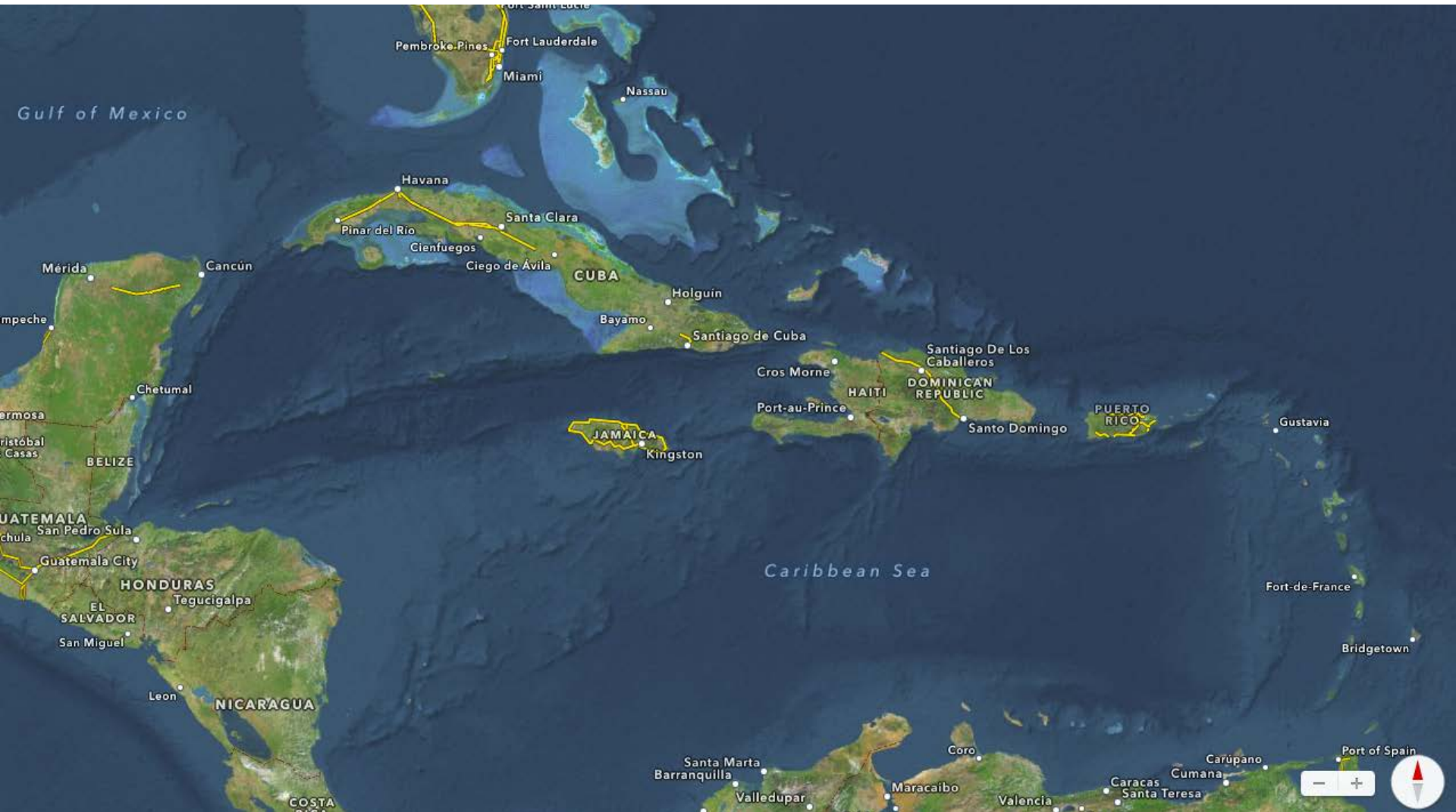
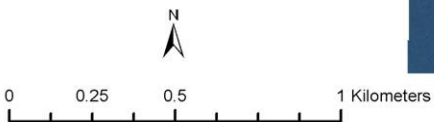
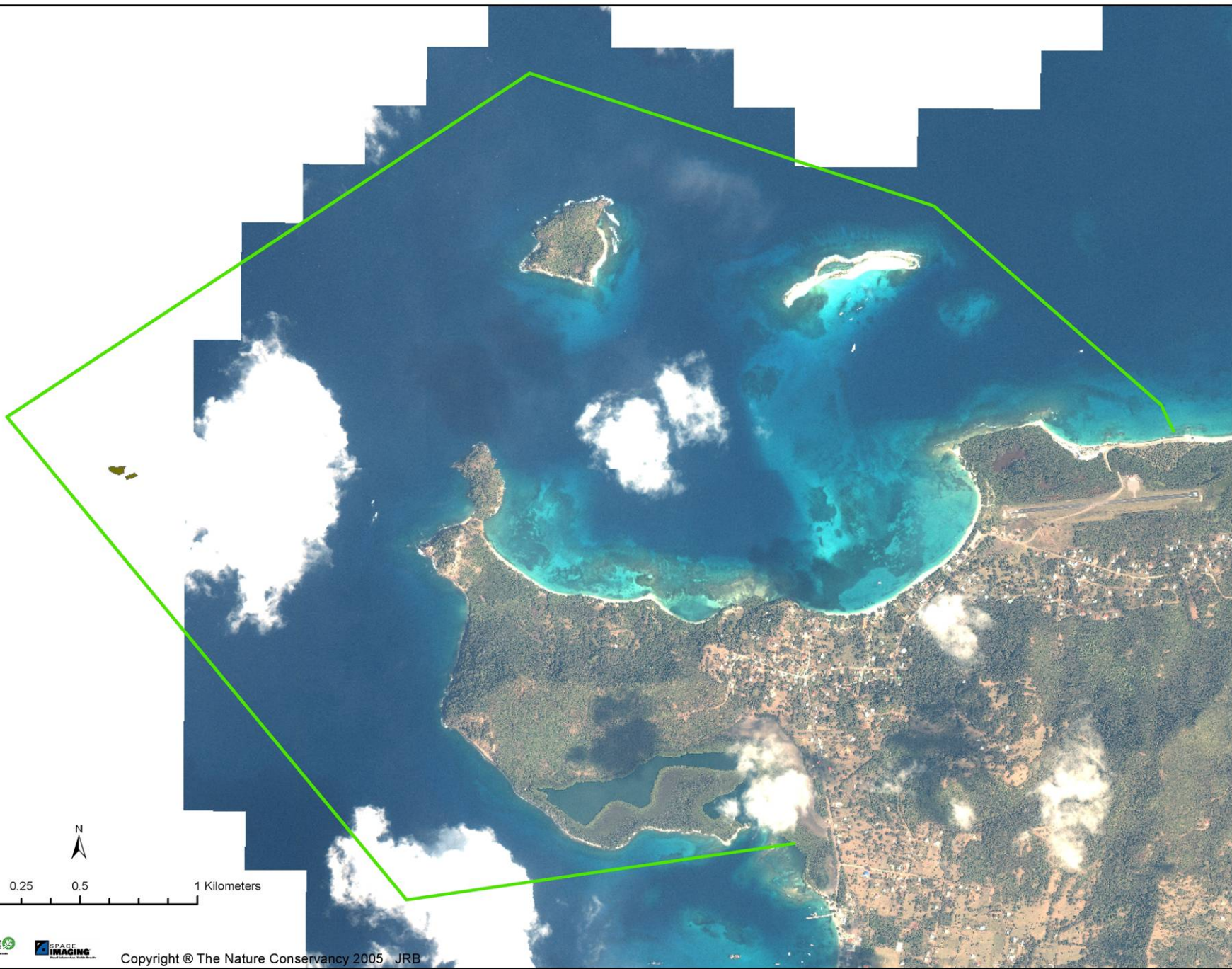


Caribbean Coral Reef Management: Examples from 2 countries: Cayman Islands & Grenada

OFR Community Working Groups
James Byrne, The Nature Conservancy



Sandy Island/Oyster Bed MPA Carriacou, Grenada Management Plan Overview



Project Partners



**Carriacou
Environmental Committee**



**Caribbean Regional
Environmental Programme**



SAVING THE LAST GREAT PLACES ON EARTH

MPA Management Planning Workshops

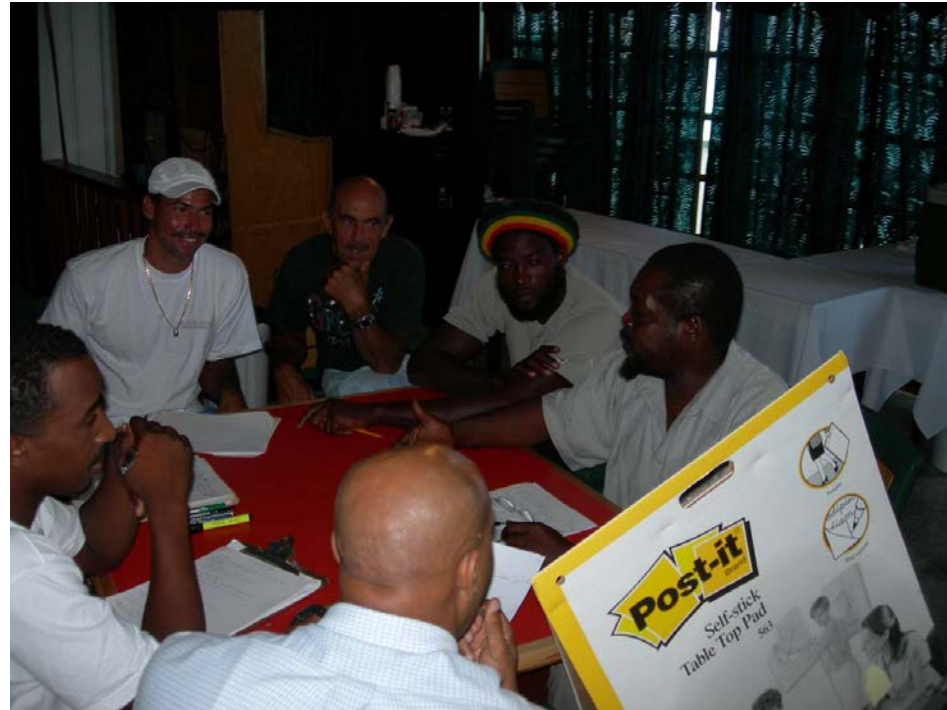
October 2005 – January 2006

Management Planning Workshops: Overview

- 3 workshops
- Overview of workshops
 - #1 “Building the Vision and Setting the Foundation”**
 - #2 “Understanding the Human Dimension”**
 - #3 “Designing Solutions”**

Stakeholder Participation in the Workshop

- All Dive Operators on Island
- Fishermen
- Tour Operators
- Hotel Owners
- Grocery Store Owners
- Women's Group
- Water Taxi Operators
- Students
- University Researchers
- NGO's
- Police
- Forestry (Local and National)
- Fisheries (Local and National)
- Ministry of Carriacou and Petit Martinique Affairs



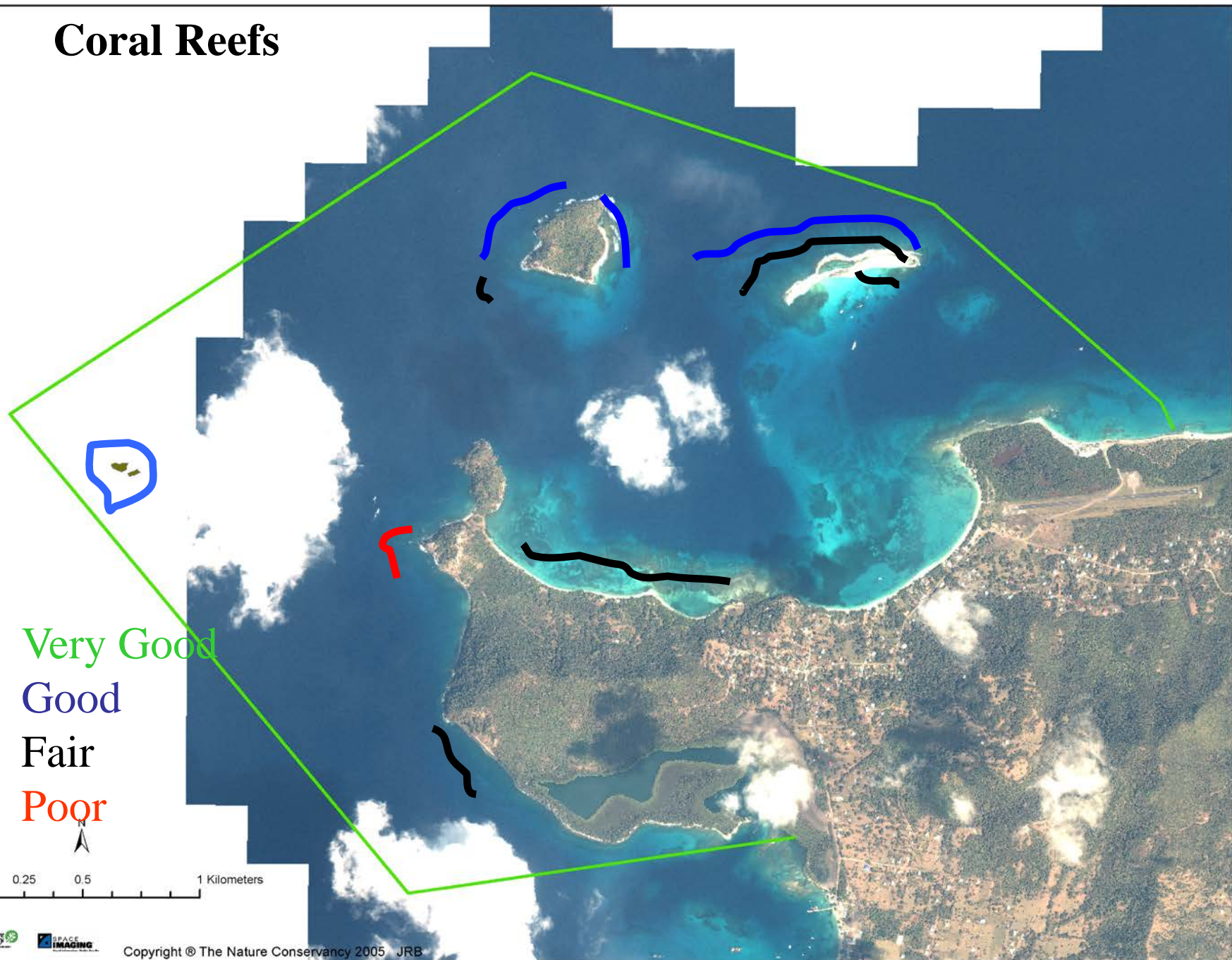
Select Priority Conservation Resources



Select Priority Conservation Resources



Coral Reefs



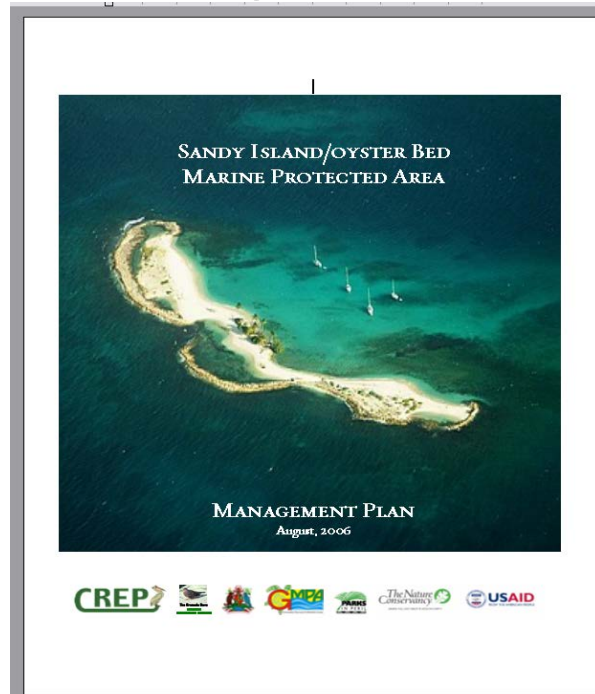


Conservation Resources		Landscape Context	Condition	Size	Overall Rank
		Grade	Grade	Grade	
1	Coral Reefs	Fair	Poor	-	Fair
2	Mangroves	Good	-	-	Good
3	Seagrass Beds	Good	Poor	-	Fair
4	Sea Turtles	Good	Good	Poor	Fair
5	Sandy Beaches	Fair	Good	Fair	Fair
6	Offshore Islands	Fair	Good	-	Good
7	Reef Fish	-	Poor	Good	Fair
Site Biodiversity Health Rank					Fair

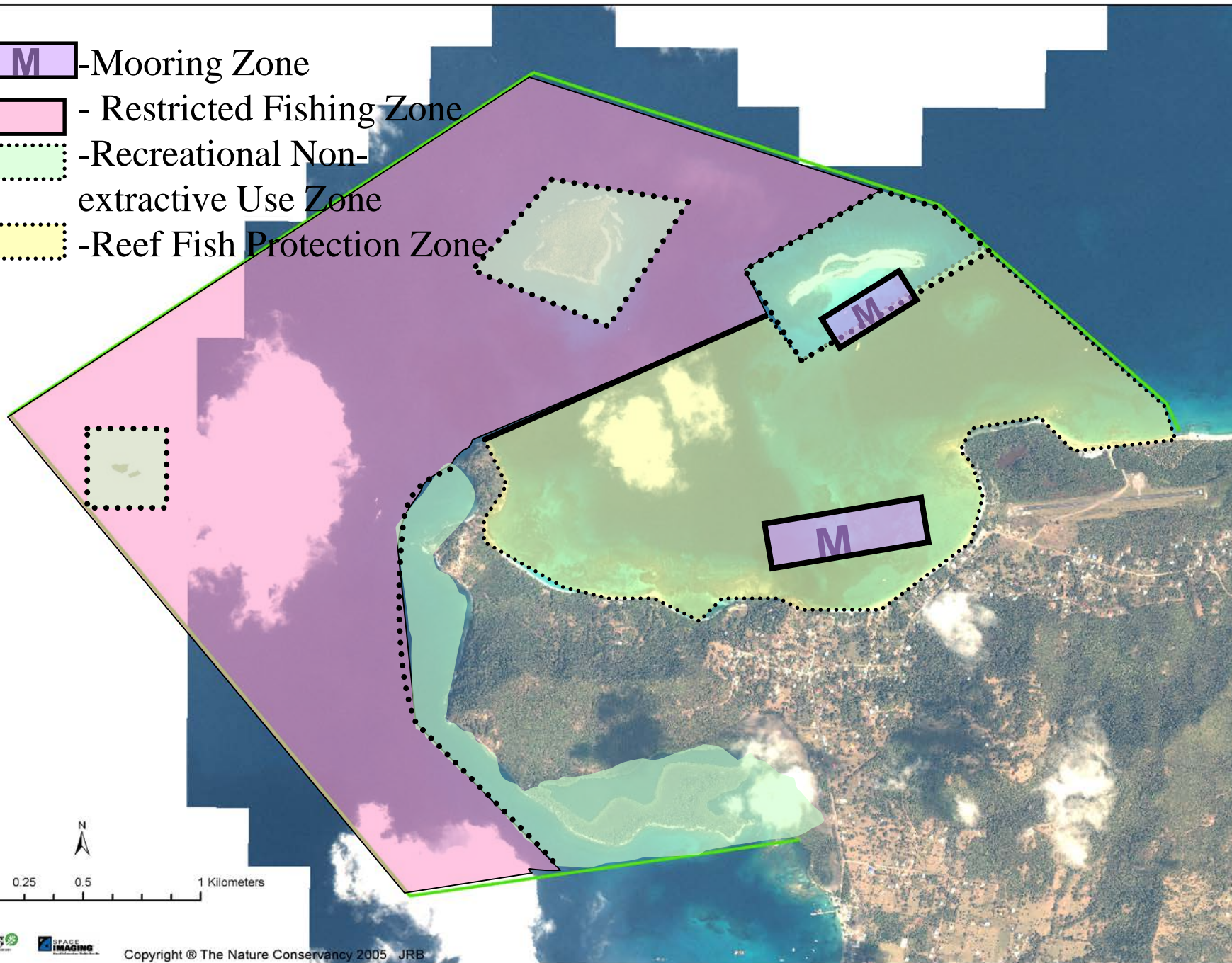
Threats Across Systems		Coral Reefs	Mangroves	Seagrass Beds	Sea Turtles	Sandy Beaches	Offshore Islands	Reef Fish		Overall Threat Rank
Project-specific threats										
1	Over fishing	Medium	-	Low	Medium	-	-	High	-	Medium
2	Inappropriate Development	-	High	-	Low	Medium	-	-	-	Medium
3	Clearing	-	-	-	-	High	Low	-	-	Medium
4	Dredging	Low	High	-	-	-	-	-	-	Medium
5	Pollution	Medium	Medium	Medium	Low	Medium	-	Medium	-	Medium
6	Inappropriate Boat Operations	Medium	Low	Low	Low	-	-	Medium	-	Medium
7	Inappropriate Fishing Practices	Medium	-	Low	Low	-	-	Medium	-	Medium
8	Illegal Fishing	-	-	-	Medium	-	-	Medium	-	Medium
9	Weather (Hurricanes, etc)	Medium	-	-	-	Low	Low	-	-	Low
10	Erosion	-	-	Low	Medium	-	-	-	-	Low
11	Sewage Discharge	Medium	-	-	-	-	-	-	-	Low
12	Removal of Mangroves	-	Medium	-	-	-	-	-	-	Low
13	Inappropriate Land Use	Low	Low	Low	Low	-	-	-	-	Low
14	Destruction of Mangroves	Low	-	Low	-	-	-	-	-	Low
15	Inadequate Drain Maintenance	-	-	Low	-	-	-	-	-	Low
16	Over visitation	-	-	-	-	-	Low	-	-	Low
Stress Status for Resources and Site		Medium	High	Medium	Medium	Medium	Low	Medium	-	High

Objectives and Strategies

- 18 Objectives Defined
- Strategies for achieving each Objective



-  - Mooring Zone
-  - Restricted Fishing Zone
-  - Recreational Non-extractive Use Zone
-  - Reef Fish Protection Zone



Fishermen Meetings





SANDY ISLAND/OYSTER BED MARINE PROTECTED AREA

LOCATION

Sandy Island/Oyster Bed Marine Protected Area



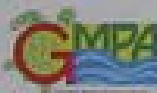
PROTECTION

- **PRESERVE MANGROVES: DO NOT REMOVE OR DAMAGE**
- **REMOVE ALL YOUR LITTER AND WASTE FROM THE MPA, AND DISPOSE OF PROPERLY**
- **ALLOW TURTLES AND THEIR EGGS TO THRIVE (DO NOT HARVEST OR HARASS)**
- **USE DESIGNATED MOORINGS: NO ANCHORING**
- **USE JET SKI/WATER SKI OUTSIDE THE MPA BOUNDARY**
- **OBSERVE OUR 'NO WAKE' SPEED**
- **LEAVE CORAL, SAND, FLORA AND FAUNA INTACT AND IN PLACE**
- **SCUBA DIVE WITH A LOCAL CERTIFIED, LICENSED DIVEMASTER AUTHORIZED BY THE MPA BOARD**

REMEMBER, TAKE ONLY MEMORIES AND PHOTOGRAPHS!

IMPORTANCE

- **THE SANDY ISLAND OYSTER BED PROTECTED AREA HAS EXTENSIVE REEFS, MANGROVES AND SEA GRASS - A COMBINATION THAT HELPS MAINTAIN A HEALTHY MARINE AND COASTAL ECOSYSTEM.**
- **THE MANGROVES ARE RENOWNED AS A HABITAT FOR THE MANGROVE OYSTERS AND SERVE AS A CRITICAL NURSERY FOR MARINE LIFE.**
- **SANDY ISLAND, AN IDYLIC WHITE SAND BEACH SURROUNDED BY CLEAR WATERS, IS A TREASURED LAND FOR THE PEOPLE OF CARRIACOU AND VISITORS FROM AROUND THE WORLD.**



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FISHERIES (MARINE PROTECTED AREAS) REGULATIONS, SRO #



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Darwin Initiative to Enhance an Established Marine Protected Area System, Cayman Islands



Cayman Islands: Narrow coastal shelf

**Bahamas shelf
area:**

3886 km²

Shelf area: 160.22

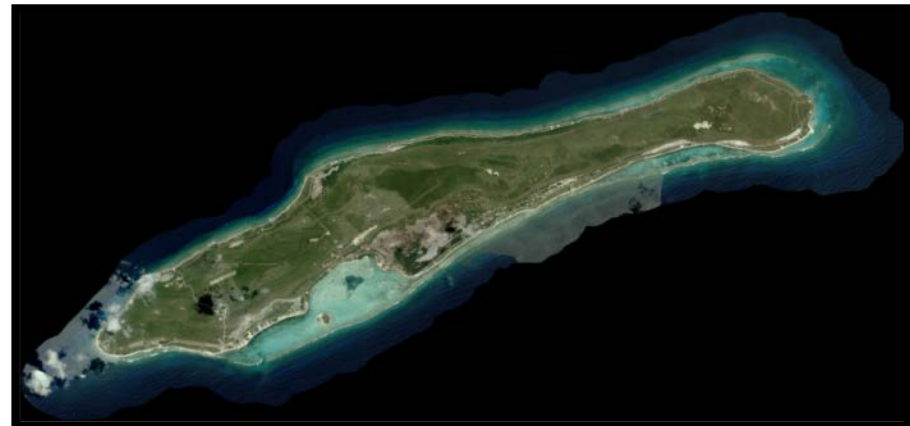
km²



**Shelf area: 21.3
km²**



Shelf area: 26.5 km²





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Cayman Islands: 1974





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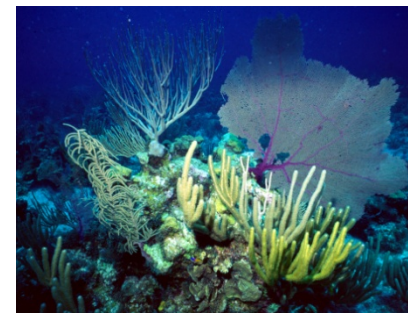
Cayman Islands: 1980s



KNOWN THREATS IN 1986:



1. Overharvesting of conch and lobster
2. On-going coastal development
3. Anchor damage and other human threats to coral reefs
4. User Conflict- Divers/Tourism and Fishers



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Rules for Cayman Islands Marine Parks

MARINE PARK ZONE

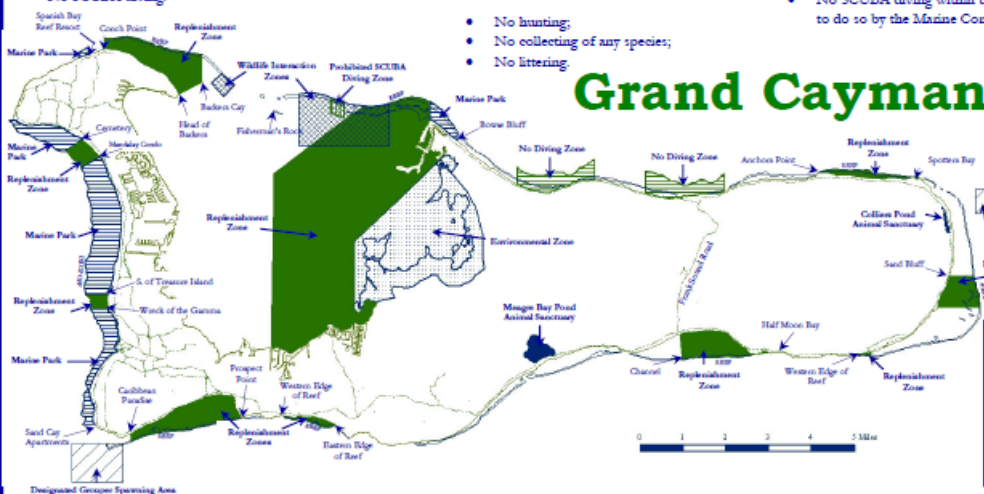
- No taking of any marine life alive or dead, except:
 - line fishing from shore is permitted (see **FISHING LICENSES** section over page);
 - line fishing at depths of 80 ft or greater is permitted;
 - taking fry and spat with a fry or cast net is permitted.
- NOTE: fish traps, spear guns, pole spears and other nets are totally prohibited.
- No anchoring - use of fixed moorings only, except:
 - boats of 60 ft or less may anchor in sand, so long as no grappling hook is used, and neither the anchor nor the rope or chain will impact coral;
 - anchoring permitted in designated Port anchorage areas—contact Port Security VHF Channel 16;
 - anchoring prohibitions suspended during emergencies and by permission of Port Director.
- Bloody Bay, Little Cayman - Special restrictions have been placed on the use of the Bloody Bay Marine Park, no commercial operations may use the park without a licence from the Marine Conservation Board.

DESIGNATED GROUPER SPAWNING AREAS

- East and West End of: Cayman Brac, Little Cayman and Twelve Mile Bank. Constrain Bank and South West Point Grand Cayman;
- No fishing for Nassau groupers: 1 November through 31 March;
- No fish pots or spear fishing within one-mile radius of Designated Grouper Spawning Area from 1 November through 31 March.

NO DIVING ZONE

- No SCUBA diving



ENVIRONMENTAL ZONE

- No taking of any marine life, alive or dead with no exceptions;
 - No in-water activities;
 - Public may access only at speeds of 5 m.p.h. or less;
 - No anchoring of any boat.
- NOTE: Line fishing, fish traps, nets, spear guns and strikers are totally prohibited.

REPLENISHMENT ZONE

- No taking of conch or lobster by any means;
- Line fishing (see **FISHING LICENSES** section over page) and anchoring permitted;
- Anchor, chain or line must not touch coral;
- Spear guns, pole spears, fish traps and nets prohibited, except that fry and spat may be taken with a fry or cast net.

NOTE: These zones include the outside edge of the reef to a depth of 20

WILDLIFE INTERACTION ZONES (WIZ)

- No taking any marine life by any means;
- No selling of fish from boats;
- No removing of any marine life from the water;
- No anchoring in water shallower than three feet or so that the anchor or boat is within 20 ft of any reef structure;
- No feeding any marine life with food of any kind or amount other than that approved by the Marine Conservation Board;
- Fish feeding is prohibited anywhere in Cayman waters outside of a designated WIZ unless licensed by the Marine Conservation Board;
- No wearing any footwear in water shallower than four feet;
- Special conditions apply to commercial boats whom must have a licence issued by the Marine Conservation Board and clearly displayed on the boat to enter this area.

ANIMAL SANCTUARIES/ RAMSAR SITES

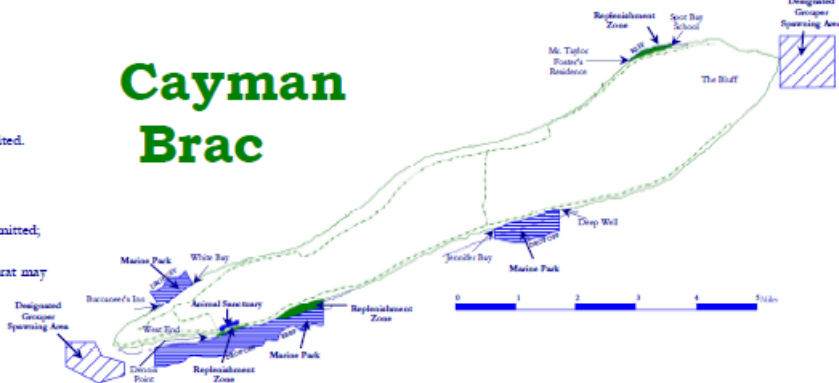
- No hunting;
- No collecting of any species;
- No littering.

PROHIBITED DIVING ZONE

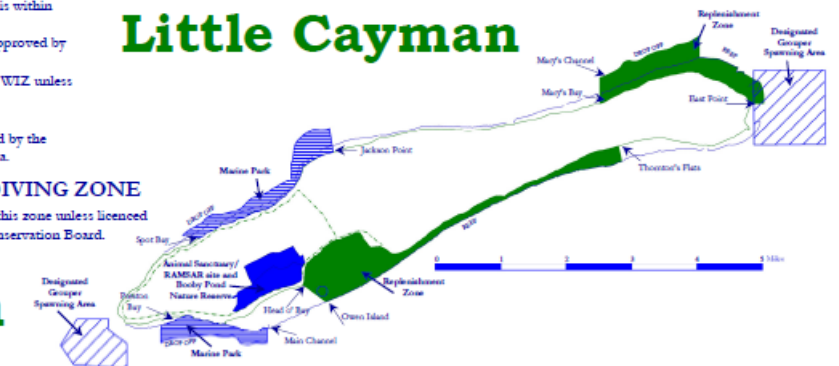
- No SCUBA diving within this zone unless licensed to do so by the Marine Conservation Board.

Grand Cayman

Cayman Brac



Little Cayman



PUBLIC MOORINGS

Public moorings are located around each of the islands to reduce anchor damage to coral. It is an offence to anchor so as to damage coral ANYWHERE in Cayman waters. These 18 and 30 inch white buoys may be identified by their blue stripe and yellow pick-up line and may be used free of charge. The smaller buoys are designed to hold vessels up to 60 feet long and the larger buoys are for vessels up to 100 feet. Public moorings should not be used when wind speeds reach or exceed 25 knots. Please limit your use of the mooring to 3 hours or less. It is the responsibility of the boat operator to ensure that the mooring is in safe condition - do not leave the boat unattended while on the mooring.

Damaged moorings may be reported to the Department of Environment 949-8469 or email doe@gov.ky

KNOW THE MARINE PARK SIGNS!



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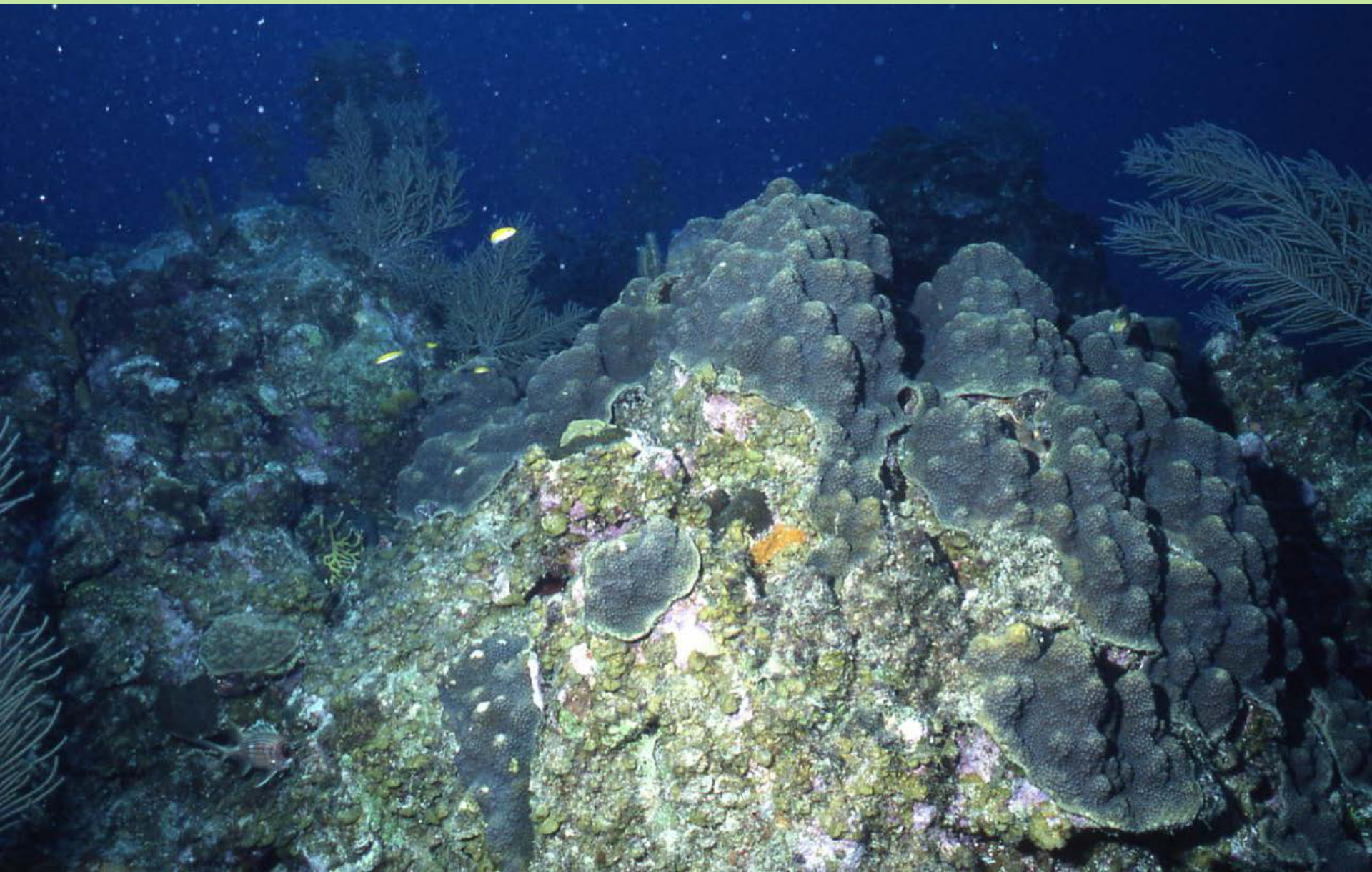
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Cayman Islands: 2000s





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Cayman Islands: Today





WHAT IS CAUSING THE DECLINES?

THREATS NOW:

1. Continued population growth
 2. Increased fishing pressure
 3. Ongoing coastal development
 4. **NEW:** Climate change
 5. **NEW:** Invasive species
- The Indo-Pacific Red Lionfish (*Pterois volitans*)





WHAT HAS THE MARINE PARKS REVIEW PROCESS ENTAILED?

1. Scientific studies to determine current health of our marine environment
2. Assessment of current threats
3. Review of international recommendations/best practices
4. Initial public input on marine parks for the future
5. Design of enhanced system of marine parks that meet our needs for the next 25 years
6. Further public consultation to seek input on proposed new network of marine parks
7. Incorporation of all feedback received where possible, amendment to proposals and presentation to Cabinet/Caucus



FIRST PUBLIC CONSULTATION 2011



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FIRST PUBLIC CONSULTATION 2011

- Aims:
 1. Introduce project and share research findings;
 2. Ask for the public's views on the marine environment and its future conservation.
- Meetings held: 23 public- and focus group meetings (all Islands).
- Regular press activity: 16 CITN items, 16 press items, 2 radio call-ins.
- Online survey: 468 participants (most completed online Cayman Islands Government survey (on Survey Monkey) of 2011).

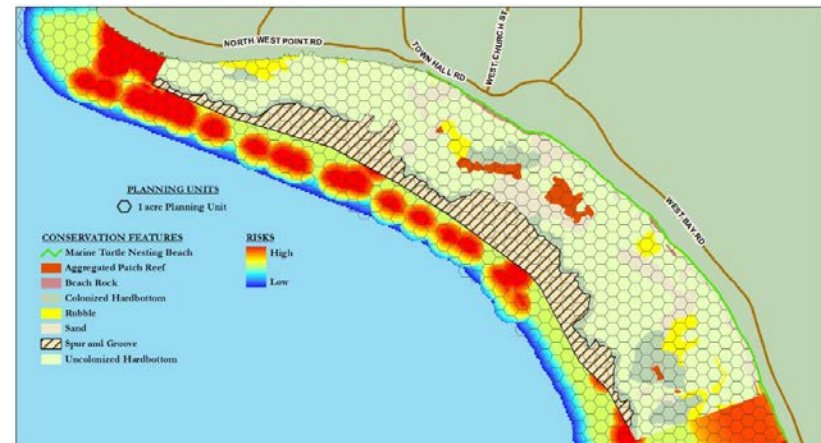
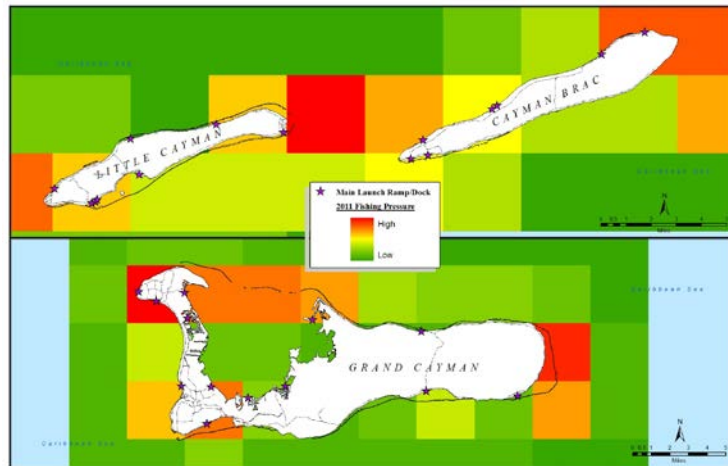
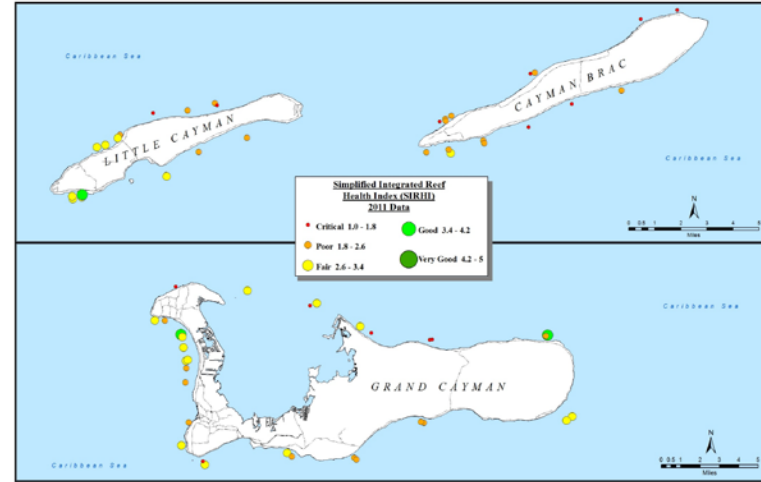
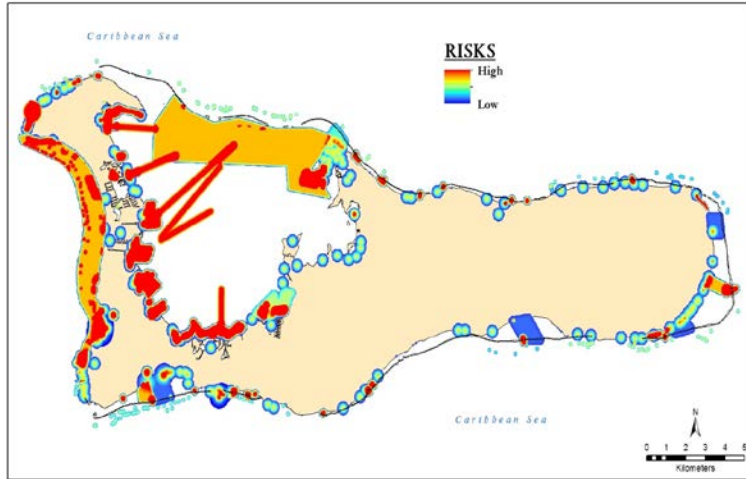


Marine reserves: International recommendations

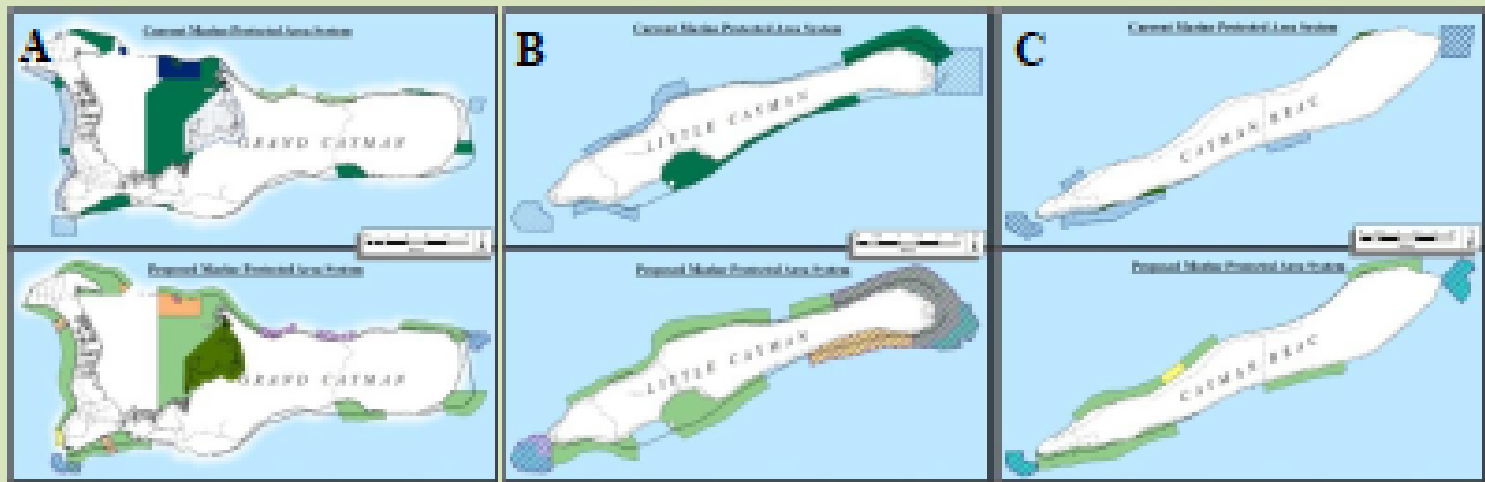
1. Protect at least 40-50% of each marine habitat within no-take reserves
2. Numerous reserves broadly distributed
3. Protect spawning sites and nurseries
4. Permanent protection
5. Size each reserve according to natural ranges of key species
6. Protect healthy areas (especially with location of key species), avoid high risk/threatened areas
7. Use temporary closures in addition to reserves



Marine Spatial Planning



Proposed New Marine Park System



Current zonation

	Marine Park		Replenishment Zone
	Environmental Zone		No Scuba Diving Zone
	Wildlife Interaction Zone		Grouper Hole

Proposed zonation

	Marine Reserve		Line Fishing Only Zone
	Environmental Zone		No Diving Zone
	Wildlife Interaction Zone		SPAG Zone (Seasonal Closure)

SECOND PUBLIC CONSULTATION 2012/13

Much discussion:

29 public and focus group meetings
588 feedback forms completed
5 months (Oct. 2012-Feb. 2013)

All feedback documented in detail
and reviewed individually



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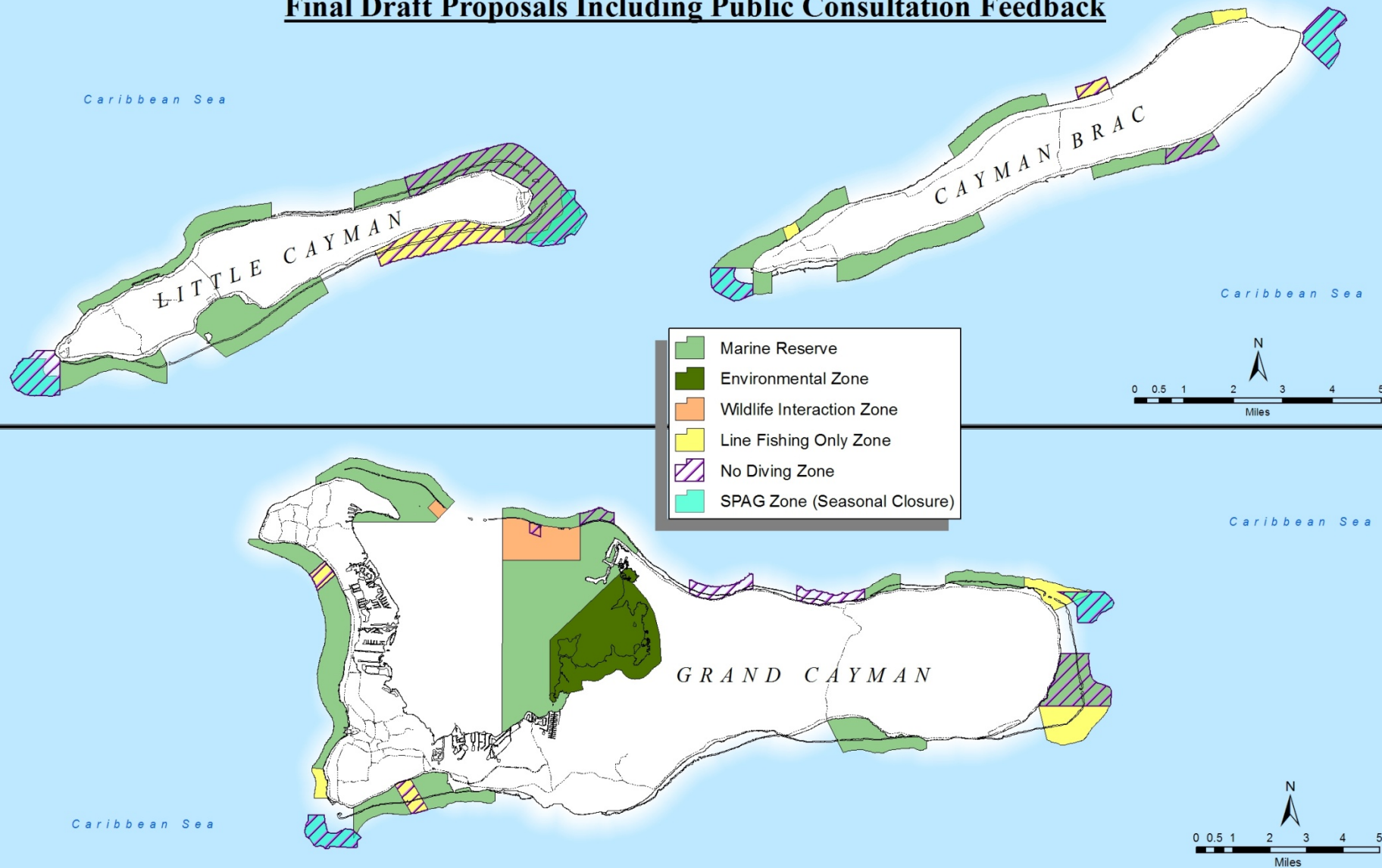


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Final Draft Proposals Including Public Consultation Feedback



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