

Kids' pages

Are you ready to learn about the bay?

News for the kids
of Tampa Bay!

Winter 2014-2015

TAMPA BAY
WATCH

Restoring the Bay Every Day

Got a Question? Ask a Scientist!

In This Issue:

What are Lionfish?

Meet some venomous
marine species!

Conservation Corner:
Protecting the natives

Fun Facts about Lionfish

Do this at home: "Eat 'em to
Beat 'em!"



Upcoming Events

Tampa Bay Watch has an excellent opportunity for young and old alike to keep our coastlines beautiful!

COASTAL CLEANUP
MARCH 21, 2015
9 AM - 12 PM

Bring your gloves, trash picks, and smiles for a massive coastal cleanup at three sites: Fort De Soto Park, Tierra Verde, and the Sunshine Skyway.

Please register at
TAMPABAYWATCH.ORG
or Email Rachel Arndt at
RARNDT@TAMPABAYWATCH.ORG.

Q What are Lionfish?
Do they look like
the lions at the
zoo?

—Thor Bryson

A Lionfish—sometimes called a zebrafish or firefish—live in the warm saltwater of the tropics. They don't look like the lions you may have seen at a zoo, but they can look pretty scary! Their fan-like pectoral fins resemble a lion's mane, they have bold brown, maroon, and white stripes that cover their entire body and 18 venomous spines. People have found their distinctive pattern and long fins to be quite beautiful, making them popular in aquariums around the world and especially in the United States.

Unfortunately, Lionfish are an invasive species here in Florida that threatens our local wildlife and habitat. (An invasive species is a plant or animal that is not native to an ecosystem, and whose introduction causes damage. It is extremely difficult to stop the spread of invasive species once they are established.)

The main concern about invasive species is that they usually do not have natural predators in their new ecosystem to keep them in balance, allowing them to spread quickly. Invasive species often prey on native species, out-compete natives for food and other resources, and carry disease. Results of this are decreasing biodiversity and changing food webs.



Lionfish are an invasive species that threaten our local wildlife and habitat.

Lionfish eat native reef fish, reducing their population. This negatively impacts the health of the reef by removing important species like those that keep algae in check. Lionfish also compete with native predatory fish, like grouper and snapper, for food.

Lionfish are native to the waters of the South Pacific and Indian Oceans from Japan to Malaysia and Australia, primarily in reefs. Over the past three decades, they have invaded the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. Lionfish were first spotted off the Atlantic Coast of Florida in 1985 and began making their way up the Gulf Coast in 2006. Local newspapers have reported Lionfish being caught near the Sunshine Skyway Bridge and one earlier this year in Apollo Beach. The Atlantic Ocean is not their natural home; they were most likely brought here for aquariums and then somehow released into the environment.

Article sources: <http://www.nwf.org/wildlife/threats-to-wildlife/invasive-species.aspx>; <http://oceanservice.noaa.gov/education/stories/lionfish/factsheet.html>; <http://myfwc.com/wildlifehabitats/nonnatives/marine-species/lionfish/>; <http://oceanservice.noaa.gov/education/stories/lionfish/factsheet.html>

Expand Your Mind!

Meet & Greet *Some Venomous Marine Species!*

VENOMOUS VS. POISONOUS: Both venomous and poisonous animals produce harmful toxins, but they deliver their toxins differently. Venomous species use specific structures like spines or teeth to inject their toxin, whereas poisonous species require its victim to absorb or ingest the toxin. It is always important to be careful when handling marine animals, but especially those that may be venomous or poisonous.



LIONFISH

Pterois volitans

Lionfish are known for their beautiful feather-like pectoral fins, but they have a secret weapon. Lionfish possess venomous dorsal, pelvic, and anal spines that are attached to venom glands. Once activated, they deliver their toxin through an unpleasant puncture wound. These toxic spines are an effective defense against natural predators. If not handled properly, humans can get punctured by a spine.



BEARDED FIREWORM

Hermodice carunculata

The bearded fireworm is a type of polychaete [*pol-i-keet*] worm found on coral reefs, rocky habitats and burrowing in the sand near our local seagrass beds. They are beautifully colored and noted for being ferocious predators that feed on coral polyps and anemones. Each segment of the worm's body has hollowed bristles filled with venom that fan out when they feel threatened by a predator. They typically reach 5-10cm in length, but have been recorded up to 35cm!



LONG SPINE SEA URCHIN

Diadema antillarum

This particular sea urchin is spherical in shape with long thin black spines that radiate from the center of the animal. The spines are mildly venomous and brittle, often breaking off into a predator or beachgoer's hand or foot. The long spines deter many animals from attempting to eat them, but a few species, like the triggerfish, can get past the rough exterior.



Our education programs get kids into the bay!



Protecting the Natives

CONSERVATION

CORNER

In its native Pacific waters, the lionfish population is kept in balance through competition, predation, and disease. Where it is not native, like in the water around that United States and the Caribbean, lionfish are taking over and harming other native fish populations. For these reasons, we have focused on reducing lionfish populations in order to protect our native animals.

There are several things we can do to help with the lionfish problem. Educating others about how harmful invasive species can be is an important first step. If you have a home aquarium, it is always good to try to keep animals and plants that are native to your area. Too often, exotic aquarium pets are released into the wild and become harmful invasive species. If you wish to get rid of an animal you have, you should contact a local pet store for advice.

A solution for the growing lionfish problem is to "eat

'em to beat 'em." Although they have venomous spines, once removed, the fish is not harmful to eat.



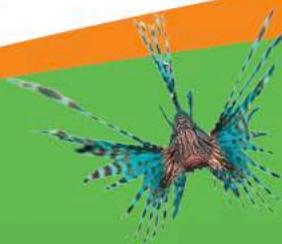
Many local organizations host large lionfish derbies around the state of Florida. These derbies teach individuals how to properly hunt for the lionfish and focus on how many lionfish can be caught in one day. There are typically prizes and cooking workshops at the derby's finale. Last year, 251 lionfish were caught during a derby held in Sarasota, and Florida Fish and Wildlife reported that 12,488 lionfish were caught in derbies all around the state in 2014.

Sources: <http://myfwc.com/fishing/saltwater/recreational/lionfish/events/>; <http://www.reef.org/lionfish>

Fun Facts *about invasive Lionfish!*

- Lionfish ambush their prey using their outstretched, fan-like pectoral fins to slowly pursue and herd them.
- Females can release about 12,000 to 15,000 eggs every four days.
- Lionfish can consume prey that are more than half their body length and prey upon more than 70 marine fish and invertebrates.
- Lionfish are the only known species to blow water at prey to get the prey to turn toward them before being devoured.
- Approximately 42% of threatened or endangered species are at risk primarily due to invasive species.

Sources: <http://www.nwf.org/wildlife/threats-to-wildlife/invasive-species.aspx>; <http://oceanservice.noaa.gov/education/stories/lionfish/factsheet.html>



Did You Know...

Lionfish can go up to three months without feeding and only lose 10% of their body mass!



Eat 'em to Beat 'em!

What you can do at home to help with the invasive lionfish problem.

DELICIOUS LIONFISH!

Lionfish have moist, buttery meat that is often compared to hogfish, one of the most popular reef fish served in restaurants. From raw to deep-fried, grilled to blackened, lionfish dishes are bound to fit anyone's taste. By eating lionfish, you're not only treating yourself to a tasty dish, but also doing your part to help save native reef fish from this voracious predator. Not to mention, it's good for you—lionfish have proven to be high in Omega 3 fats, which play a crucial role in brain function and may reduce the risk of heart disease.



Lionfish distribution has expanded from the first sightings in 1985 to 2014. (US Geological Survey/Florida Fish and Wildlife Conservation Commission)

CASTAWAY'S WRECK DIVER-STYLE LIONFISH:

Courtesy of Castaway Waterfront Restaurant and Sushi Bar in Marathon Key, Florida. Makes about 7 servings.

RECIPE INGREDIENTS:

- o 42 ounces lionfish fillets, patted dry
- o Flour (for coating)
- o 5 cloves garlic, diced
- o 2½ cups chopped tomatoes
- o 5 tsp. capers
- o 1/2 cup white wine
- o 1/4 cup fresh-squeezed lemon juice
- o 2 T. chopped fresh basil
- o Parsley or kale for garnish
- o Lemon wedge for garnish

PREPARATION:

Dredge fillets in flour to lightly dust. Place in sauté pan with small amount of hot butter over medium heat. Cook first side, careful not to burn. Turn over fish when golden, and reduce heat while adding garlic, tomatoes, capers, white wine, and lemon juice. Cover to hold steam in and cook until fish is fork-tender. Add basil and serve immediately. Garnish with sprig of parsley or kale and lemon wedge.



Myth-Buster:

While the spines of lionfish do contain venomous tissue, the flesh of a lionfish is not venomous or poisonous.



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 mtepper@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: *Lionfish*



Winter 2014-15 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):

- What is another name for the lionfish?
 - Lion's mane
 - Zebrafish
 - Fireworm
 - Flamefish
- How many venomous spines cover the body of the lionfish?
 - 18
 - 12
 - 70
 - 25
- How many decades has it taken lionfish to invade the Atlantic Ocean, the Caribbean, and the Gulf of Mexico?
 - One
 - Nine
 - Five
 - Three
- What percentage of threatened and endangered species are at risk mainly because of invasive species?
 - 70%
 - 20%
 - 50%
 - 42%
- For how long can a lionfish survive without a meal?
 - 24 hours
 - 30 days
 - 3 months
 - 1 year

Fill in the Blank:

- It is extremely difficult to stop the spread of an invasive species, like the lionfish, once it becomes _____.
- One concern for invasive species in a new area is their lack of _____ (2 words) which normally keeps their population in balance.
- Lionfish are native to the South _____ and _____ Oceans.
- Female lionfish can have up to 15,000 babies every _____ days.

Short Response:

- Using the information in the Conservation Corner of *Kids' Pages*, how would you advertise a lionfish derby to catch the record number of invasive lionfish in the Tampa Bay area? Come up with an original title, a unique slogan, and a two-sentence description of how this derby will set the record. This can be as factual or as fictional as you would like.

Kids' pages Investigations

Topic: *Lionfish*



Winter 2014-15 edition

ANSWER KEY

Multiple Choice

1. B. They are also known as the firefish.
2. A. The venom glands are located at the base of the dorsal, pelvic, and anal spines.
3. D. It has only taken 30 years to spread over an entire large region!
4. D. This means populations are decreasing because of invasive species.
5. C. In doing so, they will only lose about 10% of their body weight.

Fill in the Blank:

6. It is extremely difficult to stop the spread of an invasive species, like the lionfish, once it becomes **established**.
7. One concern for invasive species in a new area is their lack of **natural predators** which normally keeps their population in balance.
8. Lionfish are native to the South **Pacific** and **Indian** Oceans.
9. Female lionfish can have up to 15,000 babies every **four** days!

Short Response:

10. Answers will vary. *Example answer: Lionfish Lollapalooza! Conquer the beast to conquer the feast! This year, come on down and try our new lionfish-catching equipment with gear so fast, you can leave your reflexes at home! This year will be the record-breaking year to conquer and consume these invasive menaces, with any leftovers donated to the local food banks and shelters! Come on down to the conquest!*