TAMPA BAY WATCH

Kids' pages

Are you ready to learn about the bay?

News for the kids of Tampa Bay!

Winter 2016-17

TAMPA BAY WATCH
Restoring the Bay Every Day

In This Issue:

Mark your Calendars!

Spring Coastal Cleanup
Saturday, March 18
9 am - Noon

We'll have several sites for volunteers to choose from throughout Tampa Bay, including Fort De Soto Park, Tampa Bay Watch, and the Skyway Fishing piers. Visit tampabaywatch.org for more details.

Got a Question? Ask a Scientist!

Q *What are those Christmas tree-shaped creatures found in coral reefs?*

A Those spiraled, feather-like projections belong to none other than the Christmas tree worm. The Christmas tree worm, *Spirobranchus giganteus,* is a colorful marine worm with a segmented body, also known as a polychaete. Christmas tree worms are commonly recognized by their distinct shape and vibrant colors. They come in a variety of bright colors including yellow, orange, pink, and blue. They are a beautiful sight to see for many divers!

Its spiraling plumes that resemble two Christmas trees are actually the animal's radioles—or tentacles—used for feeding and respiration. These tentacles are exposed in the water column when the worm is feeding on plankton and organic material; however, most of its body remains burrowed down and hidden.

Christmas tree worms are tube-building worms. By collecting calcium and other nutrients from the water, a Christmas tree worm is able to create a tube to serve as its home and protect itself. They are very shy worms and are sensitive to shadows, light, and motion. Their radioles also serve as a door—better known as an operculum—to seal its tube when the worm is hidden inside.

Christmas tree worms are found within coral reefs of tropical waters worldwide. As juveniles, they are planktonic. This means that they drift freely in the ocean. After just a few days to two weeks, they begin to burrow down and build their tubes in the surface of coral. Once settled, they do not move; they occupy that tube throughout their lifetime.

Christmas tree worms face no major threats; however, habitat loss, climate change, and ocean acidification have the potential to affect populations. Some scientists consider Christmas tree worms to be an **indicator species.** This means that if they are living in a given environment, there is a good chance that the water and other plants and animals in that environment are healthy. They have been used to help monitor coral reef health.

Sources:
eol.org; marinebio.org; floridaocean.org; sealifebase.org; sta.uwi.edu; The Saltwater Aquarium Handbook
Image source: flickr.com

Expand Your Mind!

Meet & Greet: Relationships with Christmas Tree Worms

PUDDINGWIFE WRASSE

Halichoeres radiatus

The puddingwife wrasse is a species of fish found throughout the Western Atlantic, including Florida. Puddingwife wrasses on average grow to be just over a foot long and are very vibrantly colored. They have many different coloration phases throughout their lifetime. Puddingwife wrasses are common in the aquarium trade due to their beautiful coloration.

Puddingwife wrasses are typically found in lagoons and coral reefs. They enjoy variety in their diet and have been known to occasionally feed on Christmas tree worms. (However, if not completely eaten, a Christmas tree worm's tentacles can regrow after a few weeks.)

Sources: seascapestudio.net; sta.uwi.edu; aqua.org

CROWN-OF-THORNS SEA STAR

Acanthaster planci

The crown-of-thorns sea star is found in the tropical Pacific and Indian oceans. The spines that cover the sea stars' bodies resemble thorns, which is where the get their names. These spines are actually venomous. Crown-of-thorn sea stars can grow to be up to one meter in diameter! They are ferocious predators, feeding primarily on coral.

If there are too many crown-of-thorn sea stars in one area, they can destroy a coral reef system too quickly for it to bounce back. Fortunately, Christmas tree worms reduce the crown-of-thorn predation on corals. Christmas tree worms are thought to irritate the stomachs of crown-of-thorns sea stars, discouraging the sea stars from eating them. This, in turn, discourages the sea star from eating the coral in which the Christmas tree worms live.

Sources: arkive.org; int-res.com oceana.org; carnivoraforum.com

LOBE CORAL

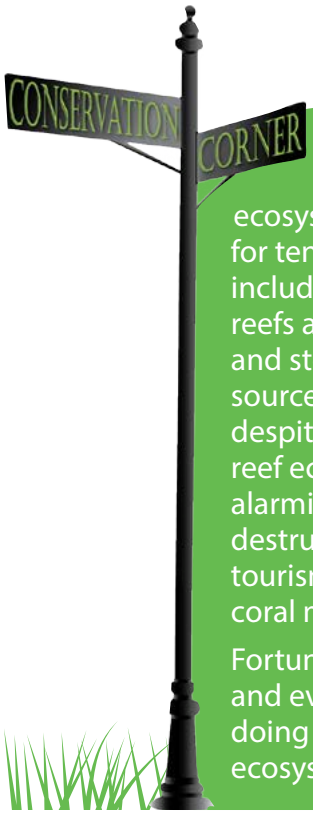
Porites lobata

Lobe coral is a large, reef-building coral found throughout the tropics. This stone coral grows very large and strong and is often tolerant to surge—or wave—forces. Tropical coral reefs are very complex ecosystems. They provide a source of food and shelter for many animal species.

Lobe coral is a very common home for Christmas tree worms. Christmas tree worms have a mutual symbiotic relationship with many coral species. This means that they benefit corals and corals benefit them. Corals provide the worms with support and protection, while the worm improves the water circulation to help the corals feed more easily.

Sources: arkive.org; int-res.com; oceana.org; carnivoraforum.com

Our education programs get kids into the bay!



Coral Reef Conservation

Coral reefs are of the most biodiverse ecosystems in the world. These ecosystems provide food and shelter for tens of thousands of marine species, including the Christmas tree worm. Coral reefs also protect coastal areas from waves and storms, and they provide us with food sources and job opportunities. However, despite their tremendous benefits, coral reef ecosystems are declining at an alarming rate. Coral reefs are threatened by destructive fishing practices, overfishing, tourism activities, pollution, sedimentation, coral mining, and climate change.

Fortunately, scientists, environmentalists, and even tourists around the world are doing what they can to save this valuable ecosystem; and you can help too!

There are many easy steps you can take to help protect coral reefs such as: conserve water, reduce pollution and waste, and practice safe and responsible diving, snorkeling, and boating. You can also get involved with or support a local conservation organization. You have the ability to make a big difference!

Sources: australianmuseum.net.au; defenders.org; globalissues.org; nature.org; oceanservice.noaa.gov; panda.org; howitworksdaily.com

Fun Facts about the wrack line!

- Multicolored plumes of red, orange, blue, yellow, pink, and white make Christmas tree worms a popular photographic animal for scuba divers and a common collection animal for aquariums.
- The tubes of Christmas tree worms can get up to 20 cm in length.
- The average life span of a Christmas tree worm is 30 years old.
- Christmas tree worms are found off the coast of every continent except for Antarctica.

Sources: marinebio.org; private-scuba.com; sealifebase.org

Did You Know...

Polychaete worms have survived five mass extinctions. Some date back 505 million years ago! *Source: smithsonianmag.com*

Fun Activity:

Can you find the Christmas Tree Worms?

(There are ten!)

Find the answer key at tampabaywatch.org/education

TAMPA BAY WATCH
Restoring the Bay Every Day

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

Please get your kids involved and sign them up to be a member today! eMail **egorey@tampabaywatch.org** or visit TAMPABAYWATCH.ORG.

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

Estuary EDventures

TAMPA BAY WATCH

Kids' pages Investigations

Topic: Christmas Tree Worms

Winter 2016-17 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. **In which substrate, or hard surface, do christmas tree worms prefer to live?**
   - (a.) Reef rock
   - (b.) Dock pilings
   - (c.) Coral
   - (d.) Sandy bottom

2. **If not completely eaten, how long does it take for a christmas tree worm's tentacles to regrow?**
   - (a.) A few hours
   - (b.) A few months
   - (c.) A few days
   - (d.) A few weeks

3. **Which type of coral is a common home for christmas tree worms?**
   - (a.) Star coral
   - (b.) Lobe coral
   - (c.) Plate coral
   - (d.) Brain coral

4. **The tubes, or permanent homes, of christmas tree worms can grow to be how long?**
   - (a.) 30 cm
   - (b.) 20 cm
   - (c.) 15 cm
   - (d.) 10 cm

5. **What is the average lifespan of a christmas tree worm?**
   - (a.) 30 years
   - (b.) 30 days
   - (c.) 10 years
   - (d.) 10 days

Fill in the Blank:

6. **Christmas tree worms are segmented marine worms also known as _____.**

7. **The worm's "christmas trees" are actually called _____: tentacles used for feeding and respiration.**

8. **As juveniles, these worms are _____, or drifting freely in the ocean.**

9. **Some scientists consider christmas tree worms to be _____ (2 words), or a species whose presence is used to monitor coral reef health.**

Short Response:

10. **Using the information provided in the Conservation Corner section of *Kids' Pages,* brainstorm four specific actions that you are already doing to help preserve declining coral reefs, and an additional two actions that you pledge to do in the future.**

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ANSWER KEY

Multiple Choice

1. C. They have a symbiotic relationship with the coral colonies.
2. D. Puddingwife wrasses enjoy eating christmas tree worms.
3. B. This stony, bouldering coral provides a sturdy home.
4. B. They build these tubes by collecting calcium from the water.
5. A. Also, some polychaetes date back over 500 million years.

Fill-in-the-Blank

6. Christmas tree worms are segmented marine worms also known as **polychaetes.**
7. The worm's "christmas trees" are actually called **radioles**—tentacles used for feeding and respiration.
8. As juveniles, these worms are **planktonic,** or drifting freely in the ocean.
9. Some scientists consider christmas tree worms to be an **indicator species** (2 words), or a species whose presence is used to monitor coral reef health.

Short Response

10. Answers will vary. *Example answer: I already practice safe ecotourism, making sure that I do not touch or take anything from reefs when I go diving or snorkeling. Additionally, I wear reef safe sunscreen or opt for SPF clothing to replace sunscreen all-together. I am conscious of my waste and make sure that when I visit the beach, I take my trash home to dispose of it properly. In the future, I plan to be more aware of where my seafood is sourced, looking to avoid purchasing reef fish with stressed populations. I will also avoid buying products in plastic packaging and instead look for packaging that can be reused, wherever possible.*