# GIS AND BERMUDA'S ENVIRONMENTAL STRATEGIES

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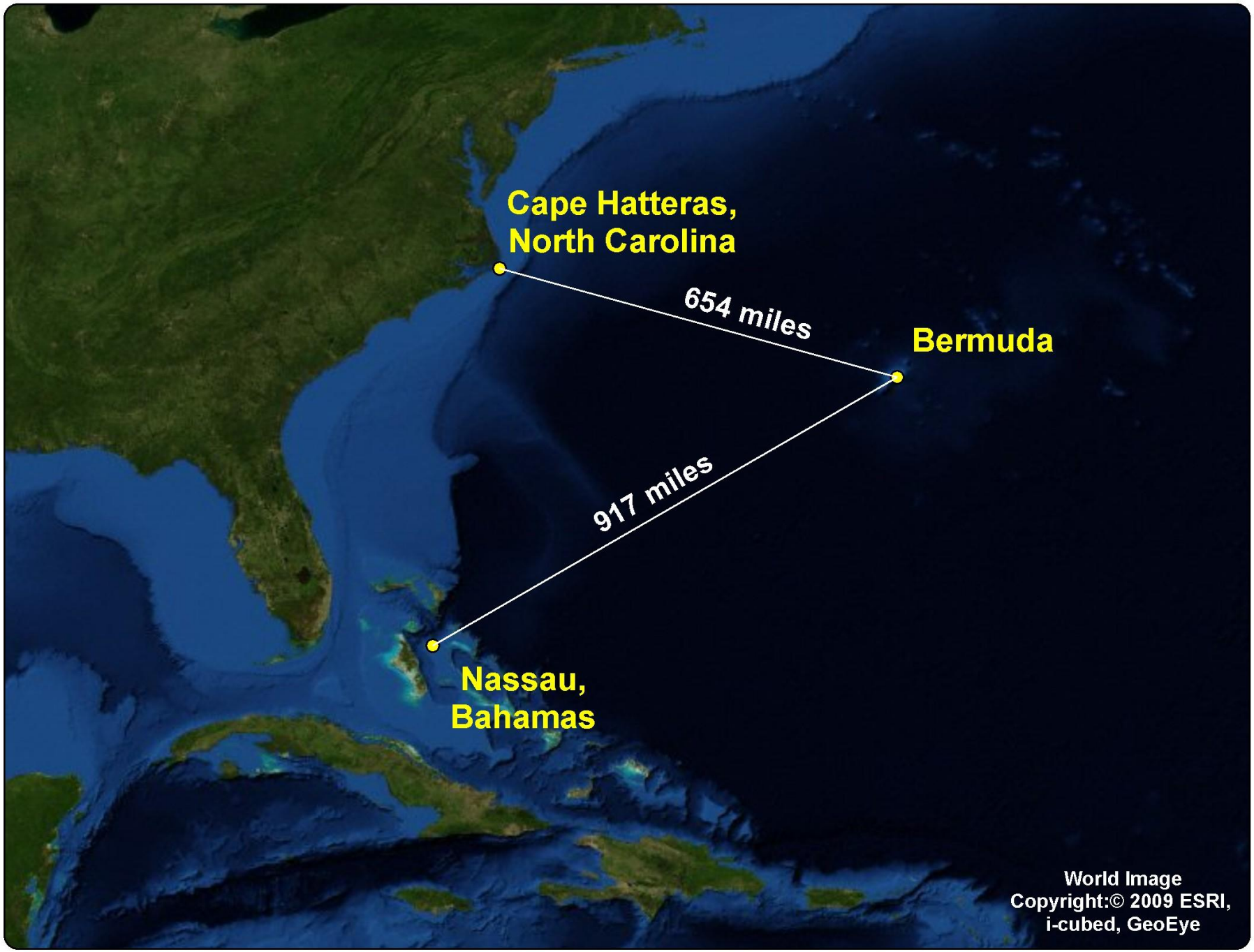
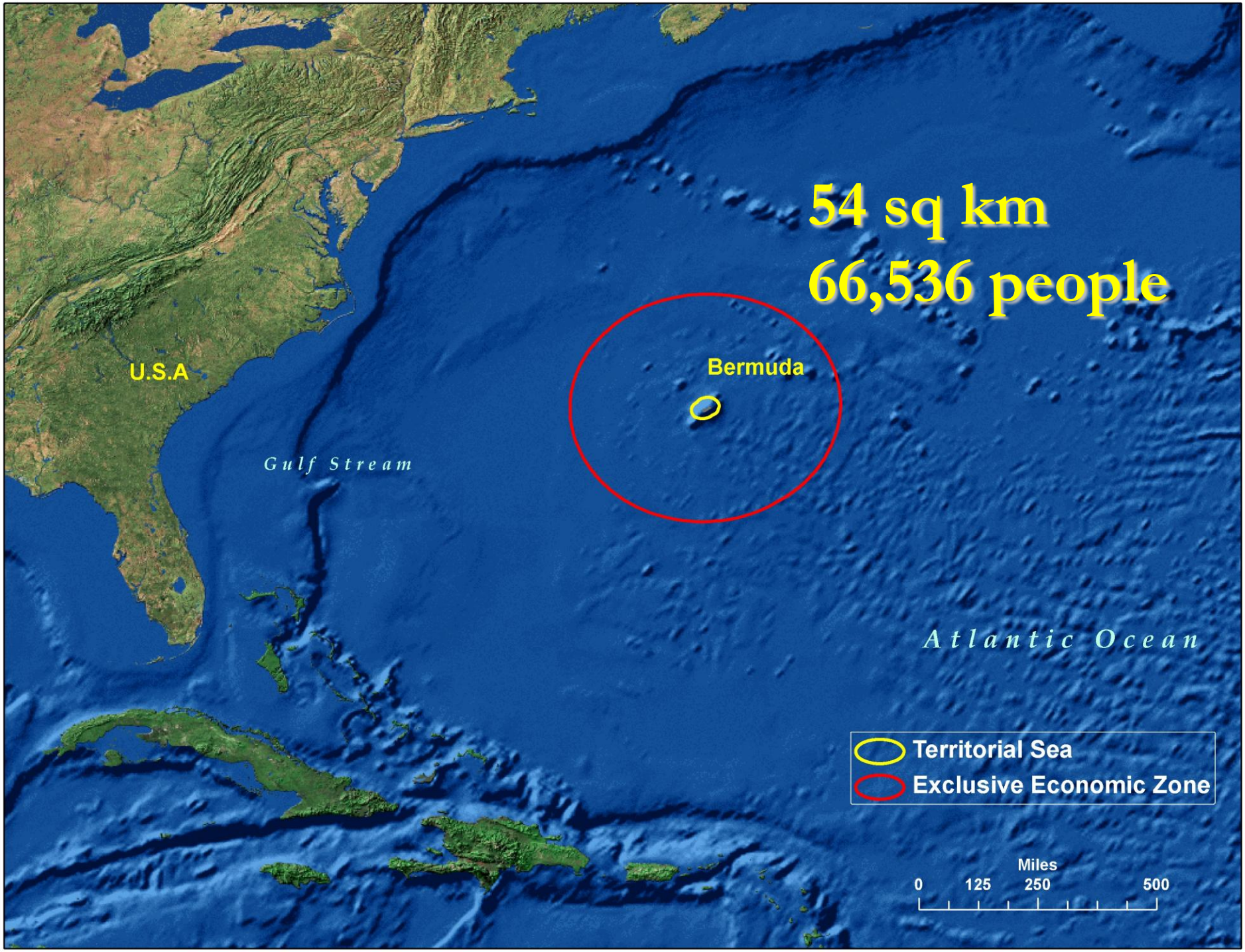
GOVERNMENT OF BERMUDA

**Department of Conservation Services**

# WHERE IS BERMUDA?


Cape Hatteras,
North Carolina
654 miles
Bermuda
917 miles
Nassau,
Bahamas
World Image
Copyright:© 2009 ESRI,
i-cubed, GeoEye


54 sq km
66,536 people
U.S.A
Bermuda
Gulf Stream
Atlantic Ocean
Territorial Sea
Exclusive Economic Zone
Miles
0
125
250
500

# WHAT DOES BERMUDA LOOK LIKE?

# EXAMPLES OF BERMUDA GIS DATASETS

## BASE DATASETS

- Aerial Photos
- Topographic Map Database
- Digital Elevation Models

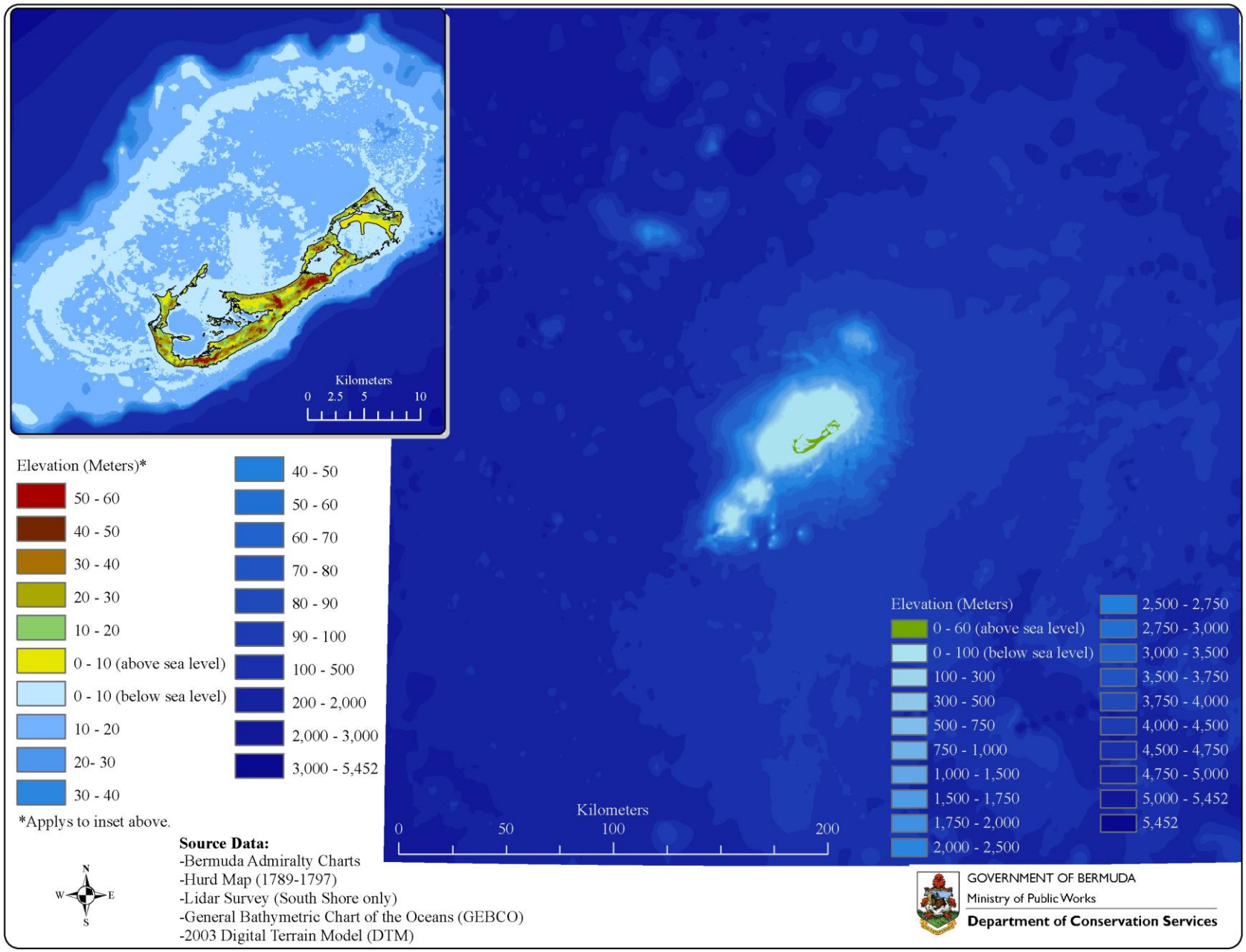
## BIODIVERSITY DATASETS

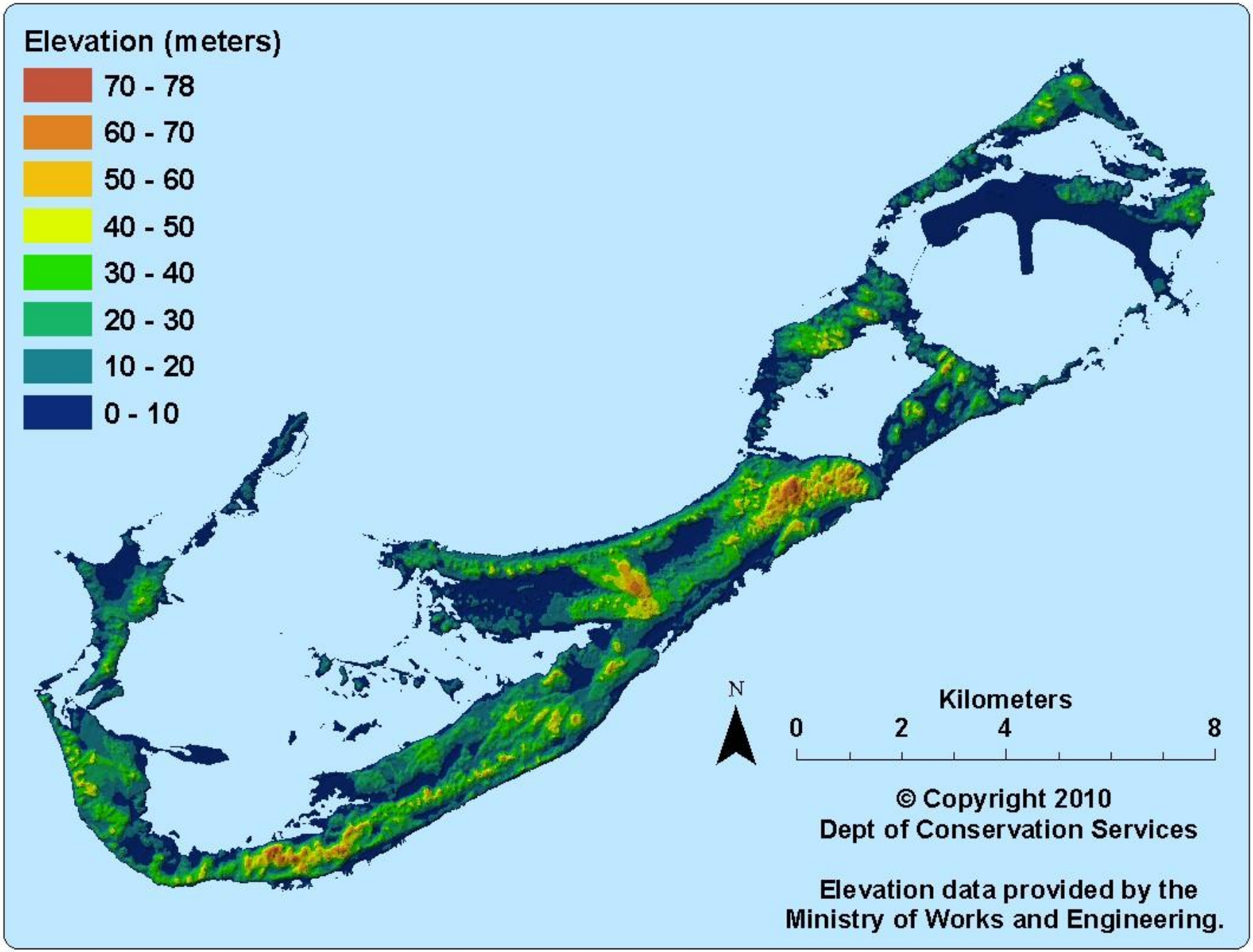
- Endemic Plants (Red Listing Project)
- Terrestrial Habitats
- Cahow Tracking
- Benthic Habitat Mapping
- Bermuda Turtle Project
- Diamondback Terrapin project
- Ramsar Sites

# AERIAL PHOTOGRAPHS

# TOPOGRAPHIC MAP DATABASE

# DIGITAL ELEVATION MODELS




Elevation (meters)
70 - 78
60 - 70
50 - 60
40 - 50
30 - 40
20 - 30
10 - 20
0 - 10
N
Kilometers
0
2
4
8
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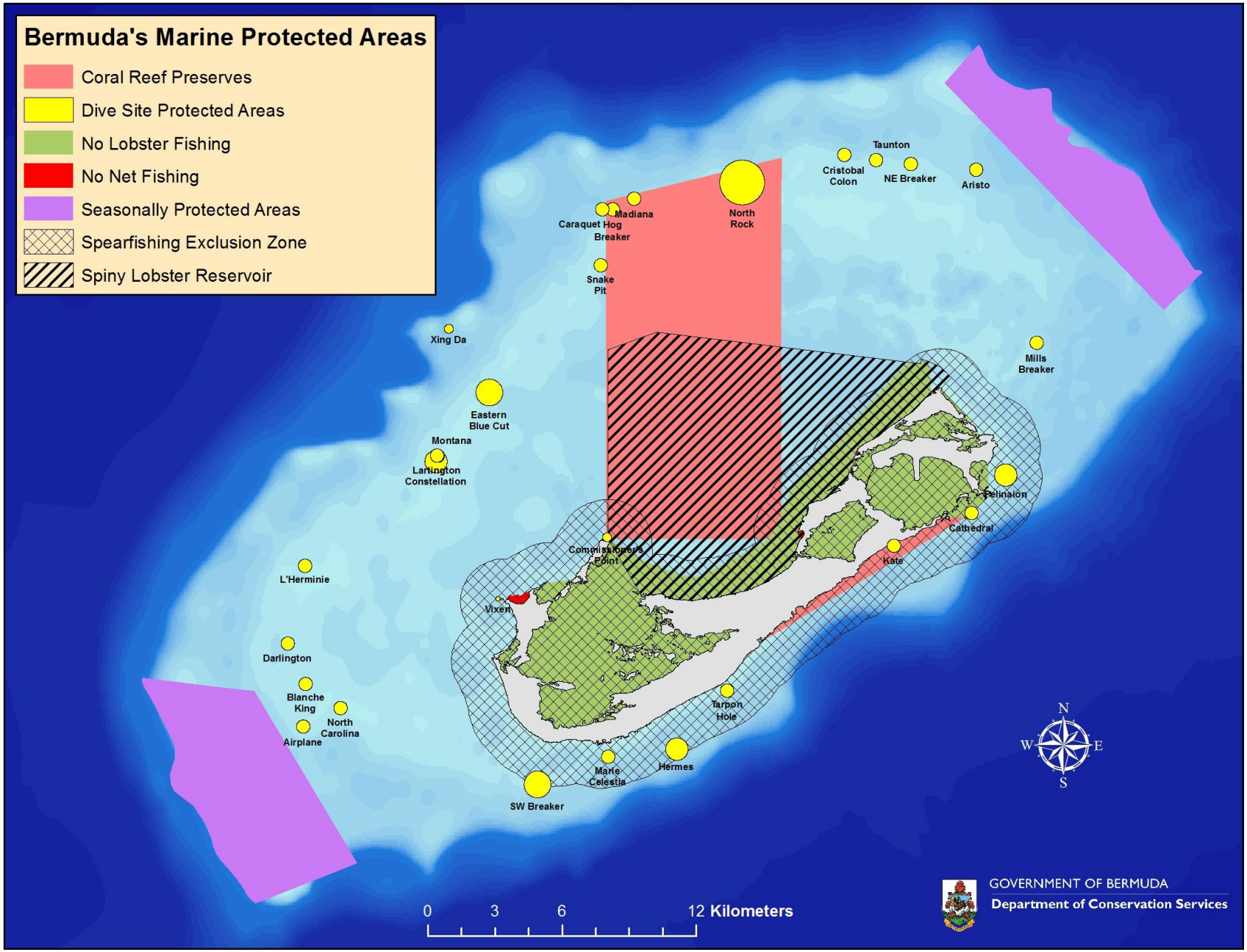
Dept of Conservation Services
Elevation data provided by the
Ministry of Works and Engineering.

# ENVIRONMENTAL STRATEGIES AND DATASETS

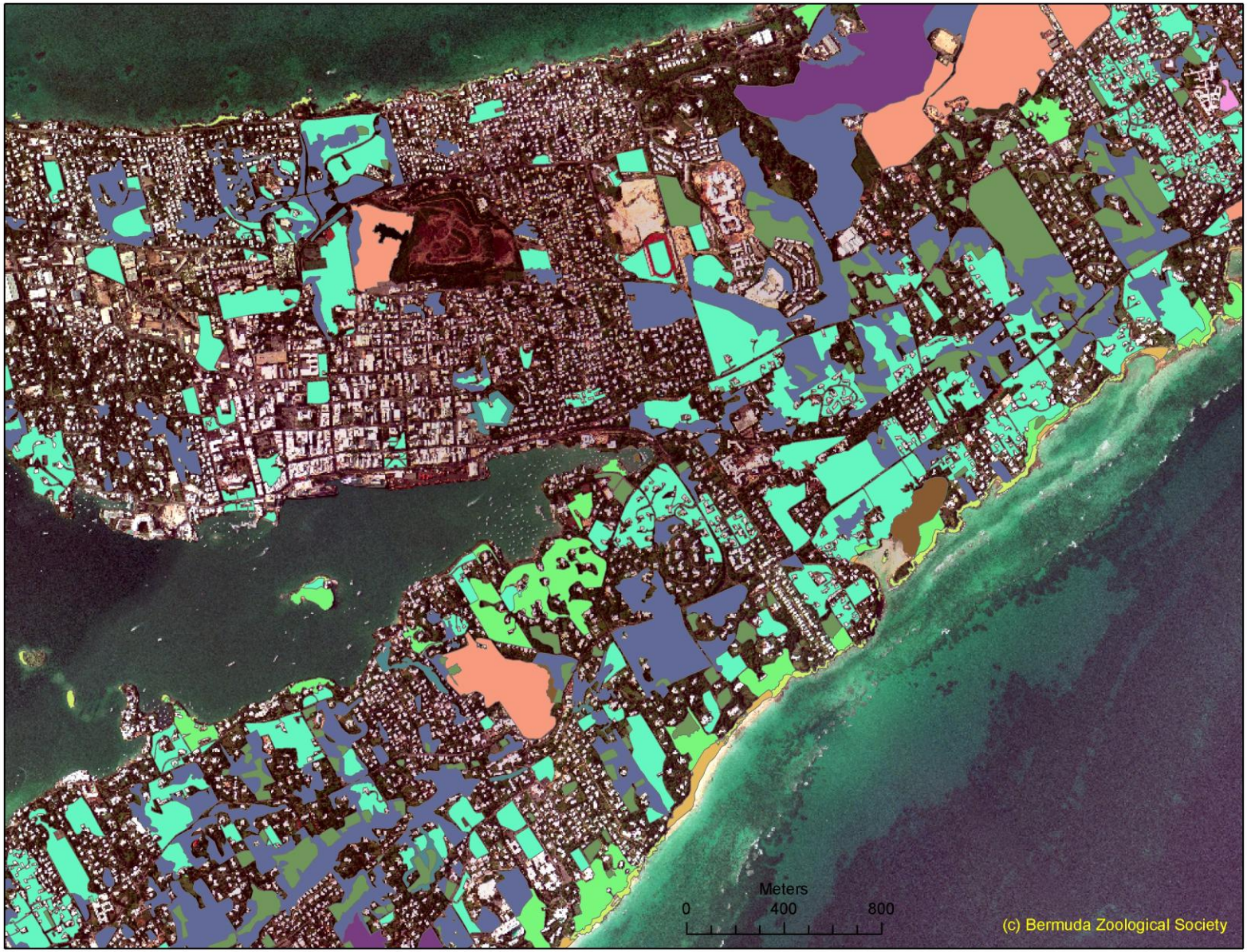
# NATIONAL ENVIRONMENTAL STRATEGIES

- **Bermuda has four national strategies that form the framework for environmental work**
  - Bermuda Biodiversity Strategy and Action Plan
  - Sustainable Development Strategy and Implementation Plan
  - Strategy for the Sustainable Use of Bermuda's Living Marine Resources
  - Bermuda Plan 2008

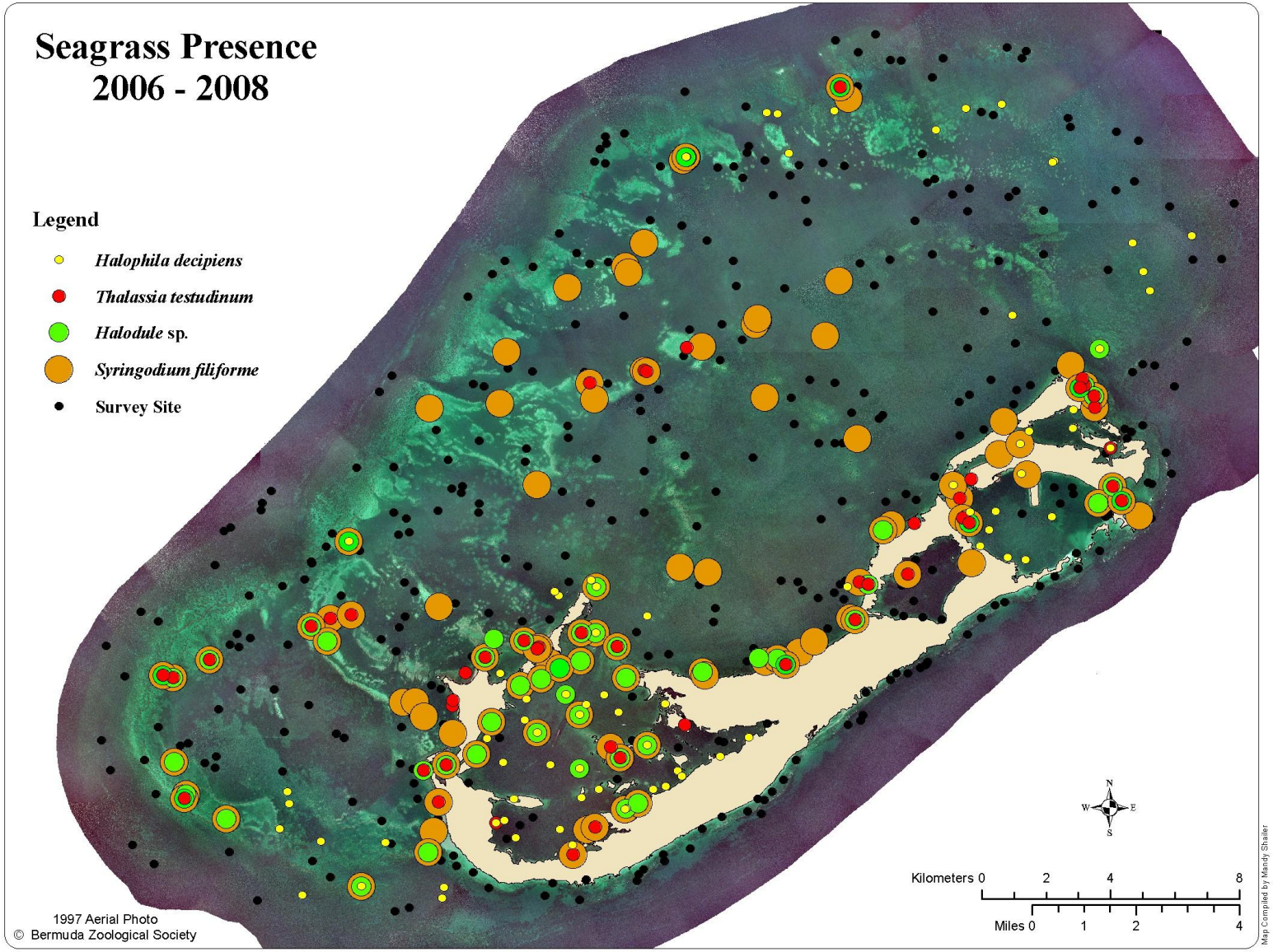
# MARINE PROTECTED AREAS



# TERRESTRIAL HABITAT MAPPING



# BENTHIC HABITAT MAPPING

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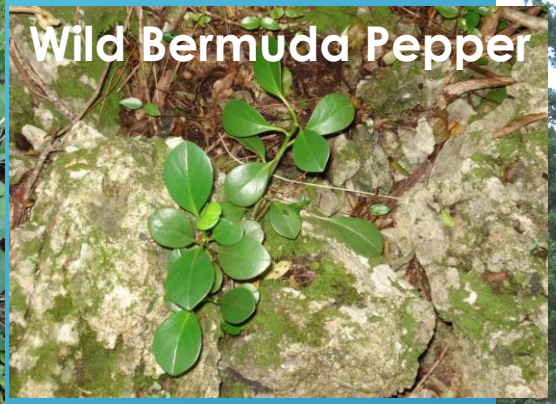
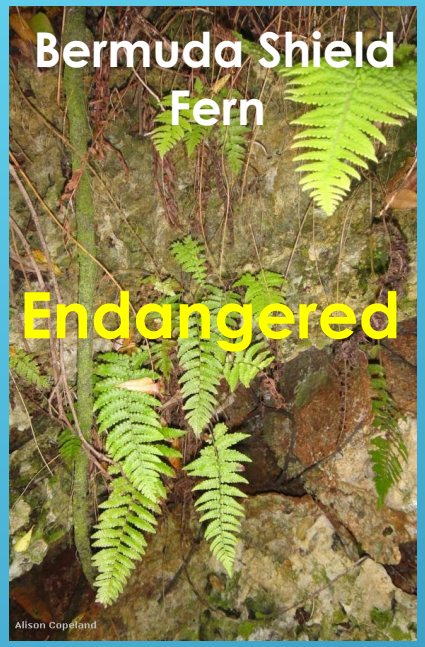
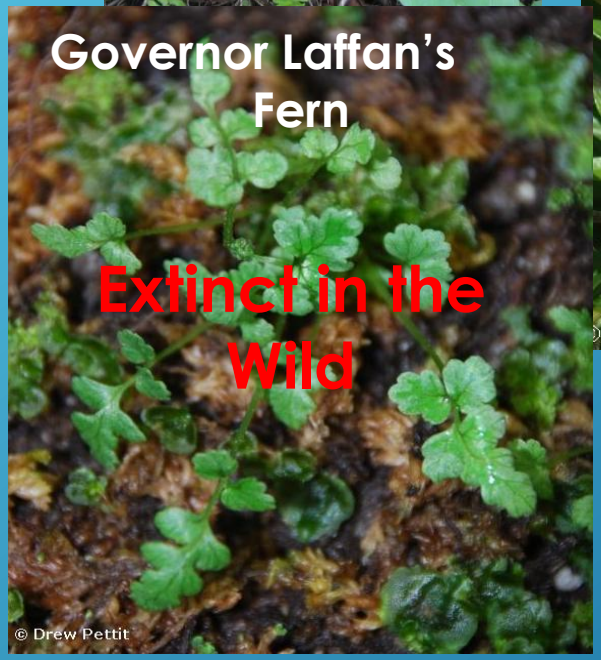


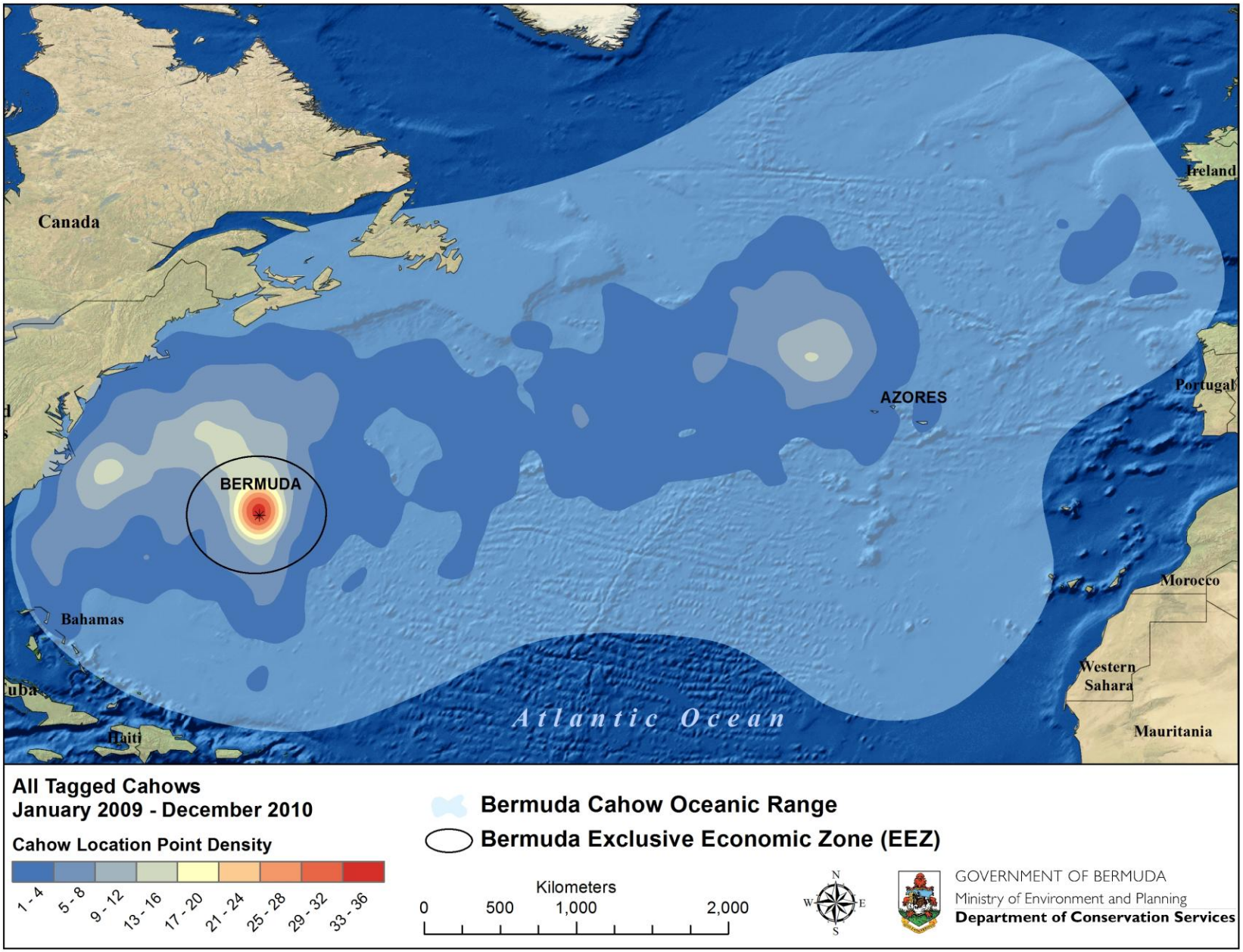


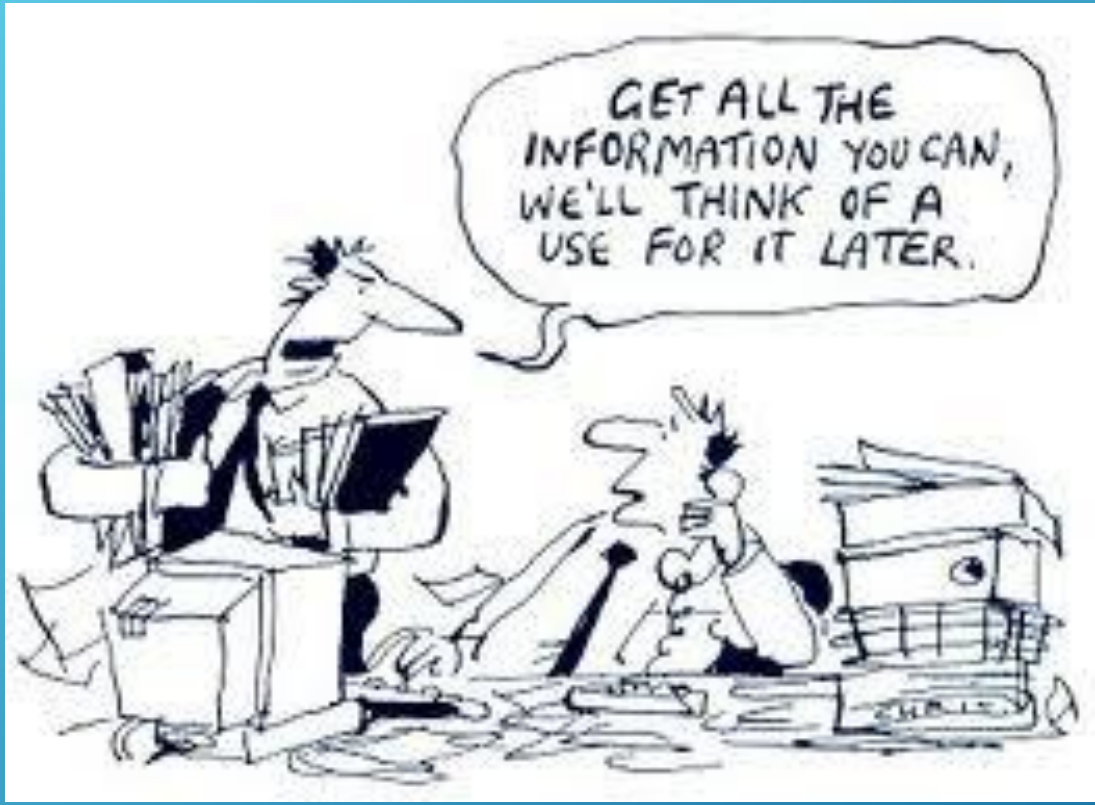



# ENDEMIC PLANT RED LISTING PROJECT

# CAHOW

# CAHOW TRACKING

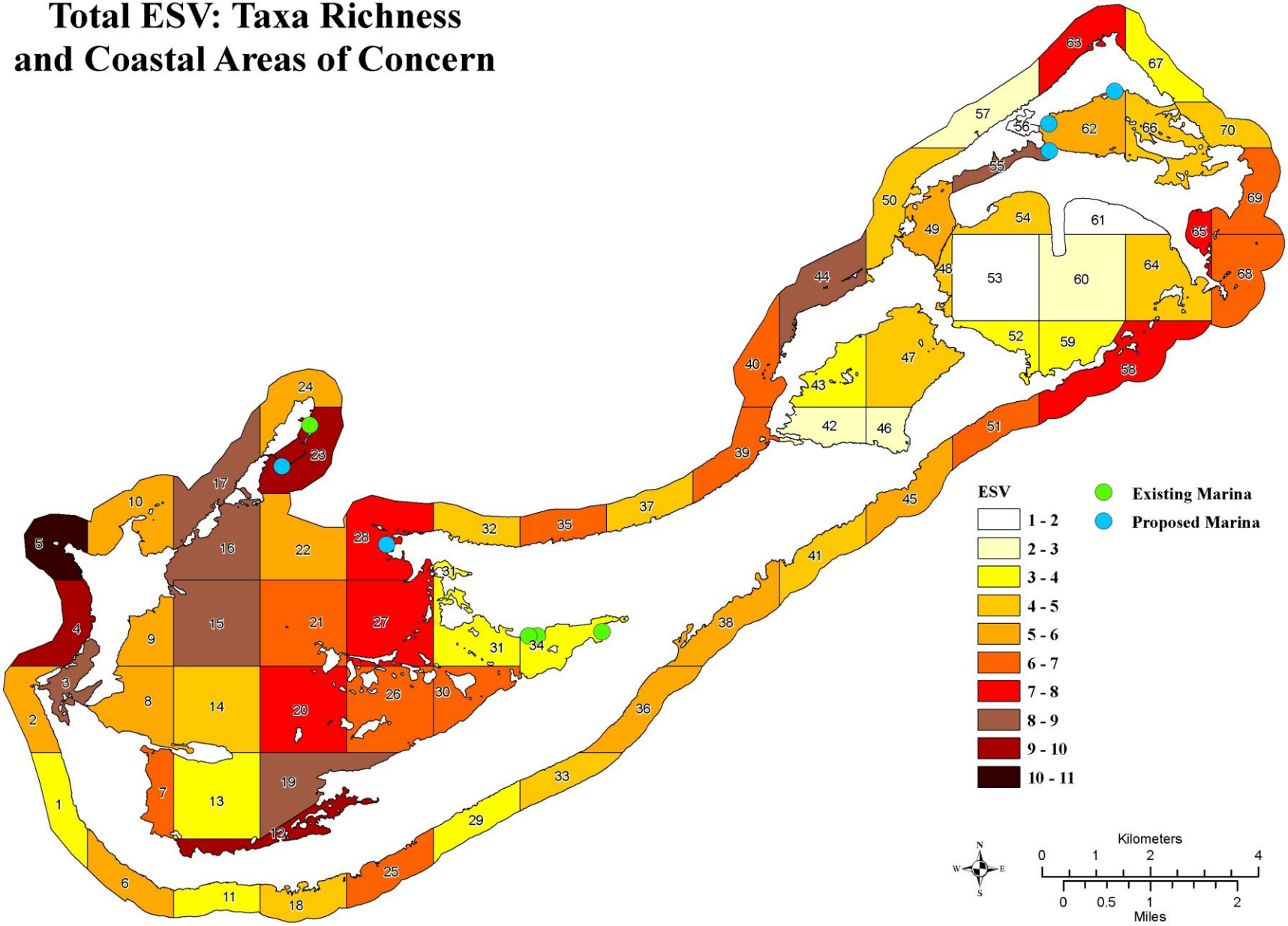



GET ALL THE INFORMATION YOU CAN, WE'LL THINK OF A USE FOR IT LATER.

# EXAMPLES OF EXISTING ENVIRONMENTAL POLICIES

- Marina Zoning
- Artificial Reefs
- Environmental Impact Assessments
- Marine Spatial Planning

# Total ESV: Taxa Richness and Coastal Areas of Concern

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- **Operating since 1990**
  - **Started as an interdepartmental interest group seeking support for GIS development**
- **Grass roots and team based approach**
  - **GIS development through the coordinated efforts of multiple government agencies.**

> **"The GIS Committee is now at the point where the need for and interest in geospatial information is greater than the capacity of this informal group to deliver advice and assistance to new potential users." (Kim Geomatics)**

# THE GIS COMMITTEE

GIS COMMITTEE
DEPT OF LAND SURVEYS AND REGISTRATION
DEPT OF CONSERVATION SERVICES
DEPT OF PLANNING
BELCO
DEPT OF STATISTIC
LOCUS Ltd (GIS CONSULTANT)
POST OFFICE
DEPT OF PARKS
DEPT OF MARINE AND PORTS

- **Objective**
  - **To provide observations and recommendations on the current and future development of geospatial information resources within the Government of Bermuda**
- **Kim Geomatics Report**
  - **"The lack of a Spatial Data Infrastructure (SDI) or web accessible data warehouse has been seen as a major limitation on the effective use of geospatial data in Bermuda" (Kim Geomatics)**
  - **"The establishment of a coherent geospatial data policy should be one of the first next steps for the Government of Bermuda" (Kim Geomatics)**

# GIS DEVELOPMENT STRATEGY 2008

# WHAT WORKS WELL

- The GIS Committee
  - Established relationships between GIS providers and users
  - Created a GIS Development Strategy
- Data sharing between departments
- Local capacity for scientific research and development of environmental strategies

# WHAT DOESN'T WORK WELL

- Data sharing with the public
- Lack of coordination of our GIS Development Strategy

- Environmental Strategies
- Legislation
- Species Recovery Plans

- www.conservation.bm
  - Resources section

# SOME LIGHT READING

ANY QUESTIONS?