

Kids' pages

Are you ready to learn about the bay?

News for the kids
of Tampa Bay!

Spring 2020



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A Closer Look at Mangrove Propagules

Is that a green bean? No: it's a mangrove propagule!

Propagules are the name given to seed pods of the red mangrove. These seed pods are said to look like long green beans! Mangroves fertilize their seed pods while they are still attached to the plant.

When they are ready, the propagules will detach from the parent plants and float in the water until they find a suitable spot to root and grow. Scientists say that they may often float—looking for the right spot to settle—for up to 40 days, but can survive even up to a year in saltwater without rooting!



Sources: naturalhistory2.si.edu, nhmi.org, restoreourshores.org, UlfMehlig.commons.wikimedia.org

Got a Question? Ask a Scientist!

Q What are mangroves?

A Mangroves are special salt-tolerant trees that are adapted for life in harsh coastal conditions. Strategies that help them survive this harsh environment include adapted roots, reproductive strategies, and salt balance strategies.

There are three main types of mangroves in Florida: red, black, and white mangroves. Red mangroves (*Rhizophora mangle*) can be distinguished by their branching reddish roots called prop and drop roots. These roots can “drop” from the upper branches and “prop” up the trees, thereby giving them extra support and protection. Red mangroves live closest to the water and build mangrove islands.

Found at slightly higher elevations is the black mangrove (*Avicennia germinans*). Their unique roots—called pneumatophores—resemble fingers sticking out of the soil, earning the nicknames “dead man fingers” or “snorkel roots.” Pneumatophores act as snorkels, helping the plant with gas exchange. Black mangroves also excrete salt on the underside of their leaves, an adaptation that helps them balance and maintain a source of freshwater.

The third mangrove in Florida, the white mangrove (*Laguncularia racemosa*), grows farthest away from the water.



Mangrove roots under water.

They feature more basic root structures and unique glands called nectaries—small bumps on the stem of each leaf. They also excrete sugar, which is believed to attract ants who provide protection to the plant from harmful insects.

There are around 469,000 acres of mangrove forests in South Florida. The important relationship between mangroves, the environment, and marine life is astounding! Mangroves provide a food source for marine life like shrimp, crabs, and fish. They are also a protective nursery habitat: their roots offer shelter to fish and other creatures until these juvenile animals are large enough to avoid most predators.

Florida's important recreational and commercial fisheries would drastically decline without healthy mangroves. Mangroves are essential bird rookeries and nesting areas for birds including herons, cormorants, egrets, and roseate spoonbills, and mangroves are an integral resource to Tampa Bay and to coastal communities around the world!

Sources: floridadep.gov, floridakeys.noaa.gov, floridamuseum.ufl.edu, marinespecies.org, nature.org.
Image source: Canva

Expand Your Mind!

Meet & Greet: Friends of the Mangrove Trees



WOOD STORK

Mycteria americana

Wood storks are large white and black wading birds that can grow to around 45 inches tall.

They are easily identified by their unfeathered bald head and neck. Wood storks forage and breed in wetland and mangrove areas. They are often seen nesting in large colonies of 100-500 nests, including the entire Everglades population of wood storks who nest only in mangroves.

Wood storks are a threatened species, and having access to a healthy and protected habitat is crucial for their survival.

Sources: floridadep.gov, floridamuseum.ufl.edu, fws.gov, myfwc.com; commons.wikimedia.org



MANGROVE SNAPPER

Lutjanus griseus

Mangrove snappers, also known as gray snappers, are gray-colored fish with small reddish-orange spots on their sides. These snappers are a small species, and on average grow to around 10-14 inches and weigh between 1-3 pounds.

Gray snappers are a popular game fish that utilizes mangroves as a nursery habitat. Juvenile gray snappers can be found seeking shelter and protection in seagrass beds and in the submerged roots or branches of coastal mangroves.

Sources: floridamuseum.ufl.edu, floridashorefishing.com, myfwc.com; Clinton & Charles Robertson, commons.wikimedia.org



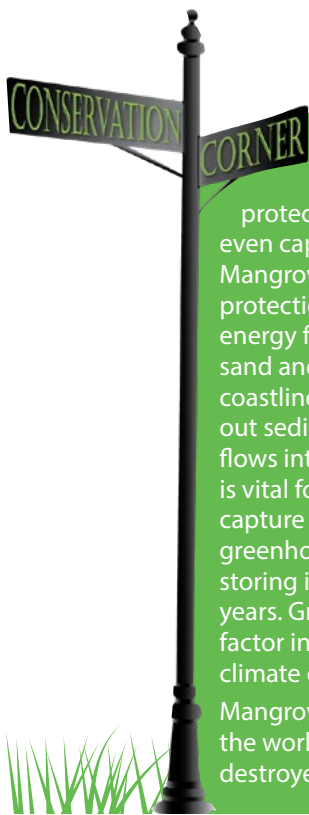
MANGROVE TREE CRAB

Aratus pisonii

Mangrove tree crabs are a tree-climbing crab that ranges in color from olive-green to brown. Mangrove tree crabs prefer living on red mangroves but can also be found on black or white mangroves. They are opportunistic feeders but mainly eat detritus-covered algae found along the mangrove roots. To escape predators, they spend most of their time higher up in the trees and only venture down when foraging for algae at low tides.

Sources: naturalhistory2.si.edu, sta.uwi.edu; Andrea Westmoreland, commons.wikimedia.org

Our education programs get kids into the bay!



The Importance of Mangroves

Mangroves are extremely important for our environment and for us! They provide protection from storms, clean our water, and even capture carbon dioxide from the atmosphere. Mangroves are a natural barrier that provides protection to our coastlines. They do this by absorbing energy from storms like hurricanes and by holding sand and sediment in place, which helps keep our coastline in one piece! Mangroves roots also help filter out sediment, nutrients, chemicals, and pollution that flows into the ocean, improving water quality. This is vital for marine life and humans! Mangrove forests capture massive amounts of carbon dioxide and other greenhouse gases from the atmosphere, trapping and storing it in their carbon-rich soils for thousands of years. Greenhouse gasses are thought to be a major factor in the warming of our planet, contributing to climate change.

Mangroves are important, and yet around half of the world's mangroves have already been cleared or destroyed in the past 40 years, and those that remain

are under potential threat. Mangroves are often cleared to make room for agriculture (like fish and shrimp ponds for aquaculture), businesses, tourist attractions, homes, and harbors.


Destroying mangroves is a major factor contributing to mangrove loss around the world. Additional threats to mangroves are emerging, including increased pollution and climate change.


Conservation efforts are largely aimed at preventing the destruction of mangrove ecosystems and increasing coverage of these special trees. There are many ways that you can help protect mangroves, too! Try looking for sustainable seafood options that are not farmed in mangrove areas, and support organizations in your area who are working to protect the environment!




Sources: en.unesco.org, iucn.org, nature.org, panda.org, restoreourshores.org, sanibelseaschool.org; Canva

Fun Facts about Mangroves

 It is estimated that in South Florida, around 75% of local game fish and 90% of commercial fish species are dependent on mangroves during part of their lives!

 Mangroves actually help hold the coastlines in place, giving many their shapes. Once the mangroves are gone, the shape of the coastline often changes!

 Mangroves cannot survive freezing temperatures. They can only be found in tropical and subtropical zones.

Sources: ausmepa.org,
conservation.org, floridamuseum.ufl.edu, oceanservice.noaa.gov



Did You Know...



Sea-level rise is changing where mangroves grow. Mangroves cannot survive if they are getting too little or too much water!

Source: onservation.org

Explore! Discover!



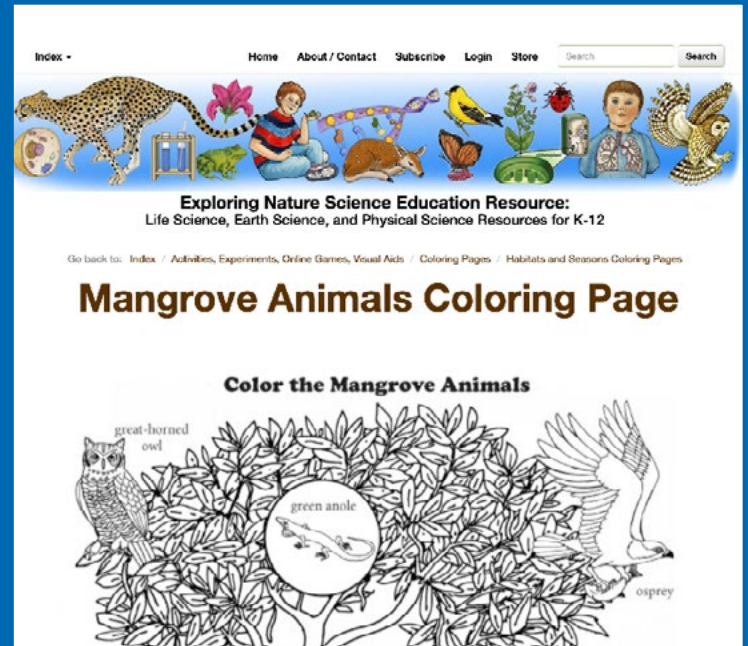
Fun Mangrove Activities:

Mangrove Animals Coloring Page

With a parent's permission, print and color the Mangrove Animals Coloring Page from this link:

exploringnature.org/db/view/Mangrove-Animals-Coloring-Page

Source: Amsel, Sheri. "Mangrove Animals Coloring Page" Exploring Nature Educational Resource ©2005-2020. April 30, 2020



Make a Mangrove: An Ecosystem Game

Play this fun "Make a Mangrove" game online:

tlearn.pbslearningmedia.org/resource/plum14.sci.life.makemangrove/make-a-mangrove-an-ecosystem-game

Source: Pinterest



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.



Kids' pages Investigations

Topic: Mangroves



Spring 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):

- Mangroves are specially adapted trees capable of tolerating what?
 - Salt
 - Rain
 - Crabs
 - Oil
- Red mangroves can be distinguished from other species by which feature?
 - Nectaries
 - Prop-and-drop roots
 - Dead man's fingers
 - Large flowers
- How many acres of mangrove forests exist in South Florida?
 - 415,000
 - 570,000
 - 469,000
 - 355,000
- Mangrove snapper are known by what other common name?
 - Lane snapper
 - Gray snapper
 - Mahogany snapper
 - Mutton snapper
- What percent of commercial fish species depend on mangroves during a portion of their life?
 - 90%
 - 75%
 - 45%
 - 40%

Fill in the Blank:

- The three mangrove species found in Florida are the _____, _____, and _____ mangroves.
- The unique roots of the black mangroves stick out of the soil and are called _____.
- The floating seed pods of the red mangrove are called _____.
- Mangroves act as a _____ for juvenile animals until they are large enough to avoid predators.

Short Response:

- Mangroves are one of the four major habitats that make up our "living shorelines," along with marshes, oysters reefs, and seagrass beds. Using the information from the *Conservation Corner* section of *Kids' Pages*, discuss how threats to mangroves may affect the other connected habitats, providing at least three examples.

Kids' pages Investigations

Topic: Mangroves

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ANSWER KEY

1. A. This is what allows them to grow without competition along coastlines.
2. B. These rusty-colored roots give them their common name.
3. C. These forests provide food, shelter, and breeding areas for many animals.
4. B. Juveniles often look like they are wearing a bandit's mask.
5. A. Most juveniles of commercial fish start their lives in the shelter of mangroves.
6. The three mangrove species found in Florida are the red, black, and white mangroves.
7. The unique roots of the black mangroves stick out of the soil and are called pneumatophores.
8. The floating seed pods of the red mangrove are called propagules.
9. Mangroves act as a nursery for juvenile animals until they are large enough to avoid predators.
10. Answers will vary. *Example answer: Mangroves help to filter out sediment and pollution runoff coming from our coastal cities. With reduction in mangrove acreage, the other habitats along the coast, especially our seagrass beds, would be overwhelmed by excess nutrients which could cause an upset in the ecosystem balance. Additionally, that added sediment could cause poor water quality which would negatively affect seagrass growth. Mangroves capture greenhouse gases, but without them, those gases could cause warmer waters which could affect oyster spawning. When mangroves are cleared for development, the coast becomes vulnerable and makes the marshes and oyster beds responsible for mitigating any storm damage, which they are not best suited to handle.*