

Bonaire National Marine Park

The Arrival of Lionfish in Bonaire

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BNMP Manager

Invasion Status

- ✓ October 26, 2009
- ✓ 500+ removed
- ✓ 384 cataloged in the lab for DNA studies, sexual maturity, stomach content and otoliths
- ✓ Coral reef environment
- ✓ Smallest 5 cm. Biggest 1.5 m



Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2010 GeoEye
Image © 2010 DigitalGlobe

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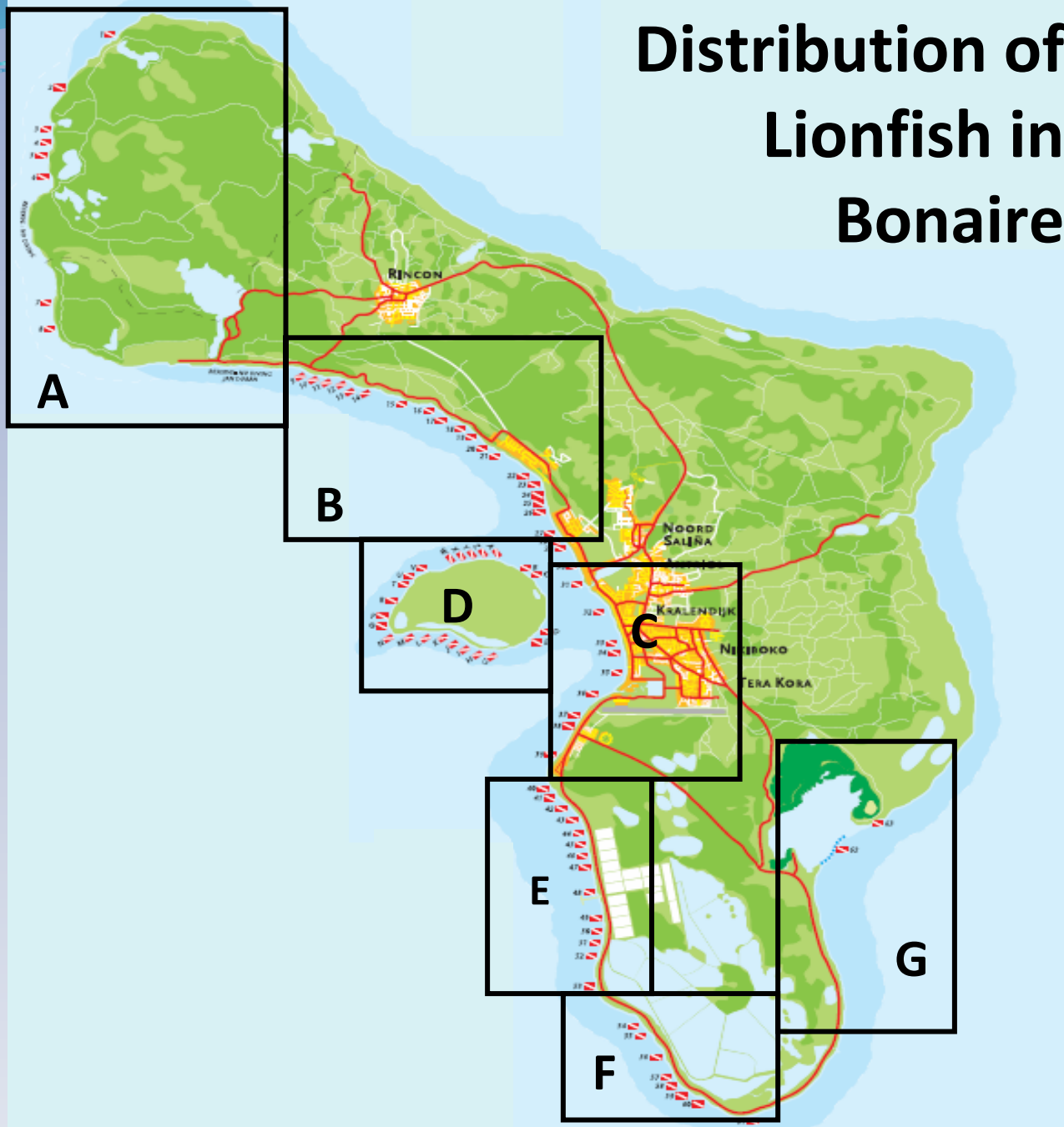
12°09'58.33" N 68°18'18.22" W elev -1 ft

Eye alt 2





Distribution of Lionfish in Bonaire



A: 16%

B: 24%

C: 34%

D: 7%

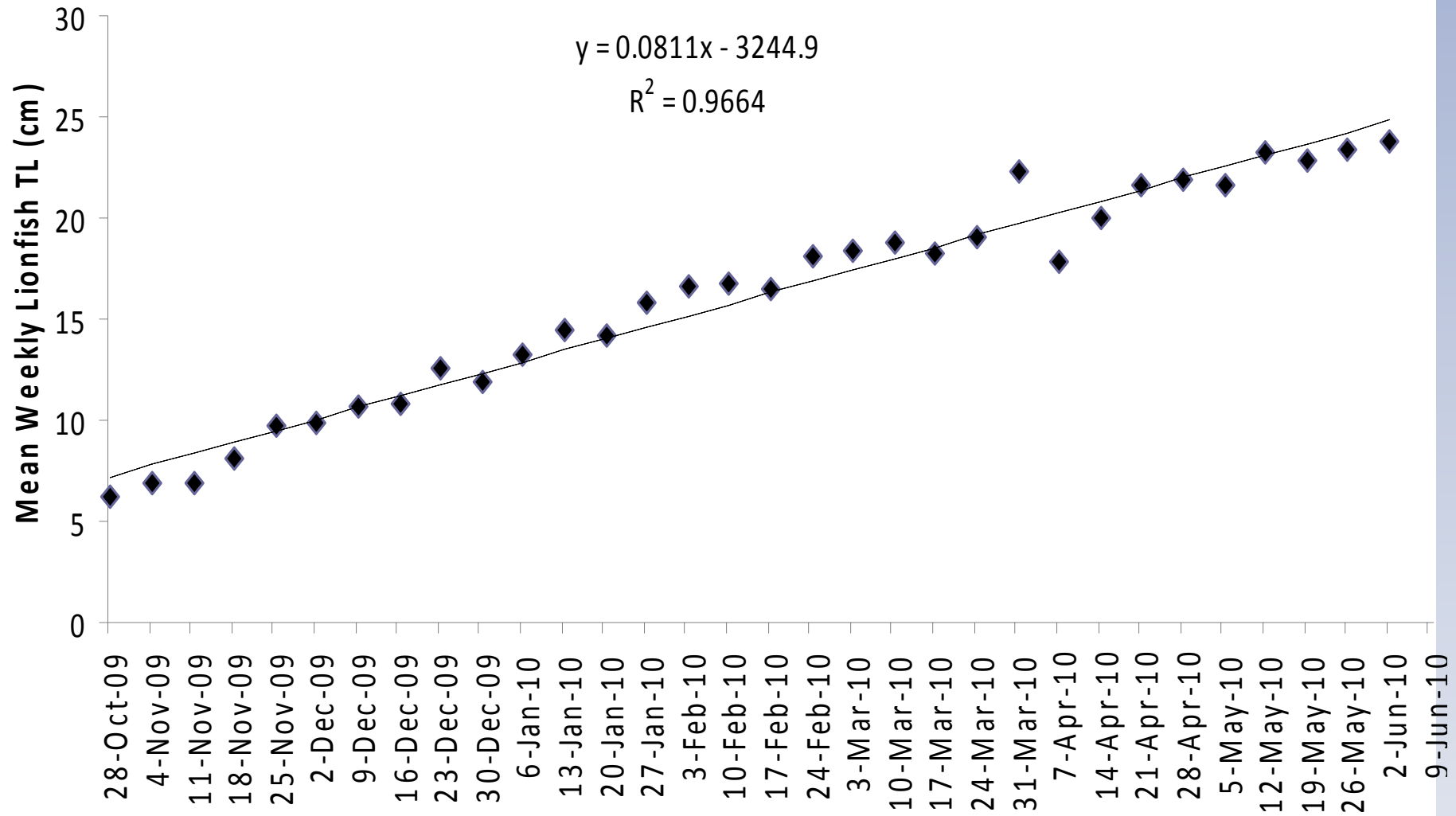
E: 20%

F: 20%

G: 11%

TOTAL: 384

Growth rate of lionfish in Bonaire



Action Plan

Communication Plan



DIVERS, HAVE YOU SEEN ME?



The venomous Indo-Pacific "Lionfish" is regularly observed in habitats within the southeast region (Florida to North Carolina) and the Bahamas. These fish are not native to Atlantic waters and may have a negative impact on native fish populations. All of their spines are venomous and can cause extreme pain. If stung, immerse wound in hot water and seek medical attention as soon as possible. Lionfish are a major threat to local fish species. Because fish do not see Lionfish as a predator they have no natural defense against it.

Lionfish can kill all the commercial fish in local waters, destroying local fishing population and coral reef.

IT IS VERY IMPORTANT IF YOU SEE A LIONFISH DO NOT HARASS IT! REPORT IT IMMEDIATELY TO THE BONAIRE NATIONAL MARINE PARK: "hotline" 9292 or 786-8444

Identification:

- * Lionfish have distinctive red, maroon, and white vertical stripes
- * Fleshy tentacles above eyes and below mouth;
- * Fan-like pectoral fins;
- * 13 long separated dorsal spines
- * 10 - 11 dorsal soft rays;
- * 3 anal spines;
- * and 6-7 anal soft rays;
- * An adult Lionfish can grow as large as 18" (45 cm)



HANDLE WITH EXTREME CAUTION: IF SEEN, MARK THE SITE AND REPORT LOCATION AND DEPTH, TO THE BONAIRE NATIONAL MARINE PARK: "hotline" 9292 or 786-8444.



BO A MIRA E PISKÁ AKI ?



E piská riba e portrèt ta un "Lion fish" (Piská leon). Nan no ta originalmente di aki banda, pero resientemente, nan a yega Boneiru.

Tur su spíñanan tin venenu i por kousa doló imenso. Si e hinkabo, pone e herida den awa kayente i buska atshon médiko mesora.

E Piská leon ta un menasa masha grandi pa nos piskánan lokal. Pasobra ku nan no konosé, nan no tin miedu di dje. E Piská leon por aserká nan fásilmente i kome nan. E Piská leon por kaba ku tur piská riba nos ref i laga esaki blo bashi.



TA DI SUMA IMPORTANSHA PA RAPORTÁ MESORA NA STINAPA ORA BO MIRA ÒF KUE UN PISKÁ LEON. YAMANDO: "hotline" 9292 òf 786-8444

Identifikashon: Piská leon tin strepi hopi distintivo koló blanku, kórà i maron di ariba bai abou, tentákulo riba nan wowo i bou di nan boka. E alanan tras di nan barika ta forma un fèn. Nan tin 13 spíña diki riba nan lomba i 10 pa 11 ala moli tras di esaki. Na nan ano tin 3 spíña diki atrobe i 6-7 ven moli. Un Piská leon adulto por krese te 18 inch (45 cm).

Tene masha kuido ku e piská aki. Si bo ku'é den reda, tarai òf na liña, **NO TIR'É BÈK NA LAMAN.** Ward'é, pa nos. Yama STINAPA su "hotline" 9292 òf 786-8444. Nos ke sa e lugá, profundidat i e ora ku a piska e piská aki.

WANTED!



HOW YOU CAN HELP

The lionfish is threatening our reefs. We need your help to control this invasion.



Ask your dive operator or the Bonaire National Marine Park staff for a **lionfish marker**. The marker consists of a 4 to 5' by 1 inch surveyor tape with a flotation device.



If you see a lionfish, **do not try to catch it**. Unsuccessful attempts to catch a lionfish only make further attempts more difficult.

Gently **attach the marker** on dead coral in the **immediate vicinity** of the lionfish.



Call the Bonaire National Marine Park on **9292** or call your dive operator as soon as possible and **report dive site, depth and distance** from the entry or buoy. **Direction North or South** from the buoy.

The capture of the lionfish by special teams and recovery of your mark might take some hours.

Most important, be extremely careful of accidentally coming into contact with a lionfish. If stung during diving, abort the dive immediately. Apply hot compress to wound and seek medical attention as soon as possible.



Bonaire National Marine Park hotline: 9292.
Read more about the lionfish on: www.stinapa.org

Action Plan

- **Removal Plan**

- 1. Information during Orientation**
- 2. Distribution of markers**
- 3. Training workshop in removal techniques**



Action Plan

- **Removal Plan**

4. Spotting, marking and reporting

5. Loading information to the “death row” (dedicate staff)



Action Plan

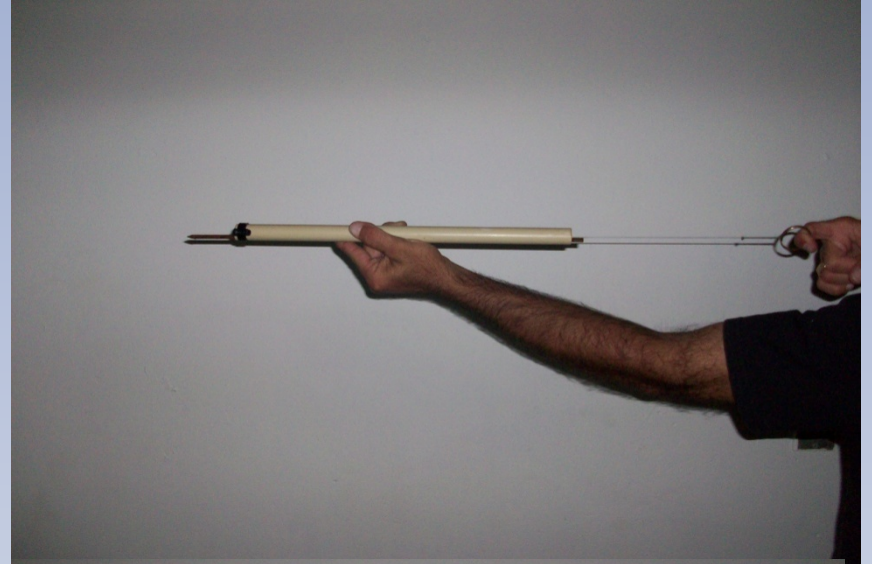
- **Removal Plan**

- 6. **Activate removal team**

- **netting**
- **“the nematocyst”**



Action Plan

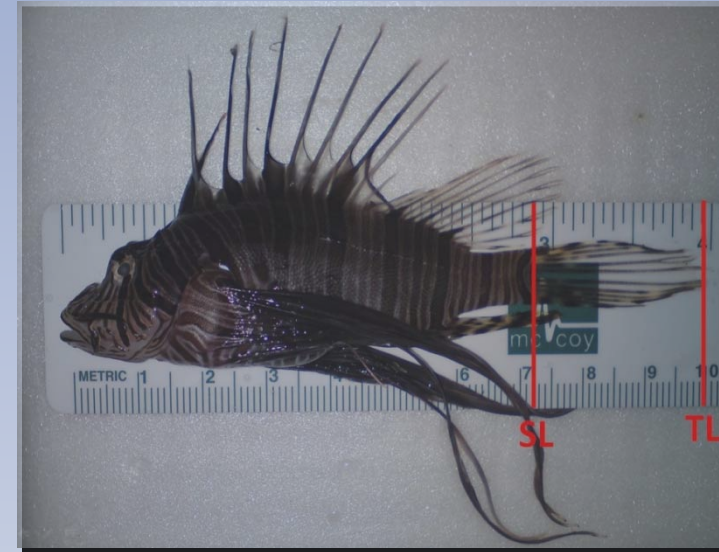


Action Plan

- Removal Plan

7. Log specimen at the laboratory

- Standard Length
- Total Length
- Wet Weight
- Location
- Collector
- Date
- Depth
- Time



date 7/13
site Angel City
Time 15:00
SL 7.2
TL 9.9
Depth 57 ft
collector Walt + Lynne
(D) F A
Net Wt 10.1g



Successes

- **Early start**
- **Action plan ready 6 month before arrival**
- **Plan based in Bonaire's main advantage, divers all the time everywhere**
- **Involvement of the Dive Operators**
- **Good number of committed volunteers**

Challenges

- **Right timing in releasing the communication plan**
- **No certainty about the impact of the plan**
- **Densities still too low to assess by traditional methods**
- **Keep the volunteers motivated**
- **Financial constrains**
- **Spear fishing banned since 1971**

Funding

• \$

Needs

- **Involvement of Fisheries Departments**
- **Promote more organized participation of Dive Operations**
- **More financial resources available to the implementation of control plans**
- **Unify the message to the political sector**

What the management options are??

1. **Prevention** (mmm, we kind of fail here!!)
2. **Early detection, rapid response** (we took way too many pictures before we realize that it was nothing else around)
3. **Damage control, slow the spread**
4. **Adapt to the new comers and go back to the happy hour !!!!!**

Thank you

