TAMPA BAY WATCH

Kids' pages

Are you ready to learn about the bay?

News for the kids of Tampa Bay!

Fall 2017

TAMPA BAY WATCH
Restoring the Bay Every Day

In This Issue:

Mark your Calendars!

Pumpkins on the Porch!

Thursday, October 26, from 5-7:30 pm

It's a fun-filled evening that includes a showing of *"It's the Great Pumpkin, Charlie Brown!"* Come with your best costume and prepare for tricks and treats!

Got a Question? Ask a Scientist!

Q Do marine animals celebrate Halloween?

A Great question! Marine animals do not celebrate Halloween like you and I do, but there are several marine animals that look pretty spooky! Some creatures that live in the deep ocean look like monsters, but why do they look like this? Well, as the water in our oceans becomes deeper, the water gets colder, and the pressure becomes greater. The average depth of the ocean is around 12,100 feet, but the deepest part of the ocean is in the Mariana trench and is around 36, 200 feet deep!

About 95% of the ocean is still undiscovered and most of that unknown area is in the deep ocean. The deep ocean is considered below 200 meters, which is about 656 feet. The beginning of this deep ocean zone is called the **twilight zone.** It is called the twilight zone because minimal light reaches down to these deep depths. As you continue to get deeper, past 1,000 meters (3,281 feet), you lose all light completely. Can you imagine living in a world completely absent of light?! The lack of light is not the only issue these animals have to deal with. At 1,000 meters, the pressure is about 100 times our normal atmosphere and the temperature is about **two degrees Celsius** (36 degrees Fahrenheit). That is only two degrees away from freezing!

How can anything live in these dark, cold, and high-pressure conditions? Many animals have gotten pretty creative. Animals have to adapt to survive in these extreme conditions. These adaptations can make some animals look pretty strange! An **adaptation** is a characteristic that allows an animal to survive in its environment, and the deep sea is a pretty harsh one! Some of the animals at these depths have huge eyes to let in even the tiniest bit of light and some have soft squishy bodies to deal with the high pressure pushing on them, while other organisms can even create their own light in a dark mysterious world. These are all deep-water adaptations!

Sources: oceanservice.noaa.gov; ocean.si.edu; oceantoday.noaa.gov; seasky.org.

Expand Your Mind!

Meet & Greet: Some Spooky-Looking Marine Creatures

ATLANTIC WOLFFISH

Anarhichas lupus

Is that a werewolf? No, that's just the Atlantic wolffish! They are named for their pointed teeth which resemble those of a wolf. Wolffish have 4-6 fang-like teeth that hang out of the front of their mouths. They use these strong teeth and jaws to crush through shellfish, urchins, and crabs. Wolffish are found in the North Atlantic Ocean, 100 to 500 meters down in extremely cold water (between 0.5-3 degrees Celsius). They are able to survive these temperatures because they have a type of antifreeze in their blood! These guys can get up to five feet long and like to tuck into rocky crevices on the ocean floor.

Sources: blogspot.com; britishseafishing.co.uk; dfo-mpo.gc.ca; nmfs.noaa.gov; Ross, Michael R., and Robert C. Biagi. Recreational Fisheries of Coastal New England. University of Massachusetts Press, 1991.

VAMPIRE SQUID

Vampyroteuthis infernalis

Vampire squids are the perfect animals for the Halloween season. The vampire squid's scientific name means "vampire squid from the underworld." Vampire squids get their name from their coloration. They are blood-red on the top and black underneath, with large milky-blue eyes. Vampire squids are found in water at depths of 600 to 1,200 meters, and can even be found in the Gulf of Mexico. These "squids" are not truly squids at all, but a special animal that is said to be somewhere between a squid and an octopus. Vampire squids have eight arms covered in spines that are connected by a webbing that make these vampires look like they are wearing a cape. Unlike Dracula, vampire squids do not suck blood, but collect their food using two thin long sticky thread-like tentacles to collect particles that float through the water. Vampire squids also do not ink like traditional squid and octopuses, but they can spew a cloud of glowing bioluminescent goo.

Sources: aquariumofpacific.org; marinebio.org; ocean.si.edu; news.nationalgeographic.com

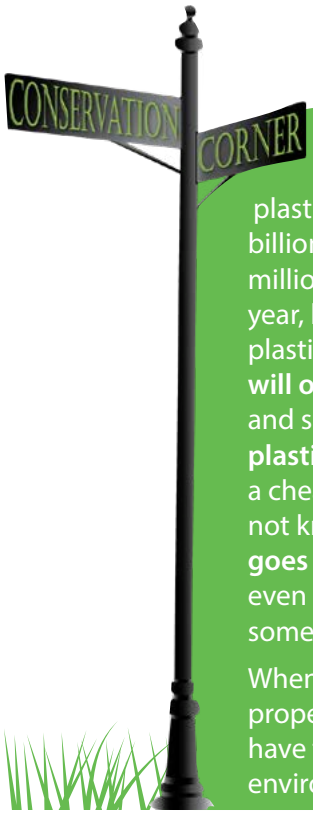
GOBLIN SHARK

Mitsukurina owstoni

Goblin sharks look more like aliens from a sci-fi movie than marine animals! These bottom-dwelling sharks are known for their large, slender noses and mouths full of sharp teeth. They use their teeth to feed by quickly unhinging and launching their jaws forward to trap their prey. They have flabby pink and gray skin and can get up to 13 feet long! Goblin sharks are found in the Gulf of Mexico and in the Atlantic and Pacific oceans in deep coastal waters around 270- 960 meters deep (that's 3,149 feet deep!) These sharks do not often come into contact with humans and are one of the rarest shark species.

Sources: floridamuseum.ufl.edu; marinebio.org; oceana.org; kids.nationalgeographic.com

Our education programs get kids into the bay!



Ocean Ghosts

Oh no; is that a ghost in the ocean? Even worse, it's a plastic bag! Now, why is a plastic bag in the ocean so scary? Around 500 billion plastic bags are used every year; that's one million bags used on earth every minute! Every year, humans produce around 300 million tons of plastic products and about **half of these products will only be used once,** like plastic bags, straws, and soda bottles. These are called **single-use plastics.** Plastic first came around in the 1950s as a cheap and easy product, but what people did not know until recently is that **plastic waste never goes away.** Most of the plastic that we have used, even from the 1950s, is still on our planet today in some shape or form!

When plastic is used and is not thrown away properly, it can end up in our oceans. Scientists have found plastic in nearly every ocean environment drom the Artic to Antarctic. Plastic pollution has a big effect on our oceans, especially its wildlife. **Every year, thousands of seabirds, sea turtles, seals, and other marine animals are killed by eating or getting tangled in plastic.** When animals like fish eat plastics and we, in turn, are eating fish, plastic could even end up in our diet!

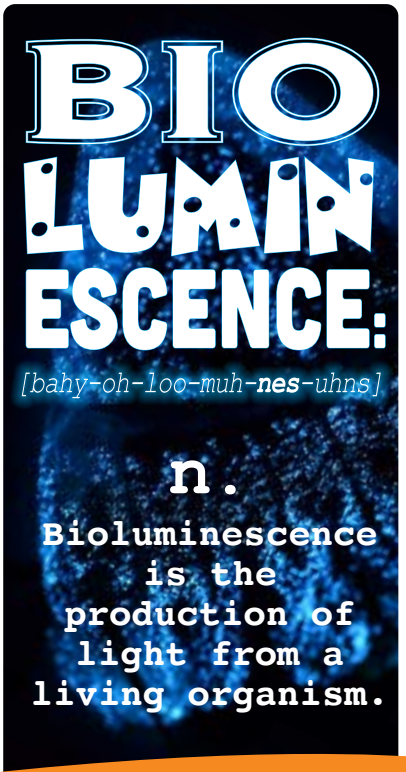
You can help with this problem! The easiest way is by cutting down your usage of single-use plastics. Instead of using plastic bags, straws, cups, forks, and water bottles, try using items that you can reuse again and again, like reusable bags, lunch boxes, metal straws, forks, and water bottles. Activities like recycling and beach clean-ups are other great ways to get involved helping our oceans and marine friends!

Sources: 5gyres.org; biologicaldiversity.org; nature.com; oceanicsociety.org; plasticoceans.org; nationalgeographic.com; news.nationalgeographic.com
Image source: scitechconnect.elsevier.com

Fun Facts about Spooky-Looking Creatures!

- Vampire squids have the largest eyes for their size in the animal kingdom!
- Male wolffish protect their eggs until they hatch!
- Scientists have only recorded around 50 goblin sharks ever! They are very rare to catch!
- Bioluminescence can be used for communication, defense, or attracting prey.

Sources: marinebio.org; natgeokids.com; scripps.ucsd.edu



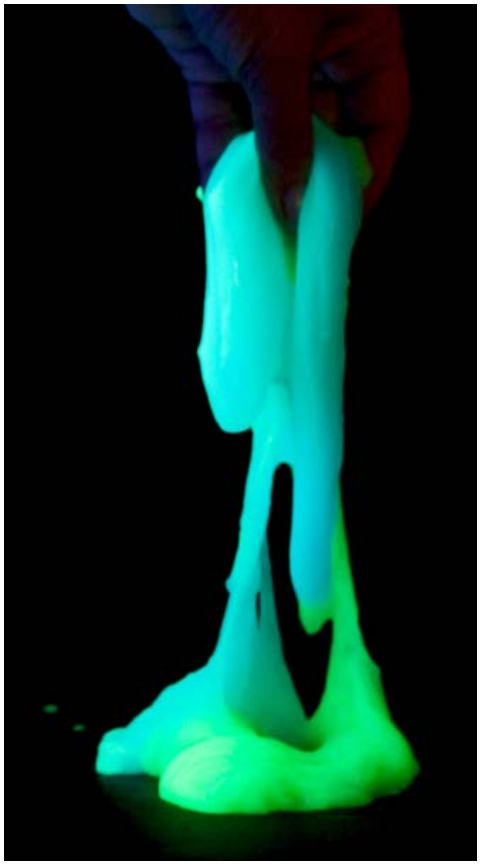
Did You Know...

In the deep ocean, between 80- 90% of the animals are bioluminescent! *Source: scripps.ucsd.edu*

Fun Activity:

"Bioluminescent" glow-in-the-dark slime!

Make glow-in-the-dark slime that looks like the bioluminescence of some of our deep-ocean friends!



Note: To make your slime glow brighter, expose it to bright light.

What you will need:

- ¼ cup clear school glue
- Borax (found in the laundry section at the grocery store)
- Glow-in-the-dark paint
- ¼ cup lukewarm water
- Two bowls
- Spoon

How to make your slime:

1. Have an adult help with this craft. Never ingest chemicals.
2. In one bowl, mix the clear glue and about 2 tablespoons of glow paint together.
3. In the second bowl, mix ¼ cup of lukewarm water with ¼ cup Borax. Stir.
4. Slowly pour the Borax and water mixture into the glue and paint mixture. Stir while combining the two.
5. The slime will start to form right away.
6. Combined the mixture as well as you can. After stirring with a spoon, you can knead it together with your hands.
7. Pour out any extra water.
8. When you are not playing with your slime, keep it in a plastic bag in your refrigerator.

Source: sciencenotes.org; sciencenotes.org

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 **membership@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
Education through Restoration

TAMPA BAY WATCH

Kids' pages Investigations

Topic: Deep Sea Creatures

Fall 2017 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. What is the name of the deepest part of the ocean?
   - a. Philippine Trench
   - b. Bikini Atoll
   - c. The Great Blue Hole
   - d. Mariana Trench

2. How much of the ocean is still undiscovered?
   - a. 90%
   - b. 98%
   - c. 95%
   - d. 80%

3. At what depth is all light lost completely?
   - a. 1,000 meters
   - b. 600 meters
   - c. 200 meters
   - d. 500 meters

4. Soft, squishy bodies and large eyes are examples of what form of survival?
   - a. Thermoregulation
   - b. Camouflage
   - c. Adaptations
   - d. Bioluminescence

5. Which of these animals has the largest eyes for their body size in the entire animal kingdom?
   - a. Angler fish
   - b. Vampire squid
   - c. Wolffish
   - d. Goblin shark

Fill in the Blank:

6. As the water in our oceans becomes deeper, the water gets _____ and the pressure becomes _____.

7. The name for the beginning of the deep ocean, starting after 200 meters, is called the "_____." (2 words)

8. Wolffish are able to survive nearly-freezing water temperatures because they have a type of _____ in their blood.

9. In the deep ocean, between 80 to 90% of animals are _____, or able to produce light.

Short Response:

10. Using the information from the Conservation Corner section of Kids' Pages, define the term "single-use plastic" and identify at least three threats plastics, especially single-use, have on the marine environment. Afterwards, make a list of 10 single-use plastic items in your home and determine which items would be easy to replace with a more reusable option.

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ANSWER KEY

1. D. Specifically, the southern end of the trench, known as Challenger Deep.

2. C. Much of that unknown ocean is the deep ocean.

3. A. The pressure at this depth is 100 times greater than sea level!

4. C. Adaptations help animals in every environment to survive.

5. B. Their eyes are a milky, blue color.

6. As the water in our oceans becomes deeper, the water gets **colder** and the pressure becomes **greater**.

7. The name for the beginning of the deep ocean, starting after 200 meters, is called the "**Twilight Zone.**" (2 words)

8. Wolffish are able to survive nearly-freezing water temperatures because they have a type of **antifreeze** in their blood.

9. In the deep ocean, between 80 to 90% of animals are **bioluminescent**, or able to produce light.

10. Answers will vary. *Example answer: A single-use plastic is defined as a plastic that is specifically created to be used only once, then discarded. Threats include ingestion or entanglement by animals, unsightly pollution in recreation areas like beaches and waterways, and accumulation of plastic in the fish humans enjoy eating. Ten single-use plastic items in my home include: 1) straws from takeaway orders 2) plasticware 3) disposable cups 4) grocery bags 5) water bottles 6) shampoo bottles 7) plastic wrap to cover leftovers 8) toothbrush 9) keurig cups 10) juice containers. When I order takeaway food, I can refuse a straw; I can replace my disposable cups for reusable, glass ones even though it may mean a bit more dishwashing; consider buying my shampoo and conditioner from refillery stores, in glass containers; and opt for reusable k-cup pods in lieu of disposable coffee pods.*