

Lionfish Update...

Most recent status, research and happenings



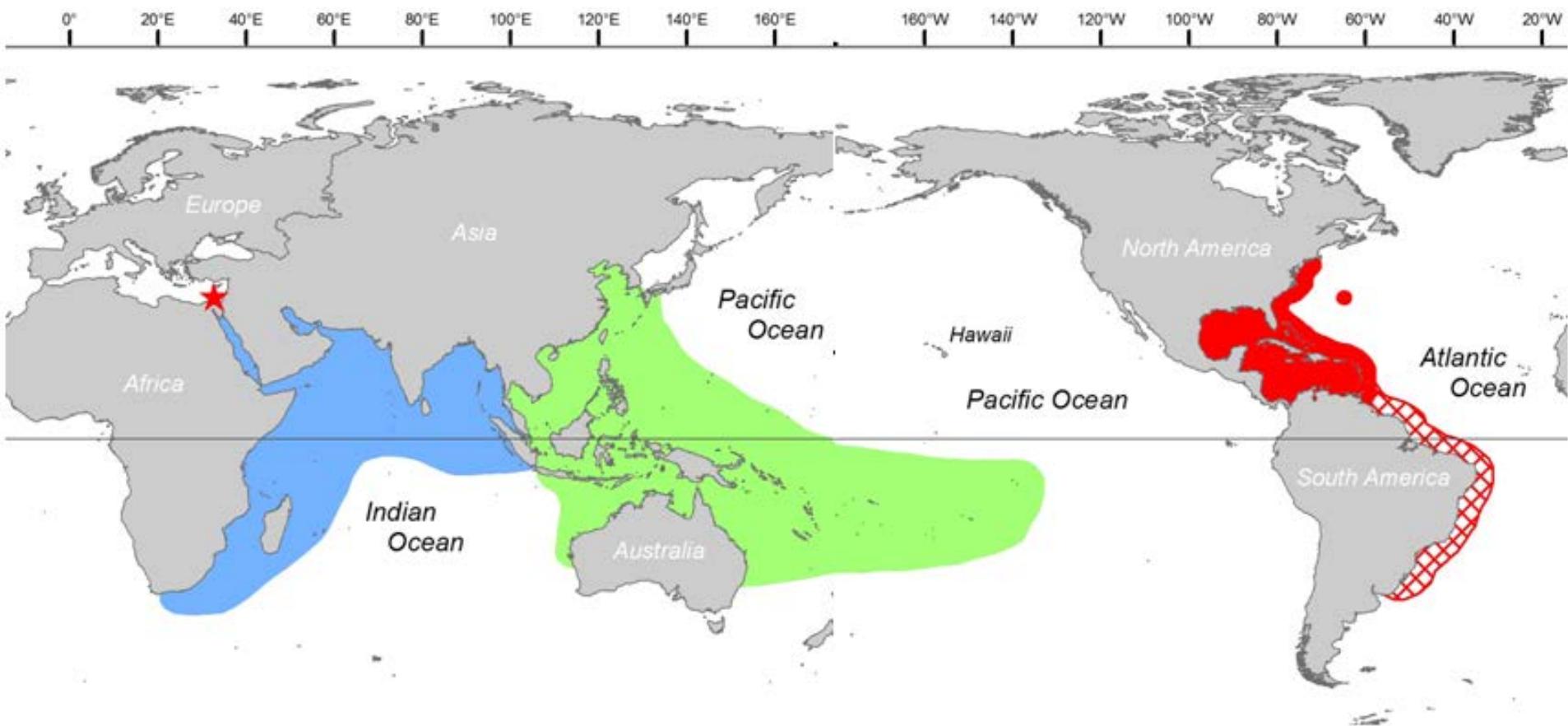
Lad Akins – Director of Special Projects, REEF

Lionfish in the Atlantic

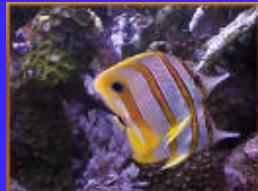


Lionfish Distribution

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



South Florida marine fish introductions – A unique place....



**Field Guide to the
Nonindigenous Marine
Fishes of Florida**

The book cover features a large image of a spotted grouper at the top, followed by a grid of six smaller images showing various non-native fish species: a yellowtail surgeonfish, a blue tang, a lionfish, a white-tipped reef shark, a purple parrotfish, and a striped butterflyfish.

Schofield, P. J., J. A. Morris, Jr. and L. Alkins

USGS
 REEF



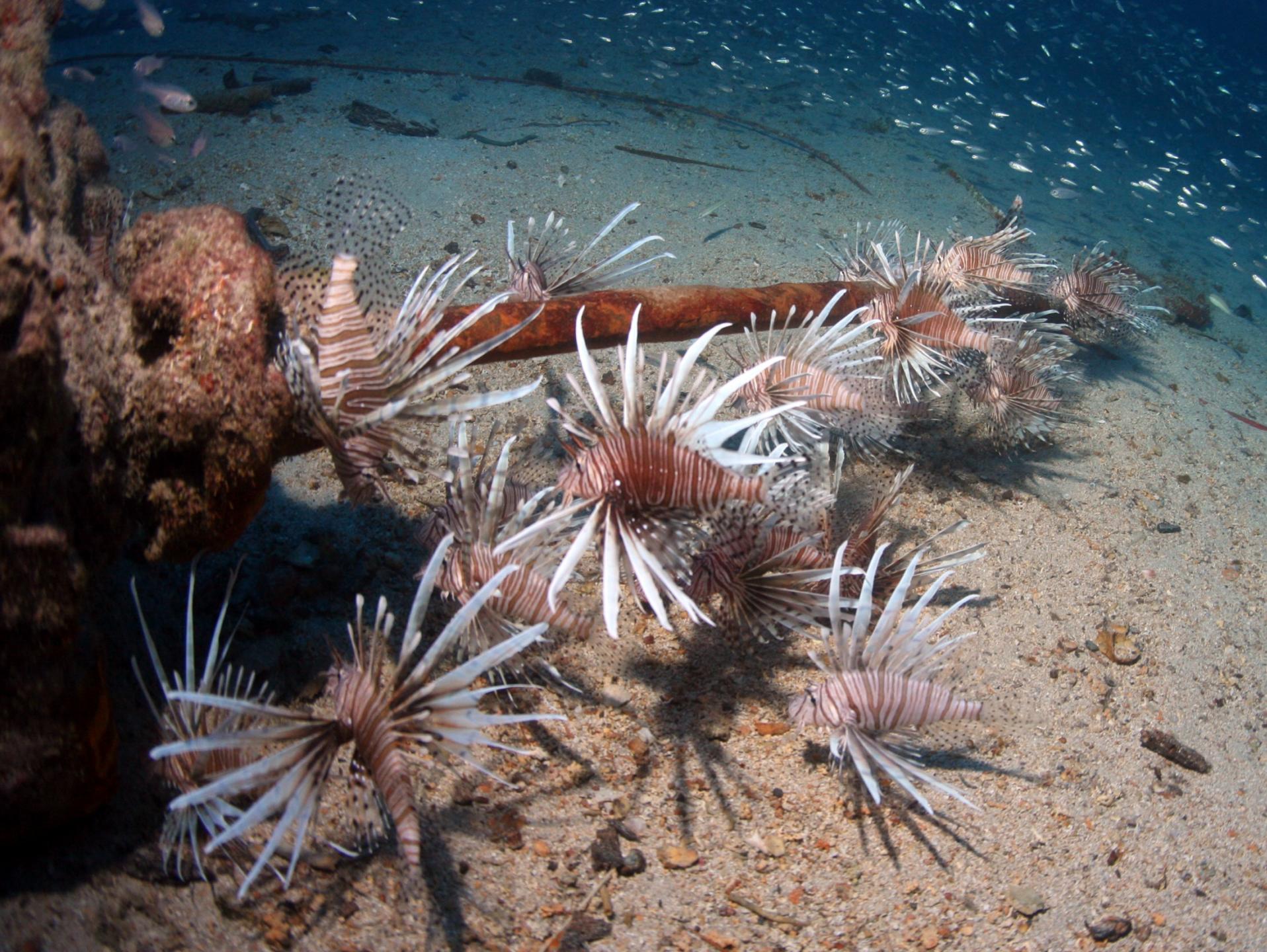


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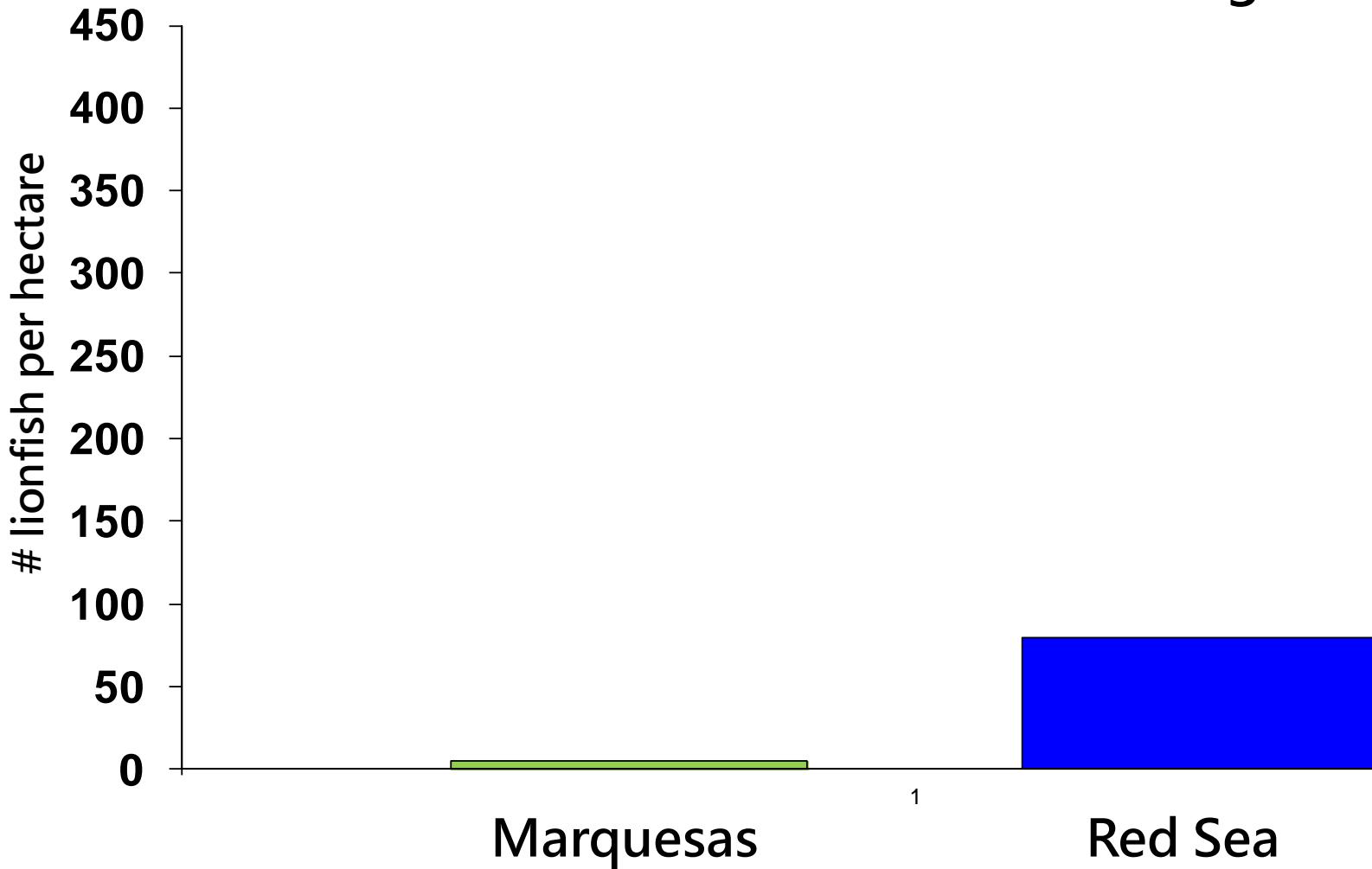


2/28/2011



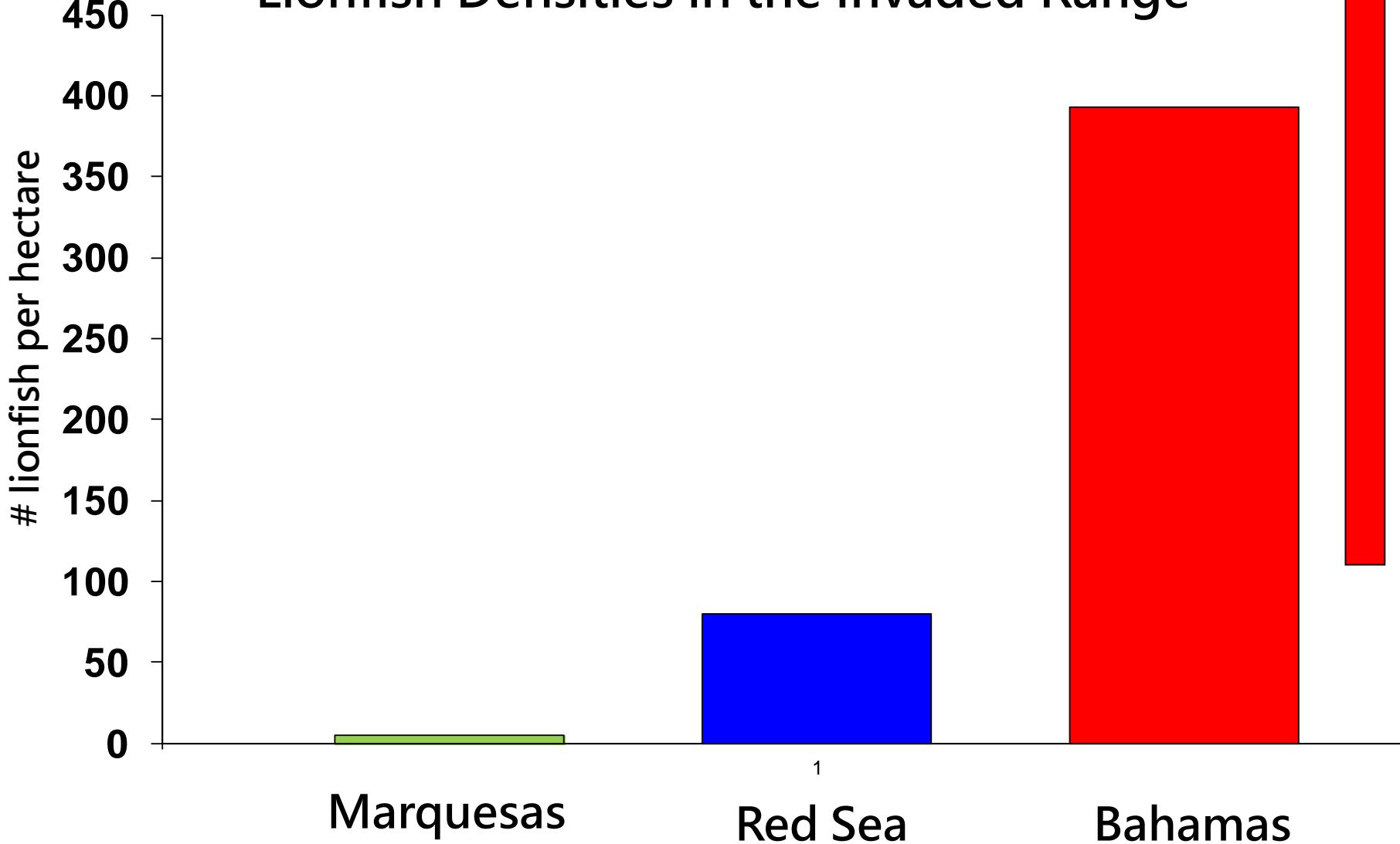


Lionfish Densities in the Native Range



Kulbikci et al 2012, Fishelson 1970

Lionfish Densities in the Invaded Range



Green & Côté 2009, Kulbicki et al 2012

Habitats

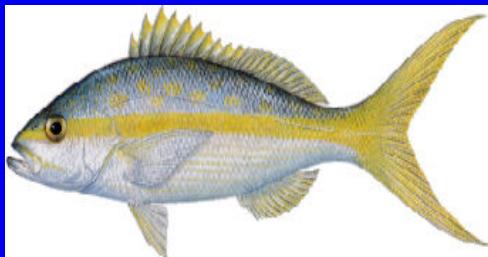






Western Atlantic Sizes
Smallest collected = 28mm
Largest collected = 474mm (482? From MX)
Max size in native range ~ 320-350mm

Lionfish consume prey over half their size



Yellow tail snapper



Nassau grouper



Redband parrotfish



Reef squirrelfish



Banded coral shrimp



Spanish hogfish



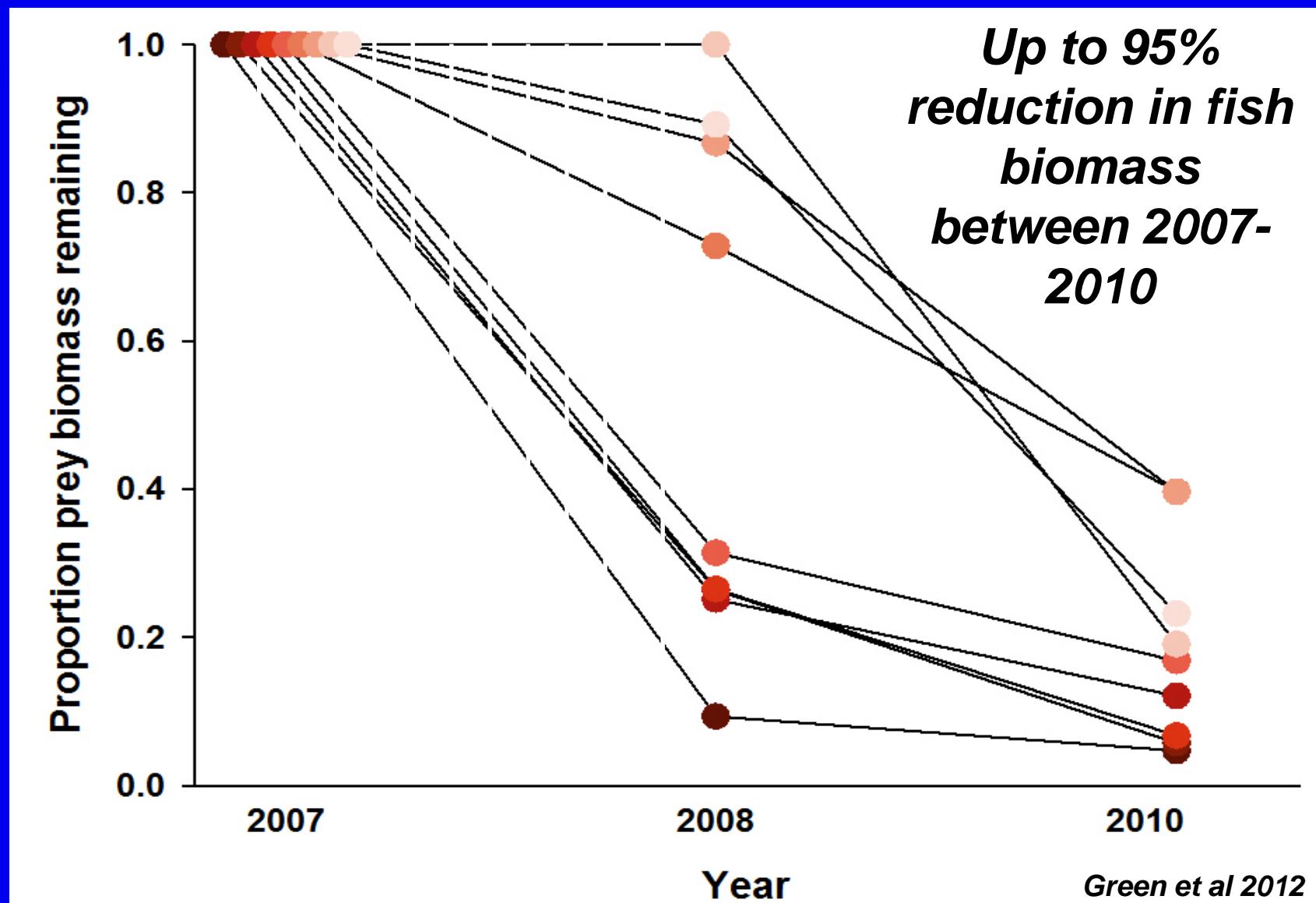
- Over 70 different prey species found in lionfish stomachs
- Commercially and recreationally important species (grazers and cleaners) – keeping the reef healthy and fish clean





64 prey fish plus a shrimp!

Impact of lionfish on Bahamian reef fishes



Why are lionfish so successful?

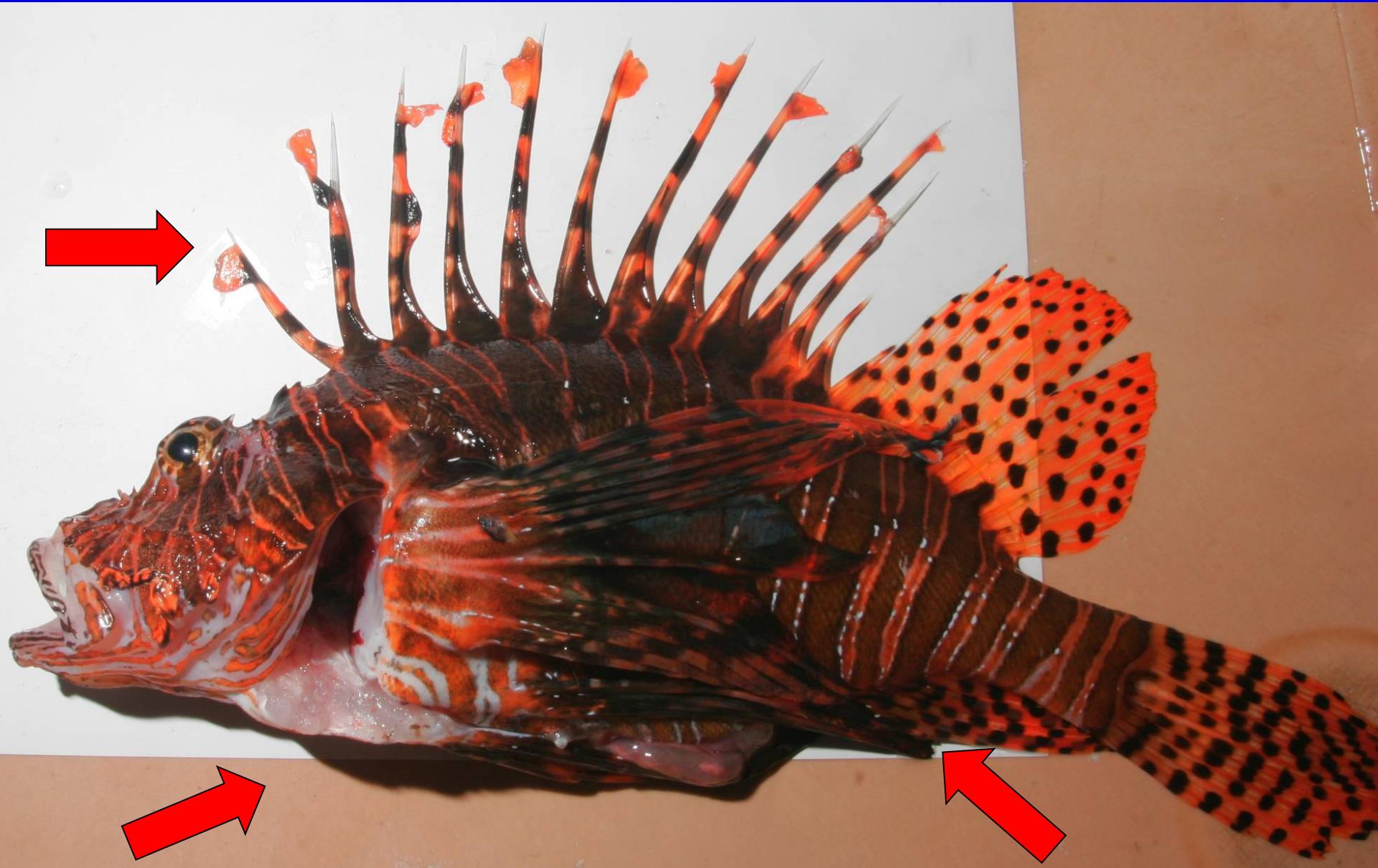




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Lionfish venomology





Lionfish reproduction

- .Spawn in pairs
- .Lionfish release two buoyant egg balls
- .~30,000 eggs per spawn
- .Spawning can occur throughout the year
- .Frequency ~4days

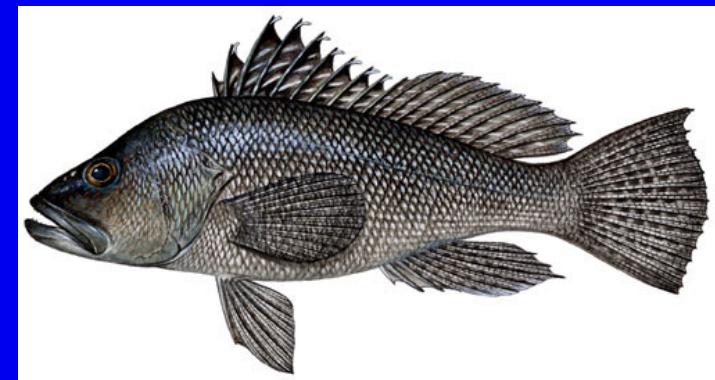
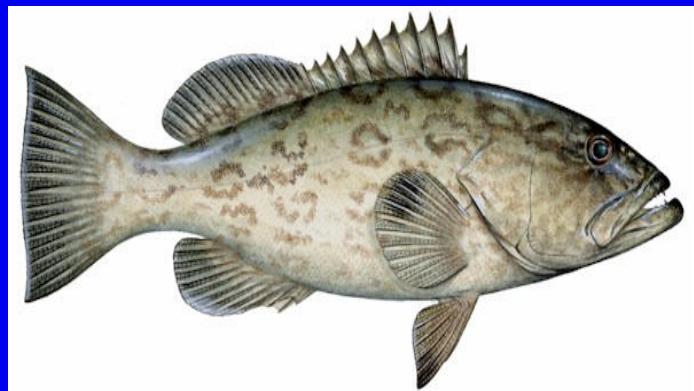
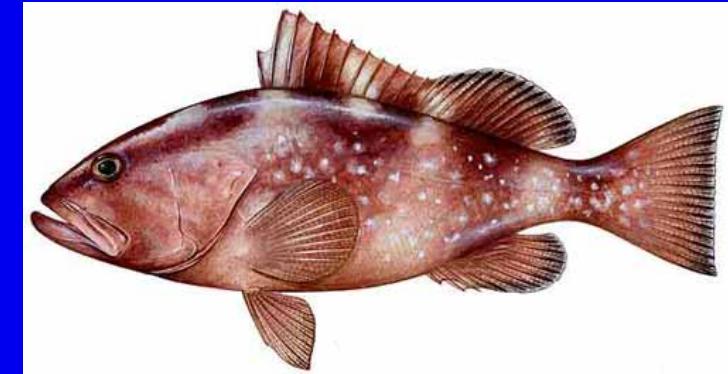


Lionfish predators?





Predation experiments







Additional Invasion Factors...

- Fewer parasites
- Faster growth
- Less competition
- Prey naiveté'
- Genetic vigor



Local Control Can Be Effective



Products





Local Control Can Be Effective

- Training
- Focused effort
- Regular visitation
- Prioritizing sites
- Removal targets
- Resource allocation



Training/Outreach/Education



Lionfish Awareness Workshop

Learn how you can help

Topics include background of the invasion, biology/ecology of lionfish, current research and impacts, collecting and handling, and more...



Lionfish are gluttonous feeders that are equipped with venomous spines. This invasive species could affect various segments of our marine environment including commercially-, recreationally-, and ecologically-important marine species.

When: Tuesday, October 11th 6:30 – 8:30 pm

Where: Eco Living Center at Rutenberg Park

6490 South Pointe Blvd
Fort Myers, Florida, 33919

[FREE and open to the Public](#)

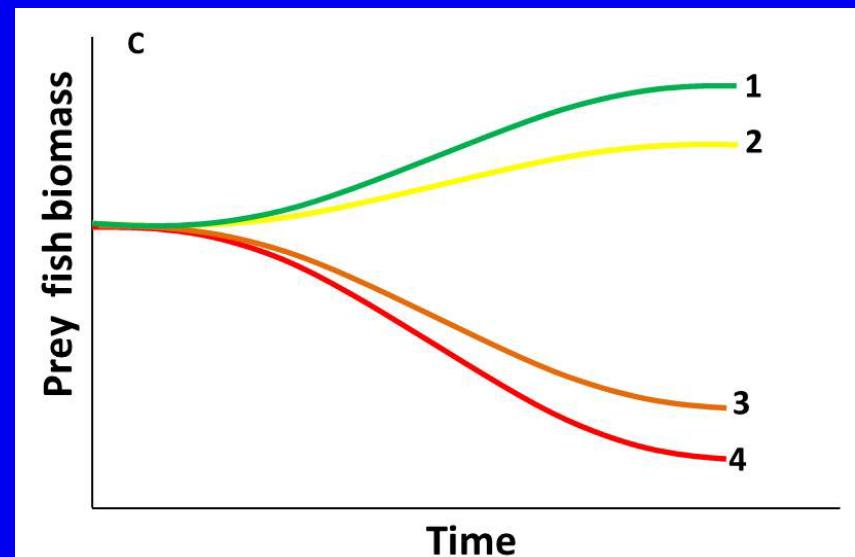
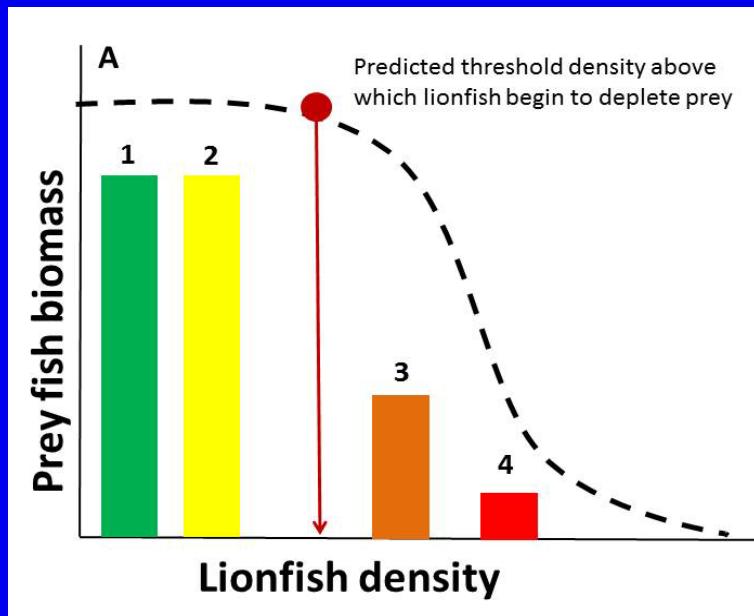


For more information on lionfish go to: www.reef.org

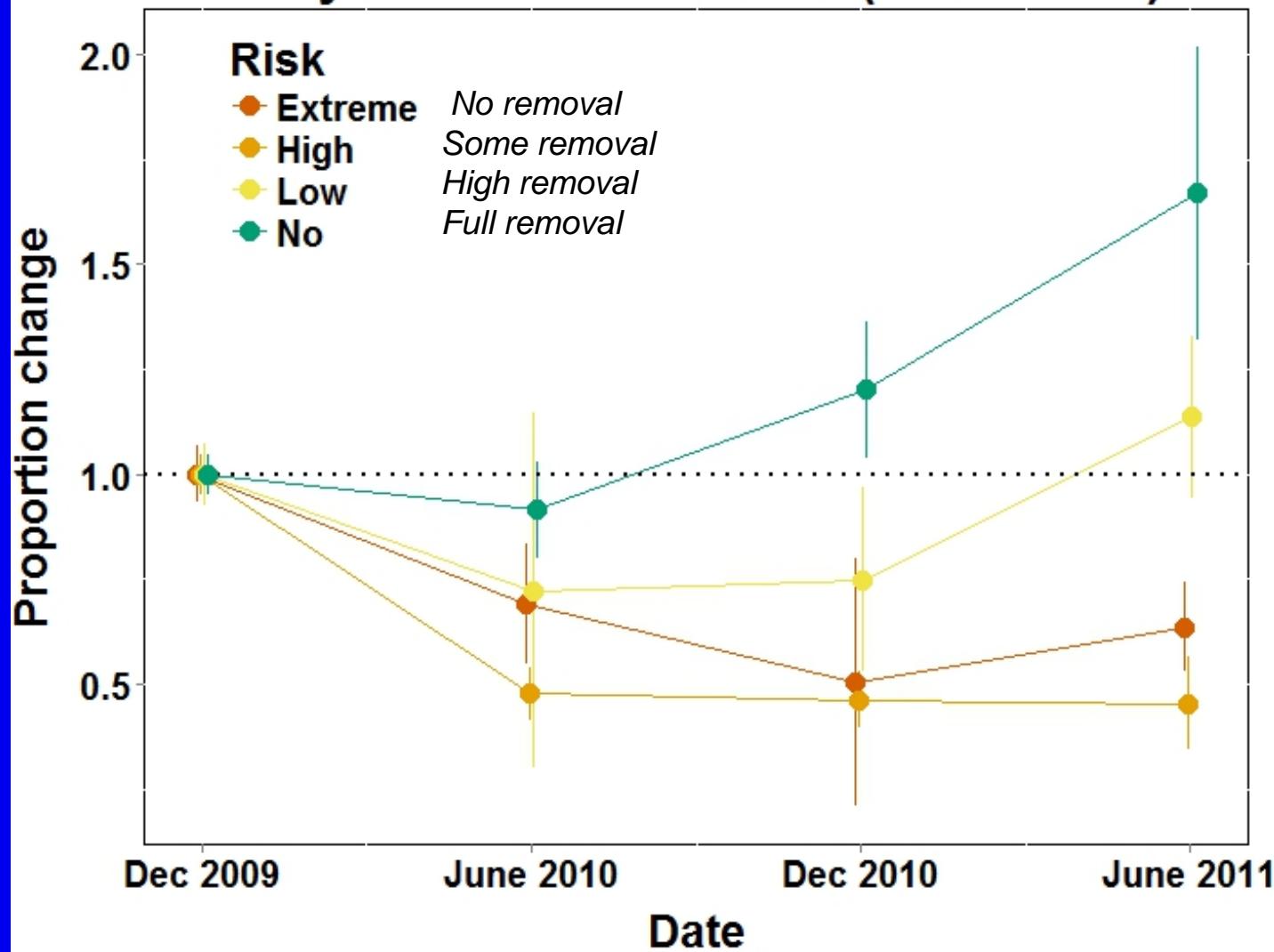
Target Density Model – how many LF can a reef support?



Target Density Model – how many LF can a reef support?



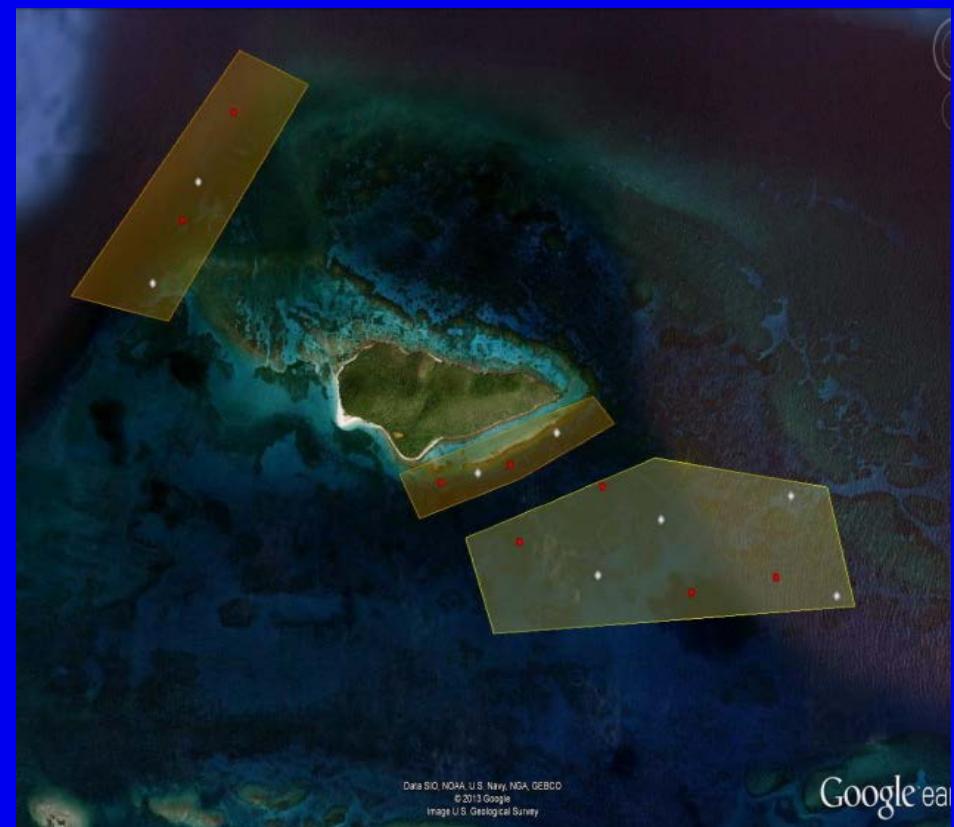
Prey sized fish biomass (6-15cm TL)



Target Density and Removal Effectiveness Study sites

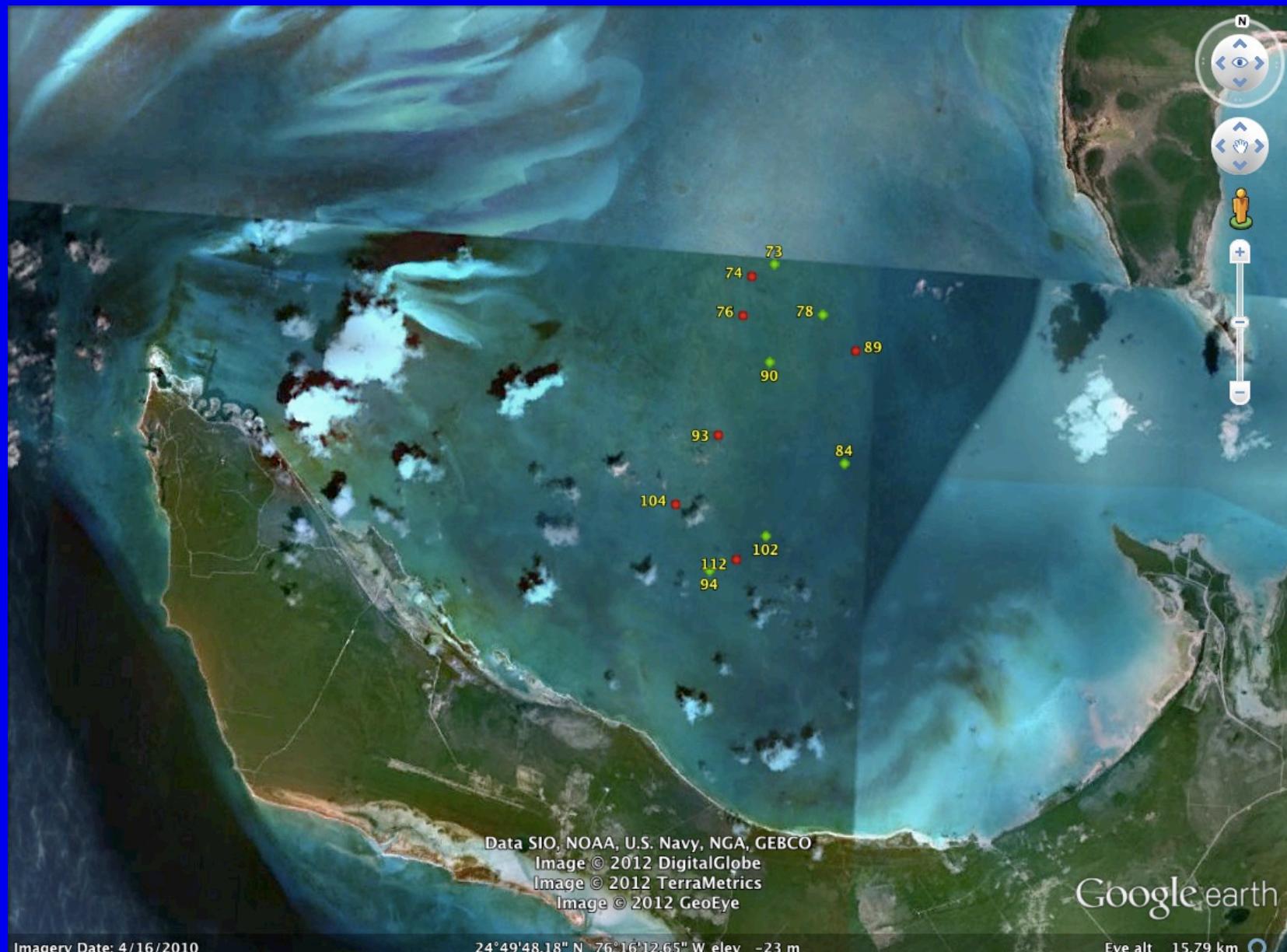


FKNMS and BNP

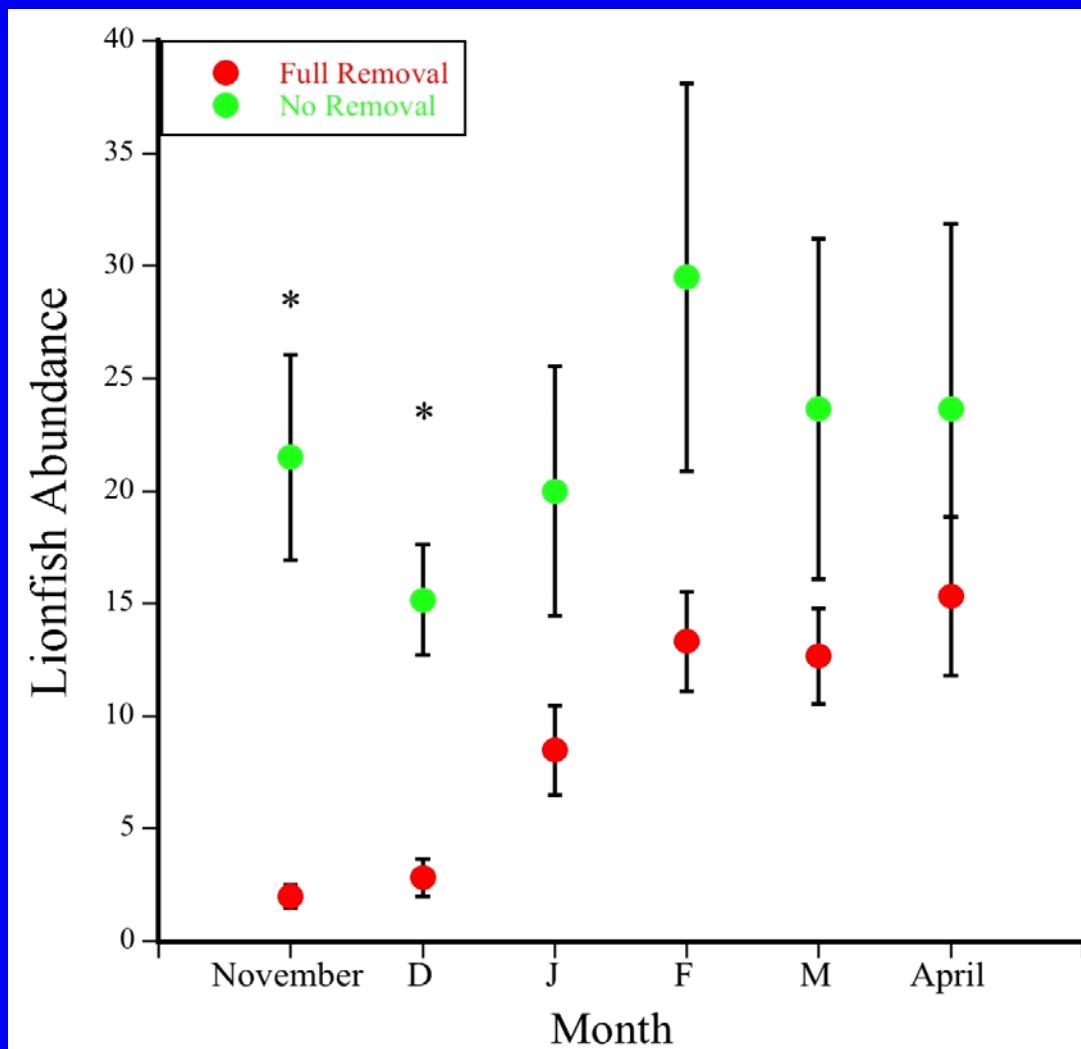


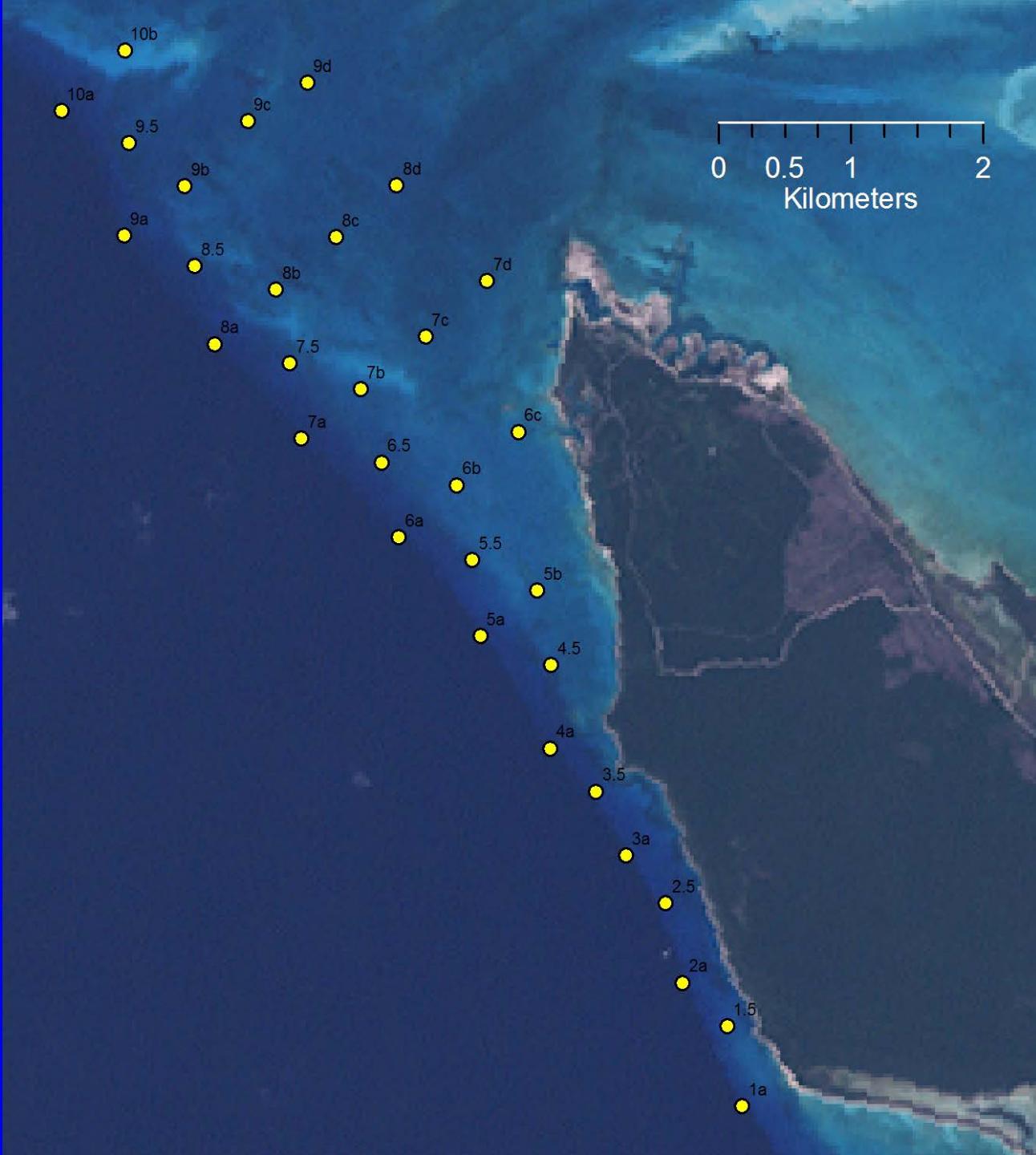
Buck Island, USVI

Removal and Re-Colonization



Re-colonization over 5 months







Ongoing control





Lionfish By-catch in the Florida Keys Commercial Spiny Lobster Fishery

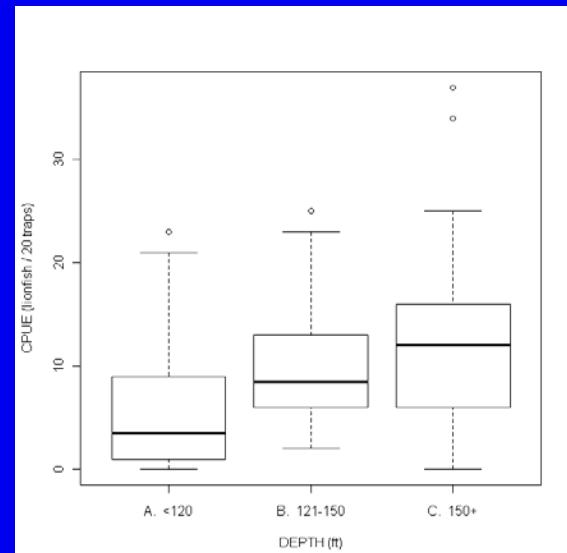


- *128 Commercial lobster vessels in Monroe County, FL*
- *\$12.6 Million USD in annual gross revenues*



Early results

- Mean total length of lionfish increases with depth and temporally during the fishing season.
- Catch rates of lionfish increase with depth
- Correlations show that when lionfish are present in traps, the catch rates for lobster is lower

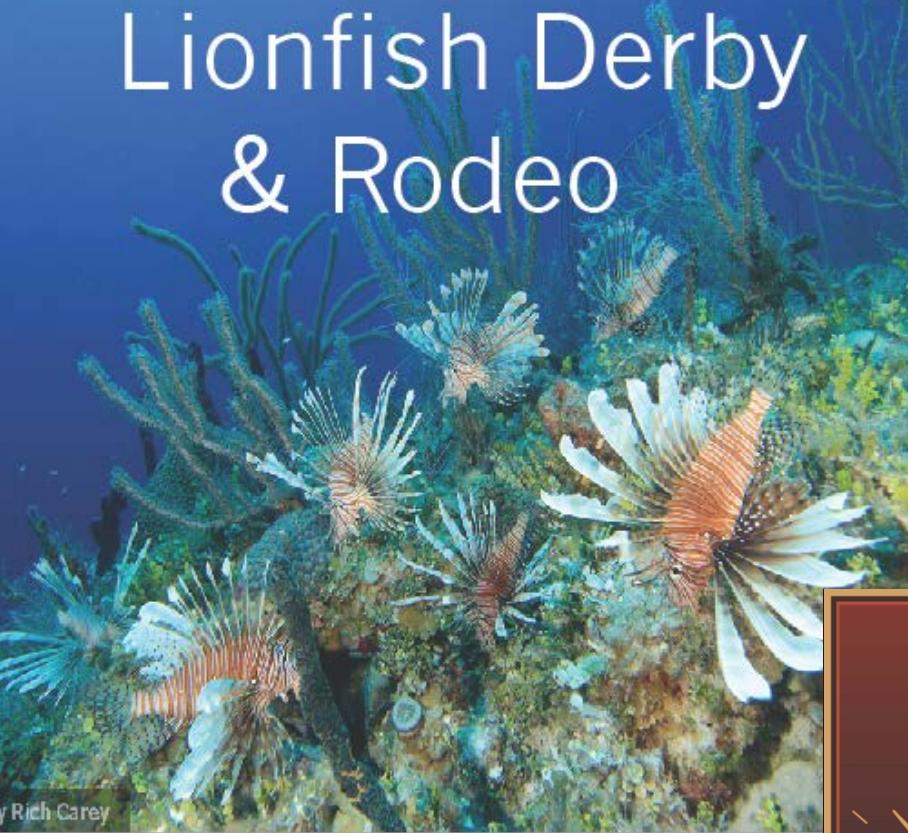




Lionfish Derbies



Lionfish Derby & Rodeo



to by Rich Carey

WANTED LIONFISH HUNTERS



2012 SOUTH FLORIDA LIONFISH DERBY SERIES

Saturday, June 30th- 15th Street Fisheries- Broward County
Saturday, August 18th- Sailfish Marina- Palm Beach County
Saturday, September 8th- Coconuts Restaurant- Upper Keys

Over \$10,000 in Cash and Prizes

Help Control the Lionfish Population

Pre-registration required:

www.reef.org/lionfish/derbies
or 305-852-0030



THIRD ANNUAL LIONFISH DERBY

KIDS OF DOLLARS IN CASH PRIZES FOR MOST, BIGGEST & SMALLEST LIONFISH ON JUNE 25TH AND BROUGHT TO DERBY HEADQUARTERS—GREEN TURTLE BRENDALS DIVE CENTER. DERBY REGISTRATION FORMS AT BRENDALS DIVE CENTER TURTLE CLUB OR REGISTER ONLINE: lionfishderby.com Must be registered to



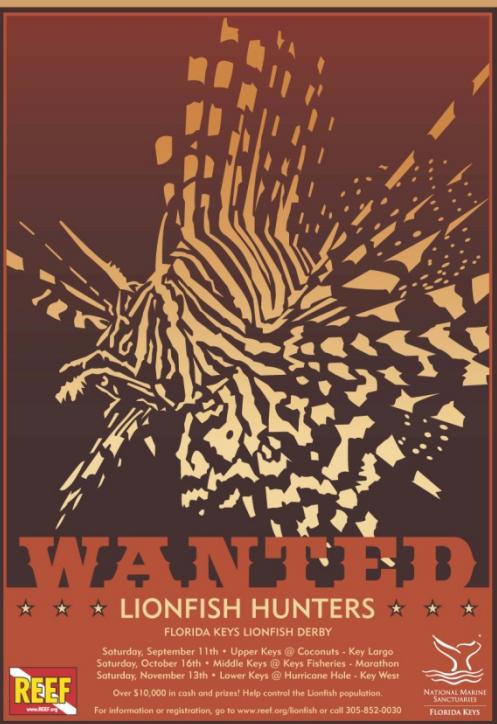
June 24th & 25th, 2010

GREEN TURTLE CAY, ABACO



lionfishderby.com

242-365-4411



Saturday, September 11th • Upper Keys @ Coconuts - Key Largo
Saturday, October 16th • Middle Keys @ Keys Fisheries - Marathon
Saturday, November 13th • Lower Keys @ Hurricane Hole - Key West

Over \$10,000 in cash prizes! Help control the lionfish population.

For information or registration, go to www.reef.org/lionfish or call 305-852-0030



Printed by Litho Craft Printers • Poster designed by Tinsley Advertising

History of Derbies

Green Turtle, Abaco 2009 –
1,408 lionfish



Marsh Harbor 2011 –
2,957 lionfish



Florida, Mexico, Cayman, DR,
Curacao, ...





5th annual Lionfish Derby Series

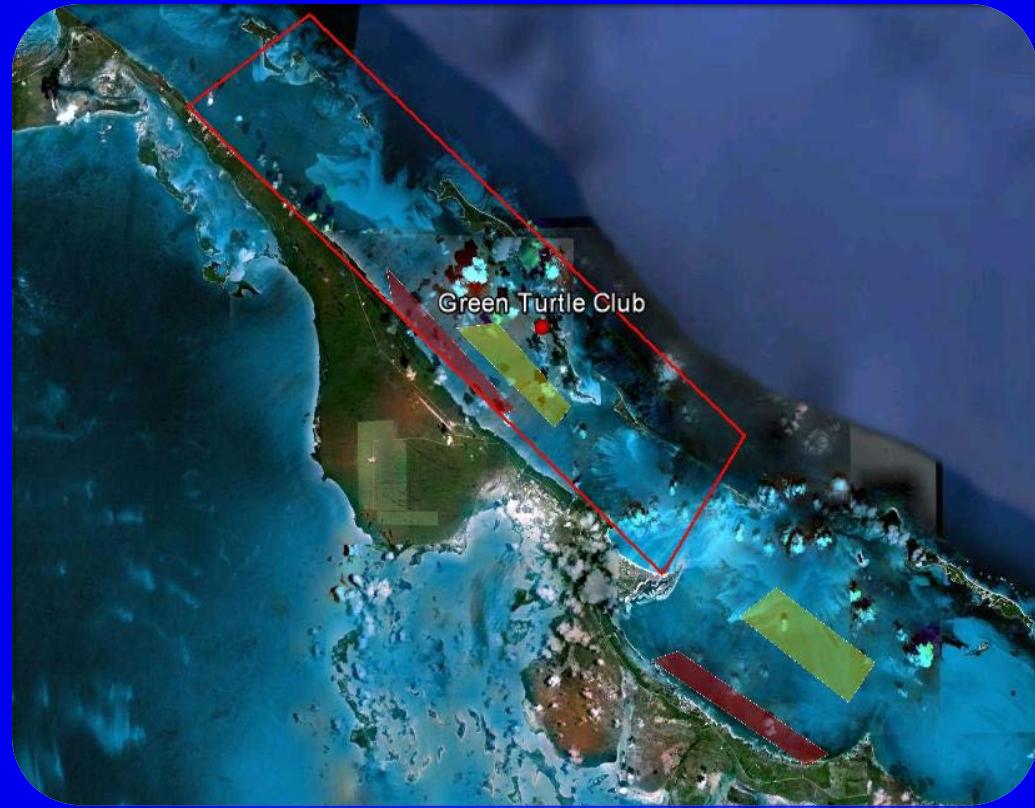


Derbies can provide...

- *Outreach and Awareness*
- *Training for removers*
- *Media interest*
- *Samples for research*
- *Tasting opportunities*
- *Lionfish removals!*



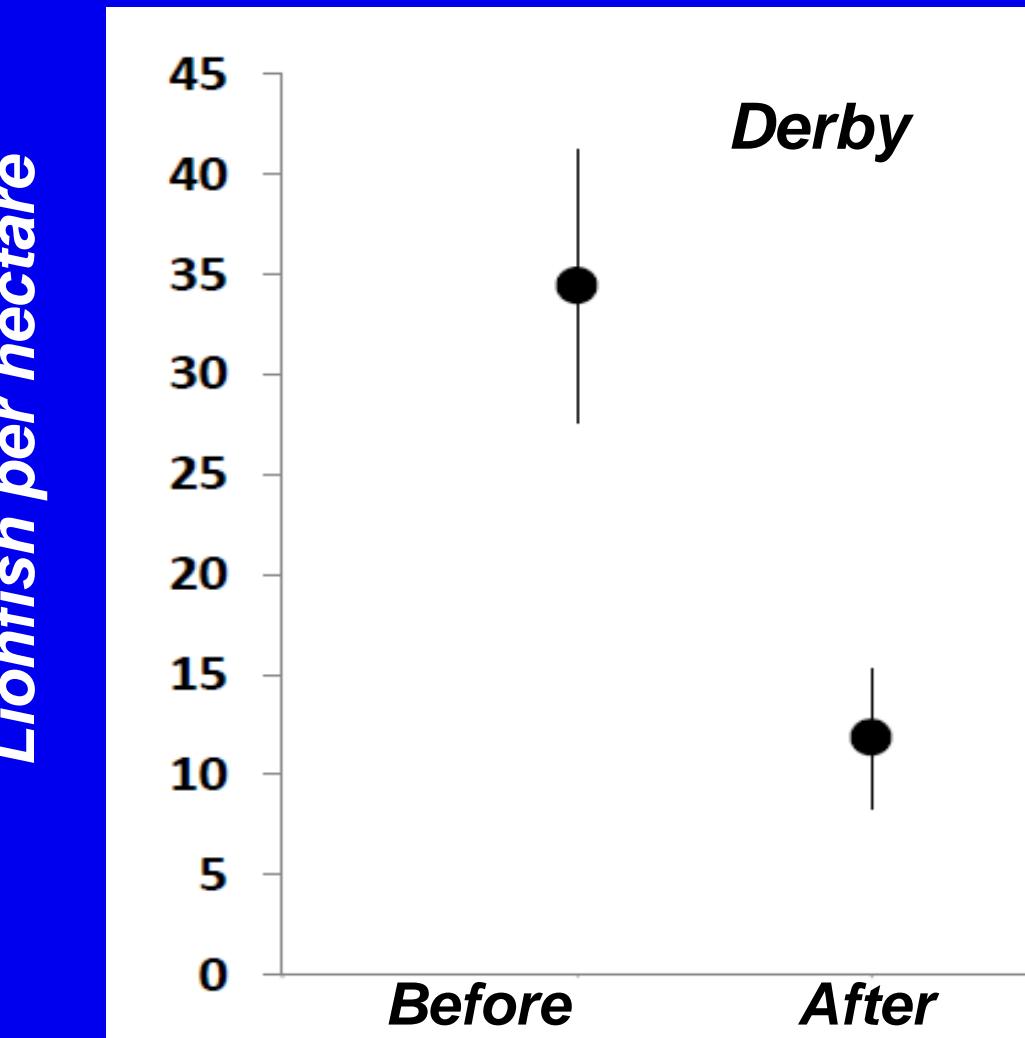
How effective are derbies?



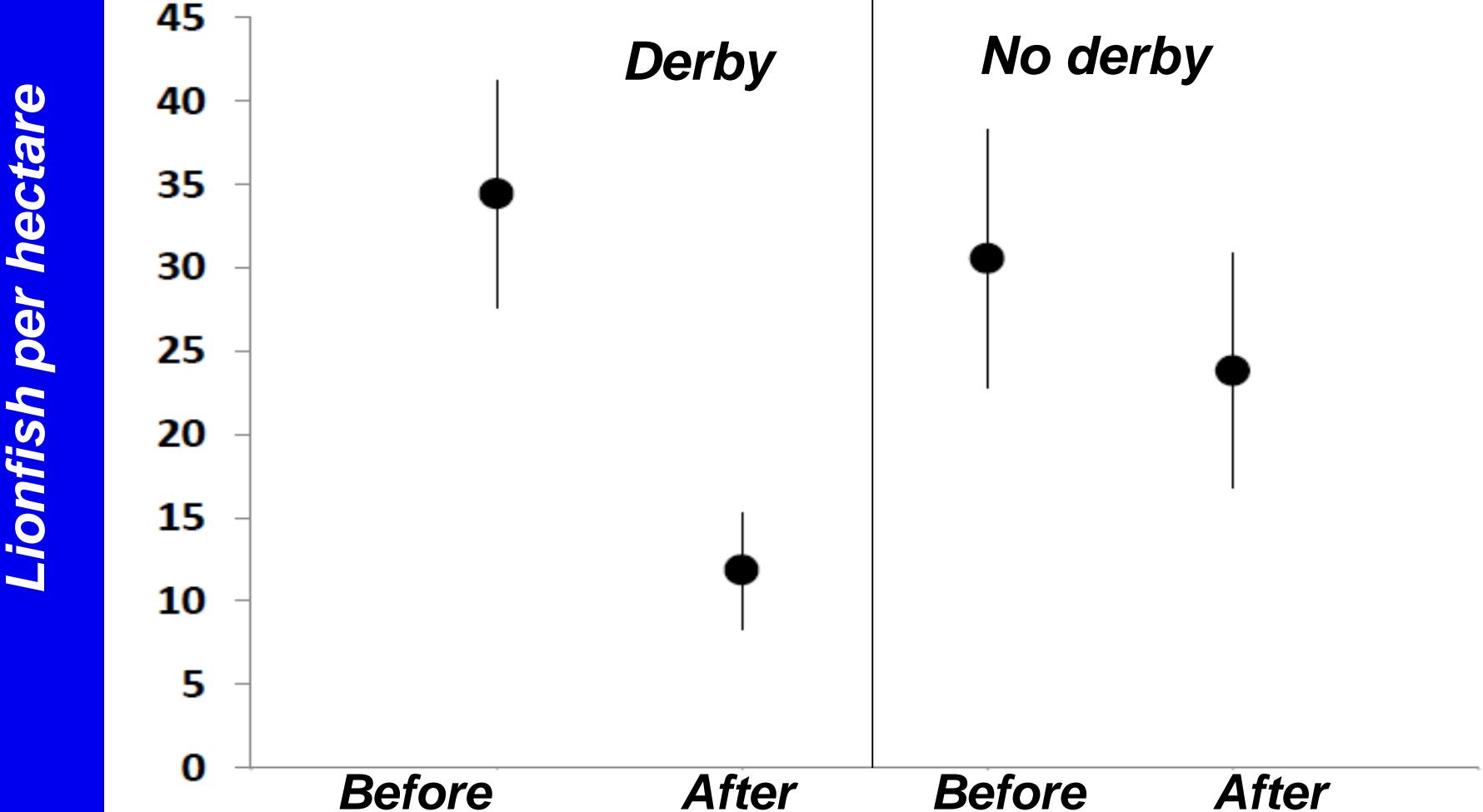
- Participant maps of areas where lionfish captured
- Surveys of lionfish before and after the derby

**Green Turtle Cay Lionfish Derby
June 16, 2012**

Derby reduced local lionfish population by 69%



Derby reduced local lionfish population by 69%



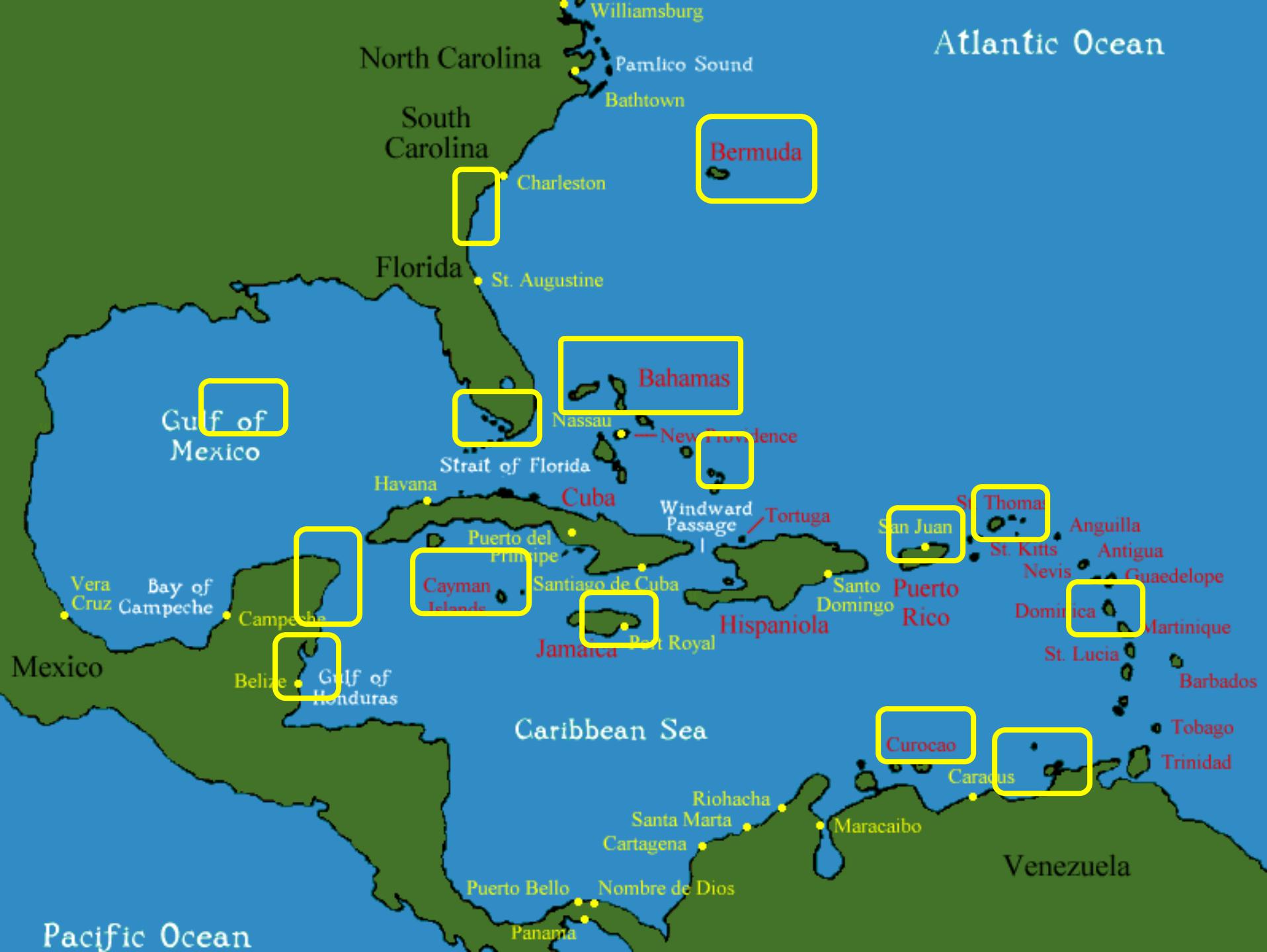
How many fish would these lionfish have consumed?



How many fish would these lionfish have consumed?

*Palm Beach (1,043 LF) =
2.0-8.8 million prey!!!*







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UNIVERSITY



GULF AND CARIBBEAN FISHERIES INSTITUTE

a not for profit 501 (c) (3) corporation

Strategies and Practices for Invasive Lionfish Control

A guide for managers



www.GCFI.org

Lionfish Web Portal

Invasive Lionfish Web Portal



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IF ATTACKED!
a lionfish delivers a potent venom via its needle-like dorsal fins.
Its sting is extremely painful to humans and can cause nausea and breathing difficulties, but is rarely fatal

[LEARN MORE](#)



Documents +

Accordion Information

About Lionfish +

FAQ +


March 2013
Sun Mon Tue Wed Thu Fri Sat
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

What is your favorite destination ?

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 Switzerland
 Canada
 US
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 New Zealand

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Invasive Lionfish
Web Portal

Home | Researching and Monitoring | Control | Education and Outreach | Management



EDUCATION & OUTREACH

Lionfish Education & Outreach Program Description

Publications & Presentations
User is directed to a page with list of all publications & presentations. User will be able to keyword search or narrow down search by using tools and filters

Events
Open a PDF file or reader with date and event listed

Videos
User is directed to a page with list of all videos. User will be able to keyword search or narrow down search by using tools and filters. Once video is clicked, it will maximize on the screen.

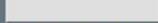
Photos
User is directed to a page with all photos. Can click on the photo to maximize. User will be able to keyword search for a photo or narrow down search by using tools and filters.

Kids
User will be directed to a page with Quick facts, Activities, Research references

Forum
User will have the ability to post questions and have answers by subject, Archives

Highlighted events
NEW Presentations added

suggested links



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What do they do
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Managers
Who they are
What do they do
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GCFI Annual Lionfish Session

- 7th year
- 66th GCFI - Corpus Christi – Nov 2013
- Papers, posters, forum

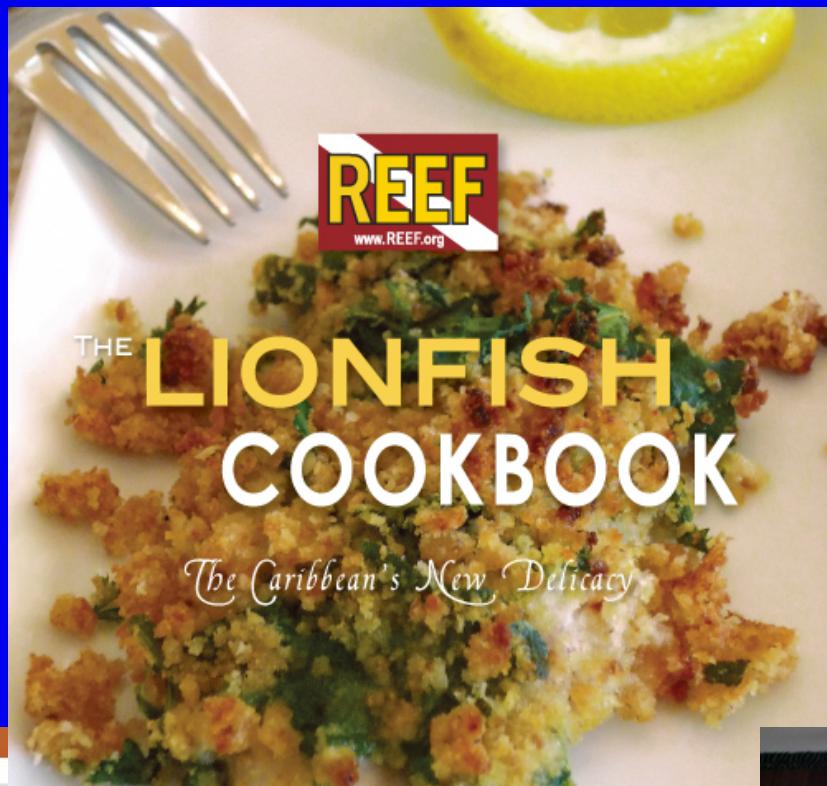


Regional Lionfish Strategy





Eat 'em to Beat 'em!



8 wonton wrappers
1/2 cup oil
8 lionfish fillets
2 tablespoons
2 tablespoons
1 tablespoon
1 cup seaweed
1/4 cup wasabi

*Items can be found at oriental
markets.

TRICIA FERGUSON AND LAD AKINS

PHOTOGRAPHY BY
DAVID M. STONE

sauce: sweet chili sauce and soy sauce
together in a bowl and set aside. Spray
skillet with non-stick cooking spray. Cook
lionfish fillets in skillet over medium high
heat for 2 to 3 minutes until flaky and
tender. Cut or flake lionfish so it is in small
pieces. Toss lionfish in soy sauce mixture.

Place lionfish on wonton wrappers, top
with seaweed salad and drizzle with
wasabi mayonnaise.

¡Delicioso!



Ciguatera

- Found in some lionfish in USVI (hotspot)
- No known cases of CFP
- Testing through FDA and NOAA
- USVI project - Dr Bernard Castillo
- Regional Workshop
 - NOAA
 - FDA
 - REEF
 - ~16 countries



Thank you!

