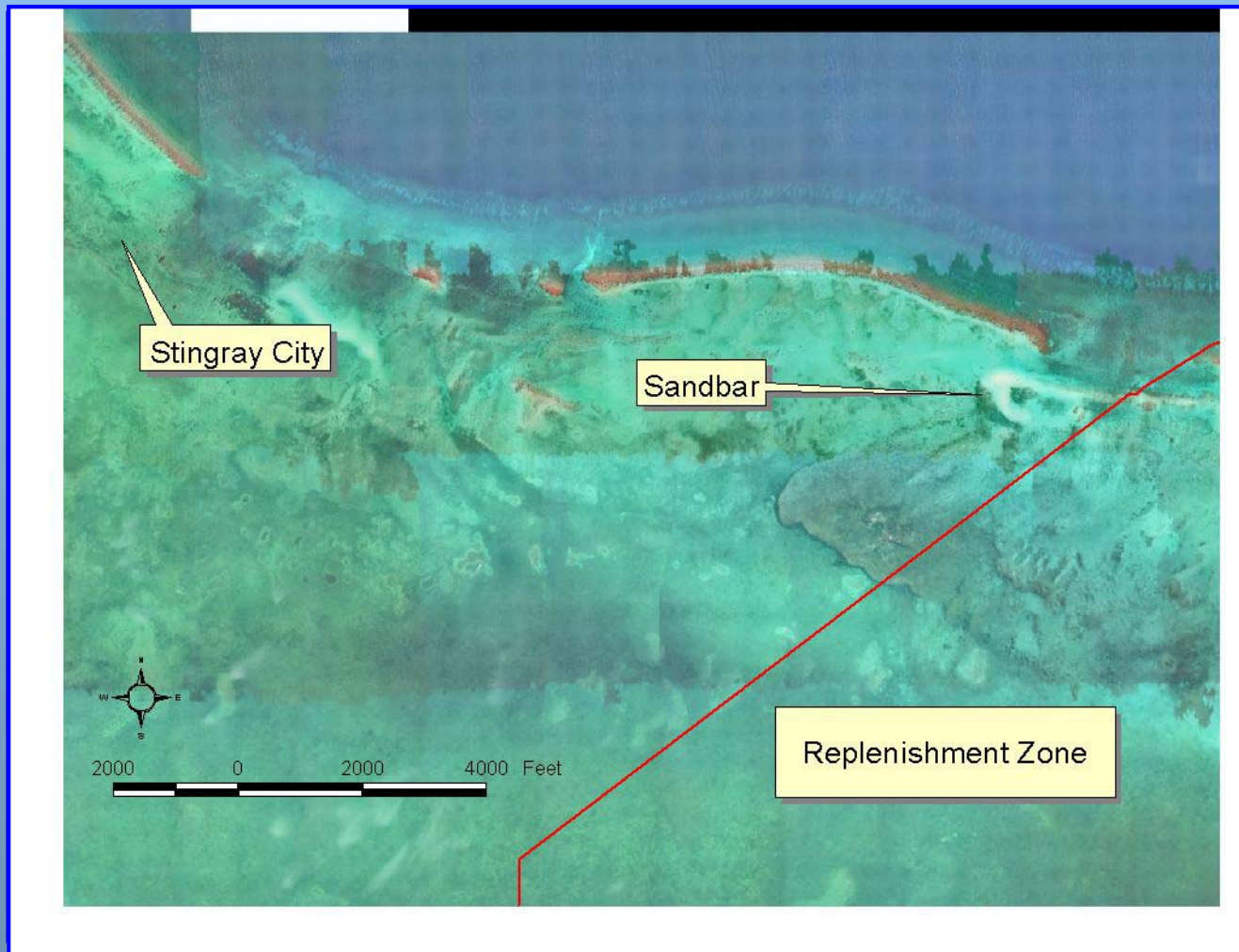


# **Wildlife Interaction Zone Regulations The Sandbar and Stingray City**

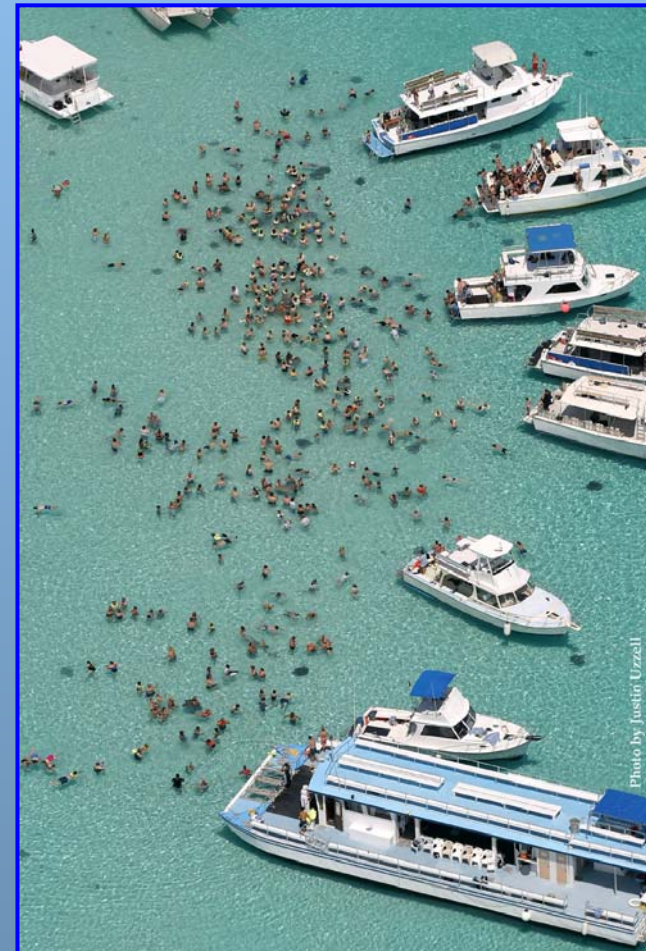
**Cayman Islands Department of Environment  
Gina Ebanks-Petrie**



# Location of the Sand Bar/ Stingray City



# Sand Bar – Grand Cayman



# Early Concerns

- Primarily centered on the effects of feeding (and overfeeding) on the Stingrays.
- Handling of rays and safety of animals and humans also an issue.



# Results of Stakeholder Consultation

## Issue

## Stakeholder

<b>Ecological health of sting ray population and North Sound in general.</b>	<b>Department of Environment (DoE), Marine Conservation Board (MCB).</b>
<b>Increasing number of negative complaints from tourists about Sand Bar experience (including safety and overcrowding issues)</b>	<b>CITA Watersports Committee; Land &amp; Sea Coop.; Department and Ministry of Tourism; MCB.</b>
<b>Adequate access to and use of area by residents.</b>	<b>MCB; general public</b>
<b>Lack of regulatory framework to address issues.</b>	<b>DoE; MCB</b>
<b>Creation of additional sting ray interaction sites</b>	<b>CITA Watersports committee, L&amp;S Coop; DoE, MCB</b>

# Recommendation Summary

- Primary recommendation: create 2 special management areas (**now referred to as Wildlife Interaction Zones**) in the North Sound: one at the Sandbar area & a second at Stingray City under the Marine Conservation Law.
- Secondary: A new stingray feeding site would be allowed on smaller and deeper sandbar sites to the SE of current site & inside Sandbar management area, subject to no other stingray interaction sites being established at any other location in the Cayman Islands.

# Issues and Solutions

## **Ecological health of stingray population and North Sound resources in general.**

- All vessels with heads will have to install holding tanks within a specified timeframe.
- On sandbar, anchoring ONLY outside the 4' (depth) contour as demarcated.
- No anchoring within 20' of fringing reef or patch reefs.
- Boat hulls must be at least 20' from any reef structure.
- No anchoring at deep Stingray City.

# Issues and Solutions contd.

## **Ecological issues contd...**

- Stingrays to be designated as a 'protected' species.
- No footwear allowed at Sandbar.
- No removing stingrays from the water.
- No selling any form of fish food from boat.
- No fishing: line, trap or spearguns. No taking of marine life of any kind.
- No Scuba Diving around the Sandbar area (area to be demarcated) except with permission from the MCB.
- Only 1 feeding station per boat and only 1 lb. (1/2 Kg.) of food per boat (regardless of size).

# Issues and Solutions Contd.

- **Adequate access to and use of area by residents:**
  - No commercial activity on actual Sandbar after 2:00pm on weekends or after 3:00pm on public holidays

# Issues and Solutions Contd.

- **Increasing number of negative complaints from tourists about Sand Bar experience (including safety and overcrowding issues):**
  - Maximum passengers = 100 people per boat
  - Maximum # of people at Stingray interaction areas in Sandbar management area at any one time = 1500 people
  - Maximum # of boats at Stingray interaction areas in Sandbar management area at any one time = 20 boats

# Issues and Solutions Contd.

- **Lack of regulatory framework to address issues:**
  - Special management areas and rules that apply will form part of Marine Park Regulations.
- **Creation of additional Stingray Interaction Sites:**
  - A new stingray feeding site will be allowed on smaller and deeper sand bars to the SE of current site, provided that no stingray interaction sites will be established at any other location in the Cayman Islands.

# **Christina Semeniuk - Ph.D. Candidate Simon Fraser University**

**Research Goals** - What tourist activities & motivations can affect wildlife fitness & tourist satisfaction?

# Two Tourism Activities that can Affect Tourism Satisfaction & Wildlife Fitness

## Satisfaction

## Wildlife Impacts

(1) Feeding rays

Atypical Grouping

(2) Handling rays

Unnatural Diet

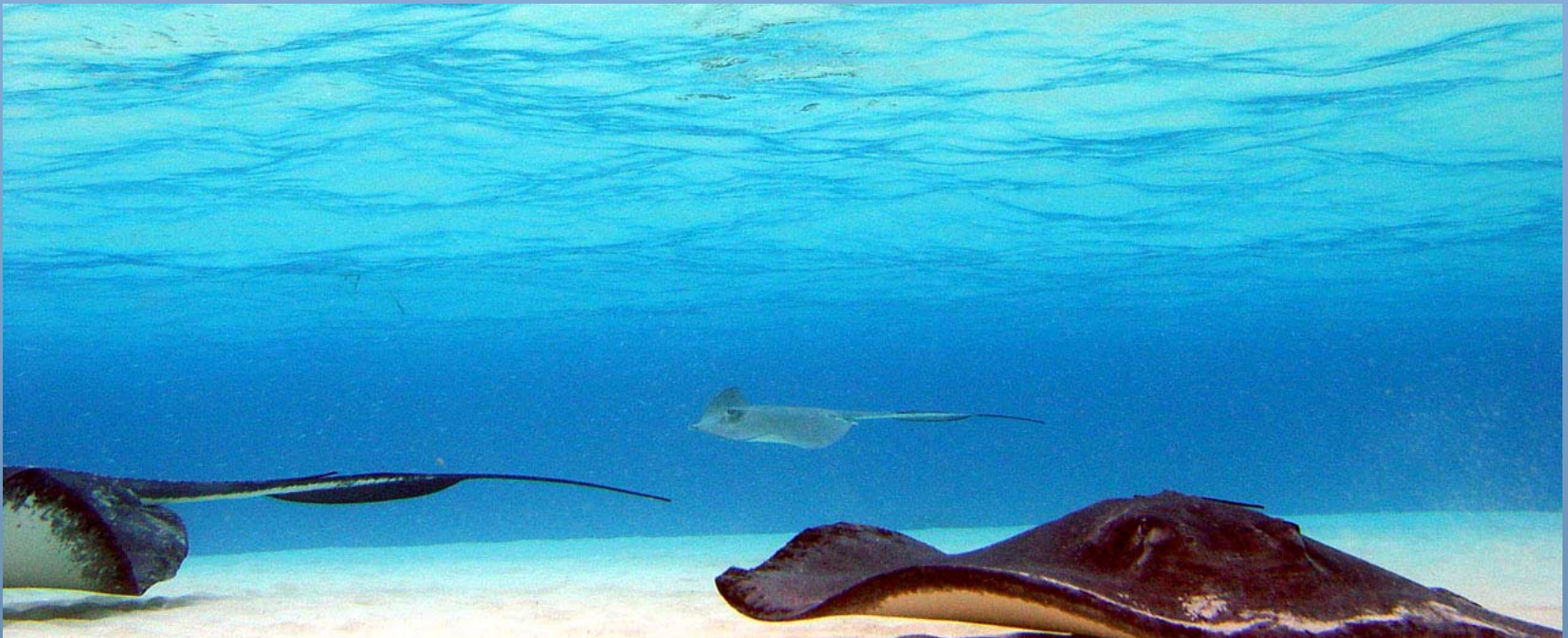
Harmful Contact

# MANAGEMENT IMPLICATIONS

## Ecological Indicators

Comparing the biology of unfed versus fed rays will

- 1) provide a range of natural variation
- 2) indicate whether fed rays fall within this range



# Injuries

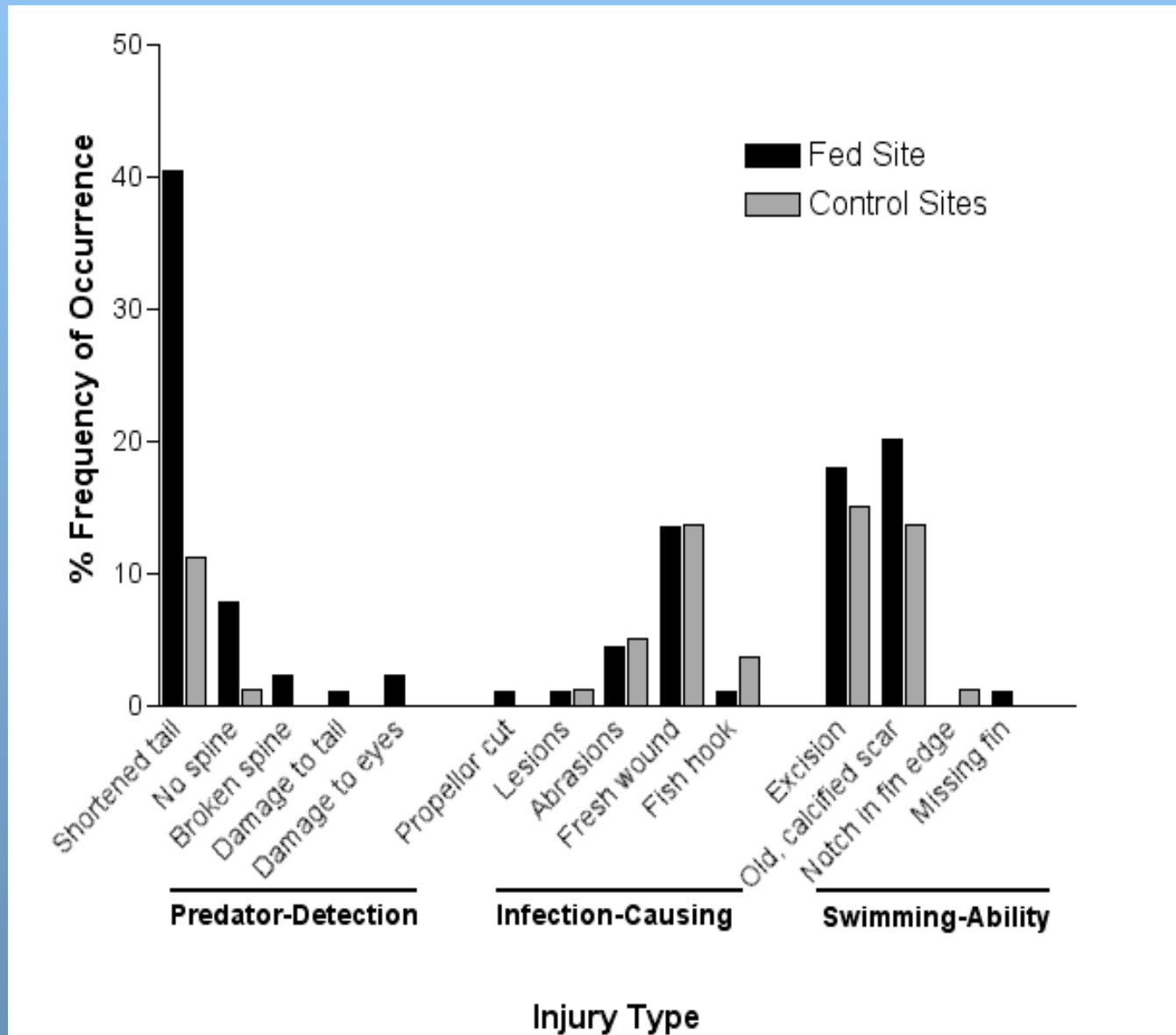
Higher proportion of fed rays are injured

65% vs. 49% ( $N_{\text{fed}} = 89$  rays;  $N_{\text{non-fed}} = 80$  rays)



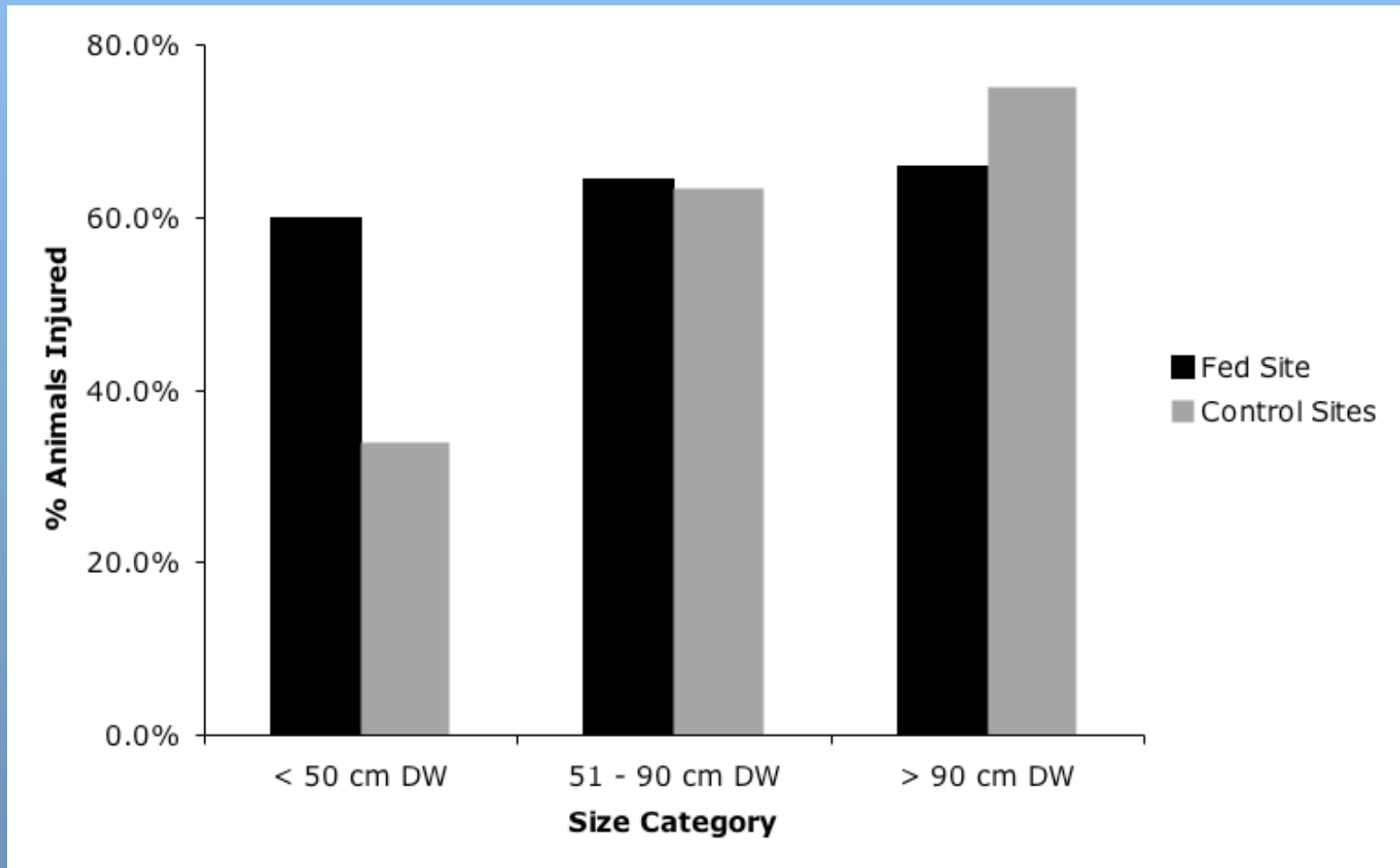
# Injuries

Fed rays have more predator-detection injuries



# Injuries

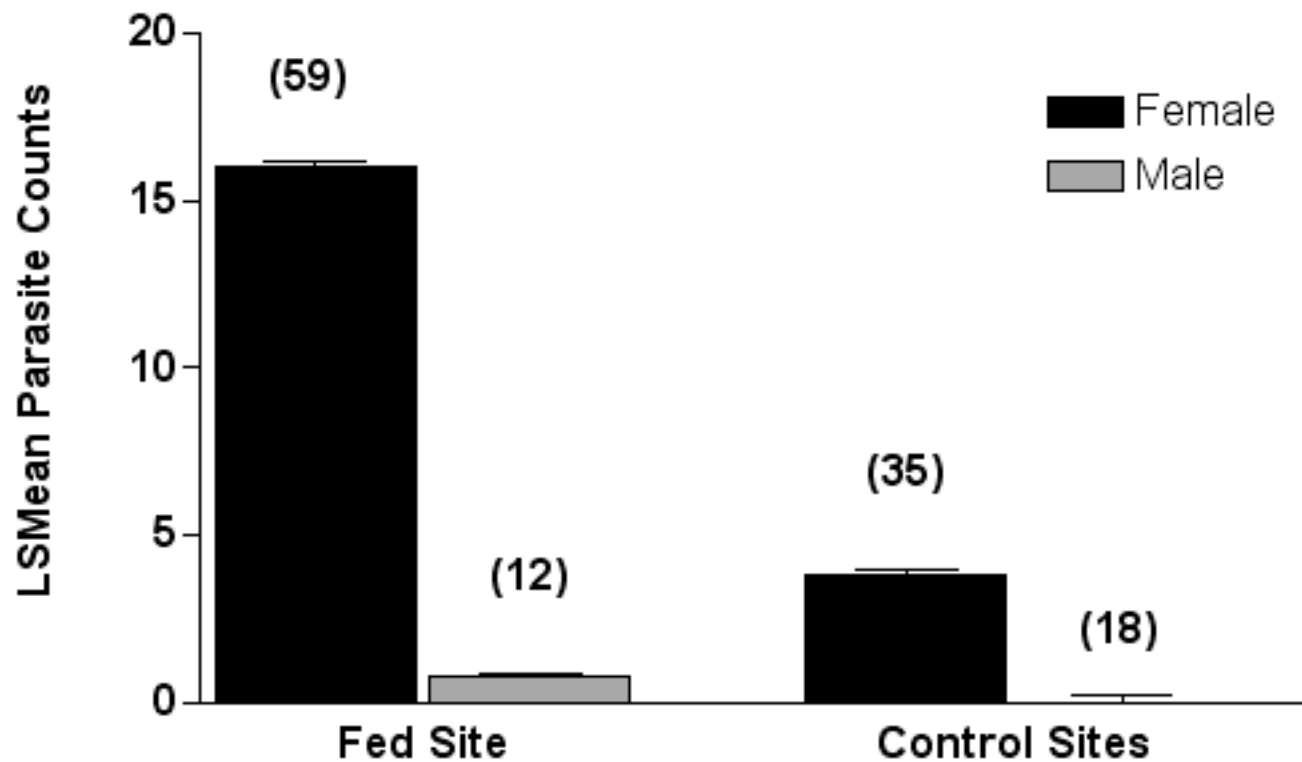
Fed rays have a more equal distribution of injuries per size class



# Spiracle Parasite Load

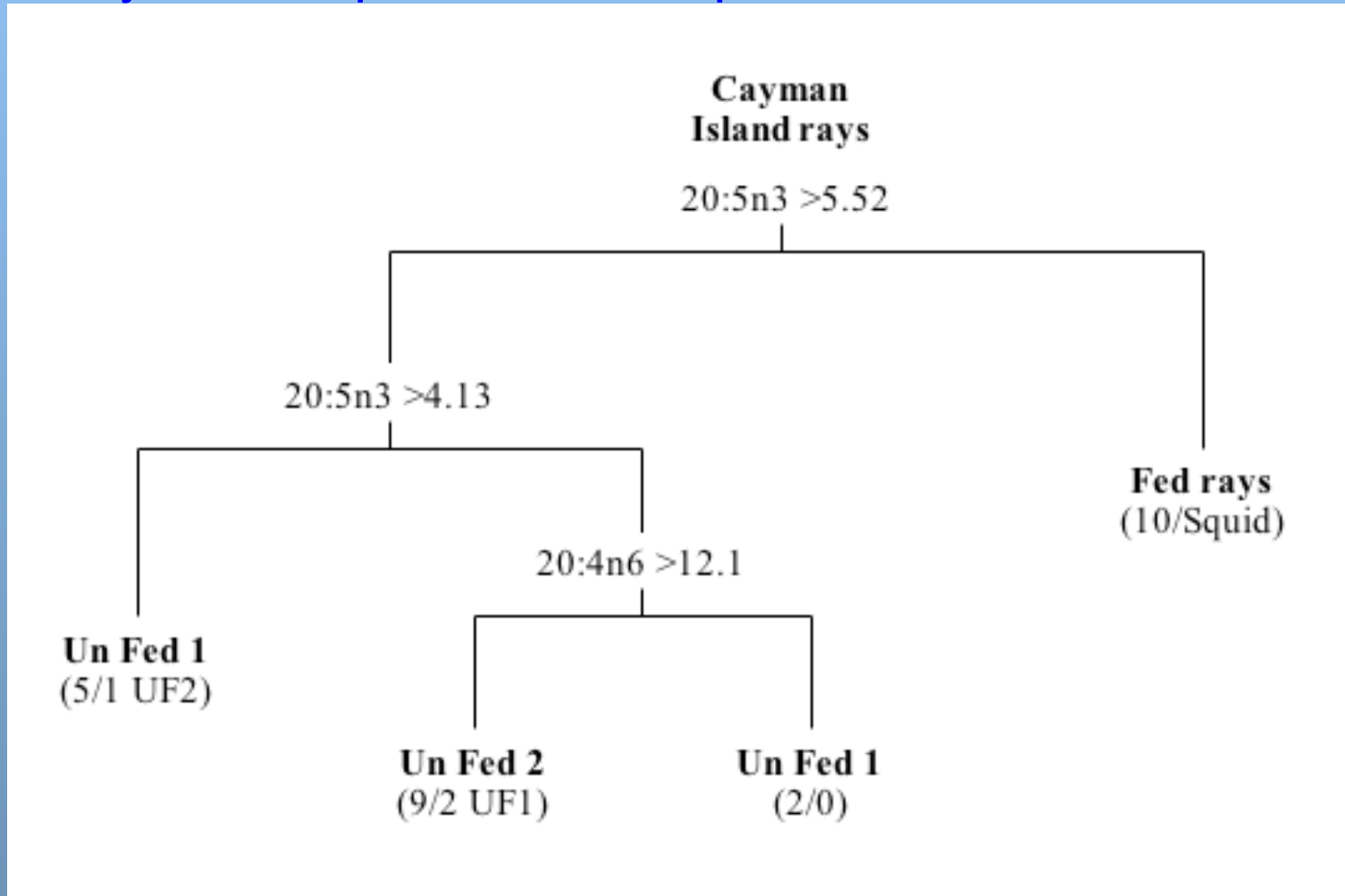
Fed rays have higher parasite counts

16 vs. 4 (females) & ~ 1 vs. ~ 0 (male) parasites/ray



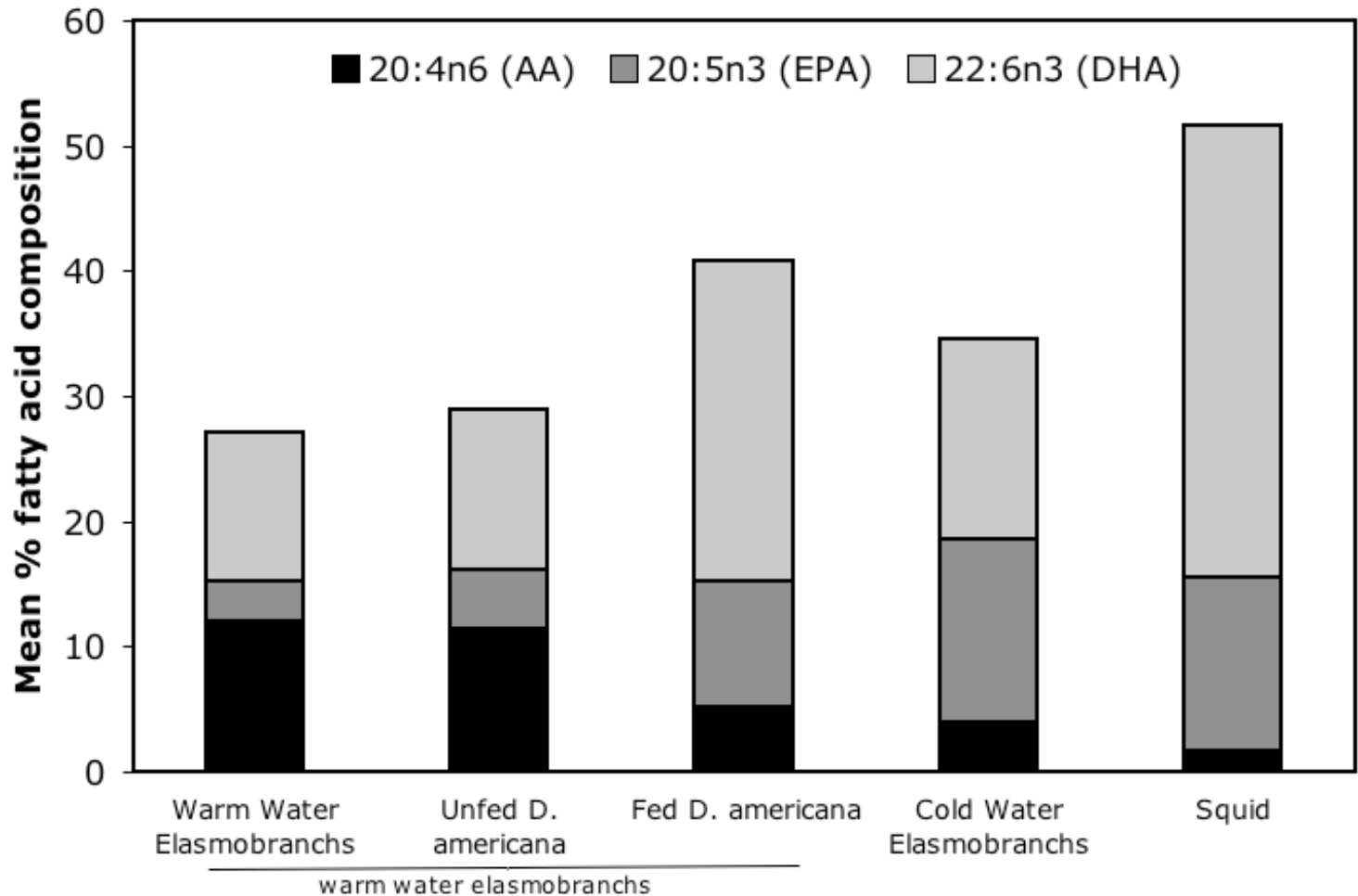
# Physiological Condition - Fatty Acids

Fed rays are dependent on Squid



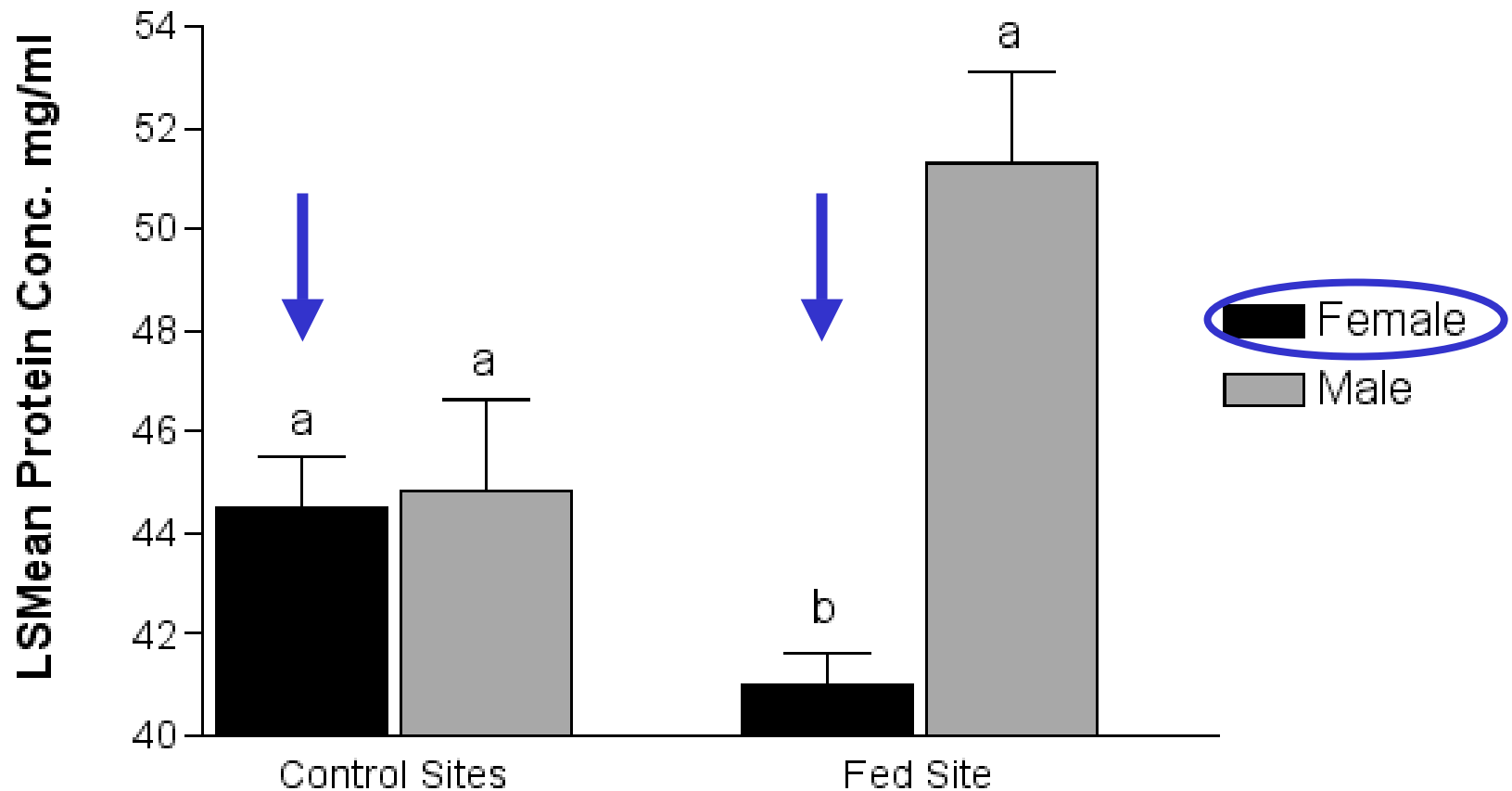
# Physiological Condition - Fatty Acids

Fed rays are being conditioned to live in cold temperatures



# Physiological Condition - Protein

Females from fed site have lower serum protein concentrations than females from control sites



# SOCIAL INDICATORS

Indicator Category	Indicators
<u>Tourist Experience</u>	Expectations met or not
<u>Conservation Ethic</u>	Importance of components of wildlife tourism Concern with potential impacts
<u>Support for Proposed Management</u>	Preferences for management scenarios

# Tourist Socio-Demographics

Survey Conducted: Summer 2004

Number of Respondents: 612 completed surveys

Country of Origin: > 90% USA

Gender: 60% Female; 40% Male

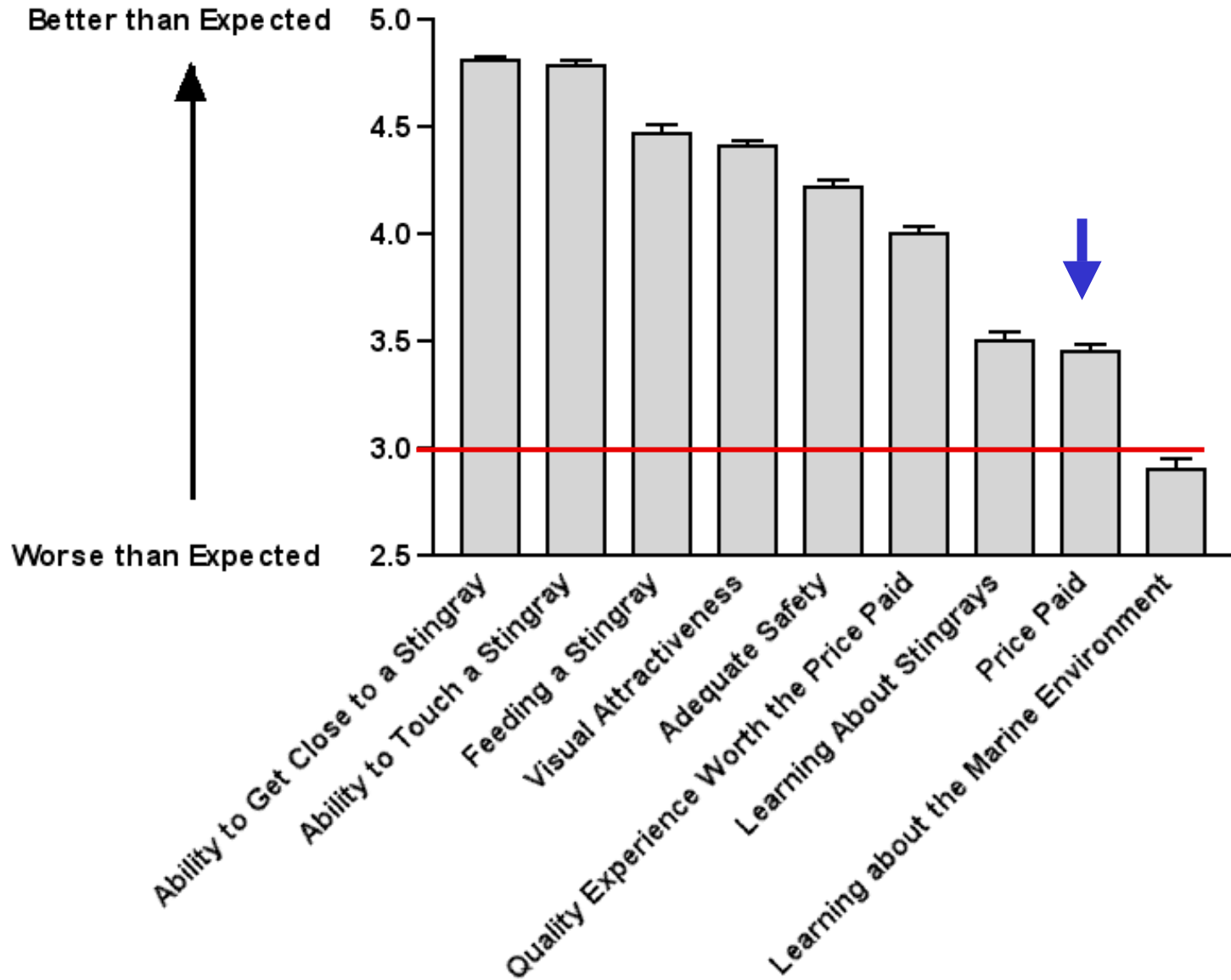
Age: ~ 35 years

Education: University

Employment: Employed, with salary > 90 000\$US/yr

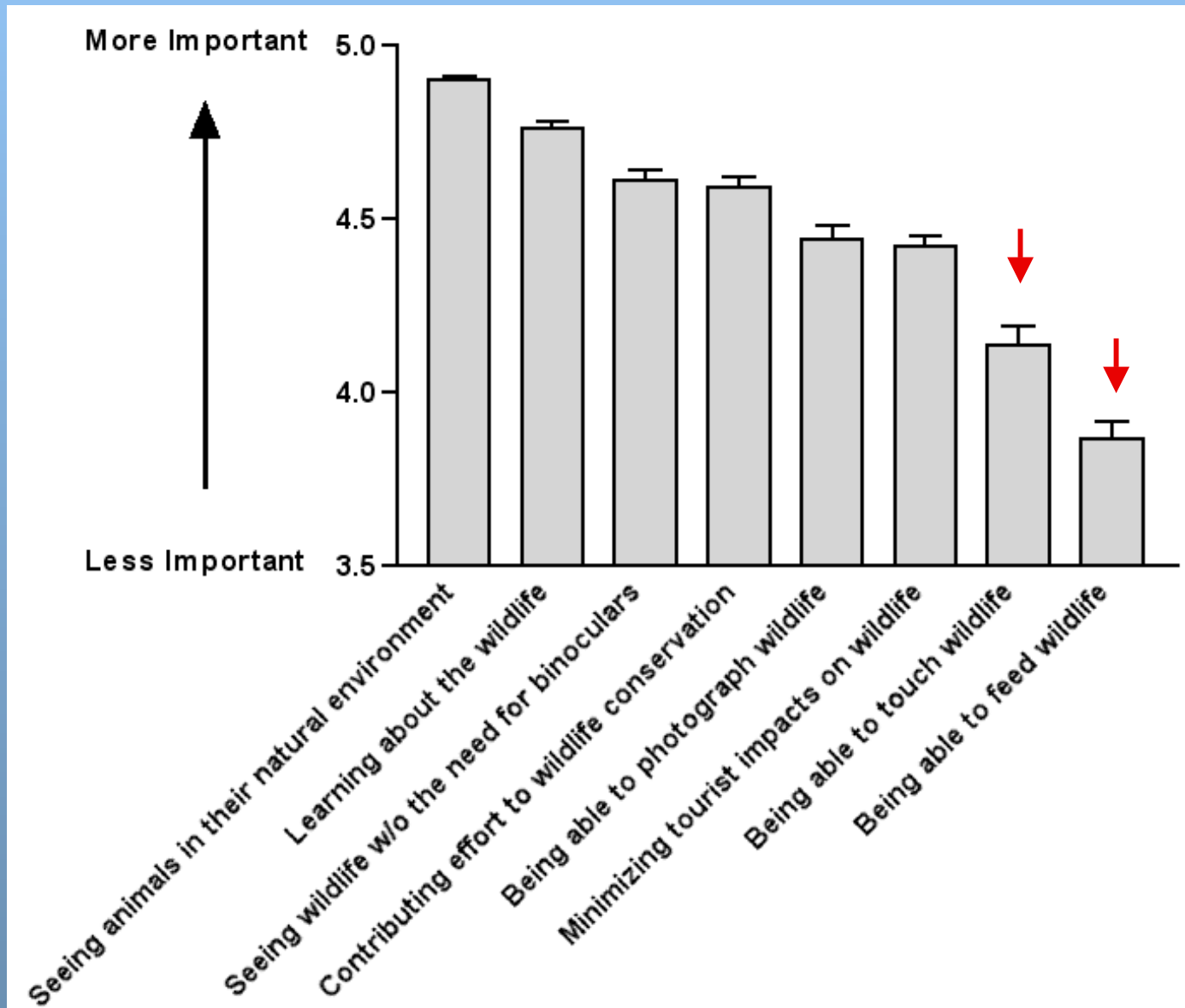
# Tourist Experience

Tourist expectations are on average met

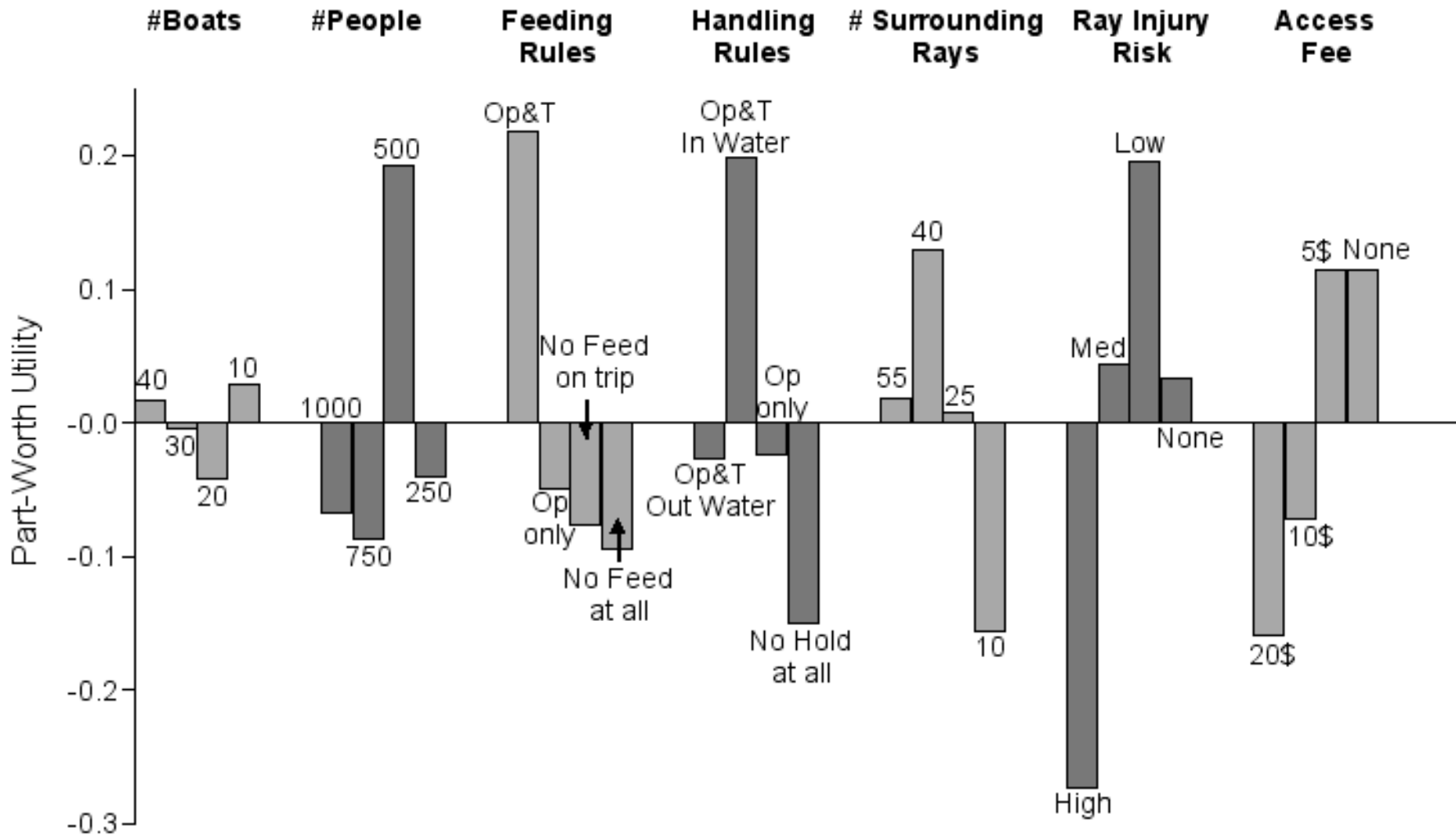


# Tourist Conservation Ethic

## Importance of certain wildlife tourism activities



# Tourist Preferences for Management Options



# Summary

## Ecological Impacts

- Fed rays have negatively impacted fitness attributes
  - (1) Higher parasite loads
  - (2) Higher injury rates
  - (3) Dependent on & Unnaturally conditioned by diet
  - (4) Lower serum proteins

## Social Impacts

- Tourists are very satisfied w/ their wildlife interaction
  - (1) Would like to learn more
  - (2) Need education re. consequences of actions/desire
  - (3) Willing to have activities regulated
  - (4) Willing to pay

# THE ROAD TO REGULATION

- **DoE's original concerns**
- **Stakeholder Dialogue**
- **Empirical Data**
- **REGULATIONS**

# The Marine Conservation (Marine Parks) (Amendment) Regulations, 2006

CAYMAN ISLANDS



Supplement No.1 published with Gazette No. 7 dated  
7 April, 2007.

THE MARINE CONSERVATION LAW  
(2003 REVISION)

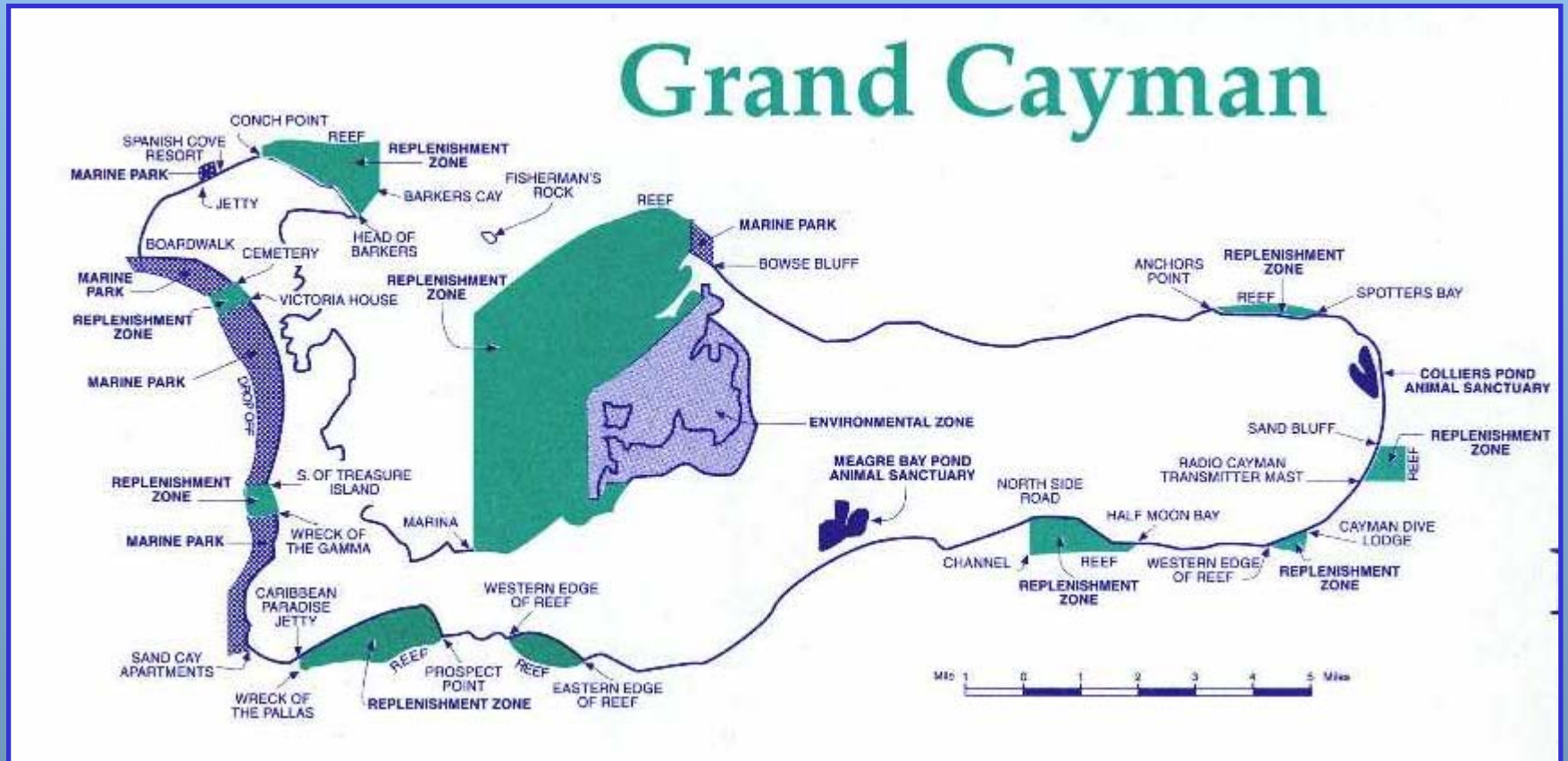
THE MARINE CONSERVATION (MARINE  
PARKS) (AMENDMENT) REGULATIONS,  
2007

# **The Marine Conservation (Marine Parks) (Amendment) Regulations, 2007**

- **Create a 4<sup>th</sup> type of marine park zone – Wildlife Interaction Zone (WIZ) and designate two such sites: one at Sandbar and one at Stingray City.**

# Cayman Islands

## Marine Parks System



# Wildlife Interaction Zones - North Sound

## *Illustrative Plan*



# The Marine Conservation (Marine Parks) (Amendment) Regulations, 2006

## Rules that apply to all:

*No person shall, within a Wildlife Interaction Zone –*

- wear footwear (except while on a boat and this does not prohibit wearing flippers while snorkeling in water deeper than 4 feet);
- remove stingrays or other marine life from the water;
- sell fish food from a boat;
- fish or take any marine life by any means;
- SCUBA dive inside the prohibited SCUBA diving area around the Sandbar without the written permission of the Board;
- feed stingrays other than with food of a kind and amount approved by the Board ;

*No boat shall be anchored in the zone –*

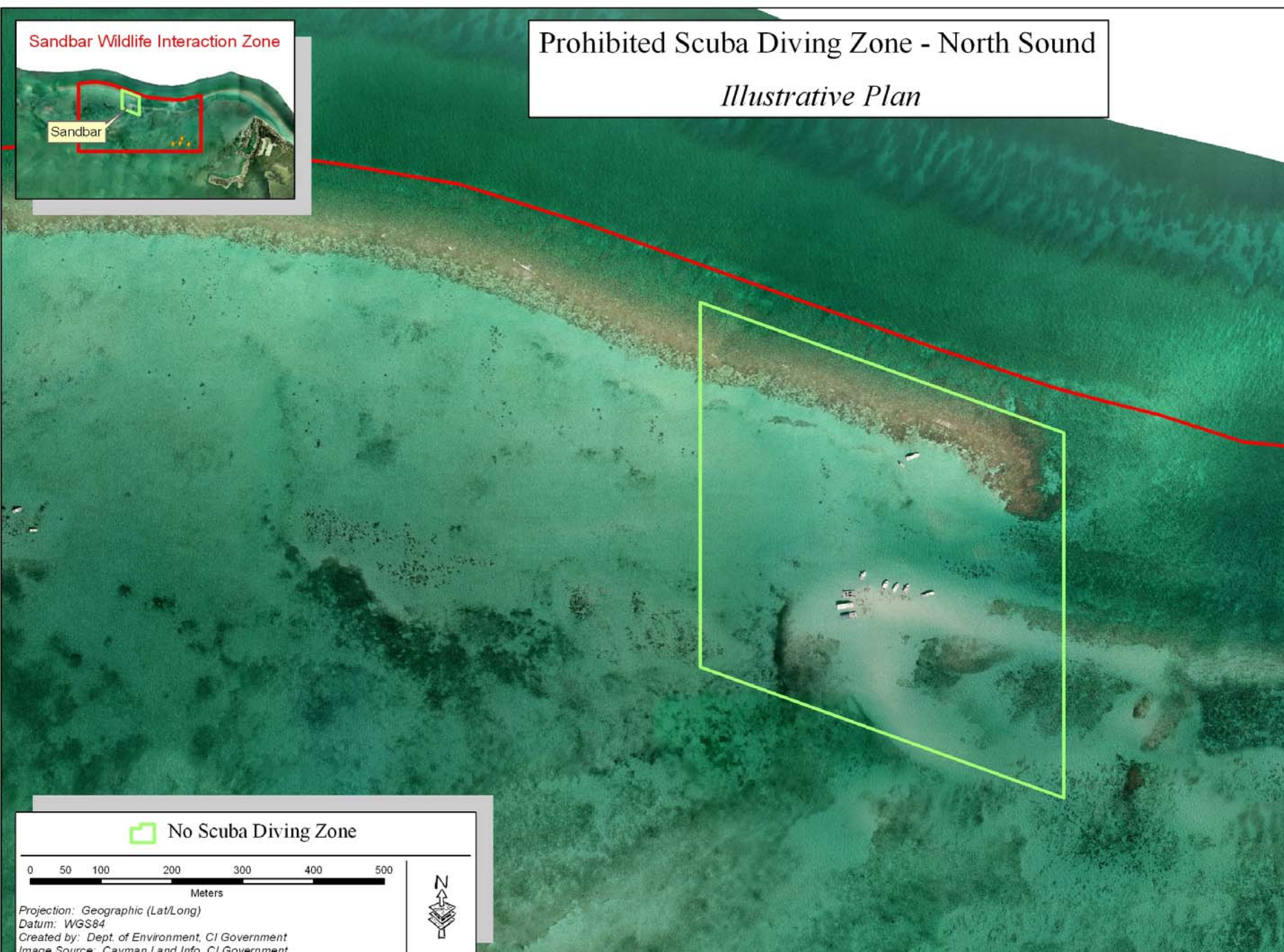
- in water shallower than 4 feet deep; or
- so that part of the anchor or chain is within 20 feet of the reef structure.


Sandbar Wildlife Interaction Zone

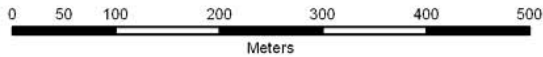


# Prohibited Scuba Diving Zone - North Sound

*Illustrative Plan*



 No Scuba Diving Zone



Projection: Geographic (Lat/Long)  
Datum: WGS84  
Created by: Dept. of Environment, CI Government  
Image Source: Cayman Land Info, CI Government

# **The Marine Conservation (Marine Parks) (Amendment) Regulations, 2006**

## **Rules that apply to tourist boats:**

- No tourist boat shall enter a zone -  
without a licence issued by the Board;  
at a time, or in circumstances, which are  
prohibited by conditions of the licence.**
- No person shall carry passengers to any  
area of Cayman waters in order to invite,  
encourage or facilitate wildlife interaction  
unless the area is a designated WIZ**

# The Marine Conservation (Marine Parks) (Amendment) Regulations, 2006

## *Additional information:*

**Licence fee structure (*Licences valid for three (3) years* )**

\$100 **application fee** for vessels under 50'

\$200 **application fee** for vessels over 50'

\$300 **licence fee** for vessels under 50'

\$600 **licence fee** for vessels over 50'

## **Renewal Fees**

\$50 for vessels under 50' and

\$100 for vessels over 50'

Licence must be displayed prominently on vessel and carried at all times by vessel operator.

# Successful Strategies

- **EFFECTIVE COMMUNICATION**
  - Brainstormed all issues in group session;
  - Group consisted of *representatives* of main stakeholder groups – easier to manage;
  - Used Spreadsheet to track each stakeholder's current position on each issue - provided a visual on progress and sticking points;
  - As facilitator, DoE had representation at all stakeholder groups.

# Final Observations

- **The development of sustainable tourism policies and practices requires active participation of all relevant parties.**
- **Voluntary Guidelines early in the process can help prepare the way for formal regulation of activities.**
- **Where possible, each stakeholder should clearly articulate position on an issue in writing.**

QUESTIONS?

THANK YOU!



Cayman Islands

Department of Environment

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