TAMPA BAY WATCH

Kids' pages

Are you ready to learn about the bay?

News for the kids of Tampa Bay!

Summer 2020

TAMPA BAY WATCH
Restoring the Bay Every Day

Got a Question? Ask a Scientist!

In This Issue:

We're Online!

If you haven't already, head to the Tampa Bay Watch website and check out the online education resources created by our restoration and education departments.

Included are Kids' Pages Investigations, videos, worksheets, and other resources which can be used at home or in the classroom! It's been a fun, new challenge to create this content for the community to continue our mission to save the bay every day.

Q Are there coral reefs in the estuary?

A As beautiful as they are, large coral reefs do not grow within the Tampa Bay estuary, though sporadic, independent colonies can be found at the junction of the bay and the Gulf of Mexico. The ambient conditions of estuaries tend to change, especially with the changing of the seasons, and alterations to parameters like salinity or temperature can be drastic and stressful on corals. However, Florida has a rather extensive reef tract off its southern coast where conditions are more suitable in the stable waters of the Atlantic Ocean and Gulf of Mexico.

The Florida Reef Tract stretches over 350 miles, from Port St. Lucie north of West Palm Beach all the way around Florida's peninsula to the Dry Tortugas past Key West. This reef tract most closely resembles a barrier reef, as opposed to an atoll or a fringe reef; however, because it's closer to the coast and lacks lagoons like most barrier reefs, it's more appropriately considered a bank reef. The Florida Reef Tract dates back about 10,000 years ago when it began forming with the thawing of the last Ice Age.

About 80 species of corals make up the Florida Reef Tract, and can be divided into two categories. **Stony corals** have calcium-based, limestone skeletons and act as the main reef builders by providing the foundation for other organisms to grow and attach. Examples of stony corals include brain coral and staghorn coral. The other category of corals is **octocorals,** or sea whips, sea fans and other soft corals. These corals have skeletal pieces, called spicules, in lieu of a limestone skeleton which allows more flexibility, adds complexity to the reef, and creates a dynamic environment for reef dwellers to thrive.

Staghorn corals in the Dry Tortugas.
© Rachel Hancock Davis/TNC

Coral reefs are one of the most crucial marine ecosystems. They provide habitat for juvenile sport fish and commercially harvested species, support the tourism and recreation industry, and buffer coastlines from storms. Because coral reefs are so vital, The Florida Reef Tract is protected by Biscayne National Park and the Florida Keys National Marine Sanctuary.

Sources: floridascoralreef.org; Florida Department of Environmental Protection; NOAA.gov

Expand Your Mind!

Meet & Greet: Florida's Reef Builders

GREAT STAR CORAL

Montastrea cavernosa

Great star coral is a type of bouldering coral, with large coral polyps (tiny living animals that make up the coral's surface) growing in a star pattern caused by the accordion-like shape of the skeleton. These massive corals are known for building colonies as large as eight feet in diameter! Along shallow reefs, great star coral colonies grow as round, dome-like structures. In deeper water, it flattens out to look like a plate. With an impressive depth range of 6-300 feet, great star coral is considered one of the deepest-dwelling stony corals of Florida.

Sources: edis.ifas.ufl.edu; Wikimedia Commons

ELKHORN CORAL

Acropora palmata

The widely-branching elkhorn coral was once an abundant reef-builder, along with its cousin, the staghorn coral. Their names come from the antlers of the hooved animals for which their colony shapes resemble. These two corals of the *Acropora* genus have experienced large-scale die-offs over recent years, largely from human threats influencing coral disease, bleaching, and rising ocean temperatures. In efforts to protect them, they were listed as threatened species under the Endangered Species Act in 2006 and can now be seen in coral nurseries to increase populations.

Sources: edis.ifas.ufl.edu, myfwc.com; Floridadep.gov; Wikimedia Commons

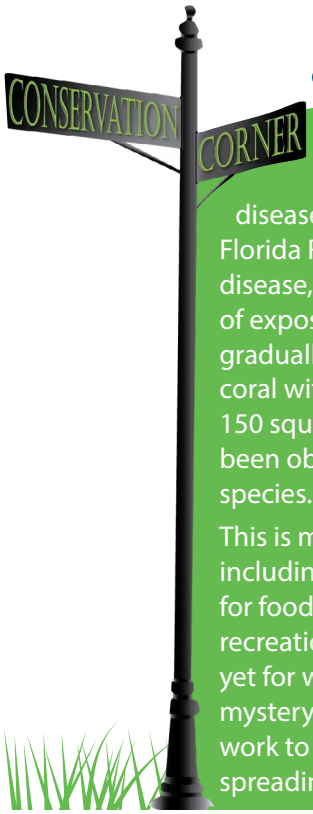
GROOVED BRAIN CORAL

Diploria labyrinthiformis

Grooved brain coral is a dome-shaped, boulder coral recognized for its bright yellow color and ridges that, to many, resemble those of the human brain. To others, the colony's deep grooves resemble a maze or labyrinth, hence the scientific name *labryinthiformis*. Brain corals are considered major reef architects. Their polyps pull calcium from the water to construct their skeletons and form the backbone of reefs. These corals dominate shallow-water reefs at depths of 15 to 50 feet.

Sources: FWC.com; edis.ifas.ufl.edu; oceana.org; Wikimedia Commons

Our education programs get kids into the bay!



Stony Coral Tissue Loss Disease

Stony Coral Tissue Loss Disease, otherwise known as White Plague, is a relatively new disease that is wreaking havoc throughout the Florida Reef Tract. First discovered in 2014, this disease, a type of bacteria, begins as small patches of exposed coral skeleton lacking tissue that gradually radiate out and eventually kill all living coral within the colony. So far, it has spread nearly 150 square miles of the Florida Reef Tract and has been observed in half of the 65 or so stony corals species.

This is more than troublesome for the organisms, including us humans, that rely on healthy reefs for food, shelter, breeding grounds, or even recreation. Even worse, there is no answer yet for what is causing this environmental mystery. Right now, scientists are still hard at work to determine exactly how White Plague is spreading and how it can be treated. At both the micro and macro levels, scientists, researchers, and conservationists are performing tests to find the answers.

However, there is hope. Corals can be resilient and bounce back as long as they receive a little jump start. We can do our part by reducing our land-based pollution. Fertilizers, pesticides, and other hazardous chemicals introduced with stormwater runoff prevent coral growth and reproduction. Suspended particles in the water like sediment or oil from land development and densely-populated coastal cities disrupt important functions within the coral bodies. Even land waste like pet feces can contribute to disease and mortality. It's important to minimize our waste on land—before it gets to the water—in order to give corals a fighting chance.

Sources: *NOAA.gov; MOTE Coral Health & Disease*

Fun Facts about Corals

- The oldest known colony in southeast Florida is over 300 years old!
- Corals are actually animals, in the phylum *Cnidaria,* and are related to anemones and jellyfish.
- It depends on the species, but most coral colonies only grow 0.5-1 inch a year!
- Octocorals get their name for the eight tentacles around each coral polyp.
- In addition to providing important nutrients, zooxanthellae (algae living within the coral polyps) are also responsible for giving many stony corals their color!

Sources: animaldiversity.org; floridascoralreef.org

Deep-water corals along Wagner Seamount located north of the Hawaiian Islands. Image credit: NOAA

Did You Know...

There are nearly as many species of deep-water corals as there are shallow-water corals, thriving 20,000 feet below the ocean's surface. These corals have adapted to live without sunlight. *Source: Smithsonian Ocean*

Paper Plate Coral Reefs!

Create your own paper plate coral reef scenescape following the instructions below.

Materials:

- Sea animal coloring page (from favorite search engine)
- Crayons/markers
- Scissors
- Two paper plates per aquarium
- Plastic food wrap
- Washable paint
- Paint brushes
- Glue
- Yarn/string
- Scotch tape

Instructions:

1. Color and cut out the animals you wish to use.
2. Cut the flat part out of one of the two paper plates, leaving a paper plate "frame."
3. On the cut-out flat piece, paint the background scene for your coral reef. Don't forget to include corals!
4. Glue your background scene to the inside of the second paper plate.
5. Glue plastic wrap to the inside of the "frame" to create a window for your aquarium.
6. Once everything is dry, separate your animals into three groups: to be glued to the background, to be hung with string, and to be taped to the plastic wrap (this creates a 3-D effect).
7. Glue or tape the animals to the background and the plastic wrap.
8. Attach yarn or string to the backs of the animals that will be hanging, then tape the ends of the yarn or string to the edge of the second plate.
9. Glue the "frame" to the second plate and allow to dry. If desired, paint the frame with your favorite color.
10. Enjoy your coral reef scenescape!

Source: picheaplace.com

Additional references from this issue: https://floridascoralreef.org/how-can-i-help; https://wusfnews.wusf.usf.edu/post/coral-grown-tampa-bay-helping-rescue-florida-keys-reefs#:~:text=Divers%20were%20busy%20in%20early,Florida%20and%20The%20Florida%20Keys.&text=%22It%20is%20the%20largest%20outplanting,CEO%20of%20the%20Florida%20Aquarium; https://floridadep.gov/rcp/rcp/content/floridas-coral-reefs; https://edis.ifas.ufl.edu/fa210; https://myfwc.com/research/habitat/coral/news-information/what-are-corals/

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Kids' Pages is a quarterly newsletter supplement to the *Bay Watch Log.*

Please get your kids involved and sign them up to be a member today! Email **membership@tampabaywatch.org** or visit tampabaywatch.org.

Cover masthead artwork drawn by Sarah Kelly, one of Tampa Bay's talented youth artists.

Estuary EDventures
Education through Restoration

TAMPA BAY WATCH

Kids' pages Investigations

Topic: Coral reefs

Summer 2020 edition

Instructions: Read through the appropriate *Kids' Pages* edition and answer the questions below. Once all the questions have been completed, refer to the Answer Key to check your work.

Multiple Choice (choose one):

1. **Why don't large coral reef communities grow in the Tampa Bay estuary?**

- ◯ a. Corals cannot grow in seagrass.
- ◯ b. The water is too shallow.
- ◯ c. Environmental conditions change too frequently.
- ◯ d. The water is too deep.

2. **What is the name of the large reef system on Florida's southern coast?**

- ◯ a. The Southern Reef Tract
- ◯ b. The Florida Barrier Reef
- ◯ c. The Great Fringe Reef
- ◯ d. The Florida Reef Tract

3. **Over how many miles does this reef system stretch?**

- ◯ a. 400
- ◯ b. 350
- ◯ c. 300
- ◯ d. 250

4. **How many species of coral make up the reef tract?**

- ◯ a. 50
- ◯ b. 60
- ◯ c. 70
- ◯ d. 80

5. **What are the two types of corals?**

- ◯ a. Boulder corals and brain corals
- ◯ b. Sea whips and branching corals
- ◯ c. Sea fans and soft corals
- ◯ d. Stony corals and octocorals

Fill in the Blank:

6. **The Florida Reef Tract most closely resembles a barrier reef; however, because it's close to the coast, it is more appropriately called a _____ reef.**

7. **The Florida Reef Tract dates back to over 10,000 years ago when it began forming with the thawing of the _____ (two words).**

8. **The coral species _____ (three words) is considered one of the deepest-dwelling stony corals in Florida.**

9. **Corals are animals that are related to _____ and _____.**

Short Response:

10. **According to the Conservation Corner of *Kids' Pages*, Stony Coral Tissue Loss (aka, "White Plague") is a disease ripping through corals across the Florida Reef Tract. Name five different ways you can help reduce stress on corals in Florida.**

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ANSWER KEY

Multiple Choice

1. C. Especially with the seasons, salt and rainfall can change the environment of the estuary.

2. D. It resides in the Atlantic Ocean and Gulf of Mexico.

3. B. It stretches from Port St. Lucie all the way past the Florida Keys to the Dry Tortugas.

4. D. Roughly 65 of the 80 species are stony, reef-building corals.

5. D. Stony corals provide foundation while octocorals provide complex habitats.

Fill in the Blank:

6. The Florida Reef Tract most closely resembles a barrier reef; however, because it's close to the coast, it is more appropriately called a **bank** reef.

7. The Florida Reef Tract dates back to over 10,000 years ago when it began forming with the thawing of the **Ice Age** (two words).

8. The coral species **Great Star Coral** (three words) is considered one of the deepest-dwelling stony corals in Florida.

9. Corals are animals that are related to **anemones** and **jellyfish**.

Short Response:

10. Answers will vary. *Example answer: At home, I can avoid using herbicides and pesticides in my lawn and garden, or find alternative solutions that are more eco-friendly. I can also avoid buying home and grocery items that are packed with a lot of plastic packaging. I can shop at second-hand stores and boutiques to buy existing quality clothes instead of buying "in style" trend items that require a lot of resources to make. Lastly, I can help clean up the coastlines so that trash does not enter into our waterways.*