

Outreach and Education Advisory Panel (OEAP)

REPORT TO THE COUNCIL

180th CFMC Regular Hybrid Meeting

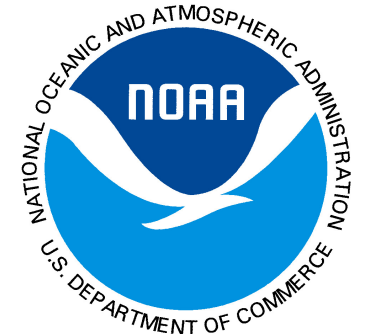
December 6-8, 2022

Embassy Suites Hotel, Tartak St. Carolina, PR



08-11-12, 2022

Alida Ortiz OEAP



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5YSP Goal: Engage, educate, and inform a variety of audiences to improve public understanding and participation in the Council process.

Basic concepts of **Ecosystem Based Management** and their application to the management measures. To help fishers and consumers in general to understand the components of the marine ecosystem, the importance of **the Fishery Ecosystem Plan** for the marine fishery ecosystem and their responsibility in keeping it healthy and sustainable.

Island Based Fishery Management Plans (IBFMP) for Puerto Rico, St. Thomas/St. John and St. Croix.

The objective is for fishers and consumers to recognize the species being managed, their natural function in the marine ecosystem and the importance of management measures to keep the ecosystem healthy and the fishery resources sustainable.

Sustainable Fish and Seafood consumption to educate consumers on the importance to consume these products and, at the same time be aware of the impact of removing those species from the ecosystem.

Marine Protected Areas in Puerto Rico, St. Thomas/St. John and St. Croix. Their importance as instruments for the protection of fishes spawning aggregation and the regulations applied to these areas from territorial and federal government agencies.

O & E Products

Fact Sheets

Biodiversity in the U.S. Caribbean marine fisheries

FORAGE FISH

FACT SHEET

FEBRUARY 2021

The NOAA Fisheries definition of Forage fish "are small schooling species that serve as prey for larger commercially and recreationally important fish, as well as for marine mammals and sea birds. Anchovies, herring, chub mackerel, and sardines are some common forage fish".

Forage fish are a fundamental part of marine food webs but are also used by humans for a variety of purposes. Ninety percent of the forage fish catch in the World is used to produce fishmeal or fish oil for use in the agriculture, aquaculture, pet food, and other industries. **Forage fish** also serve as bait or attractant for larger commercially and recreationally important fish. Forage species used to fish are also called **baitfish**.

The marine fishery ecosystem in the Caribbean has a great biodiversity that goes beyond the species caught and served in our plates. Due to the great number of species present on the Caribbean Region the definition of forage species can be complex.

SOME OF THE MOST COMMON FORAGE FISH SPECIES IN THE CARIBBEAN



Ballyhoo (*Hemiramphus brasiliensis*) are nearshore surface-swimming species that form dense schools, often in association with each other.



Scaled Herring (*Harengula jaguana*) is a gregarious species inhabiting the neritic environment and commonly schools around mangrove shorelines, seagrass beds, and surf zones.



Red Ear Herring (*Harengula humeralis*) is a gregarious species inhabiting the neritic environment and commonly schools around mangrove shorelines and seagrass beds.



Threadfin Herring (*Opisthonema oglinum*), commonly found forming dense schools in the upper 3m of the water column; feeding primarily by filtering copepods from the water column, shrimps and prawns, small finfish and benthos including copepods, crabs, worms, sponges and tunicates and detritus.



12/5/22 caribbeanfmc.com

Fact Sheet SEA URCHINS *Echinoderms/Echinodermata*

Biodiversity in the U.S. Caribbean marine fisheries ecosystem goes beyond the fish and seafood species.

Sea urchins belong to the Phylum Echinodermata, along with sea cucumbers, starfish, brittle stars, and crinoids. Sea urchins (class Echinoidea) are typically round and spiny, with tests (bodies) generally 1-4 in (3-10 cm).

Sea urchins are abundant, and ecologically important components of coral reef communities for the U.S. Caribbean marine fisheries.

They are common in shallow and deep waters around Puerto Rico. Sea urchins have a complex life history, which consists of external fertilization of an egg and planktonic larval dispersal.



Long-spined urchin
Diadema antillarum
Photo: Stacey Williams

The Essential Fish Habitat (EFH) for the sea urchins stock complex included in the IBFMPs consists of all waters from mean low water to the outer boundary of the U.S. Caribbean Exclusive Economic Zone (EEZ). Habitats used by eggs and larvae, are the mangroves and seagrass beds. Habitats used by juveniles and adults are the coral reef, hard bottom, sand, mud, and algal plain substrates.



Reef urchin
Eucidaris viridis
Photo: Stacey Williams



Sea egg
Tripneustes ventricosus
Photo: Stacey Williams

O & E Products Fact Sheets

Island Based Fisheries Management Plans

FACT SHEET
ISLAND BASED FISHERY MANAGEMENT PLANS

What is an IBFMP?

Two Island Based Fishery Management Plans are management updates of Federal Fisheries in the U.S. Caribbean. There will be three IBFMPs for Puerto Rico, one for St. Thomas-St. John and one for St. Croix.

For each island there are management measures for Reef Fish, Snappers, Spiny Lobster, Fishery Quota, Catch Quotas and for the Guano and Seal species (St. John) and for the Seal species (St. Croix). These are identified by the United States that have been managed in the United States Caribbean (USC).

What are the changes in the new IBFMPs?

Each of the Island Based Fishery Management Plans (IBFMPs) will be managed under the U.S. Caribbean-wide fishery management plan (FMP) in the Caribbean Sea. The IBFMPs will include the following changes:

- Management measures for Reef Fish, Snappers, Spiny Lobster, Fishery Quota, Catch Quotas and for the Guano and Seal species (St. John) and for the Seal species (St. Croix).
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What are the benefits of the IBFMPs?

WMA Fisheries and the Caribbean Fishery Management Council support the IBFMP-based approach to manage fisheries in the Caribbean Sea. The IBFMPs will provide the following benefits:

- Management measures for Reef Fish, Snappers, Spiny Lobster, Fishery Quota, Catch Quotas and for the Guano and Seal species (St. John) and for the Seal species (St. Croix).
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Otra Pregunta?

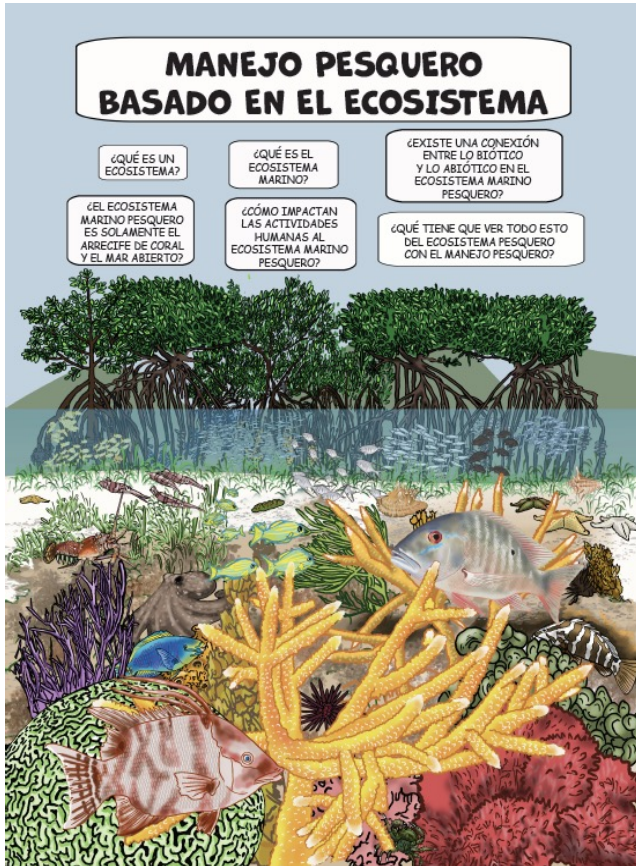
When will the IBFMPs be initiated?

On October 13, 2022, the Puerto Rico Fishery Management Plan, the St. Thomas-St. John, and the St. Croix will be the legal document to be followed in the US Caribbean.

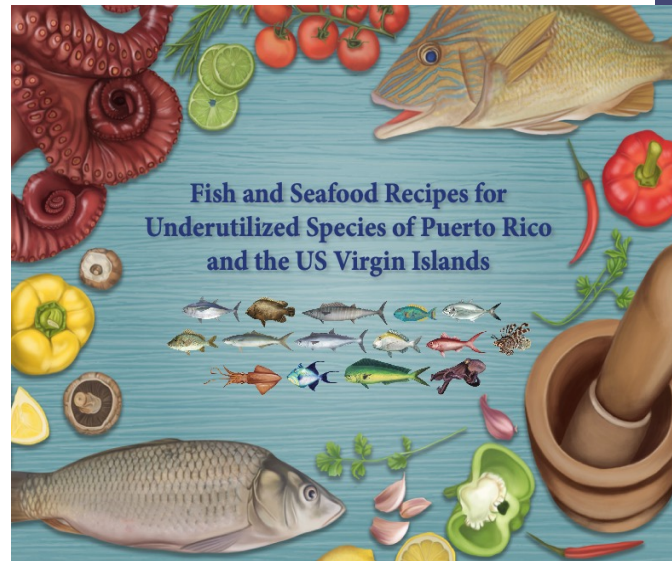
Where can you get more information on each IBFMP?

You can visit the CFMC website: www.caribbeanfmc.com

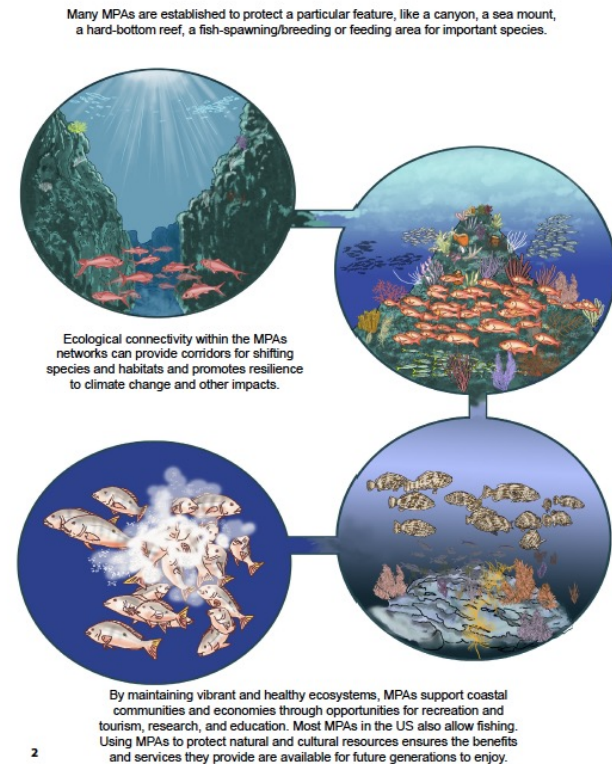
O & E Products



Sent for printing




1st drafts



Posters

Nassau grouper

Cherna criolla



Epinephelus striatus

This species has distinctive dark vertical stripes on a lighter background. It is an endemic species found only in the Caribbean Sea and the Gulf of Mexico.

El grupo de los Epinephelidae es el más grande de la familia Serranidae. En el mundo se conocen más de 100 especies. En el Caribe se encuentran más de 20 especies. El Nassau grouper es una de las más importantes especies de este grupo. Es un pez de gran tamaño que puede alcanzar hasta 100 cm de longitud y 10 kg de peso.

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Epinephelus striatus

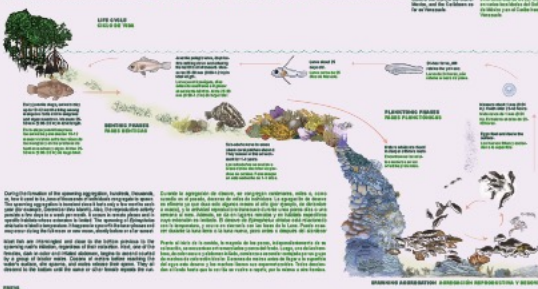
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Life Cycle

Ciclo de Vida




The Nassau grouper has a life cycle that includes several stages: egg, larva, juvenile, and adult. The adult Nassau grouper is a large fish that can reach up to 100 cm in length and 10 kg in weight. It is a highly valued species in the Caribbean Sea and the Gulf of Mexico.

El ciclo de vida del Nassau grouper incluye varias etapas: huevo, larva, juvenil y adulto. El adulto Nassau grouper es un pez grande que puede alcanzar hasta 100 cm de longitud y 10 kg de peso. Es una especie muy valorada en el Caribe y el Golfo de México.

Reproductive and Spawning

Reproducción y Desova




The Nassau grouper is a highly social species that forms large aggregations. These aggregations are used for both feeding and spawning. The spawning season for the Nassau grouper is typically from May to September.

El Nassau grouper es una especie muy social que forma grandes agregaciones. Estas agregaciones se utilizan tanto para alimentarse como para reproducirse. La temporada de reproducción del Nassau grouper es generalmente de mayo a septiembre.

Mutton snapper

Sama



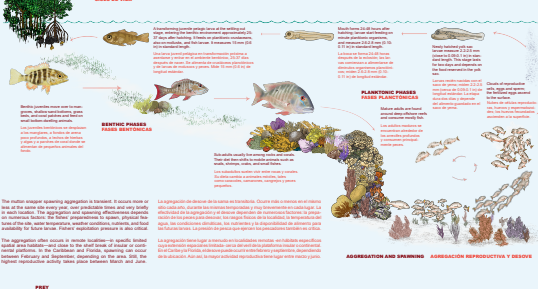
Lutjanus analis

This species is a highly valued fish in the Caribbean Sea and the Gulf of Mexico. It is a highly social species that forms large aggregations. The spawning season for the Mutton snapper is typically from May to September.

Esta especie es un pez muy valorado en el Caribe y el Golfo de México. Es una especie muy social que forma grandes agregaciones. La temporada de reproducción del Mutton snapper es generalmente de mayo a septiembre.

Life Cycle

Ciclo de Vida

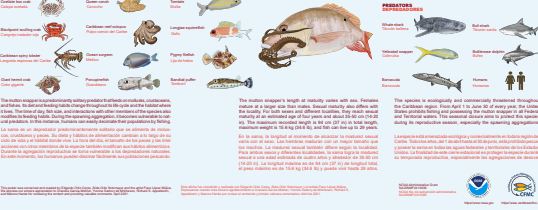


The Mutton snapper has a life cycle that includes several stages: egg, larva, juvenile, and adult. The adult Mutton snapper is a large fish that can reach up to 100 cm in length and 10 kg in weight. It is a highly valued species in the Caribbean Sea and the Gulf of Mexico.

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Reproductive and Spawning

Reproducción y Desova



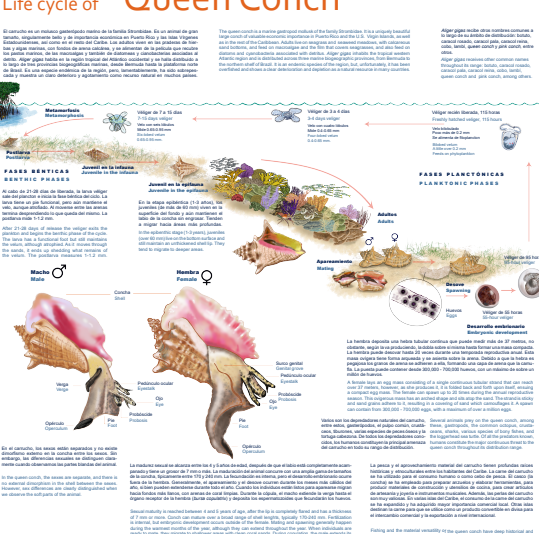
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Ciclo de vida del Carrucho

Life cycle of Queen Conch

Aliger gigas




The Queen Conch has a life cycle that includes several stages: egg, larva, juvenile, and adult. The adult Queen Conch is a large shellfish that can reach up to 100 mm in length and 10 kg in weight. It is a highly valued species in the Caribbean Sea and the Gulf of Mexico.

El ciclo de vida del Carrucho incluye varias etapas: huevo, larva, juvenil y adulto. El adulto Carrucho es un molusco grande que puede alcanzar hasta 100 mm de longitud y 10 kg de peso. Es una especie muy valorada en el Caribe y el Golfo de México.

Reproductive and Spawning

Reproducción y Desova




The Queen Conch is a highly social species that forms large aggregations. These aggregations are used for both feeding and spawning. The spawning season for the Queen Conch is typically from May to September.

El Carrucho es una especie muy social que forma grandes agregaciones. Estas agregaciones se utilizan tanto para alimentarse como para reproducirse. La temporada de reproducción del Carrucho es generalmente de mayo a septiembre.

¡No los confundas!

Comparación de las conchas adultas de los estrombidos presentes en Puerto Rico y las Islas Virgenes Estadounidenses



Aliger gigas, carrucho
Mide 152.4-330.2 mm (6-13 in)
Aliger gigas, queen conch
Length 152.4-330.2 mm (6-13 in)

Macrostrombus costalis, carrucho blanco
Mide 101.6-232.17 mm (4-9.14 in)
Macrostrombus costalis, white conch
Length 101.6-232.17 mm (4-9.14 in)


Aliger gigas, aliger 2 carrucho esquelado
Mide 7-200 mm (2.95-7.87 in)
Aliger gigas, queen conch
Length 75-200 mm (2.95-7.87 in)

Strombus magill, carrucho palmar
Mide 25-150 mm (1-5.12 in)
Strombus magill, West Indian lightning conch
Length 25-150 mm (1-5.12 in)

Lobatus cinctus, carrucho ala de halcón
Mide 35-120 mm (1.38-4.72 in)
Lobatus cinctus, hawk-wing conch
Length 35-120 mm (1.38-4.72 in)

Do not confuse them!

Comparison of adult shells of strombids present in Puerto Rico and the U.S. Virgin Islands



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Activities and Products proposed by OEAP for 2023-2024

Support development of MREP and PEPCO Workshops for the USVI

Workshops for fishers and communities on the content of the IBFMPs in Puerto Rico, St. Thomas/St John, and St. Croix

CFMC should create a collection of photographs and illustration of fish species, invertebrates, and marine fisheries ecosystem of the U.S. Caribbean. Ask researchers to send photos with species identification, where the photos were taken area, depth and who took the photos.

Activities and Products proposed by OEAP for 2023-2024

Produce Fact Sheets and booklets on:

- IBFMP essential topics (Chap. 5) for PR, St. Thomas/St. John and St. Croix: Fact sheets, stickers and infographics on each IBFMP. *
- Life Cycles of Nassau grouper, Mutton snapper, and Queen conch based on the texts and illustrations of existing posters.
- Content of FEP: Conceptual model, Endangered Species Act and Clean Water Act.
- Fish identification booklets for children based on IBFMPs.
- Integration of concepts on marine fisheries in the US Caribbean to the regular education curriculum.

Ongoing O&E projects

Illustrated Booklets on MPAs and Climate Change and U.S. Caribbean Fisheries

IBFMP essential topics (Chap. 5) for PR, St. Thomas/St. John and St. Croix: Fact sheets, stickers and infographics on each IBFMP.

Integration of concepts on marine fisheries in the US Caribbean to the regular education curriculum.



O & E Products...

- **2023 Calendar: Fishing Families** **Not finished**
 - 5 PR
 - 5 ST. Croix
 - - St. Thomas/St. John
- **Materials for snapper/grouper deep-water fishing**
 - DAPs recommendations for materials on deep-water snapper/grouper fishing regulations.
- Understanding Stock assessment...not only fishers, but all stakeholders
- Understanding management terminology: Optimum Yield (OY), Allowable Catch Limit (ACL), Acceptable Biological Catch (ABC) and others.
- **Calendars 2024, 2025**



Questions?

08-11-12, 2022



Alida Ortiz OEAP

Happy New Year

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