



Invasive Lionfish at Flower Garden Banks National Marine Sanctuary

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Lionfish – A New Threat

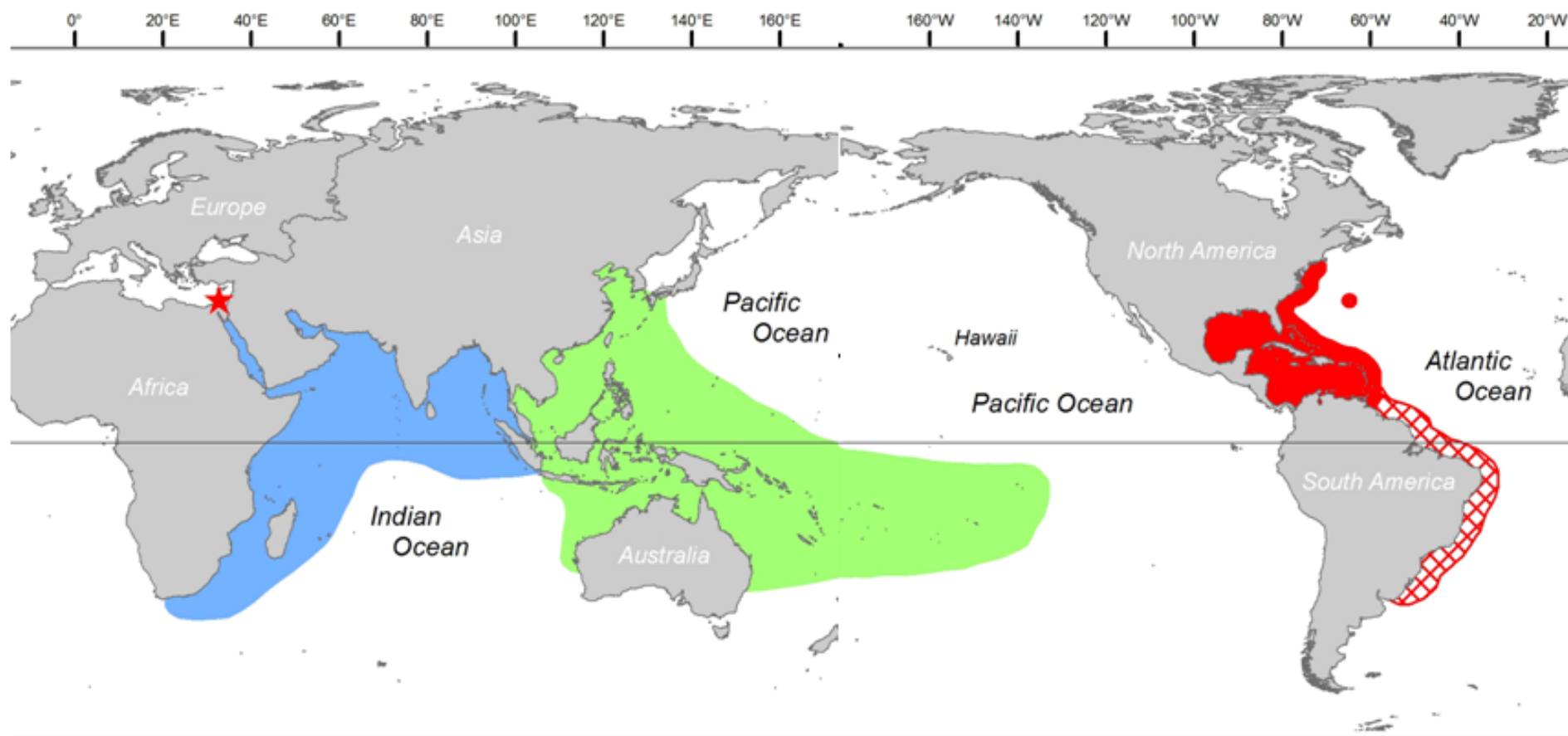


Photo: A. Sterne



Source: REEF

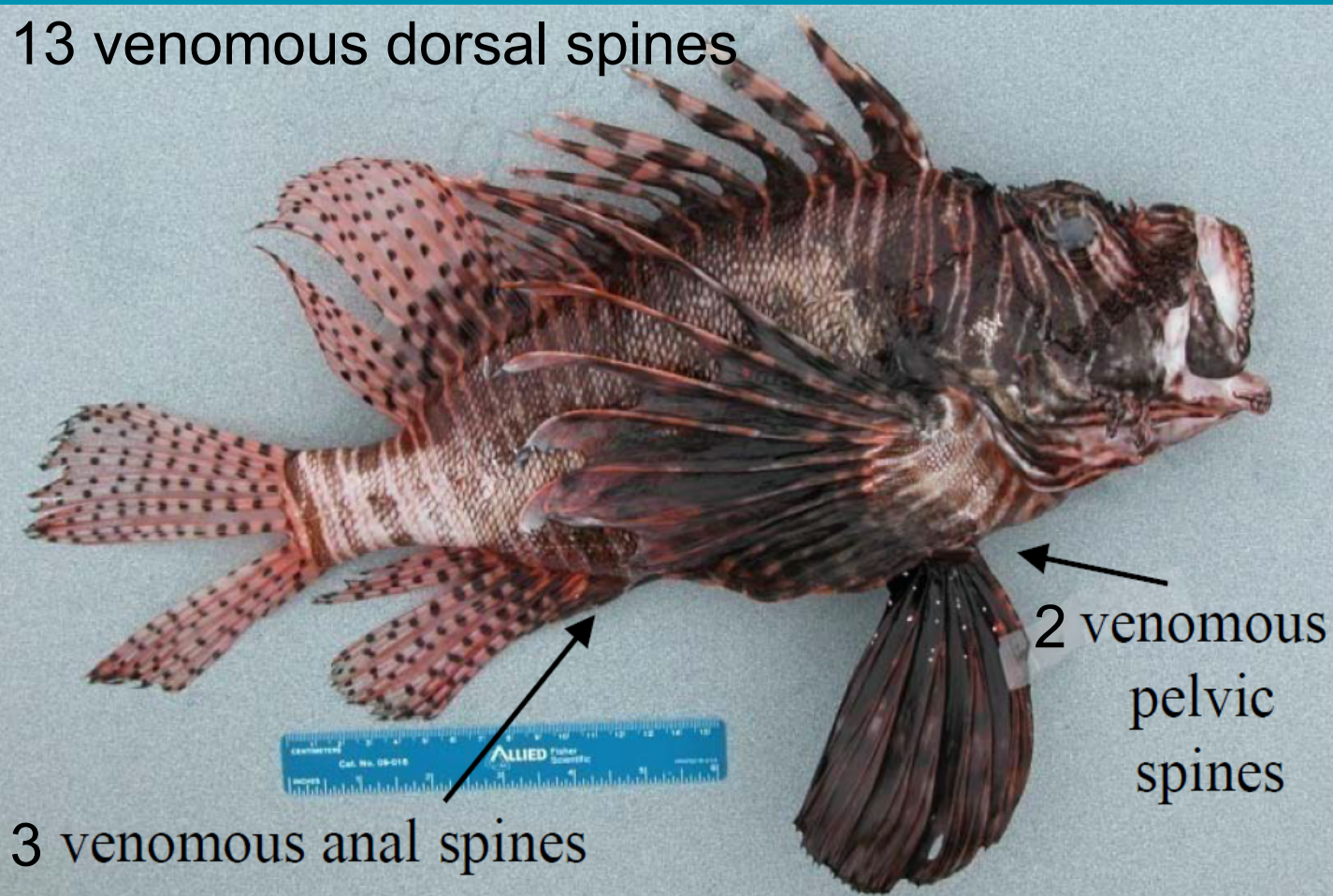
- Red Lionfish – *Pterois volitans*
- Devil Firefish – *Pterois miles*



What is a lionfish?



13 venomous dorsal spines



3 venomous anal spines

2 venomous pelvic spines

- Invasive
- Released from aquariums
- Venomous
- Few parasites
- Fast growth
- Less competition
- Prey naiveté
- Genetic vigor

Lionfish Distribution Map from 1985-2011



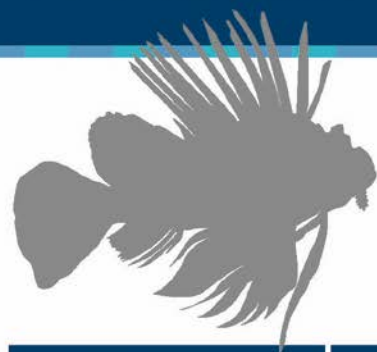
Lionfish Ecology



- Early reproduction
- Spawn in pairs
- Release two buoyant egg masses
- ~50,000 eggs per spawn!!!!

- Over 100 different prey species found in lionfish stomachs
- Fish and invertebrates
- Commercially, recreationally and ecologically important species





INVASIVE LIONFISH BY THE NUMBERS

BIOLOGY

50,000
EGGS EVERY 3 DAYS

1 YEAR
to maturity

30 YEAR
LIFESPAN

18



DISTRIBUTION

17X
DENSITY compared
to native pacific range

REACH DEPTHS
OF 1,000 feet

1985
year first
found off
Miami
FL



CONTROL

164
restaurants
SERVING
LIONFISH

51,420 lbs
commercial lionfish caught in U.S.

27,797 lionfish
REMOVED
during reef sponsored lionfish derbies

IMPACTS

INVASIVE SPECIES THREATEN CORAL REEFS



OVER 100 PREY FISH SPECIES

1,000 lionfish can consume

5 MILLION
PREY FISH IN 1 YEAR

0
KNOWN PREDATORS

LEARN MORE & GET INVOLVED

<http://coastalscience.noaa.gov/research/pollution/invasive/lionfish>

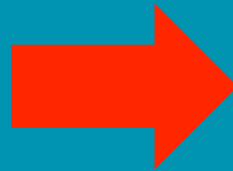
This Infographic is
available at:

- <http://sanctuaries.noaa.gov/lionfish/>
- OR
- <http://flowergarden.noaa.gov/education/invasivelionfish.html>

Source: NOAA
ONMS and NCCOS

Controlling the lionfish invasion

~~Eradication~~



Population
suppression

ONMS Lionfish Response Plan

Marine Sanctuaries Conservation Series ONMS-15-01



NOAA National Marine Sanctuaries Lionfish Response Plan (2015-2018)

Responding, Controlling, and Adapting to an Active Marine Invasion

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
Office of National Marine Sanctuaries



February 2015

- **Monitoring**
- **Control**
- **Research**
- **Education and Outreach**

Available online at: http://sanctuaries.noaa.gov/science/conservation/conservation_reports

Predators?

- Potential Problems?



Photos: REEF

Human Safety Concerns



Photos: REEF

Wildlife Safety Concerns



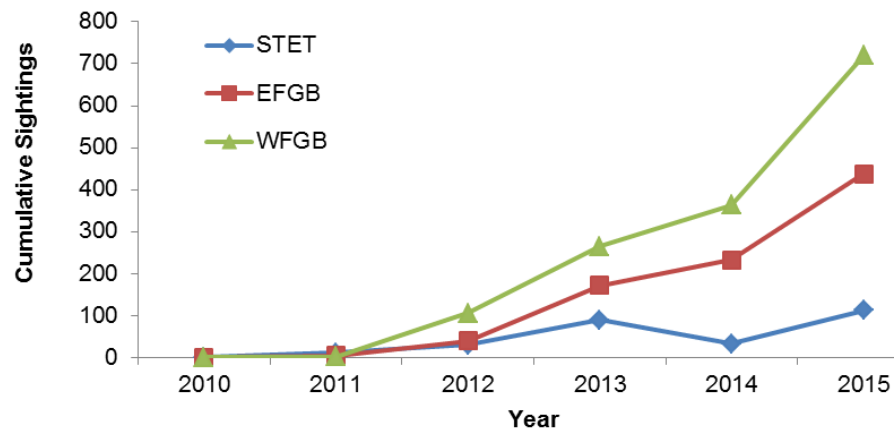
Simon Watkins. ReefCI.

Source: REEF

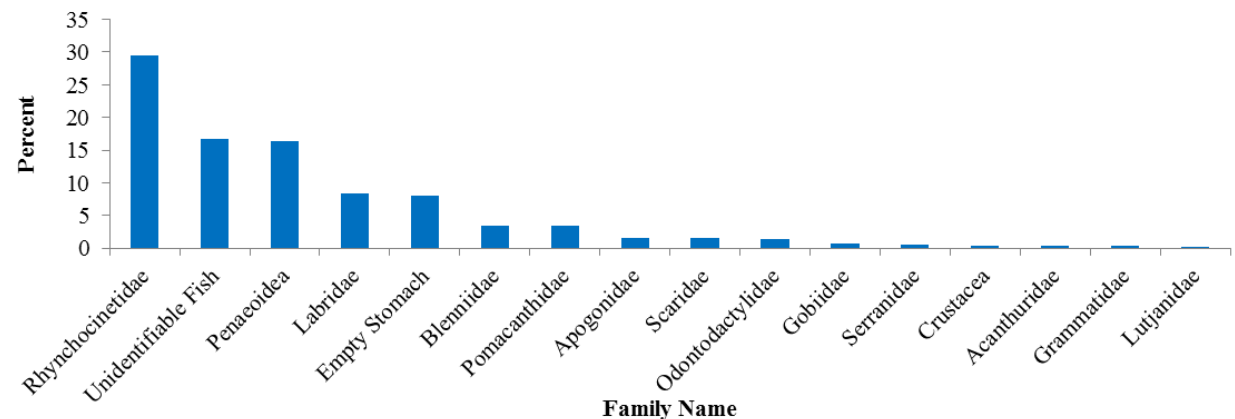
Control and Management at the Flower Garden Banks



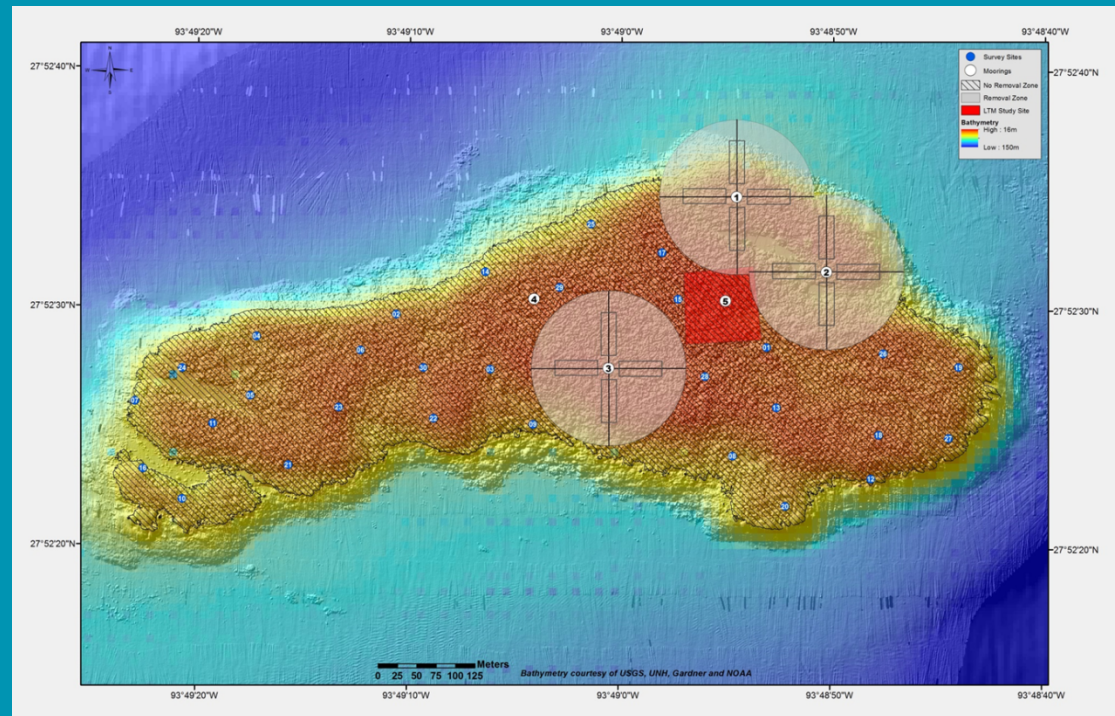
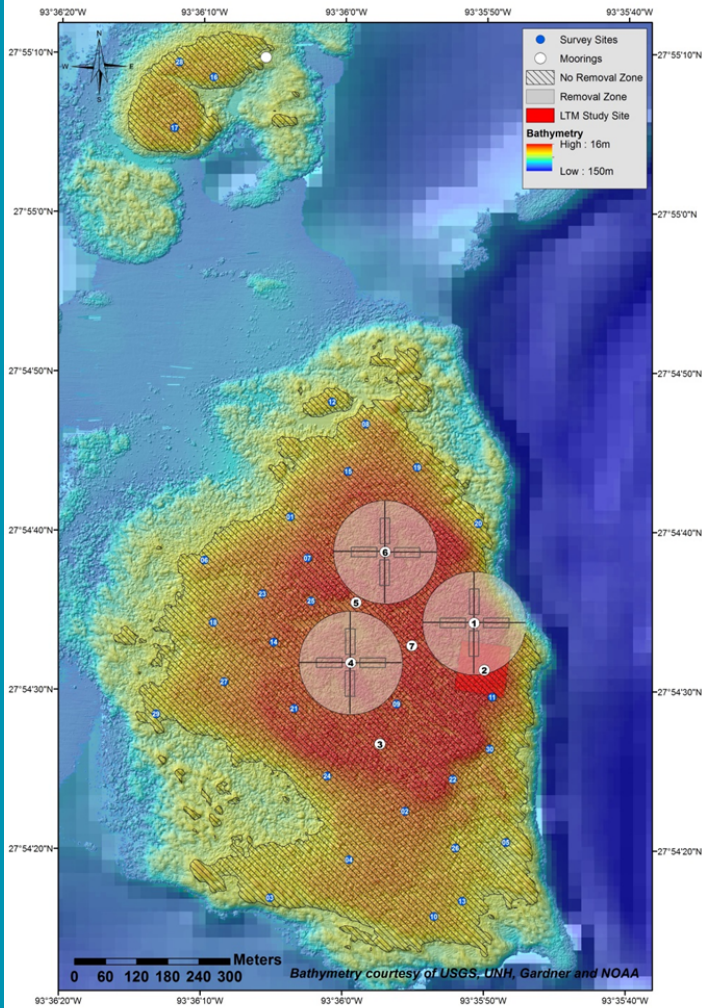
Number of Lionfish Sightings at the FGBNMS



Common FGBNMS Lionfish Prey from Stomach Contents 2011-2015



Lionfish Invitational



Photos: NOAA/FGBNMS

Lionfish Invitational



Science Team



- Lionfish/Predator Surveys
- General Fish Surveys



Photos: NOAA/FGBNMS

Lionfish Invitational



Photo: NOAA/FGBNMS/Schmahl



Photo: NOAA/FGBNMS/Eckert



Photo: NOAA/FGBNMS/Johnston

Lionfish Invitational 2015



Photos: NOAA/FGBNMS

- 317 removed
 - 181 WFGB
 - 123 EFGB
 - 13 Stetson
- Largest 43.1 cm (17 in) *TX record
- Smallest 7.6 cm (3 in)
- 70% removal rate

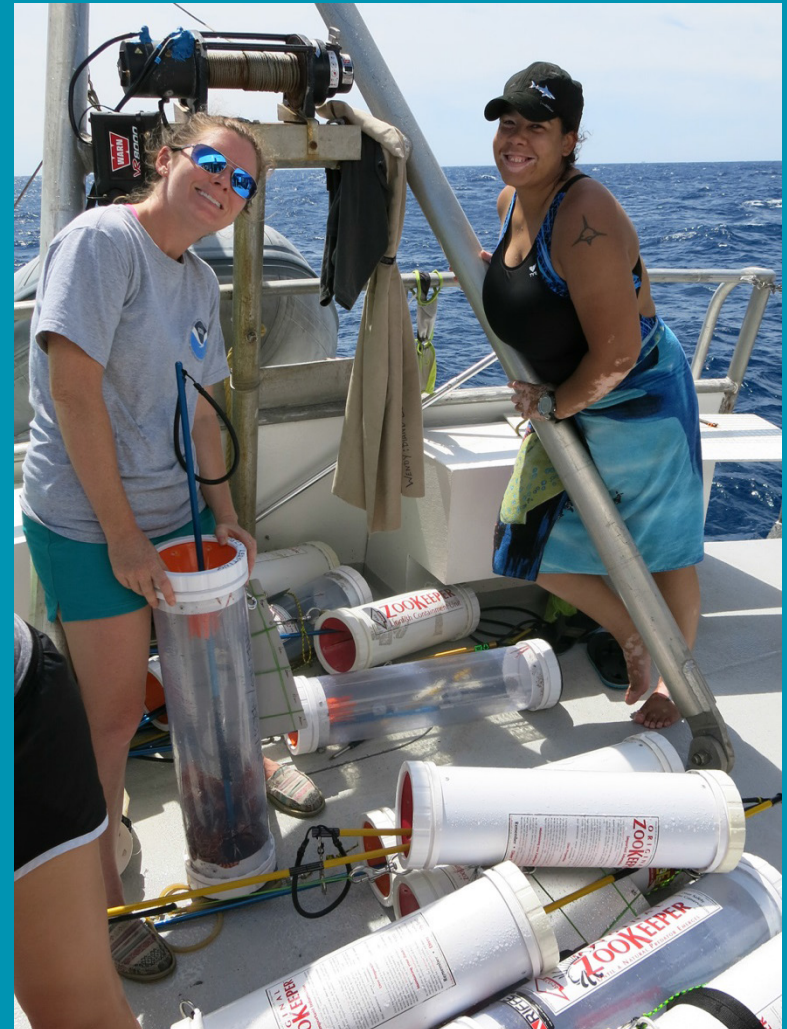


Lionfish Invitational 2016



Photos: NOAA/FGBNMS

- 394 removed
 - 185 WFGB
 - 191 EFGB
 - 18 Stetson
- Largest 42 cm (16.5 in)
- Smallest 3 cm (1.2 in)
- 75% removal rate



Lionfish Invitational 2016



Photos: NOAA/FGBNMS

394

lionfish removed from FGBNMS

Those lionfish would have eaten

?

prey fish in the next
year

Lionfish on the Menu



Turn Predator into Prey





STOP THE INVASION



**THIS IS WHAT
WE STAND TO LOSE!**

WHAT'S HAPPENING? Lionfish are invasive species from the Indo-Pacific that were introduced to the Atlantic through the aquarium trade. They consume vast quantities of more than 50 native fish and invertebrate species, some of which are economically and ecologically important.

WANT TO HELP? Support more research on lionfish and their impacts. Report lionfish sightings. Assist with lionfish removals. Eat them before they eat your lunch. Spread the word. Prevent the next marine invasion.

LET'S TAKE BACK OUR SEA!

<http://flowergarden.noaa.gov>



Prevent Invasions

Lionfish Portal: <http://lionfish.gcfi.org>



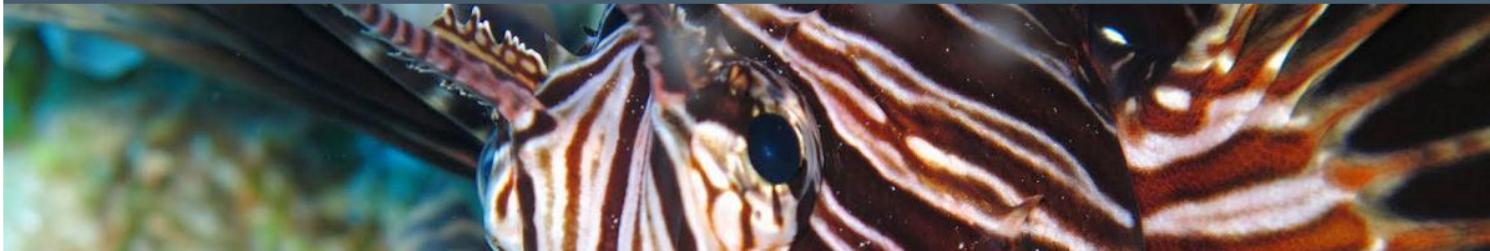
EDUCATION & OUTREACH

RESEARCH & MONITORING

CONTROL

MANAGEMENT

Search



Tweet #lionfish

Latest Flickr Photos

heytherejere posted a photo:



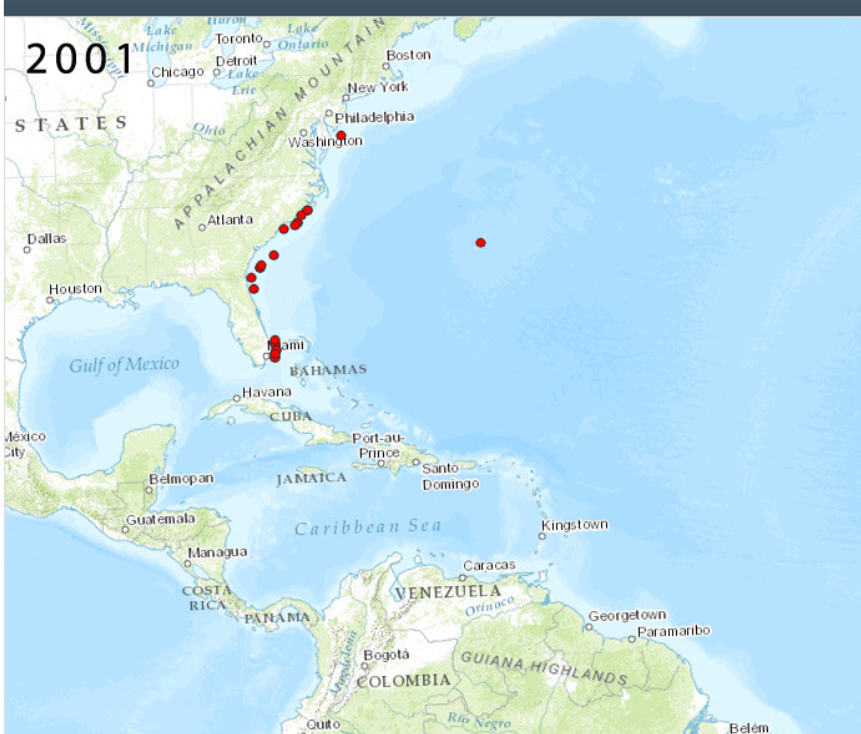
3:00 Parade, Magic Kingdom, January 29, 2016

heytherejere posted a photo:



3:00 Parade, Magic Kingdom, January 29, 2016

Timeline of the Lionfish Invasion (from USGS)



GCFINET List

- New Publication - Testing Community Support of Fisher-Developed Management Tools (USVI)
- Fwd: Third Biennial Southeast Acoustics Consortium (SEAC) Workshop Registration Information

more

Latest Lionfish YouTube Videos

hunting with a pride of lions



A "walking" frogfish, adorable pineapple fish and a mimic octopus



Flower Garden Banks National Marine Sanctuary



Questions?

