MPA Level of Protection</u></b>	Level of Protection within MPA boundaries. Specification: Defined in NOAA's Definition & Classification System for U.S. Marine Protected Areas (2011) *
<b><u>Transect Coordinates</u></b>	If transect coordinates are available for the station. Specification: Yes = Transect coordinated have been provided by fieldwork contractor;

PENDING = Transect coordinates have not been provided by fieldwork contractor yet

**T1 (Lat''Lon)**

Transect 1 coordinates. Specification: Taken at the center [5m] of the benthic transect

**T2 (Lat''Lon)**

Transect 2 coordinates. Specification: Taken at the center [5m] of the benthic transect

**T3 (Lat''Lon)**

Transect 3 coordinates. Specification: Taken at the center [5m] of the benthic transect

**T4 (Lat''Lon)**

Transect 4 coordinates. Specification: Taken at the center [5m] of the benthic transect

**T5 (Lat''Lon)**

Transect 5 coordinates. Specification: Taken at the center [5m] of the benthic transect

**Indicators in PRCRMP data files (sessile-benthic, fish, and macroinvertebrates)**

**Phylum**

Phylum of benthic, fish, and macroinvertebrate individuals

**Class**

Class of benthic, fish, and macroinvertebrate individuals

**Order**

Order of benthic, fish, and macroinvertebrate individuals

**Family**

Family of benthic, fish, and macroinvertebrate individuals

**Genus**

Genus of benthic, fish, and macroinvertebrate individuals

**Species**

Species of benthic, fish, and macroinvertebrate individuals

**Benthic Indicator**

Classification of functional groups and the main category of benthic cover percentage or colony count measurements

**Com-Eco**

Classification of [targeted] commercially and ecologically important fish species. Ex. groupers, snappers, and parrotfishes.

**[\\*References](#)**

## **Sessile-Benthic Communities**

### **Benthic Data Description:**

The PRCRMP benthic data file includes 10-meter chain transect substrate cover percentage data of sessile-benthic reef communities for all surveyed stations. Data units are in cover percent, but some benthic categories and their species (octocorals and stony corals) are reported as the number of colonies as well. When the number of colonies is reported, the data label will include the “#col.” characters. Blank cells in

this data file represent missing values. Missing values are present because since the beginning of the surveys in 1999 not all benthic categories have been identified to the species level. Also, some benthic categories and/or species have not been considered during benthic surveys at specific years, so the years when they were not considered, they will appear with missing values in the data file (blank cells). That is, this data file includes blank cells, representing species not considered during the survey and transects or stations not completed.

For data collection field methodologies see the Puerto Rico Coral Reef Monitoring Program Database Report (August 2019).

## Benthic Data Label Definitions:

### Benthic-Sessile data label

*Abiotic (total)*

*Acropora cervicornis*

*Acropora palmata*

*Acropora prolifera*

*Agaricia agaricites*

*Agaricia fragilis*

*Agaricia grahamae*

*Agaricia humilis*

*Agaricia lamarcki*

*Agaricia spp.*

*Agelas citrina*

*Agelas clathrodes*

*Agelas conifera*

*Agelas dispar*

*Agelas sceptrum*

*Agelas spp.*

### Definition

Substrate cover percentage by all abiotic subcategories

Substrate cover percentage by the Stony Coral species  
*Acropora cervicornis*

Substrate cover percentage by the Stony Coral species  
*Acropora palmata*

Substrate cover percentage by the Stony Coral species  
*Acropora prolifera*

Substrate cover percentage by the Stony Coral species  
*Agaricia agaricites*

Substrate cover percentage by the Stony Coral species  
*Agaricia fragilis*

Substrate cover percentage by the Stony Coral species  
*Agaricia grahamae*

Substrate cover percentage by the Stony Coral species  
*Agaricia humilis*

Substrate cover percentage by the Stony Coral species  
*Agaricia lamarcki*

Substrate cover percentage by the Stony Coral species  
*Agaricia spp. (unidentified)*

Substrate cover percentage by the Sponge species  
*Agelas citrina*

Substrate cover percentage by the Sponge species  
*Agelas clathrodes*

Substrate cover percentage by the Sponge species  
*Agelas conifera*

Substrate cover percentage by the Sponge species  
*Agelas dispar*

Substrate cover percentage by the Sponge species  
*Agelas sceptrum*

Substrate cover percentage by the Sponge species  
*Agelas spp. (unidentified)*

**Benthic-Sessile data label****Definition**

<i>Agelas sventres</i>	Substrate cover percentage by the Sponge species <i>Agelas sventres</i>
<i>Agelas tubulata</i>	Substrate cover percentage by the Sponge species <i>Agelas tubulata</i>
<i>Aiolochoiria crassa</i>	Substrate cover percentage by the Sponge species <i>Aiolochoiria crassa</i>
<i>Amphimedon caribica</i>	Substrate cover percentage by the Sponge species <i>Amphimedon caribica</i>
<i>Amphimedon compressa</i>	Substrate cover percentage by the Sponge species <i>Amphimedon compressa</i>
<i>Amphimedon viridis</i>	Substrate cover percentage by the Sponge species <i>Amphimedon viridis</i>
<i>Amphiroa spp.</i>	Substrate cover percentage by the Macroalgae species <i>Amphiroa spp.</i> (unidentified)
<i>Anemone spp.</i>	Substrate cover percentage by the Anemone species <i>Anemone spp.</i> (unidentified)
<i>Anemones (total)</i>	Substrate cover percentage by all Anemone species
<i>Antillogorgia acerosa</i>	Substrate cover percentage by the Octocoral species <i>Antillogorgia acerosa</i>
<i>Antillogorgia acerosa (# col.)</i>	Number of colonies of the Octocoral species <i>Antillogorgia acerosa</i>
<i>Antillogorgia americana</i>	Substrate cover percentage by the Octocoral species <i>Antillogorgia americana</i>
<i>Antillogorgia americana (# col.)</i>	Number of colonies of the Octocoral species <i>Antillogorgia americana</i>
<i>Antillogorgia bipinnata</i>	Substrate cover percentage by the Octocoral species <i>Antillogorgia bipinnata</i>
<i>Antillogorgia bipinnata (# col.)</i>	Number of colonies of the Octocoral species <i>Antillogorgia bipinnata</i>
<i>Antillogorgia rigida</i>	Substrate cover percentage by the Octocoral species <i>Antillogorgia rigida</i>
<i>Antillogorgia spp. (# col.)</i>	Number of colonies of the Octocoral species <i>Antillogorgia spp.</i> (unidentified)
<i>Aplysina archeri</i>	Substrate cover percentage by the Sponge species <i>Aplysina archeri</i>
<i>Aplysina cauliformis</i>	Substrate cover percentage by the Sponge species <i>Aplysina cauliformis</i>
<i>Aplysina fistularis</i>	Substrate cover percentage by the Sponge species <i>Aplysina fistularis</i>
<i>Aplysina fulva</i>	Substrate cover percentage by the Sponge species <i>Aplysina fulva</i>
<i>Aplysina lacunosa</i>	Substrate cover percentage by the Sponge species <i>Aplysina lacunosa</i>

<b>Benthic-Sessile data label</b>	<b>Definition</b>
<i>Aplysina spp.</i>	Substrate cover percentage by the Sponge species Aplysina spp. (unidentified)
<i>Ascidian spp.</i>	Substrate cover percentage by the Ascidian species Ascidian spp. (unidentified)
<i>Asparagopsis taxiformis</i>	Substrate cover percentage by the Macroalgae species Asparagopsis taxiformis
<i>Asparagopsis taxiformis on Ramicrusta</i>	Substrate cover percentage by the Macroalgae species Asparagopsis taxiformis on Ramicrusta
<i>Bartholomea annulata</i>	Substrate cover percentage by the Anemone species Bartholomea annulata
<i>Biemna caribea</i>	Substrate cover percentage by the Sponge species Biemna caribea
<i>Biemna spp.</i>	Substrate cover percentage by the Sponge species Biemna spp. (unidentified)
<i>Briareum asbestinum</i>	Substrate cover percentage by the Octocoral species Briareum asbestinum
<i>Briareum asbestinum (# col.)</i>	Number of colonies of the Octocoral species Briareum asbestinum
<i>Callyspongia armigera</i>	Substrate cover percentage by the Sponge species Callyspongia armigera
<i>Callyspongia fallax</i>	Substrate cover percentage by the Sponge species Callyspongia fallax
<i>Callyspongia plicifera</i>	Substrate cover percentage by the Sponge species Callyspongia plicifera
<i>Callyspongia spp.</i>	Substrate cover percentage by the Sponge species Callyspongia spp. (unidentified)
<i>Callyspongia tenerrima</i>	Substrate cover percentage by the Sponge species Callyspongia tenerrima
<i>Callyspongia vaginalis</i>	Substrate cover percentage by the Sponge species Callyspongia vaginalis
<i>Caulerpa racemosa</i>	Substrate cover percentage by the Macroalgae species Caulerpa racemosa
<i>Caulerpa spp.</i>	Substrate cover percentage by the Macroalgae species Caulerpa spp. (unidentified)
<i>Caulerpa spp. on Ramicrusta</i>	Substrate cover percentage by the Macroalgae species Caulerpa spp. (unidentified) on Ramicrusta
<i>CCA (total)</i>	Substrate cover percentage by all Crustose Coraline Algae, excluding encrusting algae from the family Peyssonneliaceae
<i>Chondrilla caribensis</i>	Substrate cover percentage by the Sponge species Chondrilla caribensis
<i>Chondrosia collectrix</i>	Substrate cover percentage by the Sponge species Chondrosia collectrix

**Benthic-Sessile data label****Definition**

<i>Cinachyrella apion</i>	Substrate cover percentage by the Sponge species Cinachyrella apion
<i>Cinachyrella kuekenthali</i>	Substrate cover percentage by the Sponge species Cinachyrella kuekenthali
<i>Clathria spp.</i>	Substrate cover percentage by the Sponge species Clathria spp. (unidentified)
<i>Clathria venosa</i>	Substrate cover percentage by the Sponge species Clathria venosa
<i>Cliona aprica</i>	Substrate cover percentage by the Sponge species Cliona aprica
<i>Cliona caribbaea</i>	Substrate cover percentage by the Sponge species Cliona caribbaea
<i>Cliona delitrix</i>	Substrate cover percentage by the Sponge species Cliona delitrix
<i>Cliona laticavicola</i>	Substrate cover percentage by the Sponge species Cliona laticavicola
<i>Cliona spp.</i>	Substrate cover percentage by the Sponge species Cliona spp. (unidentified)
<i>Cliona tenuis</i>	Substrate cover percentage by the Sponge species Cliona tenuis
<i>Cliona varians</i>	Substrate cover percentage by the Sponge species Cliona varians
<i>Colpophyllia natans</i>	Substrate cover percentage by the Stony Coral species Colpophyllia natans
<i>Condominium spp.</i>	Substrate cover percentage by the Zoanthid species Condominium spp. (unidentified)
<i>Cribrochalina vasculum</i>	Substrate cover percentage by the Sponge species Cribrochalina vasculum
<i>Cyanobacteria (total)</i>	Substrate cover percentage by Cyanobacteria
<i>Dendrogyra cylindrus</i>	Substrate cover percentage by the Stony Coral species Dendrogyra cylindrus
<i>Desmapsamma anchorata</i>	Substrate cover percentage by the Sponge species Desmapsamma anchorata
<i>Desmapsamma spp.</i>	Substrate cover percentage by the Sponge species Desmapsamma spp. (unidentified)
<i>Dichocoenia stokesii</i>	Substrate cover percentage by the Stony Coral species Dichocoenia stokesii
<i>Dichotomaria marginata</i>	Substrate cover percentage by the Macroalgae species Dichotomaria marginata
<i>Dictyonella funicularis</i>	Substrate cover percentage by the Sponge species Dictyonella funicularis
<i>Dictyonella spp.</i>	Substrate cover percentage by the Sponge species Dictyonella spp. (unidentified)



**Benthic-Sessile data label***Dictyota spp.**Dictyota spp. on Ramicrusta**Diplastrella spp.**Diploria labyrinthiformis**Drummacidon reticulatum**Dysidea etheria**Dysidea janiae**Ectyoplasia ferox**Erythropodium caribaeorum**Erythropodium caribaeorum (# col.)**Eudistoma spp.**Eunicea asperula (# col.)**Eunicea calyculata**Eunicea calyculata (# col.)**Eunicea flexuosa**Eunicea flexuosa (# col.)**Eunicea laciniata (# col.)**Eunicea laxispica (# col.)**Eunicea mammosa**Eunicea mammosa (# col.)**Eunicea pallida***Definition**

Substrate cover percentage by the Macroalgae species  
*Dictyota* spp. (unidentified)

Substrate cover percentage by the Macroalgae species  
*Dictyota* spp. (unidentified) on *Ramicrusta*

Substrate cover percentage by the Sponge species  
*Diplastrella* spp. (unidentified)

Substrate cover percentage by the Stony Coral species  
*Diploria labyrinthiformis*

Substrate cover percentage by the Sponge species  
*Drummacidon reticulatum*

Substrate cover percentage by the Sponge species  
*Dysidea etheria*

Substrate cover percentage by the Sponge species  
*Dysidea janiae*

Substrate cover percentage by the Sponge species  
*Ectyoplasia ferox*

Substrate cover percentage by the Octocoral species  
*Erythropodium caribaeorum*

Number of colonies of the Octocoral species  
*Erythropodium caribaeorum*

Substrate cover percentage by the Ascidian species  
*Eudistoma* spp. (unidentified)

Number of colonies of the Octocoral species *Eunicea*  
*asperula*

Substrate cover percentage by the Octocoral species  
*Eunicea calyculata*

Number of colonies of the Octocoral species *Eunicea*  
*calyculata*

Substrate cover percentage by the Octocoral species  
*Eunicea flexuosa*

Number of colonies of the Octocoral species *Eunicea*  
*flexuosa*

Number of colonies of the Octocoral species *Eunicea*  
*laciniata*

Number of colonies of the Octocoral species *Eunicea*  
*laxispica*

Substrate cover percentage by the Octocoral species  
*Eunicea mammosa*

Number of colonies of the Octocoral species *Eunicea*  
*mammosa*

Substrate cover percentage by the Octocoral species  
*Eunicea pallida*

**Benthic-Sessile data label***Eunicea spp.**Eunicea spp. (# col.)**Eunicea succinea**Eunicea succinea (# col.)**Eunicea tourneforti**Eunicea tourneforti (# col.)**Eusmilia fastigiata**Galaxaura spp.**Galaxaura spp. on Ramicrusta**Gaps/Holes**Geodia neptuni**Gorgonia mariae**Gorgonia ventalina**Gorgonia ventalina (# col.)**Gracilaria spp.**Haliclona spp.**Halimeda discoidea**Halimeda spp.**Halimeda spp. on Ramicrusta**Halimeda tuna**Halisarca caerulea***Definition**

Substrate cover percentage by the Octocoral species  
*Eunicea spp. (unidentified)*

Number of colonies of the Octocoral species *Eunicea*  
*spp. (unidentified)*

Substrate cover percentage by the Octocoral species  
*Eunicea succinea*

Number of colonies of the Octocoral species *Eunicea*  
*succinea*

Substrate cover percentage by the Octocoral species  
*Eunicea tourneforti*

Number of colonies of the Octocoral species *Eunicea*  
*tourneforti*

Substrate cover percentage by the Stony Coral species  
*Eusmilia fastigiata*

Substrate cover percentage by the Macroalgae species  
*Galaxaura spp. (unidentified)*

Substrate cover percentage by the Macroalgae species  
*Galaxaura spp. (unidentified)* on *Ramicrusta*

Substrate cover percentage by the abiotic subcategory  
*Gaps/Holes*

Substrate cover percentage by the Sponge species  
*Geodia neptuni*

Substrate cover percentage by the Octocoral species  
*Gorgonia mariae*

Substrate cover percentage by the Octocoral species  
*Gorgonia ventalina*

Number of colonies of the Octocoral species *Gorgonia*  
*ventalina*

Substrate cover percentage by the Macroalgae species  
*Gracilaria spp. (unidentified)*

Substrate cover percentage by the Sponge species  
*Haliclona spp. (unidentified)*

Substrate cover percentage by the Macroalgae species  
*Halimeda discoidea*

Substrate cover percentage by the Macroalgae species  
*Halimeda spp. (unidentified)*

Substrate cover percentage by the Macroalgae species  
*Halimeda spp. (unidentified)* on *Ramicrusta*

Substrate cover percentage by the Macroalgae species  
*Halimeda tuna*

Substrate cover percentage by the Sponge species  
*Halisarca caerulea*



**Benthic-Sessile data label***Halisarca spp.**Helioseris cucullata**Iotrochota arenosa**Iotrochota birotulata**Ircinia campana**Ircinia felix**Ircinia spp.**Ircinia strobilina**Isophyllia rigida**Isophyllia sinuosa**Jania spp.**Lebrunia neglecta**Lobophora spp.**Lobophora variegata**Lobophora variegatus on Ramicrusta**Macroalgae (total)**Macroalgae spp.**Madracis auretenra**Madracis carmabi**Madracis decactis**Madracis formosa**Madracis pharensis***Definition**

Substrate cover percentage by the Sponge species  
*Halisarca* spp. (unidentified)

Substrate cover percentage by the Stony Coral species  
*Helioseris cucullata*

Substrate cover percentage by the Sponge species  
*Iotrochota arenosa*

Substrate cover percentage by the Sponge species  
*Iotrochota birotulata*

Substrate cover percentage by the Sponge species  
*Ircinia campana*

Substrate cover percentage by the Sponge species  
*Ircinia felix*

Substrate cover percentage by the Sponge species  
*Ircinia* spp. (unidentified)

Substrate cover percentage by the Sponge species  
*Ircinia strobilina*

Substrate cover percentage by the Stony Coral species  
*Isophyllia rigida*

Substrate cover percentage by the Stony Coral species  
*Isophyllia sinuosa*

Substrate cover percentage by the Macroalgae species  
*Jania* spp. (unidentified)

Substrate cover percentage by the Anemone species  
*Lebrunia neglecta*

Substrate cover percentage by the Macroalgae species  
*Lobophora* spp. (unidentified)

Substrate cover percentage by the Macroalgae species  
*Lobophora variegata*

Substrate cover percentage by the Macroalgae species  
*Lobophora variegatus* on *Ramicrusta*

Substrate cover percentage by all Macroalgae species

Substrate cover percentage by the Macroalgae species  
*Macroalgae* spp. (unidentified)

Substrate cover percentage by the Stony Coral species  
*Madracis auretenra*

Substrate cover percentage by the Stony Coral species  
*Madracis carmabi*

Substrate cover percentage by the Stony Coral species  
*Madracis decactis*

Substrate cover percentage by the Stony Coral species  
*Madracis formosa*

Substrate cover percentage by the Stony Coral species  
*Madracis pharensis*

**Benthic-Sessile data label***Madracis senaria**Madracis spp.**Manicina areolata**Martensia pavonia**Meandrina jacksoni**Meandrina meandrites**Millepora alcicornis**Millepora complanata**Millepora spp.**Millepora squarrosa**Monanchora arbuscula**Montastraea cavernosa**Muricea atlantica**Muricea atlantica* (# col.)*Muricea elongata**Muricea elongata* (# col.)*Muricea laxa* (# col.)*Muricea muricata**Muricea muricata* (# col.)*Muricea pinnata**Muricea spp.* (# col.)**Definition**

Substrate cover percentage by the Stony Coral species  
*Madracis senaria*

Substrate cover percentage by the Stony Coral species  
*Madracis spp.* (unidentified)

Substrate cover percentage by the Stony Coral species  
*Manicina areolata*

Substrate cover percentage by the Macroalgae species  
*Martensia pavonia*

Substrate cover percentage by the Stony Coral species  
*Meandrina jacksoni*

Substrate cover percentage by the Stony Coral species  
*Meandrina meandrites*

Substrate cover percentage by the Stony Coral species  
*Millepora alcicornis*

Substrate cover percentage by the Stony Coral species  
*Millepora complanata*

Substrate cover percentage by the Stony Coral species  
*Millepora spp.* (unidentified)

Substrate cover percentage by the Stony Coral species  
*Millepora squarrosa*

Substrate cover percentage by the Sponge species  
*Monanchora arbuscula*

Substrate cover percentage by the Stony Coral species  
*Montastraea cavernosa*

Substrate cover percentage by the Octocoral species  
*Muricea atlantica*

Number of colonies of the Octocoral species *Muricea atlantica*

Substrate cover percentage by the Octocoral species  
*Muricea elongata*

Number of colonies of the Octocoral species *Muricea elongata*

Number of colonies of the Octocoral species *Muricea laxa*

Substrate cover percentage by the Octocoral species  
*Muricea muricata*

Number of colonies of the Octocoral species *Muricea muricata*

Substrate cover percentage by the Octocoral species  
*Muricea pinnata*

Number of colonies of the Octocoral species *Muricea spp.* (unidentified) (# col.)

**Benthic-Sessile data label***Muriceopsis flavida**Muriceopsis flavida* (# col.)*Mussa angulosa**Mycale laevis**Mycale laxissima**Mycetophyllia aliciae**Mycetophyllia danaana**Mycetophyllia ferox**Mycetophyllia lamarckiana**Mycetophyllia* spp.*Neofibularia nolitangere**Neopetrosia carbonaria**Neopetrosia proxima**Neopetrosia rosariensis**Neopetrosia* spp.*Niphates alba**Niphates caycedoi**Niphates digitalis**Niphates erecta**Niphates* spp.*Octocoral* (total # col.)*Octocoral* spp.**Definition**

Substrate cover percentage by the Octocoral species

*Muriceopsis flavida*

Number of colonies of the Octocoral species

*Muriceopsis flavida*

Substrate cover percentage by the Stony Coral species

*Mussa angulosa*

Substrate cover percentage by the Sponge species

*Mycale laevis*

Substrate cover percentage by the Sponge species

*Mycale laxissima*

Substrate cover percentage by the Stony Coral species

*Mycetophyllia aliciae*

Substrate cover percentage by the Stony Coral species

*Mycetophyllia danaana*

Substrate cover percentage by the Stony Coral species

*Mycetophyllia ferox*

Substrate cover percentage by the Stony Coral species

*Mycetophyllia lamarckiana*

Substrate cover percentage by the Stony Coral species

*Mycetophyllia* spp. (unidentified)

Substrate cover percentage by the Sponge species

*Neofibularia nolitangere*

Substrate cover percentage by the Sponge species

*Neopetrosia carbonaria*

Substrate cover percentage by the Sponge species

*Neopetrosia proxima*

Substrate cover percentage by the Sponge species

*Neopetrosia rosariensis*

Substrate cover percentage by the Sponge species

*Neopetrosia* spp. (unidentified)

Substrate cover percentage by the Sponge species

*Niphates alba*

Substrate cover percentage by the Sponge species

*Niphates caycedoi*

Substrate cover percentage by the Sponge species

*Niphates digitalis*

Substrate cover percentage by the Sponge species

*Niphates erecta*

Substrate cover percentage by the Sponge species

*Niphates* spp. (unidentified)

Total number of Octocoral colonies

Substrate cover percentage by the Octocoral species

*Octocoral* (unidentified)

**Benthic-Sessile data label***Octocoral spp. (encrusting)**Octocorals (total encrusting)**Octocorals (total erect)**Oculina diffusa**Orbicella annularis**Orbicella annularis (complex)**Orbicella faveolata**Orbicella franksi**Padina spp.**Palythoa caribaeorum**Palythoa grandis**Partially bleached coral (total)**Petrosia pallasarca**Petrosia spp.**Petrosia weinbergi**Peyssonnelia spp.**Peyssonneliaceae (total)**Phorbas amaranthus**Phymanthus crucifer***Definition**

Substrate cover percentage by the Octocoral species  
Octocorals (encrusting) unidentified

Substrate cover percentage by all encrusting Octocoral  
species

Substrate cover percentage by all erect or branching  
Octocoral species

Substrate cover percentage by the Stony Coral species  
*Oculina diffusa*

Substrate cover percentage by the Stony Coral species  
*Orbicella annularis*. *Orbicella* species-specific data  
only available since 2018.

Substrate cover percentage by all the Stony Coral  
species part of the *Orbicella annularis* (complex).

Since 2018, when species of the complex are being  
identified, this is calculated as the aggregate of cover  
percentage of *Orbicella* species.

Substrate cover percentage by the Stony Coral species  
*Orbicella faveolata*. *Orbicellid* species-specific data  
only available since 2018.

Substrate cover percentage by the Stony Coral species  
*Orbicella franksi*. *Orbicellid* species-specific data only  
available since 2018.

Substrate cover percentage by the Macroalgae species  
*Padina* spp. (unidentified)

Substrate cover percentage by the Zoanthid species  
*Palythoa caribaeorum*

Substrate cover percentage by the Zoanthid species  
*Palythoa grandis*

Substrate cover percentage by Partially bleached coral

Substrate cover percentage by the Sponge species  
*Petrosia pallasarca*

Substrate cover percentage by the Sponge species  
*Petrosia* spp. (unidentified)

Substrate cover percentage by the Sponge species  
*Petrosia weinbergi*

Substrate cover percentage by the Peyssonneliaceae  
species *Peyssonnelia* spp. (unidentified)

Substrate cover percentage by all Peyssonneliaceae  
species

Substrate cover percentage by the Sponge species  
*Phorbas amaranthus*

Substrate cover percentage by the Anemone species  
*Phymanthus crucifer*

**Benthic-Sessile data label***Plakortis angulospiculatus**Plakortis halichondrioides**Plakortis spp.**Plexaura homomalla**Plexaura homomalla* (# col.)*Plexaura kukenthali**Plexaura kukenthali* (# col.)*Plexaura kuna* (# col.)*Plexaura spp.**Plexaura spp.* (# col.)*Plexaurella dichotoma* (# col.)*Plexaurella nutans**Plexaurella nutans* (# col.)*Plexaurella spp.**Plexaurella spp.* (# col.)*Porites astreoides**Porites colonensis**Porites divaricata**Porites furcata**Porites porites**Prosuberites laughlini***Definition**Substrate cover percentage by the Sponge species  
*Plakortis angulospiculatus*Substrate cover percentage by the Sponge species  
*Plakortis halichondrioides*Substrate cover percentage by the Sponge species  
*Plakortis spp.* (unidentified)Substrate cover percentage by the Octocoral species  
*Plexaura homomalla*Number of colonies of the Octocoral species *Plexaura homomalla*Substrate cover percentage by the Octocoral species  
*Plexaura kukenthali*Number of colonies of the Octocoral species *Plexaura kukenthali*Number of colonies of the Octocoral species *Plexaura kuna*Substrate cover percentage by the Octocoral species  
*Plexaura spp.* (unidentified)Number of colonies of the Octocoral species *Plexaura spp.* (unidentified)Number of colonies of the Octocoral species  
*Plexaurella dichotoma*Substrate cover percentage by the Octocoral species  
*Plexaurella nutans*Number of colonies of the Octocoral species  
*Plexaurella nutans*Substrate cover of the Octocoral species *Plexaurella spp.* (unidentified)Number of colonies of the Octocoral species  
*Plexaurella spp.* (unidentified)Substrate cover percentage by the Stony Coral species  
*Porites astreoides*Substrate cover percentage by the Stony Coral species  
*Porites colonensis*Substrate cover percentage by the Stony Coral species  
*Porites divaricata*Substrate cover percentage by the Stony Coral species  
*Porites furcata*Substrate cover percentage by the Stony Coral species  
*Porites porites*Substrate cover percentage by the Sponge species  
*Prosuberites laughlini*

**Benthic-Sessile data label***Pseudodiploria clivosa**Pseudodiploria strigosa**Pseudoplexaura flagellosa**Pseudoplexaura flagellosa* (# col.)*Pseudoplexaura porosa* (# col.)*Pseudoplexaura* spp.*Pseudoplexaura wadenaari**Pterogorgia citrina* (# col.)*Pterogorgia guadalupensis**Pterogorgia guadalupensis* (# col.)*Pterogorgia* spp.*Pterogorgia* spp. (# col.)*Ptilocaulis walpersii**Ramicrusta* spp.*Recently dead coral* (total)*Reef overhang**Ricordea florida**Rubble**Rugosity* (m)**Definition**Substrate cover percentage by the Stony Coral species  
*Pseudodiploria clivosa*Substrate cover percentage by the Stony Coral species  
*Pseudodiploria strigosa*Substrate cover percentage by the Octocoral species  
*Pseudoplexaura flagellosa*Number of colonies of the Octocoral species  
*Pseudoplexaura flagellosa*Number of colonies of the Octocoral species  
*Pseudoplexaura porosa*Substrate cover percentage by the Octocoral species  
*Pseudoplexaura* spp. (unidentified)Substrate cover percentage by the Octocoral species  
*Pseudoplexaura wadenaari*Number of colonies of the Octocoral species  
*Pterogorgia citrina*Substrate cover percentage by the Octocoral species  
*Pterogorgia guadalupensis*Number of colonies of the Octocoral species  
*Pterogorgia guadalupensis*Substrate cover percentage by the Octocoral species  
*Pterogorgia* spp. (unidentified)Number of colonies of the Octocoral species  
*Pterogorgia* spp. (unidentified)Substrate cover percentage by the Sponge species  
*Ptilocaulis walpersii*Substrate cover percentage by the Peyssonneliaceae  
species *Ramicrusta* spp. (unidentified)

Substrate cover percentage by Recently dead coral

Substrate cover percentage by the abiotic subcategory  
Reef overhangSubstrate cover percentage by the Anemone species  
*Ricordea florida*Substrate cover percentage by the abiotic subcategory  
RubbleIt is an index or measure of topographic complexity  
for habitats intercepted by transects. It is estimated as  
the total length of the transect chain divided by the  
horizontal distance covered (10m). Specification: The  
method was adapted by DNER fieldwork contractor  
from the CARICOMP (2001) \* protocol. The original  
reference for the method is Rogers et al. (1982) \*.



**Benthic-Sessile data label****Definition**

<i>Sand</i>	Substrate cover percentage by the abiotic subcategory Sand
<i>Sand and rubble</i>	Substrate cover percentage by the abiotic subcategory Sand and rubble
<i>Sargassum hystrix</i>	Substrate cover percentage by the Macroalgae species Sargassum hystrix
<i>Sargassum natans</i>	Substrate cover percentage by the Macroalgae species Sargassum natans
<i>Scolymia cubensis</i>	Substrate cover percentage by the Stony Coral species Scolymia cubensis
<i>Scolymia spp.</i>	Substrate cover percentage by the Stony Coral species Scolymia spp. (unidentified)
<i>Scopalina ruetzleri</i>	Substrate cover percentage by the Sponge species Scopalina ruetzleri
<i>Seagrass (total)</i>	Substrate cover percentage by all Seagrass species
<i>Siderastrea radians</i>	Substrate cover percentage by the Stony Coral species Siderastrea radians
<i>Siderastrea siderea</i>	Substrate cover percentage by the Stony Coral species Siderastrea siderea
<i>Smenospongia aurea</i>	Substrate cover percentage by the Sponge species Smenospongia aurea
<i>Smenospongia conulosa</i>	Substrate cover percentage by the Sponge species Smenospongia conulosa
<i>Solenastrea bournoni</i>	Substrate cover percentage by the Stony Coral species Solenastrea bournoni
<i>Spheciospongia vesparium</i>	Substrate cover percentage by the Sponge species Spheciospongia vesparium
<i>Spirastrella coccinea</i>	Substrate cover percentage by the Sponge species Spirastrella coccinea
<i>Spirastrella hartmani</i>	Substrate cover percentage by the Sponge species Spirastrella hartmani
<i>Sponge spp.</i>	Substrate cover percentage by the Sponge species Sponge spp. (unidentified)
<i>Sponges (total)</i>	Substrate cover percentage by all Sponge species
<i>Stephanocoenia intersepta</i>	Substrate cover percentage by the Stony Coral species Stephanocoenia intersepta
<i>Stony Coral spp.</i>	Substrate cover percentage by the Stony Coral species Stony Coral spp. (unidentified)
<i>Stony Corals (total # bleached col.)</i>	Total number of bleached Stony Coral colonies
<i>Stony Corals (total # diseased col.)</i>	Total number of diseased Stony Coral colonies
<i>Stony Corals (total #col.)</i>	Total number of [healthy and diseased] Stony Coral colonies

**Benthic-Sessile data label***Stony Corals (total)**Stylaster roseus**Stypopodium spp.**Stypopodium zonale**Suberea spp.**Svenzea zeai**Tedania klausii**Thalassia testudinum**Timea micraster**Topsentia ophiraphidites**Topsentia spp.**Trididemnum solidum**Tunicata (total)**Turf (mixed)**Turf (mixed) on Ramicrusta**Turf (mixed) with sediment**Turf Algae (total)**Udotea spp.**Valonia ventricosa**Verongula reisiwigi**Verongula rigida**Verongula spp.***Definition**

Substrate cover percentage by all Stony Coral species, including hyrocorals (Millepora)

Substrate cover percentage by the Stony Coral species Stylaster roseus

Substrate cover percentage by the Macroalgae species Stypopodium spp. (unidentified)

Substrate cover percentage by the Macroalgae species Stypopodium zonale

Substrate cover percentage by the Sponge species Suberea spp. (unidentified)

Substrate cover percentage by the Sponge species Svenzea zeai

Substrate cover percentage by the Sponge species Tedania klausii

Substrate cover percentage by the Seagrass species Thalassia testudinum

Substrate cover percentage by the Sponge species Timea micraster

Substrate cover percentage by the Sponge species Topsentia ophiraphidites

Substrate cover percentage by the Sponge species Topsentia spp. (unidentified)

Substrate cover percentage by the Ascidian species Trididemnum solidum

Substrate cover percentage by all Tunicata species  
Total substrate cover percentage by mixed Turf algae assemblages

Substrate cover percentage by Turf algae growing on Ramicrusta

Substrate cover percentage by Turf algae with sediment

Substrate cover percentage by all Turf Algae subcategories

Substrate cover percentage by the Macroalgae species Udotea spp. (unidentified)

Substrate cover percentage by the Macroalgae species Valonia ventricosa

Substrate cover percentage by the Sponge species Verongula reisiwigi

Substrate cover percentage by the Sponge species Verongula rigida

Substrate cover percentage by the Sponge species Verongula spp. (unidentified)



<b>Benthic-Sessile data label</b>	<b>Definition</b>
<i>Wrangelia bicuspidata</i>	Substrate cover percentage by the Macroalgae species <i>Wrangelia bicuspidata</i>
<i>Xestospongia muta</i>	Substrate cover percentage by the Sponge species <i>Xestospongia muta</i>
<i>Zoanthids (total)</i>	Substrate cover percentage by all Zoanthid species

## Fish and Macroinvertebrate Abundance

### Fish and Macroinvertebrate Abundance Data Description:

This data file includes reef fish and macroinvertebrates counts in 30-meter squared band transects from 1999-2020. The data units are number (#) of individuals/30 m<sup>2</sup>. This data file includes blank cells, representing species not considered during the survey and transects or stations not completed.

For data collection field methodologies see the Puerto Rico Coral Reef Monitoring Program Database Report (August 2019).

### Fish and Macroinvertebrate Abundance Data Label Definitions:

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Abudefduf saxatilis</i>	# of <i>Abudefduf saxatilis</i> individuals / 30 m <sup>2</sup>
<i>Abudefduf taurus</i>	# of <i>Abudefduf taurus</i> individuals / 30 m <sup>2</sup>
<i>Acanthemblemaria aspera</i>	# of <i>Acanthemblemaria aspera</i> individuals / 30 m <sup>2</sup>
<i>Acanthemblemaria chaplini</i>	# of <i>Acanthemblemaria chaplini</i> individuals / 30 m <sup>2</sup>
<i>Acanthemblemaria maria</i>	# of <i>Acanthemblemaria maria</i> individuals / 30 m <sup>2</sup>
<i>Acanthemblemaria spinosa</i>	# of <i>Acanthemblemaria spinosa</i> individuals / 30 m <sup>2</sup>
<i>Acanthostracion polygonius</i>	# of <i>Acanthostracion polygonius</i> individuals / 30 m <sup>2</sup>
<i>Acanthostracion quadricornis</i>	# of <i>Acanthostracion quadricornis</i> individuals / 30 m <sup>2</sup>
<i>Acanthurus chirurgus</i>	# of <i>Acanthurus chirurgus</i> individuals / 30 m <sup>2</sup>
<i>Acanthurus coeruleus</i>	# of <i>Acanthurus coeruleus</i> individuals / 30 m <sup>2</sup>
<i>Acanthurus tractus (bahianus)</i>	# of <i>Acanthurus tractus</i> and/or <i>bahianus</i> individuals / 30 m <sup>2</sup>
<i>Aetobatus narinari</i>	# of <i>Aetobatus narinari</i> individuals / 30 m <sup>2</sup>
<i>Aluterus scriptus</i>	# of <i>Aluterus scriptus</i> individuals / 30 m <sup>2</sup>
<i>Aluterus spp.</i>	# of <i>Aluterus</i> spp. (unidentified) individuals / 30 m <sup>2</sup>
<i>Amblycirrhitus pinos</i>	# of <i>Amblycirrhitus pinos</i> individuals / 30 m <sup>2</sup>
<i>Ancylomenes pedersoni</i>	# of <i>Ancylomenes pedersoni</i> individuals / 30 m <sup>2</sup>
<i>Anisotremus surinamensis</i>	# of <i>Anisotremus surinamensis</i> individuals / 30 m <sup>2</sup>
<i>Anisotremus virginicus</i>	# of <i>Anisotremus virginicus</i> individuals / 30 m <sup>2</sup>
<i>Apogon maculatus</i>	# of <i>Apogon maculatus</i> individuals / 30 m <sup>2</sup>
<i>Anomura spp.</i>	# of <i>Anomura</i> spp. individuals / 30 m <sup>2</sup>
<i>Apogon spp.</i>	# of <i>Apogon</i> spp. (unidentified) individuals / 30 m <sup>2</sup>
<i>Apogon townsendi</i>	# of <i>Apogon townsendi</i> individuals / 30 m <sup>2</sup>

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Astrophyton muricatum</i>	# of <i>Astrophyton muricatum</i> individuals / 30 m2
<i>Aulostomus maculatus</i>	# of <i>Aulostomus maculatus</i> individuals / 30 m2
<i>Balistes vetula</i>	# of <i>Balistes vetula</i> individuals / 30 m2
<i>Blenniidae spp.</i>	# of <i>Blenniidae spp.</i> (unidentified) individuals / 30 m2
<i>Bodianus rufus</i>	# of <i>Bodianus rufus</i> individuals / 30 m2
<i>Bothus lunatus</i>	# of <i>Bothus lunatus</i> individuals / 30 m2
<i>Calamus calamus</i>	# of <i>Calamus calamus</i> individuals / 30 m2
<i>Calamus pennatula</i>	# of <i>Calamus pennatula</i> individuals / 30 m2
<i>Calamus spp.</i>	# of <i>Calamus spp.</i> (unidentified) individuals / 30 m2
<i>Cantherhines macrocerus</i>	# of <i>Cantherhines macrocerus</i> individuals / 30 m2
<i>Cantherhines pullus</i>	# of <i>Cantherhines pullus</i> individuals / 30 m2
<i>Canthidermis sufflamen</i>	# of <i>Canthidermis sufflamen</i> individuals / 30 m2
<i>Canthigaster rostrata</i>	# of <i>Canthigaster rostrata</i> individuals / 30 m2
<i>Carangoides bartholomaei</i>	# of <i>Carangoides bartholomaei</i> individuals / 30 m2
<i>Caranx crysos</i>	# of <i>Caranx crysos</i> individuals / 30 m2
<i>Caranx hippos</i>	# of <i>Caranx hippos</i> individuals / 30 m2
<i>Caranx latus</i>	# of <i>Caranx latus</i> individuals / 30 m2
<i>Caranx lugubris</i>	# of <i>Caranx lugubris</i> individuals / 30 m2
<i>Caranx ruber</i>	# of <i>Caranx ruber</i> individuals / 30 m2
<i>Carcharhinus perezii</i>	# of <i>Carcharhinus perezii</i> individuals / 30 m2
<i>Carpilius corallinus</i>	# of <i>Carpilius corallinus</i> individuals / 30 m2
<i>Centropyge argi</i>	# of <i>Centropyge argi</i> individuals / 30 m2
<i>Cephalopholis cruentata</i>	# of <i>Cephalopholis cruentata</i> individuals / 30 m2
<i>Cephalopholis fulva</i>	# of <i>Cephalopholis fulva</i> individuals / 30 m2
<i>Chaenopsis ocellata</i>	# of <i>Chaenopsis ocellata</i> individuals / 30 m2
<i>Chaetodipterus faber</i>	# of <i>Chaetodipterus faber</i> individuals / 30 m2
<i>Chaetodon capistratus</i>	# of <i>Chaetodon capistratus</i> individuals / 30 m2
<i>Chaetodon ocellatus</i>	# of <i>Chaetodon ocellatus</i> individuals / 30 m2
<i>Chaetodon sedentarius</i>	# of <i>Chaetodon sedentarius</i> individuals / 30 m2
<i>Chaetodon striatus</i>	# of <i>Chaetodon striatus</i> individuals / 30 m2
<i>Chromis cyanea</i>	# of <i>Chromis cyanea</i> individuals / 30 m2
<i>Chromis insolata</i>	# of <i>Chromis insolata</i> individuals / 30 m2
<i>Chromis multilineata</i>	# of <i>Chromis multilineata</i> individuals / 30 m2
<i>Chromis spp.</i>	# of <i>Chromis spp.</i> (unidentified) individuals / 30 m2
<i>Clepticus parrae</i>	# of <i>Clepticus parrae</i> individuals / 30 m2
<i>Coralliophila caribaea</i>	# of <i>Coralliophila caribaea</i> individuals / 30 m2
<i>Coralliophila spp.</i>	# of <i>Coralliophila spp.</i> (unidentified) individuals / 30 m2
<i>Coryphopterus glaucofraenum</i>	# of <i>Coryphopterus glaucofraenum</i> individuals / 30 m2
<i>Coryphopterus lipernes</i>	# of <i>Coryphopterus lipernes</i> individuals / 30 m2
<i>Coryphopterus personatus</i>	# of <i>Coryphopterus personatus</i> individuals / 30 m2
<i>Coryphopterus spp.</i>	# of <i>Coryphopterus spp.</i> (unidentified) individuals / 30 m2
<i>Cryptotomus roseus</i>	# of <i>Cryptotomus roseus</i> individuals / 30 m2

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Ctenogobius saepepallens</i>	# of <i>Ctenogobius saepepallens</i> individuals / 30 m2
<i>Ctenoides scaber</i>	# of <i>Ctenoides scaber</i> individuals / 30 m2
<i>Cyphoma gibbosum</i>	# of <i>Cyphoma gibbosum</i> individuals / 30 m2
<i>Damithrax spinosissimus</i>	# of <i>Damithrax spinosissimus</i> individuals / 30 m2
<i>Decapterus macarellus</i>	# of <i>Decapterus macarellus</i> individuals / 30 m2
<i>Diadema antillarum</i>	# of <i>Diadema antillarum</i> individuals / 30 m2
<i>Diodon holocanthus</i>	# of <i>Diodon holocanthus</i> individuals / 30 m2
<i>Diodon hystrix</i>	# of <i>Diodon hystrix</i> individuals / 30 m2
<i>Echeneis naucrates</i>	# of <i>Echeneis naucrates</i> individuals / 30 m2
<i>Echinometra lucunter</i>	# of <i>Echinometra lucunter</i> individuals / 30 m2
<i>Echinometra</i> spp.	# of <i>Echinometra</i> spp. (unidentified) individuals / 30 m2
<i>Echinometra viridis</i>	# of <i>Echinometra viridis</i> individuals / 30 m2
<i>Elacatinus dilepis</i>	# of <i>Elacatinus dilepis</i> individuals / 30 m2
<i>Elacatinus evelynae</i>	# of <i>Elacatinus evelynae</i> individuals / 30 m2
<i>Elacatinus horsti</i>	# of <i>Elacatinus horsti</i> individuals / 30 m2
<i>Elacatinus saucrus</i>	# of <i>Elacatinus saucrus</i> individuals / 30 m2
<i>Epinephelus adscensionis</i>	# of <i>Epinephelus adscensionis</i> individuals / 30 m2
<i>Epinephelus guttatus</i>	# of <i>Epinephelus guttatus</i> individuals / 30 m2
<i>Epinephelus</i> spp.	# of <i>Epinephelus</i> spp. (unidentified) individuals / 30 m2
<i>Epinephelus striatus</i>	# of <i>Epinephelus striatus</i> individuals / 30 m2
<i>Equetus lanceolatus</i>	# of <i>Equetus lanceolatus</i> individuals / 30 m2
<i>Equetus punctatus</i>	# of <i>Equetus punctatus</i> individuals / 30 m2
<i>Eucidaris tribuloides</i>	# of <i>Eucidaris tribuloides</i> individuals / 30 m2
<i>Gastropoda</i> spp.	# of <i>Gastropoda</i> spp. (unidentified) individuals / 30 m2
<i>Gerres cinereus</i>	# of <i>Gerres cinereus</i> individuals / 30 m2
<i>Ginglymostoma cirratum</i>	# of <i>Ginglymostoma cirratum</i> individuals / 30 m2
<i>Gnatholepis thompsoni</i>	# of <i>Gnatholepis thompsoni</i> individuals / 30 m2
<i>Gobiosoma</i> spp.	# of <i>Gobiosoma</i> spp. (unidentified) individuals / 30 m2
<i>Gramma loreto</i>	# of <i>Gramma loreto</i> individuals / 30 m2
<i>Grapsus</i> spp.	# of <i>Grapsus</i> spp. (unidentified) individuals / 30 m2
<i>Gymnothorax funebris</i>	# of <i>Gymnothorax funebris</i> individuals / 30 m2
<i>Gymnothorax miliaris</i>	# of <i>Gymnothorax miliaris</i> individuals / 30 m2
<i>Gymnothorax moringa</i>	# of <i>Gymnothorax moringa</i> individuals / 30 m2
<i>Gymnothorax</i> spp.	# of <i>Gymnothorax</i> spp. (unidentified) individuals / 30 m2
<i>Haemulon album</i>	# of <i>Haemulon album</i> individuals / 30 m2
<i>Haemulon aurolineatum</i>	# of <i>Haemulon aurolineatum</i> individuals / 30 m2
<i>Haemulon carbonarium</i>	# of <i>Haemulon carbonarium</i> individuals / 30 m2
<i>Haemulon chrysargyreum</i>	# of <i>Haemulon chrysargyreum</i> individuals / 30 m2
<i>Haemulon flavolineatum</i>	# of <i>Haemulon flavolineatum</i> individuals / 30 m2
<i>Haemulon macrostomum</i>	# of <i>Haemulon macrostomum</i> individuals / 30 m2
<i>Haemulon melanurum</i>	# of <i>Haemulon melanurum</i> individuals / 30 m2
<i>Haemulon parra</i>	# of <i>Haemulon parra</i> individuals / 30 m2

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Haemulon plumierii</i>	# of <i>Haemulon plumierii</i> individuals / 30 m2
<i>Haemulon sciurus</i>	# of <i>Haemulon sciurus</i> individuals / 30 m2
<i>Haemulon spp.</i>	# of <i>Haemulon</i> spp. (unidentified) individuals / 30 m2
<i>Haemulon squamipinna</i>	# of <i>Haemulon squamipinna</i> individuals / 30 m2
<i>Haemulon vittatum</i>	# of <i>Haemulon vittatum</i> individuals / 30 m2
<i>Halichoeres bivittatus</i>	# of <i>Halichoeres bivittatus</i> individuals / 30 m2
<i>Halichoeres cyanocephalus</i>	# of <i>Halichoeres cyanocephalus</i> individuals / 30 m2
<i>Halichoeres garnoti</i>	# of <i>Halichoeres garnoti</i> individuals / 30 m2
<i>Halichoeres maculipinna</i>	# of <i>Halichoeres maculipinna</i> individuals / 30 m2
<i>Halichoeres poeyi</i>	# of <i>Halichoeres poeyi</i> individuals / 30 m2
<i>Halichoeres radiatus</i>	# of <i>Halichoeres radiatus</i> individuals / 30 m2
<i>Halichoeres spp.</i>	# of <i>Halichoeres</i> spp. (unidentified) individuals / 30 m2
<i>Hemiramphus brasiliensis</i>	# of <i>Hemiramphus brasiliensis</i> individuals / 30 m2
<i>Hermodice carunculata</i>	# of <i>Hermodice carunculata</i> individuals / 30 m2
<i>Heteropriacanthus cruentatus</i>	# of <i>Heteropriacanthus cruentatus</i> individuals / 30 m2
<i>Holacanthus ciliaris</i>	# of <i>Holacanthus ciliaris</i> individuals / 30 m2
<i>Holacanthus tricolor</i>	# of <i>Holacanthus tricolor</i> individuals / 30 m2
<i>Holocentrus adscensionis</i>	# of <i>Holocentrus adscensionis</i> individuals / 30 m2
<i>Holocentrus rufus</i>	# of <i>Holocentrus rufus</i> individuals / 30 m2
<i>Holothuria (Halodeima) mexicana</i>	# of <i>Holothuria (Halodeima) mexicana</i> individuals / 30 m2
<i>Hypleurochilus bermudensis</i>	# of <i>Hypleurochilus bermudensis</i> individuals / 30 m2
<i>Hypoplectrus aberrans</i>	# of <i>Hypoplectrus aberrans</i> individuals / 30 m2
<i>Hypoplectrus chlorurus</i>	# of <i>Hypoplectrus chlorurus</i> individuals / 30 m2
<i>Hypoplectrus gummigutta</i>	# of <i>Hypoplectrus gummigutta</i> individuals / 30 m2
<i>Hypoplectrus guttavarius</i>	# of <i>Hypoplectrus guttavarius</i> individuals / 30 m2
<i>Hypoplectrus indigo</i>	# of <i>Hypoplectrus indigo</i> individuals / 30 m2
<i>Hypoplectrus nigricans</i>	# of <i>Hypoplectrus nigricans</i> individuals / 30 m2
<i>Hypoplectrus puella</i>	# of <i>Hypoplectrus puella</i> individuals / 30 m2
<i>Hypoplectrus spp.</i>	# of <i>Hypoplectrus</i> spp. (unidentified) individuals / 30 m2
<i>Hypoplectrus unicolor</i>	# of <i>Hypoplectrus unicolor</i> individuals / 30 m2
<i>Isostichopus badionotus</i>	# of <i>Isostichopus badionotus</i> individuals / 30 m2
<i>Kyphosus sectatrix</i>	# of <i>Kyphosus sectatrix</i> individuals / 30 m2
<i>Kyphosus spp.</i>	# of <i>Kyphosus</i> spp. (unidentified) individuals / 30 m2
<i>Lachnolaimus maximus</i>	# of <i>Lachnolaimus maximus</i> individuals / 30 m2
<i>Lactophrys bicaudalis</i>	# of <i>Lactophrys bicaudalis</i> individuals / 30 m2
<i>Lactophrys trigonus</i>	# of <i>Lactophrys trigonus</i> individuals / 30 m2
<i>Lactophrys triqueter</i>	# of <i>Lactophrys triqueter</i> individuals / 30 m2
<i>Liopropoma rubre</i>	# of <i>Liopropoma rubre</i> individuals / 30 m2
<i>Liopropoma spp.</i>	# of <i>Liopropoma</i> spp. (unidentified) individuals / 30 m2
<i>Lobatus gigas</i>	# of <i>Lobatus gigas</i> individuals / 30 m2
<i>Lutjanus analis</i>	# of <i>Lutjanus analis</i> individuals / 30 m2

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Lutjanus apodus</i>	# of <i>Lutjanus apodus</i> individuals / 30 m2
<i>Lutjanus cyanopterus</i>	# of <i>Lutjanus cyanopterus</i> individuals / 30 m2
<i>Lutjanus griseus</i>	# of <i>Lutjanus griseus</i> individuals / 30 m2
<i>Lutjanus jocu</i>	# of <i>Lutjanus jocu</i> individuals / 30 m2
<i>Lutjanus mahogoni</i>	# of <i>Lutjanus mahogoni</i> individuals / 30 m2
<i>Lutjanus synagris</i>	# of <i>Lutjanus synagris</i> individuals / 30 m2
<i>Malacanthus plumieri</i>	# of <i>Malacanthus plumieri</i> individuals / 30 m2
<i>Malacoctenus gilli</i>	# of <i>Malacoctenus gilli</i> individuals / 30 m2
<i>Malacoctenus spp.</i>	# of <i>Malacoctenus spp.</i> (unidentified) individuals / 30 m2
<i>Malacoctenus triangulatus</i>	# of <i>Malacoctenus triangulatus</i> individuals / 30 m2
<i>Melichthys niger</i>	# of <i>Melichthys niger</i> individuals / 30 m2
<i>Microspathodon chrysurus</i>	# of <i>Microspathodon chrysurus</i> individuals / 30 m2
<i>Monacanthus spp.</i>	# of <i>Monacanthus spp.</i> (unidentified) individuals / 30 m2
<i>Monacanthus tuckeri</i>	# of <i>Monacanthus tuckeri</i> individuals / 30 m2
<i>Mulloidichthys martinicus</i>	# of <i>Mulloidichthys martinicus</i> individuals / 30 m2
<i>Muraena robusta</i>	# of <i>Muraena robusta</i> individuals / 30 m2
<i>Muraena spp.</i>	# of <i>Muraena spp.</i> (unidentified) individuals / 30 m2
<i>Mycteroperca interstitialis</i>	# of <i>Mycteroperca interstitialis</i> individuals / 30 m2
<i>Mycteroperca spp.</i>	# of <i>Mycteroperca spp.</i> (unidentified) individuals / 30 m2
<i>Mycteroperca tigris</i>	# of <i>Mycteroperca tigris</i> individuals / 30 m2
<i>Mycteroperca venenosa</i>	# of <i>Mycteroperca venenosa</i> individuals / 30 m2
<i>Myrichthys breviceps</i>	# of <i>Myrichthys breviceps</i> individuals / 30 m2
<i>Myrichthys ocellatus</i>	# of <i>Myrichthys ocellatus</i> individuals / 30 m2
<i>Myripristis jacobus</i>	# of <i>Myripristis jacobus</i> individuals / 30 m2
<i>Neoniphon marianus</i>	# of <i>Neoniphon marianus</i> individuals / 30 m2
<i>Octopus vulgaris</i>	# of <i>Octopus vulgaris</i> individuals / 30 m2
<i>Ocyurus chrysurus</i>	# of <i>Ocyurus chrysurus</i> individuals / 30 m2
<i>Odontoscion dentex</i>	# of <i>Odontoscion dentex</i> individuals / 30 m2
<i>Ophioblennius atlanticus</i>	# of <i>Ophioblennius atlanticus</i> individuals / 30 m2
<i>Ophioblennius macclurei</i>	# of <i>Ophioblennius macclurei</i> individuals / 30 m2
<i>Ophioderma spp.</i>	# of <i>Ophioderma spp.</i> (unidentified) individuals / 30 m2
<i>Ophiothrix (Acanthophiothrix) suenoni</i>	# of <i>Ophiothrix (Acanthophiothrix) suenoni</i> individuals / 30 m2
<i>Paguristes spp.</i>	# of <i>Paguristes spp.</i> (unidentified) individuals / 30 m2
<i>Pagurus spp.</i>	# of <i>Pagurus spp.</i> (unidentified) individuals / 30 m2
<i>Panulirus argus</i>	# of <i>Panulirus argus</i> individuals / 30 m2
<i>Panulirus guttatus</i>	# of <i>Panulirus guttatus</i> individuals / 30 m2
<i>Paralabrax dewegeri</i>	# of <i>Paralabrax dewegeri</i> individuals / 30 m2
<i>Paranthias furcifer</i>	# of <i>Paranthias furcifer</i> individuals / 30 m2
<i>Pareques acuminatus</i>	# of <i>Pareques acuminatus</i> individuals / 30 m2
<i>Pempheris schomburgkii</i>	# of <i>Pempheris schomburgkii</i> individuals / 30 m2
<i>Pempheris spp.</i>	# of <i>Pempheris spp.</i> (unidentified) individuals / 30 m2



<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Percnon gibbesi</i>	# of Percnon gibbesi individuals / 30 m2
<i>Periclimenes spp.</i>	# of Periclimenes spp. (unidentified) individuals / 30 m2
<i>Pomacanthus arcuatus</i>	# of Pomacanthus arcuatus individuals / 30 m2
<i>Pomacanthus paru</i>	# of Pomacanthus paru individuals / 30 m2
<i>Priacanthus arenatus</i>	# of Priacanthus arenatus individuals / 30 m2
<i>Priacanthus spp.</i>	# of Priacanthus spp. (unidentified) individuals / 30 m2
<i>Prognathodes aculeatus</i>	# of Prognathodes aculeatus individuals / 30 m2
<i>Prognathodes aya</i>	# of Prognathodes aya individuals / 30 m2
<i>Pseudupeneus maculatus</i>	# of Pseudupeneus maculatus individuals / 30 m2
<i>Pteria columbus</i>	# of Pteria columbus individuals / 30 m2
<i>Pterois volitans</i>	# of Pterois volitans individuals / 30 m2
<i>Rypticus saponaceus</i>	# of Rypticus saponaceus individuals / 30 m2
<i>Sargocentron coruscum</i>	# of Sargocentron coruscum individuals / 30 m2
<i>Sargocentron vexillarium</i>	# of Sargocentron vexillarium individuals / 30 m2
<i>Scarus coelestinus</i>	# of Scarus coelestinus individuals / 30 m2
<i>Scarus coeruleus</i>	# of Scarus coeruleus individuals / 30 m2
<i>Scarus guacamaia</i>	# of Scarus guacamaia individuals / 30 m2
<i>Scarus iseri</i>	# of Scarus iseri individuals / 30 m2
<i>Scarus spp.</i>	# of Scarus spp. (unidentified) individuals / 30 m2
<i>Scarus taeniopterus</i>	# of Scarus taeniopterus individuals / 30 m2
<i>Scarus vetula</i>	# of Scarus vetula individuals / 30 m2
<i>Scomberomorus cavalla</i>	# of Scomberomorus cavalla individuals / 30 m2
<i>Scomberomorus regalis</i>	# of Scomberomorus regalis individuals / 30 m2
<i>Scorpaena plumieri</i>	# of Scorpaena plumieri individuals / 30 m2
<i>Scyllarides spp.</i>	# of Scyllarides spp. (unidentified) individuals / 30 m2
<i>Serranus baldwini</i>	# of Serranus baldwini individuals / 30 m2
<i>Serranus spp.</i>	# of Serranus spp. (unidentified) individuals / 30 m2
<i>Serranus tabacarius</i>	# of Serranus tabacarius individuals / 30 m2
<i>Serranus tigrinus</i>	# of Serranus tigrinus individuals / 30 m2
<i>Sparisoma atomarium</i>	# of Sparisoma atomarium individuals / 30 m2
<i>Sparisoma aurofrenatum</i>	# of Sparisoma aurofrenatum individuals / 30 m2
<i>Sparisoma chrysopterum</i>	# of Sparisoma chrysopterum individuals / 30 m2
<i>Sparisoma radians</i>	# of Sparisoma radians individuals / 30 m2
<i>Sparisoma rubripinne</i>	# of Sparisoma rubripinne individuals / 30 m2
<i>Sparisoma spp.</i>	# of Sparisoma spp. (unidentified) individuals / 30 m2
<i>Sparisoma viride</i>	# of Sparisoma viride individuals / 30 m2
<i>Sphoeroides greeleyi</i>	# of Sphoeroides greeleyi individuals / 30 m2
<i>Sphoeroides spp.</i>	# of Sphoeroides spp. individuals / 30 m2
<i>Sphoeroides testudineus</i>	# of Sphoeroides testudineus individuals / 30 m2
<i>Sphyraena barracuda</i>	# of Sphyraena barracuda individuals / 30 m2
<i>Stegastes adustus</i>	# of Stegastes adustus individuals / 30 m2
<i>Stegastes fuscus</i>	# of Stegastes fuscus individuals / 30 m2

<b>Fish &amp; Macroinverts data label</b>	<b>Definition</b>
<i>Stegastes leucostictus</i>	# of <i>Stegastes leucostictus</i> individuals / 30 m <sup>2</sup>
<i>Stegastes partitus</i>	# of <i>Stegastes partitus</i> individuals / 30 m <sup>2</sup>
<i>Stegastes planifrons</i>	# of <i>Stegastes planifrons</i> individuals / 30 m <sup>2</sup>
<i>Stegastes variabilis</i>	# of <i>Stegastes variabilis</i> individuals / 30 m <sup>2</sup>
<i>Stenopus hispidus</i>	# of <i>Stenopus hispidus</i> individuals / 30 m <sup>2</sup>
<i>Stenorhynchus seticornis</i>	# of <i>Stenorhynchus seticornis</i> individuals / 30 m <sup>2</sup>
<i>Stephanolepis hispidus</i>	# of <i>Stephanolepis hispidus</i> individuals / 30 m <sup>2</sup>
<i>Stephanolepis setifer</i>	# of <i>Stephanolepis setifer</i> individuals / 30 m <sup>2</sup>
<i>Stramonita rustica</i>	# of <i>Stramonita rustica</i> individuals / 30 m <sup>2</sup>
<i>Syngnathus spp.</i>	# of <i>Syngnathus</i> spp. (unidentified) individuals / 30 m <sup>2</sup>
<i>Synodus intermedius</i>	# of <i>Synodus intermedius</i> individuals / 30 m <sup>2</sup>
<i>Synodus saurus</i>	# of <i>Synodus saurus</i> individuals / 30 m <sup>2</sup>
<i>Thalassoma bifasciatum</i>	# of <i>Thalassoma bifasciatum</i> individuals / 30 m <sup>2</sup>
<i>Tripneustes ventricosus</i>	# of <i>Tripneustes ventricosus</i> individuals / 30 m <sup>2</sup>
<i>Unidentified spp.(fish)</i>	# of unidentified fish species individuals / 30 m <sup>2</sup>
<i>Urobatis jamaicensis</i>	# of <i>Urobatis jamaicensis</i> individuals / 30 m <sup>2</sup>
<i>Xanthichthys ringens</i>	# of <i>Xanthichthys ringens</i> individuals / 30 m <sup>2</sup>

## Fish and Macroinvertebrate Size-Frequency Abundance

### Fish and Macroinvertebrate Size-Frequency Abundance Data Description

This data file includes commercially, and ecologically important reef fish and macroinvertebrates counts per size class between 2004 - 2020. Between 2004 – 2013, these counts by size were annotated using the Active Search Census (ASEC) methodology for 30 minutes per monitoring station. Between 2015 – 2019, the methodology was shifted from ASEC to an extended fish and macroinvertebrate abundance band transect. The data units between 2004 - 2013 are number (#) of individuals / 30 mins per site, and 2015 - present are number (#) of individuals / 60 m<sup>2</sup>. This data file includes blank cells, representing species not considered during the survey and transects or stations not completed.

For data collection field methodologies see the Puerto Rico Coral Reef Monitoring Program (PRCRMP) Database Report (August 2019).

Size classes and the size class size median in this data file are the following:

<b>Classes</b>	<b>Size (cm)</b>	<b>*Median (cm)</b>
c1	1-5	3
c2	6-10	8
c3	11-15	13

c4	16-20	18
c5	21-25	23
c6	26-30	28
c7	31-35	33
c8	36-40	38
c9	41-45	43
c10	46-50	48
c11	51-55	53
c12	56-60	58
c13	61-65	63
c14	66-70	68
c15	71-75	73
c16	76-80	78
c17	81-85	83
c18	86-90	88
c19	91-95	93
c20	96-100	98
c21	101-105	103
c22	106-110	108
c23	111-115	113
c24	116-120	118
c25	121-125	123
c30	146-150	148
c31	151-155	153
c32	156-160	158



c33	161-165	163
c34	166-170	168
c35	171-175	173
c36	176-180	178
c41	201-205	203

\*The size class median was used as the length value to estimate fish biomass using fishbase.org tools (see [fish biomass data description](#)).

## Fish and Macroinvertebrate Size-Frequency Abundance Data Label Definitions

### Fish & Macroinvert Size-freq. data label Definition

<i>Acanthurus chirurgus</i> c1	# of individuals of <i>Acanthurus chirurgus</i> between 1-5cm and a median size of 3cm
<i>Acanthurus chirurgus</i> c2	# of individuals of <i>Acanthurus chirurgus</i> between 6-10cm and a median size of 8cm
<i>Acanthurus chirurgus</i> c3	# of individuals of <i>Acanthurus chirurgus</i> between 11-15cm and a median size of 13cm
<i>Acanthurus chirurgus</i> c4	# of individuals of <i>Acanthurus chirurgus</i> between 16-20cm and a median size of 18cm
<i>Acanthurus coeruleus</i> c1	# of individuals of <i>Acanthurus coeruleus</i> between 1-5cm and a median size of 3cm
<i>Acanthurus coeruleus</i> c2	# of individuals of <i>Acanthurus coeruleus</i> between 6-10cm and a median size of 8cm
<i>Acanthurus coeruleus</i> c3	# of individuals of <i>Acanthurus coeruleus</i> between 11-15cm and a median size of 13cm
<i>Acanthurus coeruleus</i> c4	# of individuals of <i>Acanthurus coeruleus</i> between 16-20cm and a median size of 18cm
<i>Acanthurus coeruleus</i> c5	# of individuals of <i>Acanthurus coeruleus</i> between 21-25cm and a median size of 23cm
<i>Acanthurus tractus</i> (bahianus) c1	# of individuals of <i>Acanthurus tractus</i> and/or bahianus between 1-5cm and a median size of 3cm
<i>Acanthurus tractus</i> (bahianus) c2	# of individuals of <i>Acanthurus tractus</i> and/or bahianus between 6-10cm and a median size of 8cm
<i>Acanthurus tractus</i> (bahianus) c3	# of individuals of <i>Acanthurus tractus</i> and/or bahianus between 11-15cm and a median size of 13cm
<i>Acanthurus tractus</i> (bahianus) c4	# of individuals of <i>Acanthurus tractus</i> and/or bahianus between 16-20cm and a median size of 18cm
<i>Acanthurus tractus</i> (bahianus) c5	# of individuals of <i>Acanthurus tractus</i> and/or bahianus between 21-25cm and a median size of 23cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Aetobatus narinari</i> c18	# of individuals of <i>Aetobatus narinari</i> between 86-90cm and a median size of 88cm
<i>Aetobatus narinari</i> c19	# of individuals of <i>Aetobatus narinari</i> between 91-95cm and a median size of 93cm
<i>Aetobatus narinari</i> c24	# of individuals of <i>Aetobatus narinari</i> between 116-120cm and a median size of 118cm
<i>Aetobatus narinari</i> c30	# of individuals of <i>Aetobatus narinari</i> between 146-150cm and a median size of 148cm
<i>Aetobatus narinari</i> c34	# of individuals of <i>Aetobatus narinari</i> between 166-170cm and a median size of 168cm
<i>Aetobatus narinari</i> c35	# of individuals of <i>Aetobatus narinari</i> between 171-175cm and a median size of 173cm
<i>Aetobatus narinari</i> c8	# of individuals of <i>Aetobatus narinari</i> between 36-40cm and a median size of 38cm
<i>Alectis ciliaris</i> c9	# of individuals of <i>Alectis ciliaris</i> between 41-45cm and a median size of 43cm
<i>Anchoa</i> spp. c1	# of individuals of <i>Anchoa</i> spp. between 1-5cm and a median size of 3cm
<i>Balistes vetula</i> c10	# of individuals of <i>Balistes vetula</i> between 46-50cm and a median size of 48cm
<i>Balistes vetula</i> c5	# of individuals of <i>Balistes vetula</i> between 21-25cm and a median size of 23cm
<i>Balistes vetula</i> c6	# of individuals of <i>Balistes vetula</i> between 26-30cm and a median size of 28cm
<i>Balistes vetula</i> c7	# of individuals of <i>Balistes vetula</i> between 31-35cm and a median size of 33cm
<i>Balistes vetula</i> c8	# of individuals of <i>Balistes vetula</i> between 36-40cm and a median size of 38cm
<i>Balistes vetula</i> c9	# of individuals of <i>Balistes vetula</i> between 41-45cm and a median size of 43cm
<i>Calamus pennatula</i> c4	# of individuals of <i>Calamus pennatula</i> between 16-20cm and a median size of 18cm
<i>Calamus pennatula</i> c5	# of individuals of <i>Calamus pennatula</i> between 21-25cm and a median size of 23cm
<i>Calamus pennatula</i> c6	# of individuals of <i>Calamus pennatula</i> between 26-30cm and a median size of 28cm
<i>Calamus pennatula</i> c7	# of individuals of <i>Calamus pennatula</i> between 31-35cm and a median size of 33cm
<i>Canthidermis sufflamen</i> c12	# of individuals of <i>Canthidermis sufflamen</i> between 56-60cm and a median size of 58cm
<i>Caranx crysos</i> c1	# of individuals of <i>Caranx crysos</i> between 1-5cm and a median size of 3cm

**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Caranx crysos c10</i>	# of individuals of <i>Caranx crysos</i> between 46-50cm and a median size of 48cm
<i>Caranx crysos c2</i>	# of individuals of <i>Caranx crysos</i> between 6-10cm and a median size of 8cm
<i>Caranx crysos c3</i>	# of individuals of <i>Caranx crysos</i> between 11-15cm and a median size of 13cm
<i>Caranx crysos c4</i>	# of individuals of <i>Caranx crysos</i> between 16-20cm and a median size of 18cm
<i>Caranx crysos c5</i>	# of individuals of <i>Caranx crysos</i> between 21-25cm and a median size of 23cm
<i>Caranx crysos c6</i>	# of individuals of <i>Caranx crysos</i> between 26-30cm and a median size of 28cm
<i>Caranx crysos c7</i>	# of individuals of <i>Caranx crysos</i> between 31-35cm and a median size of 33cm
<i>Caranx crysos c8</i>	# of individuals of <i>Caranx crysos</i> between 36-40cm and a median size of 38cm
<i>Caranx crysos c9</i>	# of individuals of <i>Caranx crysos</i> between 41-45cm and a median size of 43cm
<i>Caranx hippos c10</i>	# of individuals of <i>Caranx hippos</i> between 46-50cm and a median size of 48cm
<i>Caranx hippos c12</i>	# of individuals of <i>Caranx hippos</i> between 56-60cm and a median size of 58cm
<i>Caranx hippos c14</i>	# of individuals of <i>Caranx hippos</i> between 66-70cm and a median size of 68cm
<i>Caranx hippos c6</i>	# of individuals of <i>Caranx hippos</i> between 26-30cm and a median size of 28cm
<i>Caranx hippos c8</i>	# of individuals of <i>Caranx hippos</i> between 36-40cm and a median size of 38cm
<i>Caranx hippos c9</i>	# of individuals of <i>Caranx hippos</i> between 41-45cm and a median size of 43cm
<i>Caranx latus c10</i>	# of individuals of <i>Caranx latus</i> between 46-50cm and a median size of 48cm
<i>Caranx latus c11</i>	# of individuals of <i>Caranx latus</i> between 51-55cm and a median size of 53cm
<i>Caranx latus c2</i>	# of individuals of <i>Caranx latus</i> between 6-10cm and a median size of 8cm
<i>Caranx latus c3</i>	# of individuals of <i>Caranx latus</i> between 11-15cm and a median size of 13cm
<i>Caranx latus c6</i>	# of individuals of <i>Caranx latus</i> between 26-30cm and a median size of 28cm
<i>Caranx latus c8</i>	# of individuals of <i>Caranx latus</i> between 36-40cm and a median size of 38cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Caranx lugubris c10</i>	# of individuals of <i>Caranx lugubris</i> between 46-50cm and a median size of 48cm
<i>Caranx lugubris c12</i>	# of individuals of <i>Caranx lugubris</i> between 56-60cm and a median size of 58cm
<i>Caranx lugubris c14</i>	# of individuals of <i>Caranx lugubris</i> between 66-70cm and a median size of 68cm
<i>Caranx lugubris c16</i>	# of individuals of <i>Caranx lugubris</i> between 76-80cm and a median size of 78cm
<i>Caranx lugubris c2</i>	# of individuals of <i>Caranx lugubris</i> between 6-10cm and a median size of 8cm
<i>Caranx lugubris c6</i>	# of individuals of <i>Caranx lugubris</i> between 26-30cm and a median size of 28cm
<i>Caranx lugubris c8</i>	# of individuals of <i>Caranx lugubris</i> between 36-40cm and a median size of 38cm
<i>Caranx ruber c2</i>	# of individuals of <i>Caranx ruber</i> between 6-10cm and a median size of 8cm
<i>Caranx ruber c3</i>	# of individuals of <i>Caranx ruber</i> between 11-15cm and a median size of 13cm
<i>Caranx ruber c5</i>	# of individuals of <i>Caranx ruber</i> between 21-25cm and a median size of 23cm
<i>Caranx ruber c8</i>	# of individuals of <i>Caranx ruber</i> between 36-40cm and a median size of 38cm
<i>Carcharhinus limbatus c18</i>	# of individuals of <i>Carcharhinus limbatus</i> between 86-90cm and a median size of 88cm
<i>Carcharhinus perezii c14</i>	# of individuals of <i>Carcharhinus perezii</i> between 66-70cm and a median size of 68cm
<i>Carcharhinus perezii c16</i>	# of individuals of <i>Carcharhinus perezii</i> between 76-80cm and a median size of 78cm
<i>Carcharhinus perezii c18</i>	# of individuals of <i>Carcharhinus perezii</i> between 86-90cm and a median size of 88cm
<i>Carcharhinus perezii c19</i>	# of individuals of <i>Carcharhinus perezii</i> between 91-95cm and a median size of 93cm
<i>Carcharhinus perezii c30</i>	# of individuals of <i>Carcharhinus perezii</i> between 146-150cm and a median size of 148cm
<i>Cephalopholis cruentata c1</i>	# of individuals of <i>Cephalopholis cruentata</i> between 1-5cm and a median size of 3cm
<i>Cephalopholis cruentata c2</i>	# of individuals of <i>Cephalopholis cruentata</i> between 6-10cm and a median size of 8cm
<i>Cephalopholis cruentata c3</i>	# of individuals of <i>Cephalopholis cruentata</i> between 11-15cm and a median size of 13cm
<i>Cephalopholis cruentata c4</i>	# of individuals of <i>Cephalopholis cruentata</i> between 16-20cm and a median size of 18cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Cephalopholis cruentata c5</i>	# of individuals of <i>Cephalopholis cruentata</i> between 21-25cm and a median size of 23cm
<i>Cephalopholis cruentata c6</i>	# of individuals of <i>Cephalopholis cruentata</i> between 26-30cm and a median size of 28cm
<i>Cephalopholis cruentata c7</i>	# of individuals of <i>Cephalopholis cruentata</i> between 31-35cm and a median size of 33cm
<i>Cephalopholis fulva c1</i>	# of individuals of <i>Cephalopholis fulva</i> between 1-5cm and a median size of 3cm
<i>Cephalopholis fulva c2</i>	# of individuals of <i>Cephalopholis fulva</i> between 6-10cm and a median size of 8cm
<i>Cephalopholis fulva c3</i>	# of individuals of <i>Cephalopholis fulva</i> between 11-15cm and a median size of 13cm
<i>Cephalopholis fulva c4</i>	# of individuals of <i>Cephalopholis fulva</i> between 16-20cm and a median size of 18cm
<i>Cephalopholis fulva c5</i>	# of individuals of <i>Cephalopholis fulva</i> between 21-25cm and a median size of 23cm
<i>Cephalopholis fulva c6</i>	# of individuals of <i>Cephalopholis fulva</i> between 26-30cm and a median size of 28cm
<i>Cephalopholis fulva c7</i>	# of individuals of <i>Cephalopholis fulva</i> between 31-35cm and a median size of 33cm
<i>Chaetodon ocellatus c3</i>	# of individuals of <i>Chaetodon ocellatus</i> between 11-15cm and a median size of 13cm
<i>Chaetodon sedentarius c2</i>	# of individuals of <i>Chaetodon sedentarius</i> between 6-10cm and a median size of 8cm
<i>Chaetodon striatus c2</i>	# of individuals of <i>Chaetodon striatus</i> between 6-10cm and a median size of 8cm
<i>Chromis cyanea c1</i>	# of individuals of <i>Chromis cyanea</i> between 1-5cm and a median size of 3cm
<i>Chromis cyanea c2</i>	# of individuals of <i>Chromis cyanea</i> between 6-10cm and a median size of 8cm
<i>Cyphoma gibbosum (adult)</i>	# of individuals of adult <i>Cyphoma gibbosum</i>
<i>Damithrax spinosissimus c2</i>	# of individuals of <i>Damithrax spinosissimus</i> between 6-10cm and a median size of 8cm
<i>Damithrax spinosissimus c3</i>	# of individuals of <i>Damithrax spinosissimus</i> between 11-15cm and a median size of 13cm
<i>Decapterus macarellus c3</i>	# of individuals of <i>Decapterus macarellus</i> between 11-15cm and a median size of 13cm
<i>Decapterus macarellus c4</i>	# of individuals of <i>Decapterus macarellus</i> between 16-20cm and a median size of 18cm
<i>Diadema antillarum (adult)</i>	# of individuals of adult <i>Diadema antillarum</i>
<i>Echinometra viridis (adult)</i>	# of individuals of adult <i>Echinometra viridis</i>
<i>Elagatis bipinnulata c10</i>	# of individuals of <i>Elagatis bipinnulata</i> between 46-50cm and a median size of 48cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Elagatis bipinnulata c12</i>	# of individuals of <i>Elagatis bipinnulata</i> between 56-60cm and a median size of 58cm
<i>Elagatis bipinnulata c14</i>	# of individuals of <i>Elagatis bipinnulata</i> between 66-70cm and a median size of 68cm
<i>Elagatis bipinnulata c8</i>	# of individuals of <i>Elagatis bipinnulata</i> between 36-40cm and a median size of 38cm
<i>Epinephelus adscensionis c6</i>	# of individuals of <i>Epinephelus adscensionis</i> between 26-30cm and a median size of 28cm
<i>Epinephelus adscensionis c8</i>	# of individuals of <i>Epinephelus adscensionis</i> between 36-40cm and a median size of 38cm
<i>Epinephelus adscensionis c9</i>	# of individuals of <i>Epinephelus adscensionis</i> between 41-45cm and a median size of 43cm
<i>Epinephelus guttatus c10</i>	# of individuals of <i>Epinephelus guttatus</i> between 46-50cm and a median size of 48cm
<i>Epinephelus guttatus c2</i>	# of individuals of <i>Epinephelus guttatus</i> between 6-10cm and a median size of 8cm
<i>Epinephelus guttatus c3</i>	# of individuals of <i>Epinephelus guttatus</i> between 11-15cm and a median size of 13cm
<i>Epinephelus guttatus c4</i>	# of individuals of <i>Epinephelus guttatus</i> between 16-20cm and a median size of 18cm
<i>Epinephelus guttatus c5</i>	# of individuals of <i>Epinephelus guttatus</i> between 21-25cm and a median size of 23cm
<i>Epinephelus guttatus c6</i>	# of individuals of <i>Epinephelus guttatus</i> between 26-30cm and a median size of 28cm
<i>Epinephelus guttatus c7</i>	# of individuals of <i>Epinephelus guttatus</i> between 31-35cm and a median size of 33cm
<i>Epinephelus guttatus c8</i>	# of individuals of <i>Epinephelus guttatus</i> between 36-40cm and a median size of 38cm
<i>Epinephelus guttatus c9</i>	# of individuals of <i>Epinephelus guttatus</i> between 41-45cm and a median size of 43cm
<i>Epinephelus itajara c25</i>	# of individuals of <i>Epinephelus itajara</i> between 121-125cm and a median size of 123cm
<i>Epinephelus striatus c10</i>	# of individuals of <i>Epinephelus striatus</i> between 46-50cm and a median size of 48cm
<i>Epinephelus striatus c11</i>	# of individuals of <i>Epinephelus striatus</i> between 51-55cm and a median size of 53cm
<i>Epinephelus striatus c12</i>	# of individuals of <i>Epinephelus striatus</i> between 56-60cm and a median size of 58cm
<i>Epinephelus striatus c13</i>	# of individuals of <i>Epinephelus striatus</i> between 61-65cm and a median size of 63cm
<i>Epinephelus striatus c14</i>	# of individuals of <i>Epinephelus striatus</i> between 66-70cm and a median size of 68cm



**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Epinephelus striatus c15</i>	# of individuals of <i>Epinephelus striatus</i> between 71-75cm and a median size of 73cm
<i>Epinephelus striatus c18</i>	# of individuals of <i>Epinephelus striatus</i> between 86-90cm and a median size of 88cm
<i>Epinephelus striatus c5</i>	# of individuals of <i>Epinephelus striatus</i> between 21-25cm and a median size of 23cm
<i>Epinephelus striatus c7</i>	# of individuals of <i>Epinephelus striatus</i> between 31-35cm and a median size of 33cm
<i>Epinephelus striatus c8</i>	# of individuals of <i>Epinephelus striatus</i> between 36-40cm and a median size of 38cm
<i>Epinephelus striatus c9</i>	# of individuals of <i>Epinephelus striatus</i> between 41-45cm and a median size of 43cm
<i>Eretmochelys imbricata c14</i>	# of individuals of <i>Eretmochelys imbricata</i> between 66-70cm and a median size of 68cm
<i>Eucidaris tribuloides (adult)</i>	# of individuals of adult <i>Eucidaris tribuloides</i>
<i>Gerres cinereus c4</i>	# of individuals of <i>Gerres cinereus</i> between 16-20cm and a median size of 18cm
<i>Gerres cinereus c6</i>	# of individuals of <i>Gerres cinereus</i> between 26-30cm and a median size of 28cm
<i>Gerres cinereus c7</i>	# of individuals of <i>Gerres cinereus</i> between 31-35cm and a median size of 33cm
<i>Ginglymostoma cirratum c14</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 66-70cm and a median size of 68cm
<i>Ginglymostoma cirratum c16</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 76-80cm and a median size of 78cm
<i>Ginglymostoma cirratum c18</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 86-90cm and a median size of 88cm
<i>Ginglymostoma cirratum c20</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 96-100cm and a median size of 98cm
<i>Ginglymostoma cirratum c24</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 116-120cm and a median size of 118cm
<i>Ginglymostoma cirratum c30</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 146-150cm and a median size of 148cm
<i>Ginglymostoma cirratum c34</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 166-170cm and a median size of 168cm
<i>Ginglymostoma cirratum c36</i>	# of individuals of <i>Ginglymostoma cirratum</i> between 176-180cm and a median size of 178cm
<i>Gramma loreto c1</i>	# of individuals of <i>Gramma loreto</i> between 1-5cm and a median size of 3cm
<i>Gramma loreto c2</i>	# of individuals of <i>Gramma loreto</i> between 6-10cm and a median size of 8cm
<i>Gymnothorax moringa c15</i>	# of individuals of <i>Gymnothorax moringa</i> between 71-75cm and a median size of 73cm



**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Gymnothorax moringa</i> c16	# of individuals of <i>Gymnothorax moringa</i> between 76-80cm and a median size of 78cm
<i>Haemulon plumierii</i> c6	# of individuals of <i>Haemulon plumierii</i> between 26-30cm and a median size of 28cm
<i>Haemulon plumierii</i> c7	# of individuals of <i>Haemulon plumierii</i> between 31-35cm and a median size of 33cm
<i>Halodeima mexicana</i> c5	# of individuals of <i>Halodeima mexicana</i> between 21-25cm and a median size of 23cm
<i>Halodeima mexicana</i> c6	# of individuals of <i>Halodeima mexicana</i> between 26-30cm and a median size of 28cm
<i>Holacanthus ciliaris</i> c10	# of individuals of <i>Holacanthus ciliaris</i> between 46-50cm and a median size of 48cm
<i>Holacanthus ciliaris</i> c3	# of individuals of <i>Holacanthus ciliaris</i> between 11-15cm and a median size of 13cm
<i>Holacanthus ciliaris</i> c5	# of individuals of <i>Holacanthus ciliaris</i> between 21-25cm and a median size of 23cm
<i>Holacanthus ciliaris</i> c6	# of individuals of <i>Holacanthus ciliaris</i> between 26-30cm and a median size of 28cm
<i>Holacanthus ciliaris</i> c7	# of individuals of <i>Holacanthus ciliaris</i> between 31-35cm and a median size of 33cm
<i>Holacanthus ciliaris</i> c8	# of individuals of <i>Holacanthus ciliaris</i> between 36-40cm and a median size of 38cm
<i>Holacanthus ciliaris</i> c9	# of individuals of <i>Holacanthus ciliaris</i> between 41-45cm and a median size of 43cm
<i>Holacanthus tricolor</i> c1	# of individuals of <i>Holacanthus tricolor</i> between 1-5cm and a median size of 3cm
<i>Holacanthus tricolor</i> c2	# of individuals of <i>Holacanthus tricolor</i> between 6-10cm and a median size of 8cm
<i>Holacanthus tricolor</i> c3	# of individuals of <i>Holacanthus tricolor</i> between 11-15cm and a median size of 13cm
<i>Holacanthus tricolor</i> c4	# of individuals of <i>Holacanthus tricolor</i> between 16-20cm and a median size of 18cm
<i>Holacanthus tricolor</i> c5	# of individuals of <i>Holacanthus tricolor</i> between 21-25cm and a median size of 23cm
<i>Holacanthus tricolor</i> c7	# of individuals of <i>Holacanthus tricolor</i> between 31-35cm and a median size of 33cm
<i>Hypanus americanus</i> c10	# of individuals of <i>Hypanus americanus</i> between 46-50cm and a median size of 48cm
<i>Hypanus americanus</i> c12	# of individuals of <i>Hypanus americanus</i> between 56-60cm and a median size of 58cm
<i>Hypanus americanus</i> c14	# of individuals of <i>Hypanus americanus</i> between 66-70cm and a median size of 68cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Hypanus americanus c15</i>	# of individuals of <i>Hypanus americanus</i> between 71-75cm and a median size of 73cm
<i>Hypanus americanus c16</i>	# of individuals of <i>Hypanus americanus</i> between 76-80cm and a median size of 78cm
<i>Hypanus americanus c18</i>	# of individuals of <i>Hypanus americanus</i> between 86-90cm and a median size of 88cm
<i>Hypanus americanus c24</i>	# of individuals of <i>Hypanus americanus</i> between 116-120cm and a median size of 118cm
<i>Hypanus americanus c6</i>	# of individuals of <i>Hypanus americanus</i> between 26-30cm and a median size of 28cm
<i>Istiophorus albicans c30</i>	# of individuals of <i>Istiophorus albicans</i> between 146-150cm and a median size of 148cm
<i>Lachnolaimus maximus c10</i>	# of individuals of <i>Lachnolaimus maximus</i> between 46-50cm and a median size of 48cm
<i>Lachnolaimus maximus c11</i>	# of individuals of <i>Lachnolaimus maximus</i> between 51-55cm and a median size of 53cm
<i>Lachnolaimus maximus c12</i>	# of individuals of <i>Lachnolaimus maximus</i> between 56-60cm and a median size of 58cm
<i>Lachnolaimus maximus c13</i>	# of individuals of <i>Lachnolaimus maximus</i> between 61-65cm and a median size of 63cm
<i>Lachnolaimus maximus c3</i>	# of individuals of <i>Lachnolaimus maximus</i> between 11-15cm and a median size of 13cm
<i>Lachnolaimus maximus c4</i>	# of individuals of <i>Lachnolaimus maximus</i> between 16-20cm and a median size of 18cm
<i>Lachnolaimus maximus c5</i>	# of individuals of <i>Lachnolaimus maximus</i> between 21-25cm and a median size of 23cm
<i>Lachnolaimus maximus c6</i>	# of individuals of <i>Lachnolaimus maximus</i> between 26-30cm and a median size of 28cm
<i>Lachnolaimus maximus c7</i>	# of individuals of <i>Lachnolaimus maximus</i> between 31-35cm and a median size of 33cm
<i>Lachnolaimus maximus c8</i>	# of individuals of <i>Lachnolaimus maximus</i> between 36-40cm and a median size of 38cm
<i>Lachnolaimus maximus c9</i>	# of individuals of <i>Lachnolaimus maximus</i> between 41-45cm and a median size of 43cm
<i>Lactophrys trigonus c7</i>	# of individuals of <i>Lactophrys trigonus</i> between 31-35cm and a median size of 33cm
<i>Lactophrys triqueter c3</i>	# of individuals of <i>Lactophrys triqueter</i> between 11-15cm and a median size of 13cm
<i>Liopropoma rubre c2</i>	# of individuals of <i>Liopropoma rubre</i> between 6-10cm and a median size of 8cm
<i>Lobatus costatus c2</i>	# of individuals of <i>Lobatus costatus</i> between 6-10cm and a median size of 8cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Lobatus costatus c3</i>	# of individuals of <i>Lobatus costatus</i> between 11-15cm and a median size of 13cm
<i>Lobatus gigas c3</i>	# of individuals of <i>Lobatus gigas</i> between 11-15cm and a median size of 13cm
<i>Lobatus gigas c5</i>	# of individuals of <i>Lobatus gigas</i> between 21-25cm and a median size of 23cm
<i>Lobatus gigas c6</i>	# of individuals of <i>Lobatus gigas</i> between 26-30cm and a median size of 28cm
<i>Lutjanus analis c1</i>	# of individuals of <i>Lutjanus analis</i> between 1-5cm and a median size of 3cm
<i>Lutjanus analis c10</i>	# of individuals of <i>Lutjanus analis</i> between 46-50cm and a median size of 48cm
<i>Lutjanus analis c12</i>	# of individuals of <i>Lutjanus analis</i> between 56-60cm and a median size of 58cm
<i>Lutjanus analis c15</i>	# of individuals of <i>Lutjanus analis</i> between 71-75cm and a median size of 73cm
<i>Lutjanus analis c2</i>	# of individuals of <i>Lutjanus analis</i> between 6-10cm and a median size of 8cm
<i>Lutjanus analis c3</i>	# of individuals of <i>Lutjanus analis</i> between 11-15cm and a median size of 13cm
<i>Lutjanus analis c4</i>	# of individuals of <i>Lutjanus analis</i> between 16-20cm and a median size of 18cm
<i>Lutjanus analis c5</i>	# of individuals of <i>Lutjanus analis</i> between 21-25cm and a median size of 23cm
<i>Lutjanus analis c6</i>	# of individuals of <i>Lutjanus analis</i> between 26-30cm and a median size of 28cm
<i>Lutjanus analis c7</i>	# of individuals of <i>Lutjanus analis</i> between 31-35cm and a median size of 33cm
<i>Lutjanus analis c8</i>	# of individuals of <i>Lutjanus analis</i> between 36-40cm and a median size of 38cm
<i>Lutjanus analis c9</i>	# of individuals of <i>Lutjanus analis</i> between 41-45cm and a median size of 43cm
<i>Lutjanus apodus c10</i>	# of individuals of <i>Lutjanus apodus</i> between 46-50cm and a median size of 48cm
<i>Lutjanus apodus c2</i>	# of individuals of <i>Lutjanus apodus</i> between 6-10cm and a median size of 8cm
<i>Lutjanus apodus c3</i>	# of individuals of <i>Lutjanus apodus</i> between 11-15cm and a median size of 13cm
<i>Lutjanus apodus c4</i>	# of individuals of <i>Lutjanus apodus</i> between 16-20cm and a median size of 18cm
<i>Lutjanus apodus c5</i>	# of individuals of <i>Lutjanus apodus</i> between 21-25cm and a median size of 23cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Lutjanus apodus c6</i>	# of individuals of <i>Lutjanus apodus</i> between 26-30cm and a median size of 28cm
<i>Lutjanus apodus c7</i>	# of individuals of <i>Lutjanus apodus</i> between 31-35cm and a median size of 33cm
<i>Lutjanus apodus c8</i>	# of individuals of <i>Lutjanus apodus</i> between 36-40cm and a median size of 38cm
<i>Lutjanus apodus c9</i>	# of individuals of <i>Lutjanus apodus</i> between 41-45cm and a median size of 43cm
<i>Lutjanus cyanopterus c10</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 46-50cm and a median size of 48cm
<i>Lutjanus cyanopterus c11</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 51-55cm and a median size of 53cm
<i>Lutjanus cyanopterus c12</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 56-60cm and a median size of 58cm
<i>Lutjanus cyanopterus c16</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 76-80cm and a median size of 78cm
<i>Lutjanus cyanopterus c18</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 86-90cm and a median size of 88cm
<i>Lutjanus cyanopterus c3</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 11-15cm and a median size of 13cm
<i>Lutjanus cyanopterus c4</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 16-20cm and a median size of 18cm
<i>Lutjanus cyanopterus c5</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 21-25cm and a median size of 23cm
<i>Lutjanus cyanopterus c8</i>	# of individuals of <i>Lutjanus cyanopterus</i> between 36-40cm and a median size of 38cm
<i>Lutjanus griseus c3</i>	# of individuals of <i>Lutjanus griseus</i> between 11-15cm and a median size of 13cm
<i>Lutjanus griseus c4</i>	# of individuals of <i>Lutjanus griseus</i> between 16-20cm and a median size of 18cm
<i>Lutjanus griseus c5</i>	# of individuals of <i>Lutjanus griseus</i> between 21-25cm and a median size of 23cm
<i>Lutjanus griseus c6</i>	# of individuals of <i>Lutjanus griseus</i> between 26-30cm and a median size of 28cm
<i>Lutjanus jocu c10</i>	# of individuals of <i>Lutjanus jocu</i> between 46-50cm and a median size of 48cm
<i>Lutjanus jocu c11</i>	# of individuals of <i>Lutjanus jocu</i> between 51-55cm and a median size of 53cm
<i>Lutjanus jocu c12</i>	# of individuals of <i>Lutjanus jocu</i> between 56-60cm and a median size of 58cm
<i>Lutjanus jocu c3</i>	# of individuals of <i>Lutjanus jocu</i> between 11-15cm and a median size of 13cm

**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Lutjanus jocu c4</i>	# of individuals of <i>Lutjanus jocu</i> between 16-20cm and a median size of 18cm
<i>Lutjanus jocu c6</i>	# of individuals of <i>Lutjanus jocu</i> between 26-30cm and a median size of 28cm
<i>Lutjanus jocu c7</i>	# of individuals of <i>Lutjanus jocu</i> between 31-35cm and a median size of 33cm
<i>Lutjanus jocu c8</i>	# of individuals of <i>Lutjanus jocu</i> between 36-40cm and a median size of 38cm
<i>Lutjanus jocu c9</i>	# of individuals of <i>Lutjanus jocu</i> between 41-45cm and a median size of 43cm
<i>Lutjanus mahogoni c2</i>	# of individuals of <i>Lutjanus mahogoni</i> between 6-10cm and a median size of 8cm
<i>Lutjanus mahogoni c3</i>	# of individuals of <i>Lutjanus mahogoni</i> between 11-15cm and a median size of 13cm
<i>Lutjanus mahogoni c4</i>	# of individuals of <i>Lutjanus mahogoni</i> between 16-20cm and a median size of 18cm
<i>Lutjanus mahogoni c5</i>	# of individuals of <i>Lutjanus mahogoni</i> between 21-25cm and a median size of 23cm
<i>Lutjanus mahogoni c6</i>	# of individuals of <i>Lutjanus mahogoni</i> between 26-30cm and a median size of 28cm
<i>Lutjanus mahogoni c7</i>	# of individuals of <i>Lutjanus mahogoni</i> between 31-35cm and a median size of 33cm
<i>Lutjanus mahogoni c8</i>	# of individuals of <i>Lutjanus mahogoni</i> between 36-40cm and a median size of 38cm
<i>Lutjanus synagris c2</i>	# of individuals of <i>Lutjanus synagris</i> between 6-10cm and a median size of 8cm
<i>Lutjanus synagris c3</i>	# of individuals of <i>Lutjanus synagris</i> between 11-15cm and a median size of 13cm
<i>Lutjanus synagris c4</i>	# of individuals of <i>Lutjanus synagris</i> between 16-20cm and a median size of 18cm
<i>Lutjanus synagris c5</i>	# of individuals of <i>Lutjanus synagris</i> between 21-25cm and a median size of 23cm
<i>Lutjanus synagris c6</i>	# of individuals of <i>Lutjanus synagris</i> between 26-30cm and a median size of 28cm
<i>Lutjanus synagris c8</i>	# of individuals of <i>Lutjanus synagris</i> between 36-40cm and a median size of 38cm
<i>Microspathodon chrysurus c1</i>	# of individuals of <i>Microspathodon chrysurus</i> between 1-5cm and a median size of 3cm
<i>Microspathodon chrysurus c2</i>	# of individuals of <i>Microspathodon chrysurus</i> between 6-10cm and a median size of 8cm
<i>Microspathodon chrysurus c3</i>	# of individuals of <i>Microspathodon chrysurus</i> between 11-15cm and a median size of 13cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Microspathodon chrysurus c4</i>	# of individuals of <i>Microspathodon chrysurus</i> between 16-20cm and a median size of 18cm
<i>Mycteroperca interstitialis c6</i>	# of individuals of <i>Mycteroperca interstitialis</i> between 26-30cm and a median size of 28cm
<i>Mycteroperca interstitialis c7</i>	# of individuals of <i>Mycteroperca interstitialis</i> between 31-35cm and a median size of 33cm
<i>Mycteroperca interstitialis c8</i>	# of individuals of <i>Mycteroperca interstitialis</i> between 36-40cm and a median size of 38cm
<i>Mycteroperca tigris c10</i>	# of individuals of <i>Mycteroperca tigris</i> between 46-50cm and a median size of 48cm
<i>Mycteroperca tigris c12</i>	# of individuals of <i>Mycteroperca tigris</i> between 56-60cm and a median size of 58cm
<i>Mycteroperca tigris c6</i>	# of individuals of <i>Mycteroperca tigris</i> between 26-30cm and a median size of 28cm
<i>Mycteroperca tigris c7</i>	# of individuals of <i>Mycteroperca tigris</i> between 31-35cm and a median size of 33cm
<i>Mycteroperca tigris c8</i>	# of individuals of <i>Mycteroperca tigris</i> between 36-40cm and a median size of 38cm
<i>Mycteroperca venenosa c10</i>	# of individuals of <i>Mycteroperca venenosa</i> between 46-50cm and a median size of 48cm
<i>Mycteroperca venenosa c11</i>	# of individuals of <i>Mycteroperca venenosa</i> between 51-55cm and a median size of 53cm
<i>Mycteroperca venenosa c12</i>	# of individuals of <i>Mycteroperca venenosa</i> between 56-60cm and a median size of 58cm
<i>Mycteroperca venenosa c14</i>	# of individuals of <i>Mycteroperca venenosa</i> between 66-70cm and a median size of 68cm
<i>Mycteroperca venenosa c15</i>	# of individuals of <i>Mycteroperca venenosa</i> between 71-75cm and a median size of 73cm
<i>Mycteroperca venenosa c16</i>	# of individuals of <i>Mycteroperca venenosa</i> between 76-80cm and a median size of 78cm
<i>Mycteroperca venenosa c20</i>	# of individuals of <i>Mycteroperca venenosa</i> between 96-100cm and a median size of 98cm
<i>Mycteroperca venenosa c6</i>	# of individuals of <i>Mycteroperca venenosa</i> between 26-30cm and a median size of 28cm
<i>Mycteroperca venenosa c7</i>	# of individuals of <i>Mycteroperca venenosa</i> between 31-35cm and a median size of 33cm
<i>Mycteroperca venenosa c8</i>	# of individuals of <i>Mycteroperca venenosa</i> between 36-40cm and a median size of 38cm
<i>Mycteroperca venenosa c9</i>	# of individuals of <i>Mycteroperca venenosa</i> between 41-45cm and a median size of 43cm
<i>Negaprion brevirostris c18</i>	# of individuals of <i>Negaprion brevirostris</i> between 86-90cm and a median size of 88cm



**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Negaprion brevirostris</i> c24	# of individuals of <i>Negaprion brevirostris</i> between 116-120cm and a median size of 118cm
<i>Octopus vulgaris</i> c10	# of individuals of <i>Octopus vulgaris</i> between 46-50cm and a median size of 48cm
<i>Ocyurus chrysurus</i> c1	# of individuals of <i>Ocyurus chrysurus</i> between 1-5cm and a median size of 3cm
<i>Ocyurus chrysurus</i> c10	# of individuals of <i>Ocyurus chrysurus</i> between 46-50cm and a median size of 48cm
<i>Ocyurus chrysurus</i> c2	# of individuals of <i>Ocyurus chrysurus</i> between 6-10cm and a median size of 8cm
<i>Ocyurus chrysurus</i> c3	# of individuals of <i>Ocyurus chrysurus</i> between 11-15cm and a median size of 13cm
<i>Ocyurus chrysurus</i> c4	# of individuals of <i>Ocyurus chrysurus</i> between 16-20cm and a median size of 18cm
<i>Ocyurus chrysurus</i> c5	# of individuals of <i>Ocyurus chrysurus</i> between 21-25cm and a median size of 23cm
<i>Ocyurus chrysurus</i> c6	# of individuals of <i>Ocyurus chrysurus</i> between 26-30cm and a median size of 28cm
<i>Ocyurus chrysurus</i> c7	# of individuals of <i>Ocyurus chrysurus</i> between 31-35cm and a median size of 33cm
<i>Ocyurus chrysurus</i> c8	# of individuals of <i>Ocyurus chrysurus</i> between 36-40cm and a median size of 38cm
<i>Ocyurus chrysurus</i> c9	# of individuals of <i>Ocyurus chrysurus</i> between 41-45cm and a median size of 43cm
<i>Opistognathus aurifrons</i> c1	# of individuals of <i>Opistognathus aurifrons</i> between 1-5cm and a median size of 3cm
<i>Opistognathus aurifrons</i> c2	# of individuals of <i>Opistognathus aurifrons</i> between 6-10cm and a median size of 8cm
<i>Opistognathus aurifrons</i> c3	# of individuals of <i>Opistognathus aurifrons</i> between 11-15cm and a median size of 13cm
<i>Panulirus argus</i> c1	# of individuals of <i>Panulirus argus</i> between 1-5cm and a median size of 3cm
<i>Panulirus argus</i> c10	# of individuals of <i>Panulirus argus</i> between 46-50cm and a median size of 48cm
<i>Panulirus argus</i> c2	# of individuals of <i>Panulirus argus</i> between 6-10cm and a median size of 8cm
<i>Panulirus argus</i> c3	# of individuals of <i>Panulirus argus</i> between 11-15cm and a median size of 13cm
<i>Panulirus argus</i> c4	# of individuals of <i>Panulirus argus</i> between 16-20cm and a median size of 18cm
<i>Panulirus argus</i> c5	# of individuals of <i>Panulirus argus</i> between 21-25cm and a median size of 23cm



**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Panulirus argus</i> c6	# of individuals of <i>Panulirus argus</i> between 26-30cm and a median size of 28cm
<i>Panulirus argus</i> c7	# of individuals of <i>Panulirus argus</i> between 31-35cm and a median size of 33cm
<i>Panulirus argus</i> c8	# of individuals of <i>Panulirus argus</i> between 36-40cm and a median size of 38cm
<i>Panulirus guttatus</i> c2	# of individuals of <i>Panulirus guttatus</i> between 6-10cm and a median size of 8cm
<i>Panulirus guttatus</i> c3	# of individuals of <i>Panulirus guttatus</i> between 11-15cm and a median size of 13cm
<i>Panulirus guttatus</i> c4	# of individuals of <i>Panulirus guttatus</i> between 16-20cm and a median size of 18cm
<i>Panulirus guttatus</i> c5	# of individuals of <i>Panulirus guttatus</i> between 21-25cm and a median size of 23cm
<i>Periclimenes pedersoni</i> (adult)	# of individuals of adult <i>Periclimenes pedersoni</i>
<i>Pomacanthus paru</i> c7	# of individuals of <i>Pomacanthus paru</i> between 31-35cm and a median size of 33cm
<i>Pomacanthus paru</i> c8	# of individuals of <i>Pomacanthus paru</i> between 36-40cm and a median size of 38cm
<i>Prognathodes aculeatus</i> c1	# of individuals of <i>Prognathodes aculeatus</i> between 1-5cm and a median size of 3cm
<i>Prognathodes aculeatus</i> c2	# of individuals of <i>Prognathodes aculeatus</i> between 6-10cm and a median size of 8cm
<i>Pterois volitans</i> c1	# of individuals of <i>Pterois</i> spp. between 1-5cm and a median size of 3cm
<i>Pterois volitans</i> c2	# of individuals of <i>Pterois</i> spp. between 6-10cm and a median size of 8cm
<i>Pterois volitans</i> c3	# of individuals of <i>Pterois</i> spp. between 11-15cm and a median size of 13cm
<i>Pterois volitans</i> c4	# of individuals of <i>Pterois</i> spp. between 16-20cm and a median size of 18cm
<i>Pterois volitans</i> c5	# of individuals of <i>Pterois</i> spp. between 21-25cm and a median size of 23cm
<i>Pterois volitans</i> c6	# of individuals of <i>Pterois</i> spp. between 26-30cm and a median size of 28cm
<i>Pterois volitans</i> c7	# of individuals of <i>Pterois</i> spp. between 31-35cm and a median size of 33cm
<i>Pterois volitans</i> c8	# of individuals of <i>Pterois</i> spp. between 36-40cm and a median size of 38cm
<i>Scarus coelestinus</i> c13	# of individuals of <i>Scarus coelestinus</i> between 61-65cm and a median size of 63cm
<i>Scarus coelestinus</i> c6	# of individuals of <i>Scarus coelestinus</i> between 26-30cm and a median size of 28cm

**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Scarus iseri c1</i>	# of individuals of <i>Scarus iseri</i> between 1-5cm and a median size of 3cm
<i>Scarus iseri c2</i>	# of individuals of <i>Scarus iseri</i> between 6-10cm and a median size of 8cm
<i>Scarus iseri c3</i>	# of individuals of <i>Scarus iseri</i> between 11-15cm and a median size of 13cm
<i>Scarus iseri c4</i>	# of individuals of <i>Scarus iseri</i> between 16-20cm and a median size of 18cm
<i>Scarus iseri c5</i>	# of individuals of <i>Scarus iseri</i> between 21-25cm and a median size of 23cm
<i>Scarus iseri c6</i>	# of individuals of <i>Scarus iseri</i> between 26-30cm and a median size of 28cm
<i>Scarus iseri c7</i>	# of individuals of <i>Scarus iseri</i> between 31-35cm and a median size of 33cm
<i>Scarus iseri c8</i>	# of individuals of <i>Scarus iseri</i> between 36-40cm and a median size of 38cm
<i>Scarus spp. c1</i>	# of individuals of <i>Scarus</i> spp. between 1-5cm and a median size of 2cm
<i>Scarus taeniopterus c1</i>	# of individuals of <i>Scarus taeniopterus</i> between 1-5cm and a median size of 3cm
<i>Scarus taeniopterus c10</i>	# of individuals of <i>Scarus taeniopterus</i> between 46-50cm and a median size of 48cm
<i>Scarus taeniopterus c2</i>	# of individuals of <i>Scarus taeniopterus</i> between 6-10cm and a median size of 8cm
<i>Scarus taeniopterus c3</i>	# of individuals of <i>Scarus taeniopterus</i> between 11-15cm and a median size of 13cm
<i>Scarus taeniopterus c4</i>	# of individuals of <i>Scarus taeniopterus</i> between 16-20cm and a median size of 18cm
<i>Scarus taeniopterus c5</i>	# of individuals of <i>Scarus taeniopterus</i> between 21-25cm and a median size of 23cm
<i>Scarus taeniopterus c6</i>	# of individuals of <i>Scarus taeniopterus</i> between 26-30cm and a median size of 28cm
<i>Scarus taeniopterus c8</i>	# of individuals of <i>Scarus taeniopterus</i> between 36-40cm and a median size of 38cm
<i>Scarus taeniopterus c9</i>	# of individuals of <i>Scarus taeniopterus</i> between 41-45cm and a median size of 43cm
<i>Scarus vetula c2</i>	# of individuals of <i>Scarus vetula</i> between 6-10cm and a median size of 8cm
<i>Scarus vetula c3</i>	# of individuals of <i>Scarus vetula</i> between 11-15cm and a median size of 13cm
<i>Scarus vetula c4</i>	# of individuals of <i>Scarus vetula</i> between 16-20cm and a median size of 18cm

**Fish & Macroinvert Size-freq.  
data label****Definition**

<i>Scarus vetula c5</i>	# of individuals of <i>Scarus vetula</i> between 21-25cm and a median size of 23cm
<i>Scarus vetula c6</i>	# of individuals of <i>Scarus vetula</i> between 26-30cm and a median size of 28cm
<i>Scarus vetula c7</i>	# of individuals of <i>Scarus vetula</i> between 31-35cm and a median size of 33cm
<i>Scarus vetula c8</i>	# of individuals of <i>Scarus vetula</i> between 36-40cm and a median size of 38cm
<i>Scomberomorus regalis c10</i>	# of individuals of <i>Scomberomorus regalis</i> between 46-50cm and a median size of 48cm
<i>Scomberomorus regalis c12</i>	# of individuals of <i>Scomberomorus regalis</i> between 56-60cm and a median size of 58cm
<i>Scomberomorus regalis c13</i>	# of individuals of <i>Scomberomorus regalis</i> between 61-65cm and a median size of 63cm
<i>Scomberomorus regalis c14</i>	# of individuals of <i>Scomberomorus regalis</i> between 66-70cm and a median size of 68cm
<i>Scomberomorus regalis c15</i>	# of individuals of <i>Scomberomorus regalis</i> between 71-75cm and a median size of 73cm
<i>Scomberomorus regalis c16</i>	# of individuals of <i>Scomberomorus regalis</i> between 76-80cm and a median size of 78cm
<i>Scomberomorus regalis c18</i>	# of individuals of <i>Scomberomorus regalis</i> between 86-90cm and a median size of 88cm
<i>Scomberomorus regalis c20</i>	# of individuals of <i>Scomberomorus regalis</i> between 96-100cm and a median size of 98cm
<i>Scomberomorus regalis c5</i>	# of individuals of <i>Scomberomorus regalis</i> between 21-25cm and a median size of 23cm
<i>Scomberomorus regalis c6</i>	# of individuals of <i>Scomberomorus regalis</i> between 26-30cm and a median size of 28cm
<i>Scomberomorus regalis c7</i>	# of individuals of <i>Scomberomorus regalis</i> between 31-35cm and a median size of 33cm
<i>Scomberomorus regalis c8</i>	# of individuals of <i>Scomberomorus regalis</i> between 36-40cm and a median size of 38cm
<i>Scomberomorus regalis c9</i>	# of individuals of <i>Scomberomorus regalis</i> between 41-45cm and a median size of 43cm
<i>Scyllarides spp. c4</i>	# of individuals of <i>Scyllarides</i> spp. between 16-20cm and a median size of 18cm
<i>Sepioteuthis spp. c5</i>	# of individuals of <i>Sepioteuthis</i> spp. between 21-25cm and a median size of 23cm
<i>Seriola rivoliana c10</i>	# of individuals of <i>Seriola rivoliana</i> between 46-50cm and a median size of 48cm
<i>Seriola rivoliana c14</i>	# of individuals of <i>Seriola rivoliana</i> between 66-70cm and a median size of 68cm

**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Sparisoma aurofrenatum c1</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 1-5cm and a median size of 3cm
<i>Sparisoma aurofrenatum c2</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 6-10cm and a median size of 8cm
<i>Sparisoma aurofrenatum c3</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 11-15cm and a median size of 13cm
<i>Sparisoma aurofrenatum c4</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 16-20cm and a median size of 18cm
<i>Sparisoma aurofrenatum c5</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 21-25cm and a median size of 23cm
<i>Sparisoma aurofrenatum c6</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 26-30cm and a median size of 28cm
<i>Sparisoma aurofrenatum c7</i>	# of individuals of <i>Sparisoma aurofrenatum</i> between 31-35cm and a median size of 33cm
<i>Sparisoma chrysopteron c3</i>	# of individuals of <i>Sparisoma chrysopteron</i> between 11-15cm and a median size of 13cm
<i>Sparisoma chrysopteron c4</i>	# of individuals of <i>Sparisoma chrysopteron</i> between 16-20cm and a median size of 18cm
<i>Sparisoma chrysopteron c5</i>	# of individuals of <i>Sparisoma chrysopteron</i> between 21-25cm and a median size of 23cm
<i>Sparisoma chrysopteron c6</i>	# of individuals of <i>Sparisoma chrysopteron</i> between 26-30cm and a median size of 28cm
<i>Sparisoma chrysopteron c7</i>	# of individuals of <i>Sparisoma chrysopteron</i> between 31-35cm and a median size of 33cm
<i>Sparisoma radians c1</i>	# of individuals of <i>Sparisoma radians</i> between 1-5cm and a median size of 3cm
<i>Sparisoma radians c2</i>	# of individuals of <i>Sparisoma radians</i> between 6-10cm and a median size of 8cm
<i>Sparisoma rubripinne c2</i>	# of individuals of <i>Sparisoma rubripinne</i> between 6-10cm and a median size of 8cm
<i>Sparisoma rubripinne c3</i>	# of individuals of <i>Sparisoma rubripinne</i> between 11-15cm and a median size of 13cm
<i>Sparisoma rubripinne c4</i>	# of individuals of <i>Sparisoma rubripinne</i> between 16-20cm and a median size of 18cm
<i>Sparisoma rubripinne c5</i>	# of individuals of <i>Sparisoma rubripinne</i> between 21-25cm and a median size of 23cm
<i>Sparisoma rubripinne c6</i>	# of individuals of <i>Sparisoma rubripinne</i> between 26-30cm and a median size of 28cm
<i>Sparisoma rubripinne c7</i>	# of individuals of <i>Sparisoma rubripinne</i> between 31-35cm and a median size of 33cm
<i>Sparisoma spp. (juv)</i>	# of individuals of juvenile <i>Sparisoma spp.</i>
<i>Sparisoma spp. c5</i>	# of individuals of <i>Sparisoma spp.</i> between 21-25cm and a median size of 23cm

**Fish & Macroinvert Size-freq.  
data label**

**Definition**

<i>Sparisoma spp. c7</i>	# of individuals of <i>Sparisoma</i> spp. between 31-35cm and a median size of 33cm
<i>Sparisoma viride c1</i>	# of individuals of <i>Sparisoma viride</i> between 1-5cm and a median size of 3cm
<i>Sparisoma viride c10</i>	# of individuals of <i>Sparisoma viride</i> between 46-50cm and a median size of 48cm
<i>Sparisoma viride c11</i>	# of individuals of <i>Sparisoma viride</i> between 51-55cm and a median size of 53cm
<i>Sparisoma viride c2</i>	# of individuals of <i>Sparisoma viride</i> between 6-10cm and a median size of 8cm
<i>Sparisoma viride c3</i>	# of individuals of <i>Sparisoma viride</i> between 11-15cm and a median size of 13cm
<i>Sparisoma viride c4</i>	# of individuals of <i>Sparisoma viride</i> between 16-20cm and a median size of 18cm
<i>Sparisoma viride c5</i>	# of individuals of <i>Sparisoma viride</i> between 21-25cm and a median size of 23cm
<i>Sparisoma viride c6</i>	# of individuals of <i>Sparisoma viride</i> between 26-30cm and a median size of 28cm
<i>Sparisoma viride c7</i>	# of individuals of <i>Sparisoma viride</i> between 31-35cm and a median size of 33cm
<i>Sparisoma viride c8</i>	# of individuals of <i>Sparisoma viride</i> between 36-40cm and a median size of 38cm
<i>Sparisoma viride c9</i>	# of individuals of <i>Sparisoma viride</i> between 41-45cm and a median size of 43cm
<i>Sphyraena barracuda c10</i>	# of individuals of <i>Sphyraena barracuda</i> between 46-50cm and a median size of 48cm
<i>Sphyraena barracuda c11</i>	# of individuals of <i>Sphyraena barracuda</i> between 51-55cm and a median size of 53cm
<i>Sphyraena barracuda c12</i>	# of individuals of <i>Sphyraena barracuda</i> between 56-60cm and a median size of 58cm
<i>Sphyraena barracuda c13</i>	# of individuals of <i>Sphyraena barracuda</i> between 61-65cm and a median size of 63cm
<i>Sphyraena barracuda c14</i>	# of individuals of <i>Sphyraena barracuda</i> between 66-70cm and a median size of 68cm
<i>Sphyraena barracuda c15</i>	# of individuals of <i>Sphyraena barracuda</i> between 71-75cm and a median size of 73cm
<i>Sphyraena barracuda c16</i>	# of individuals of <i>Sphyraena barracuda</i> between 76-80cm and a median size of 78cm
<i>Sphyraena barracuda c18</i>	# of individuals of <i>Sphyraena barracuda</i> between 86-90cm and a median size of 88cm
<i>Sphyraena barracuda c20</i>	# of individuals of <i>Sphyraena barracuda</i> between 96-100cm and a median size of 98cm

**Fish & Macroinvert Size-freq. data label****Definition**

<i>Sphyraena barracuda</i> c24	# of individuals of <i>Sphyraena barracuda</i> between 116-120cm and a median size of 118cm
<i>Sphyraena barracuda</i> c30	# of individuals of <i>Sphyraena barracuda</i> between 146-150cm and a median size of 148cm
<i>Sphyraena barracuda</i> c8	# of individuals of <i>Sphyraena barracuda</i> between 36-40cm and a median size of 38cm
<i>Sphyraena barracuda</i> c9	# of individuals of <i>Sphyraena barracuda</i> between 41-45cm and a median size of 43cm
<i>Stenopus hispidus</i> (adult)	# of individuals of adult <i>Stenopus hispidus</i>
<i>Stenorhynchus seticornis</i> (adult)	# of individuals of adult <i>Stenorhynchus seticornis</i>
<i>Trachinotus falcatus</i> c12	# of individuals of <i>Trachinotus falcatus</i> between 56-60cm and a median size of 58cm
<i>Trachinotus falcatus</i> c8	# of individuals of <i>Trachinotus falcatus</i> between 36-40cm and a median size of 38cm
<i>Tursiops</i> spp. c41	# of individuals of <i>Tursiops</i> spp. between 201-205cm and a median size of 203cm

## Fish Biomass

### Fish Biomass Data Description:

This data file includes commercially, and ecologically important reef fish biomass estimates between 2004 - 2020. Between 2004 - 2013 these estimates are based on size-frequency data annotated using the Active Search Census (ASEC) for 30 minutes per monitoring station and between 2015 – present estimates are based on five 60 m<sup>2</sup> band transects per station. The current (2015 - 2020) biomass data units are in grams per 60 meters squared (gr / 60 m<sup>2</sup>), while previous data (2004-2013) units are in grams per 30 minutes per site. Data is presented per transect between 2015 – 2020.

Biomass estimates were calculated using weight-length relationship coefficients and biomass calculator tools available in [Fishbase.org](https://fishbase.org). Fish species with no weight-length relationship information are not included in the biomass data file. The coefficients from fishbase.org used to obtain biomass estimates are those developed from fish samples geographically related to Puerto Rico, when available. The length values used [either as total length or fork length] to calculate the biomass of each species size class was the median size of the size class. First the estimated biomass of one individual of each species size class was calculated. Then, each individual biomass estimate was multiplied by the number of individuals observed per transect. Lastly, all biomass estimates per species size class are aggregated to report one biomass value per species. This data file includes blank cells, representing species not considered during the survey and transects or stations not completed.



For data collection field methodologies see the Puerto Rico Coral Reef Monitoring Program Database Report (August 2019).

### **Fish Biomass Data Label Definitions:**

From 2004 – 2013 the biomass unit is grams by 15-minute ASEC Survey, while from 2015-present the units are in grams / 60 m<sup>2</sup>.

<b>Fish Biomass data label</b>	<b>Definition</b>
<i>Acanthurus tractus (bahianus)</i>	grams of Acanthurus tractus and/or bahianus
<i>Acanthurus chirurgus</i>	grams of Acanthurus chirurgus
<i>Acanthurus coeruleus</i>	grams of Acanthurus coeruleus
<i>Aetobatus narinari</i>	grams of Aetobatus narinari
<i>Alectis ciliaris</i>	grams of Alectis ciliaris
<i>Balistes vetula</i>	grams of Balistes vetula
<i>Calamus pennatula</i>	grams of Calamus pennatula
<i>Canthidermis sufflamen</i>	grams of Canthidermis sufflamen
<i>Caranx crysos</i>	grams of Caranx crysos
<i>Caranx hippos</i>	grams of Caranx hippos
<i>Caranx latus</i>	grams of Caranx latus
<i>Caranx lugubris</i>	grams of Caranx lugubris
<i>Caranx ruber</i>	grams of Caranx ruber
<i>Carcharhinus limbatus</i>	grams of Carcharhinus limbatus
<i>Carcharhinus perezii</i>	grams of Carcharhinus perezii
<i>Cephalopholis cruentata</i>	grams of Cephalopholis cruentata
<i>Cephalopholis fulva</i>	grams of Cephalopholis fulva
<i>Chaetodon ocellatus</i>	grams of Chaetodon ocellatus
<i>Chaetodon sedentarius</i>	grams of Chaetodon sedentarius



<b>Fish Biomass data label</b>	<b>Definition</b>
<i>Chaetodon striatus</i>	grams of Chaetodon striatus
<i>Decapterus macarellus</i>	grams of Decapterus macarellus
<i>Elagatis bipinnulata</i>	grams of Elagatis bipinnulata
<i>Epinephelus adscensionis</i>	grams of Epinephelus adscensionis
<i>Epinephelus guttatus</i>	grams of Epinephelus guttatus
<i>Epinephelus itajara</i>	grams of Epinephelus itajara
<i>Epinephelus striatus</i>	grams of Epinephelus striatus
<i>Gerres cinereus</i>	grams of Gerres cinereus
<i>Ginglymostoma cirratum</i>	grams of Ginglymostoma cirratum
<i>Gymnothorax moringa</i>	grams of Gymnothorax moringa
<i>Haemulon plumierii</i>	grams of Haemulon plumierii
<i>Holacanthus ciliaris</i>	grams of Holacanthus ciliaris
<i>Holacanthus tricolor</i>	grams of Holacanthus tricolor
<i>Hypanus americanus</i>	grams of Hypanus americanus
<i>Istiophorus albicans</i>	grams of Istiophorus albicans
<i>Lachnolaimus maximus</i>	grams of Lachnolaimus maximus
<i>Lactophrys trigonus</i>	grams of Lactophrys trigonus
<i>Lactophrys triqueter</i>	grams of Lactophrys triqueter
<i>Lutjanus analis</i>	grams of Lutjanus analis
<i>Lutjanus apodus</i>	grams of Lutjanus apodus
<i>Lutjanus cyanopterus</i>	grams of Lutjanus cyanopterus
<i>Lutjanus griseus</i>	grams of Lutjanus griseus
<i>Lutjanus jocu</i>	grams of Lutjanus jocu
<i>Lutjanus mahogoni</i>	grams of Lutjanus mahogoni

<b>Fish Biomass data label</b>	<b>Definition</b>
<i>Lutjanus synagris</i>	grams of <i>Lutjanus synagris</i>
<i>Microspathodon chrysurus</i>	grams of <i>Microspathodon chrysurus</i>
<i>Mycteroperca interstitialis</i>	grams of <i>Mycteroperca interstitialis</i>
<i>Mycteroperca tigris</i>	grams of <i>Mycteroperca tigris</i>
<i>Mycteroperca venenosa</i>	grams of <i>Mycteroperca venenosa</i>
<i>Negaprion brevirostris</i>	grams of <i>Negaprion brevirostris</i>
<i>Ocyurus chrysurus</i>	grams of <i>Ocyurus chrysurus</i>
<i>Pomacanthus paru</i>	grams of <i>Pomacanthus paru</i>
<i>Pterois volitans</i>	grams of <i>Pterois volitans</i>
<i>Scarus coelestinus</i>	grams of <i>Scarus coelestinus</i>
<i>Scarus iseri</i>	grams of <i>Scarus iseri</i>
<i>Scarus taeniopterus</i>	grams of <i>Scarus taeniopterus</i>
<i>Scomberomorus regalis</i>	grams of <i>Scomberomorus regalis</i>
<i>Seriola rivoliana</i>	grams of <i>Seriola rivoliana</i>
<i>Sparisoma aurofrenatum</i>	grams of <i>Sparisoma aurofrenatum</i>
<i>Sparisoma chrysopteron</i>	grams of <i>Sparisoma chrysopteron</i>
<i>Sparisoma radians</i>	grams of <i>Sparisoma radians</i>
<i>Sparisoma rubripinne</i>	grams of <i>Sparisoma rubripinne</i>
<i>Sparisoma viride</i>	grams of <i>Sparisoma viride</i>
<i>Sphyraena barracuda</i>	grams of <i>Sphyraena barracuda</i>
<i>Trachinotus falcatus</i>	grams of <i>Trachinotus falcatus</i>

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