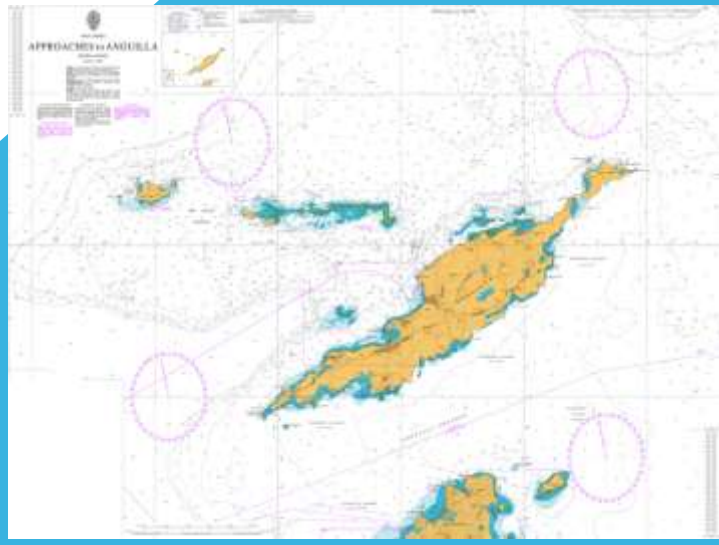
USING MAPS TO COMMUNICATE TO OFFICIALS AND THE PUBLIC IN ANGUILLA FOR THE NATIONAL ECOSYSTEM ASSESSMENT

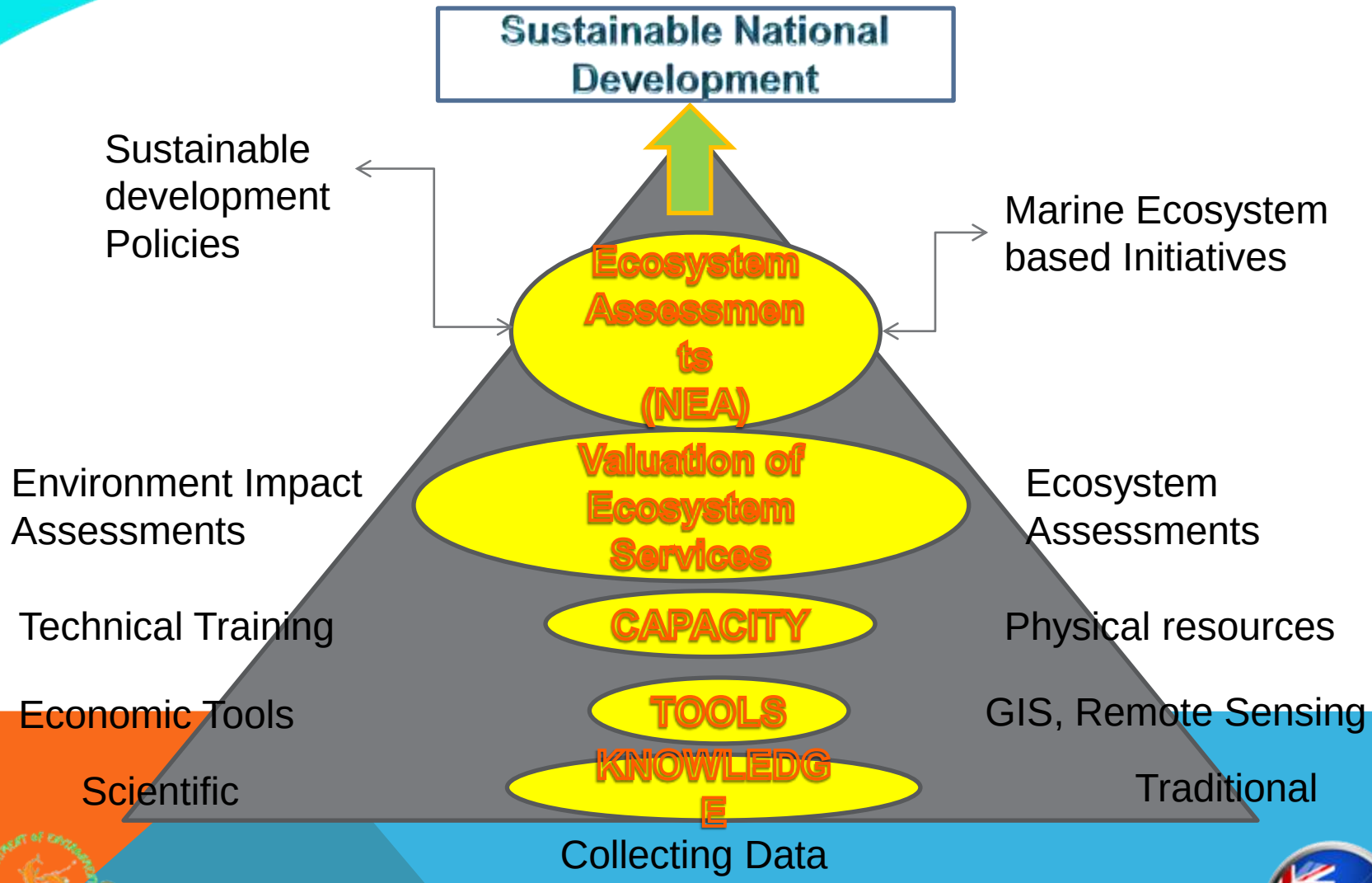


C. ANDRE SAMUEL

WHAT LED TO THE NATIONAL ECOSYSTEM ASSESSMENT

- Future of Reefs Project
- Tourism value of Anguilla's Ecosystems
- Terrestrial and Marine Habitat Mapping Projects
- Little Scrub Ecosystem Assessment
- Soil Amelioration Project
- Wetlands ecosystem Project
- Greening the Economy Workshop and Report
- Collaborative projects with several government agencies

DOE'S STRATEGIC APPROACH



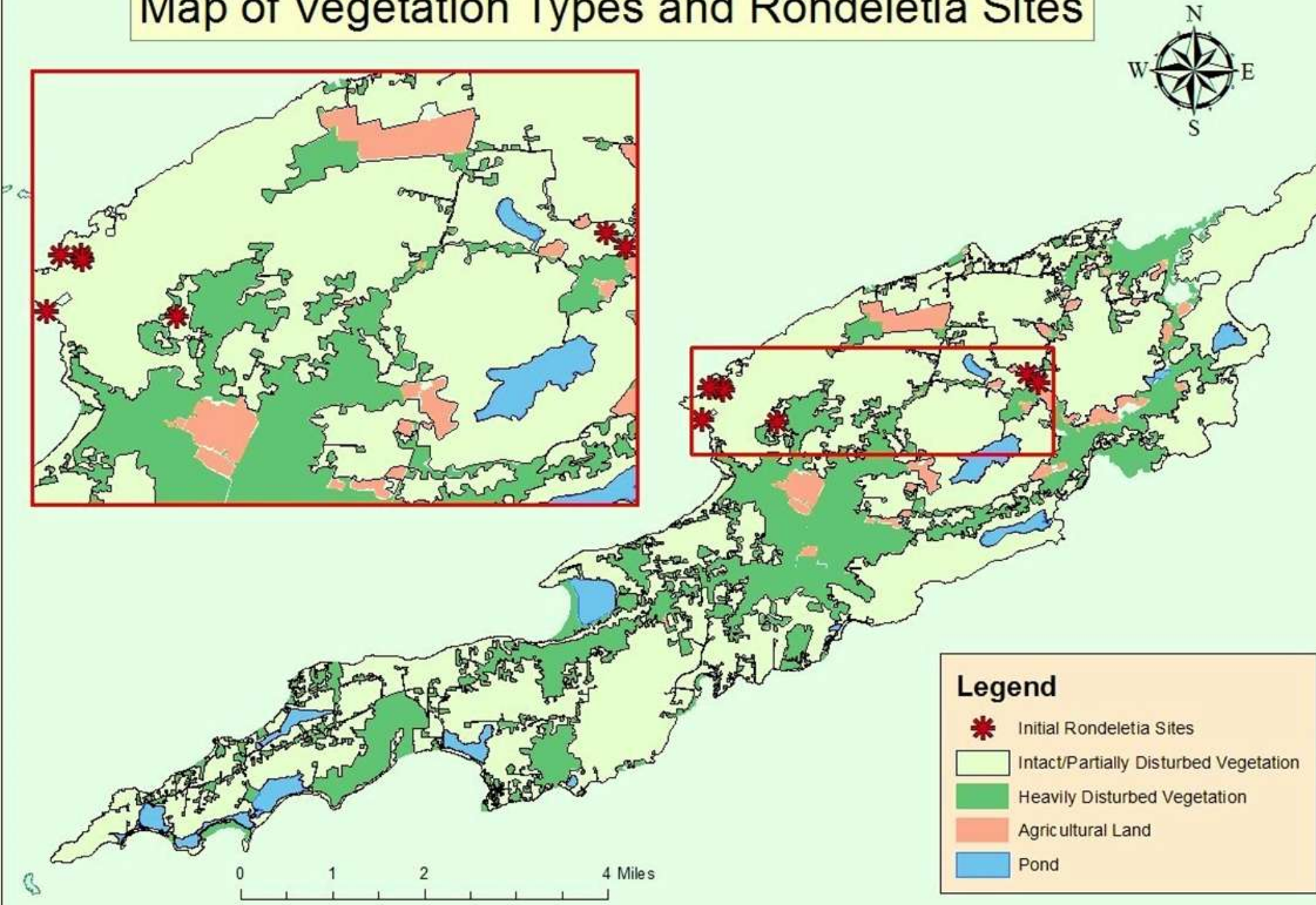
OBJECTIVES OF THE NATIONAL ECOSYSTEM ASSESSMENT

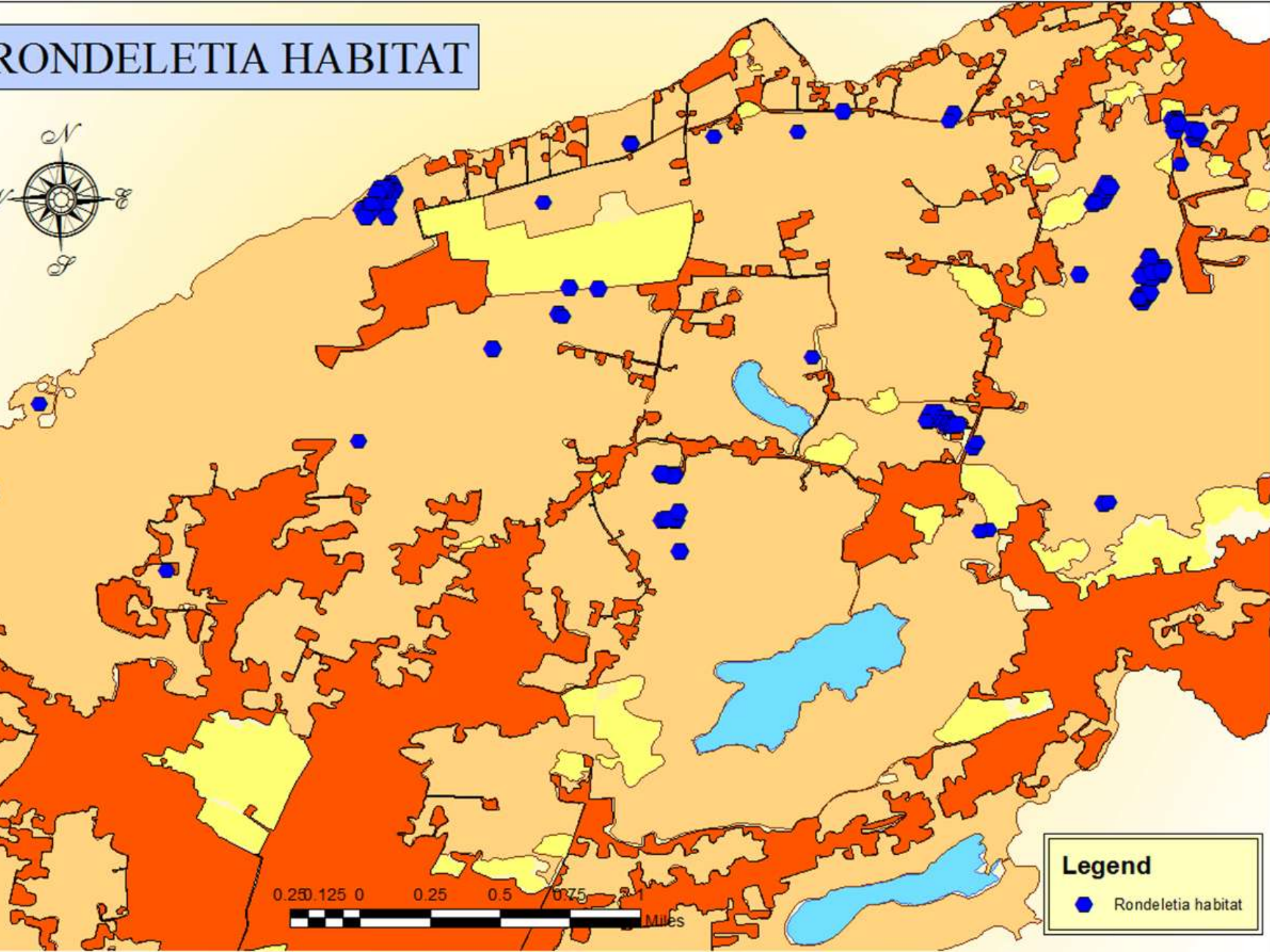
- Create and evidence base database on the status and trends in Anguilla's Ecosystems and their associated services
- Strengthen the technical capacity across agencies (multisectoral) in conducting social scenario assessments, ecosystems services assessment, socio-economic valuation assessment
- Develop scenarios/narratives with associated timelines, critical uncertainties and potential surprises (illustrations, GiS maps)
- Establish an integrated framework towards a national development plan.

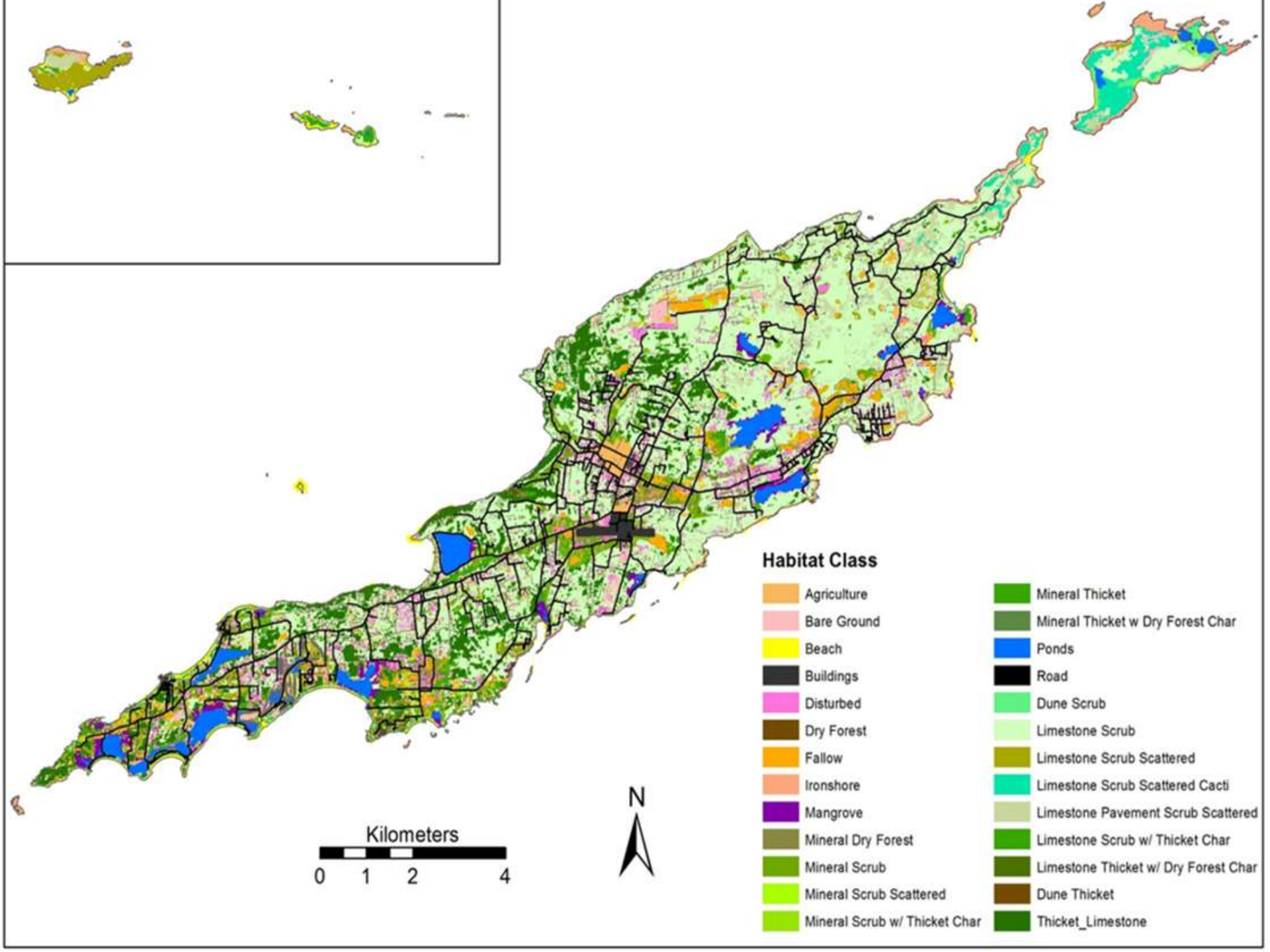
EARLY MAPPING WORK ON ANGUILLA

- **ACRAMAM Project-Anguilla Coastal Resources and Marine and Monitoring Project**
- **Spatial Patterns of Anguilla's Endemic Plant *Rondeletia anguillensis***
- **Little Scrub Ecosystem Assessment**
- **Terrestrial Habitat Mapping Project**
- **Marine Habitat Mapping Pro**

Map of Vegetation Types and Rondeletia Sites




RONDELETIA HABITAT
N
E
S
0.25 0.125 0 0.25 0.5 0.75 1
Miles
Legend
Rondeletia habitat


Habitat Class
Agriculture
Bare Ground
Beach
Buildings
Disturbed
Dry Forest
Fallow
Ironshore
Mangrove
Mineral Dry Forest
Mineral Scrub
Mineral Scrub Scattered
Mineral Scrub w/ Thicket Char
Mineral Thicket
Mineral Thicket w Dry Forest Char
Ponds
Road
Dune Scrub
Limestone Scrub
Limestone Scrub Scattered
Limestone Scrub Scattered Cacti
Limestone Pavement Scrub Scattered
Limestone Scrub w/ Thicket Char
Limestone Thicket w/ Dry Forest Char
Dune Thicket
Thicket_Limestone
Kilometers
0 1 2 4
N

THE ROLE OF GIS IN THE NATIONAL ECOSYSTEM ASSESSMENT

- **Recording and storing information**
- **Analyzing local distributions and spatial patterns**
- **Presenting findings and communicating findings**

WHY WE MAP?

- To Map ecological correlates
- To map social values
- To map possible activities
- To map physical attributes
- To make correlations and describe the dynamics of nature
- To document traditional knowledge

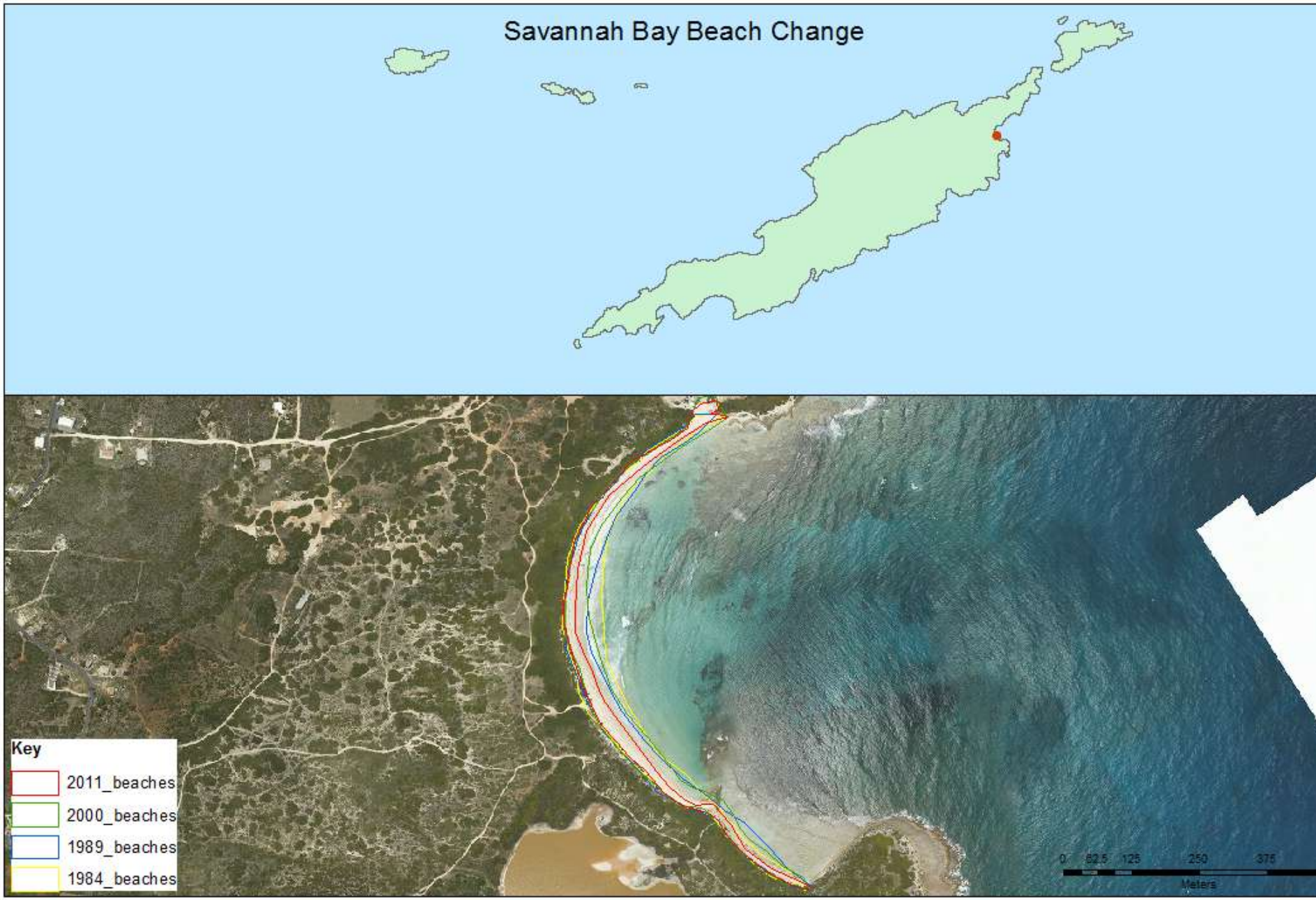
More specifically>>>

- Illustrating baseline information
- Illustrating trends and changes
- Illustrating relationships that may not have been considered
- Illustrating what scenarios may look like within the context of the island

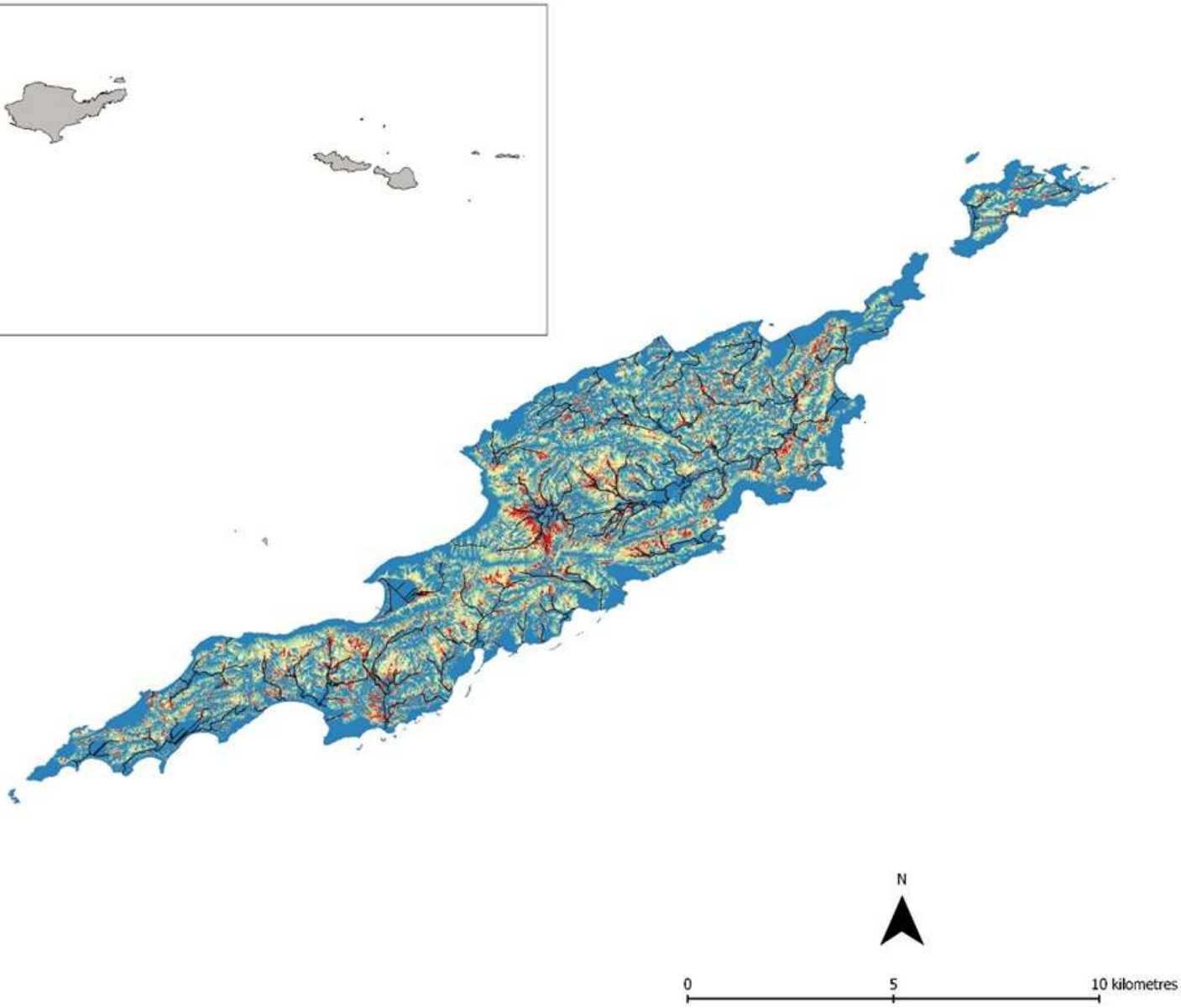
MAKING THE CASE FOR INCLUSION OF RISKS IN LAND DEVELOPMENT DECISIONS

- Erosion Risk maps
- Flood Risk maps
- Coastal infrastructure risk maps (Roads, Housing)

Savannah Bay Beach Change



Erosion Risk



Key Service Map

Erosion risk

High risk of erosion

Low risk of erosion

Theme to Consider:
The Anguillan Government has ambitious targets for development. Sources of water across the island support local communities, agriculture, fisheries, tourism and habitats. Water sources are vulnerable to pollution and over extraction.

What the map shows:
This map shows the naturally occurring water resources present on Anguilla and current extraction wells. Aquifers within the island are located within central belt and vary in area extent. Small water courses are present across the island connecting (Cauls Pond) and discharging into saltwater ponds.

How the map has been created:
The map has been created from governemnt sources including hydro-geologic surveys of groundwater and digitized stock maps of water courses and extraction wells.

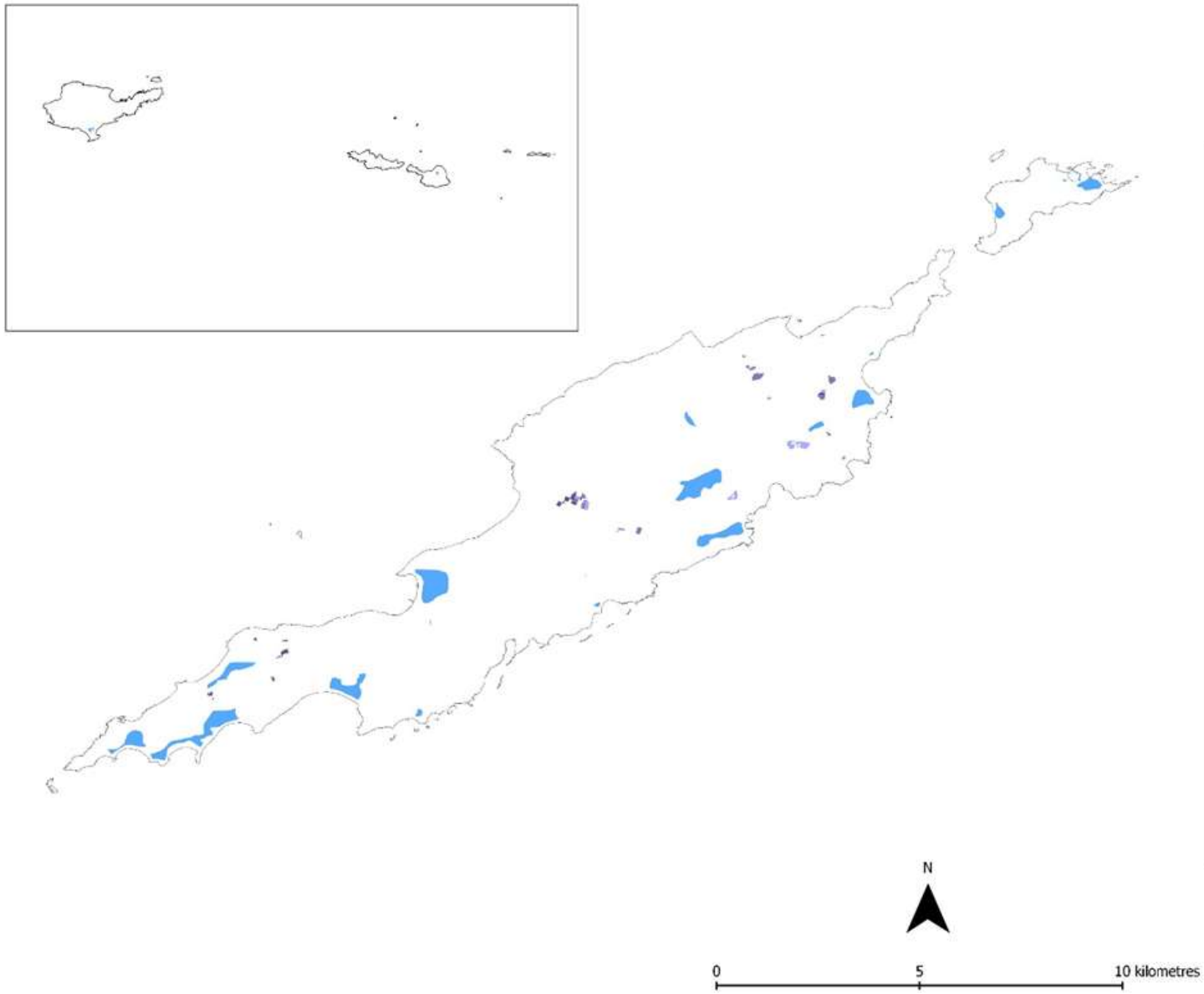
Environment SYSTEMS
evidence and insight

Cartographer by Environment Systems Ltd. January 2015.
Derived from Satellite imagery December 1984-August 2013

MAKING THE CASE FOR AN EMPHASIS ON AGRICULTURAL DEVELOPMENT

- **Agricultural Potential matrix**
- **Arable lands (Active, Fallow), past and present**
- **Current situation of arable lands**
- **Current farming practice and crop types**
- **Plot size and soil type**
- **Development of a policy paper for Agricultural development**

Agriculture: Crops



Key Services Map

Legend

Average Crop Value
- High
- Medium
- Low

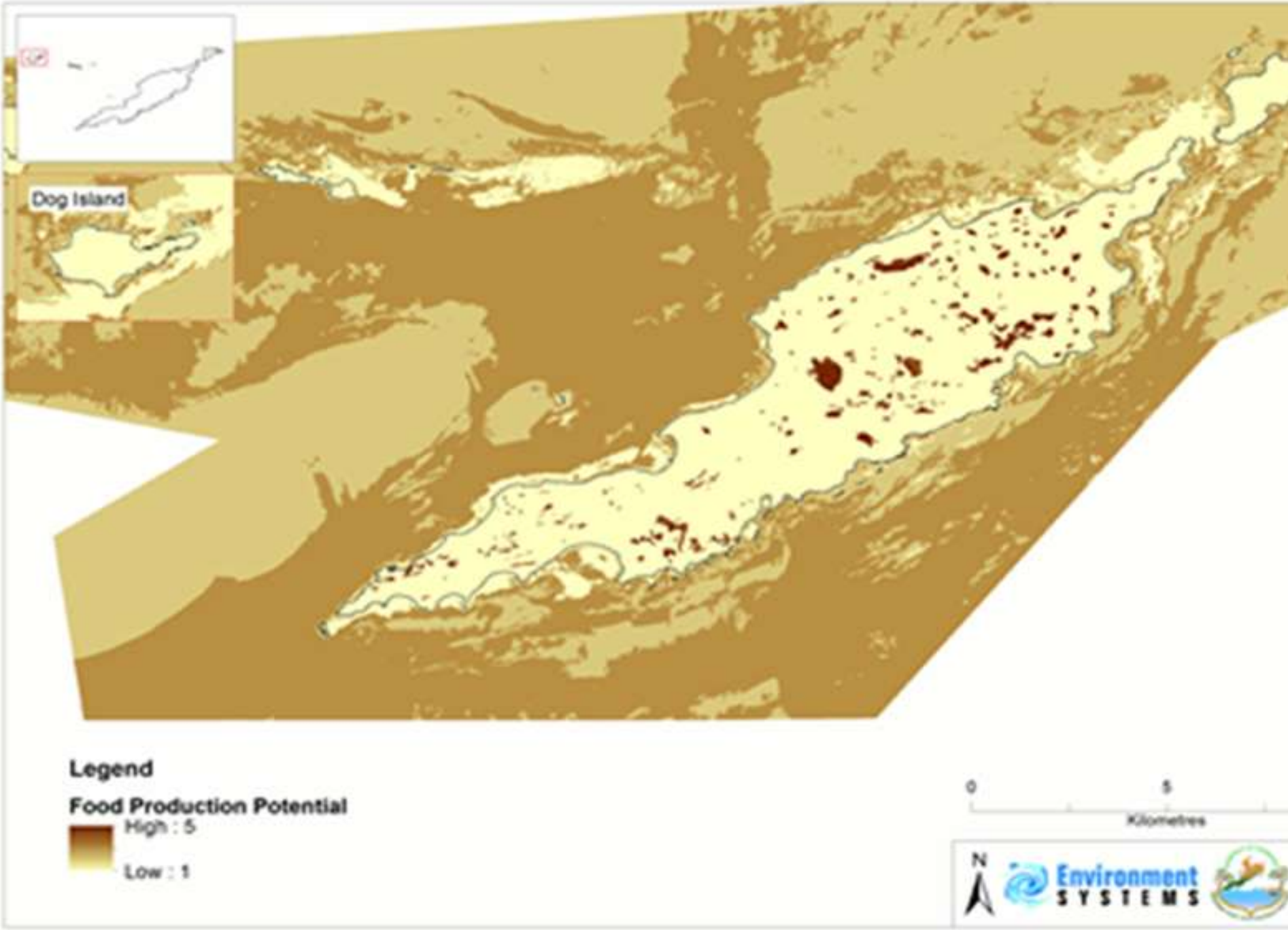
- Pond

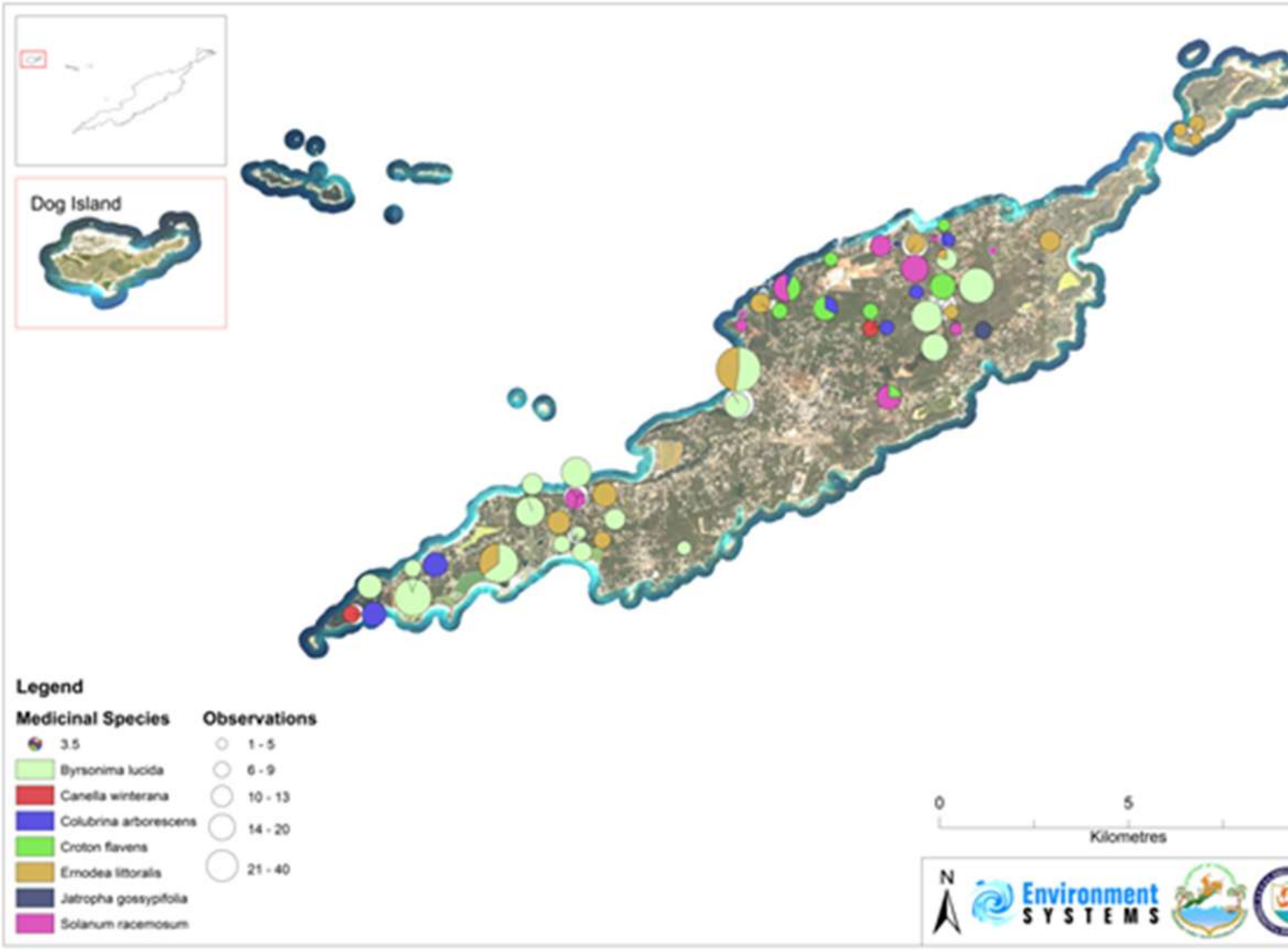
Theme to Consider:

What the map shows:

How the map has been created:

Cartographer by Environment Systems Ltd. January 2015.
Derived from Satellite imagery December 1984-August 2013

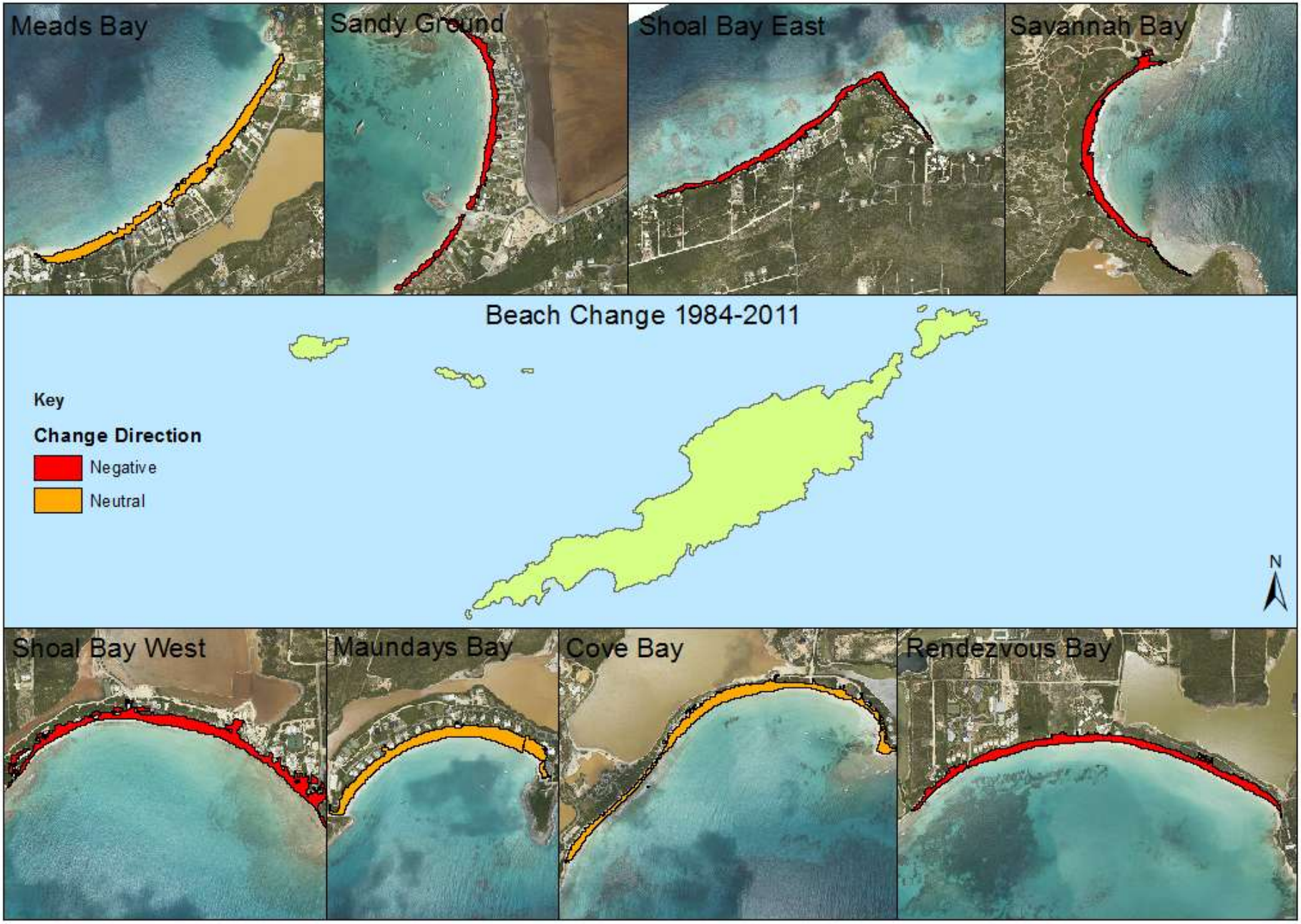

Dog Island
Legend
Food Production Potential
High : 5
Low : 1
0
5
Kilometres
N
Environment
SYSTEMS


Dog Island
Legend
Medicinal Species
3.5
Byrsonima lucida
Canella winterana
Colubrina arborescens
Croton flavens
Ernodea littoralis
Jatropha gossypifolia
Solanum racemosum
Observations
1 - 5
6 - 9
10 - 13
14 - 20
21 - 40
0
5
Kilometres
N
Environment
SYSTEMS

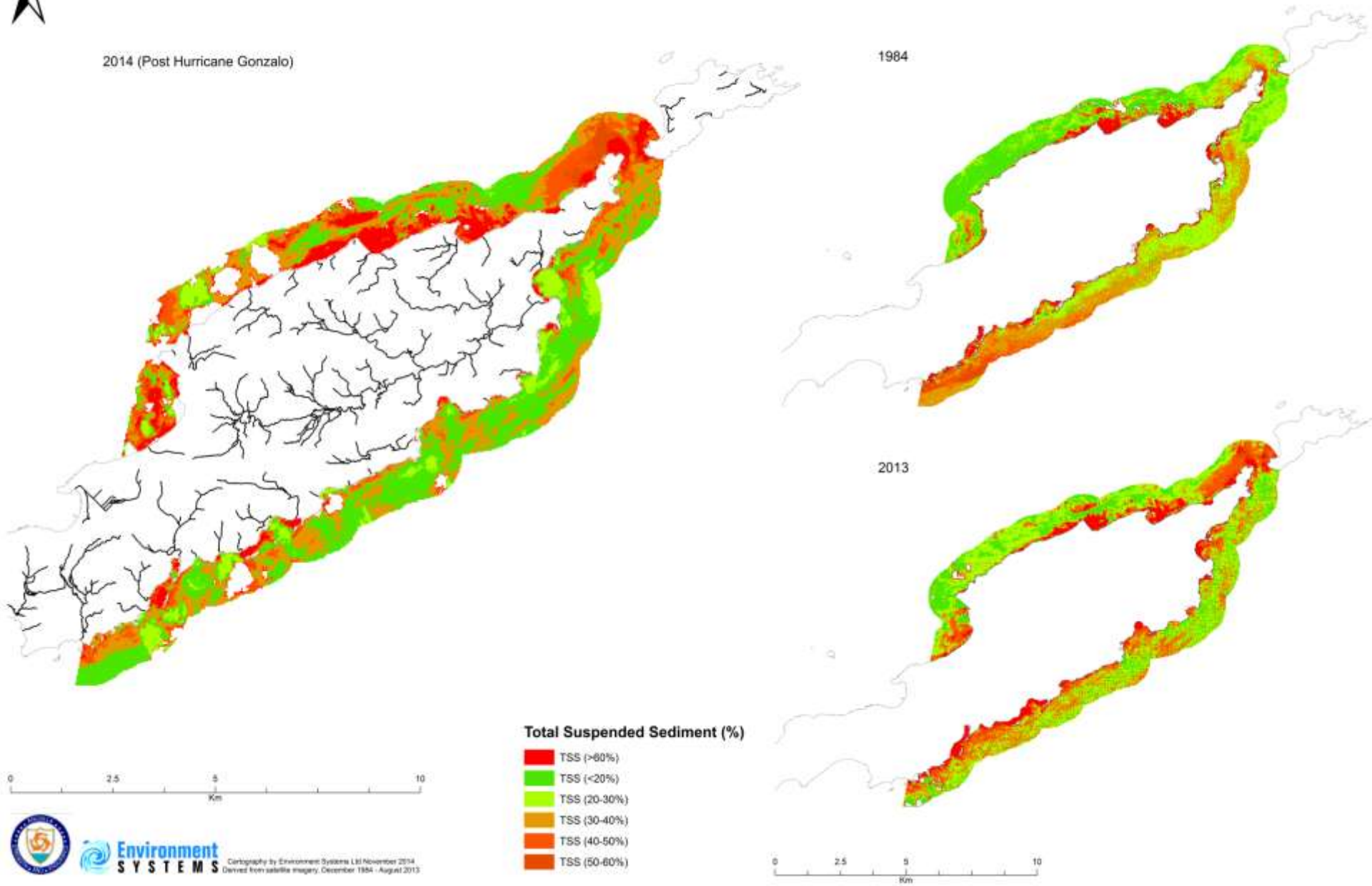
MAKING THE CASE FOR ESTABLISHING AN INTEGRATED COASTAL DEVELOPMENT PLAN

Ridge to Reef Principles

- **Vegetation cover**
- **Land use in closest proximity**
- **Infrastructure**
- **Suspended Solids Maps-1984, 2012 and post-Hurricane Gonzalo**
- **Mapping of beach dynamics**
- **Stable, shrinking and increasing coastlines**


Meads Bay
Sandy Ground
Shoal Bay East
Savannah Bay
Beach Change 1984-2011
Key
Change Direction
Negative
Neutral
N
Shoal Bay West
Maundays Bay
Cove Bay
Rendezvous Bay

Anguilla Erosion Risk and Suspended Sediment



MAKING THE CASE FOR FISHERIES DEVELOPMENT

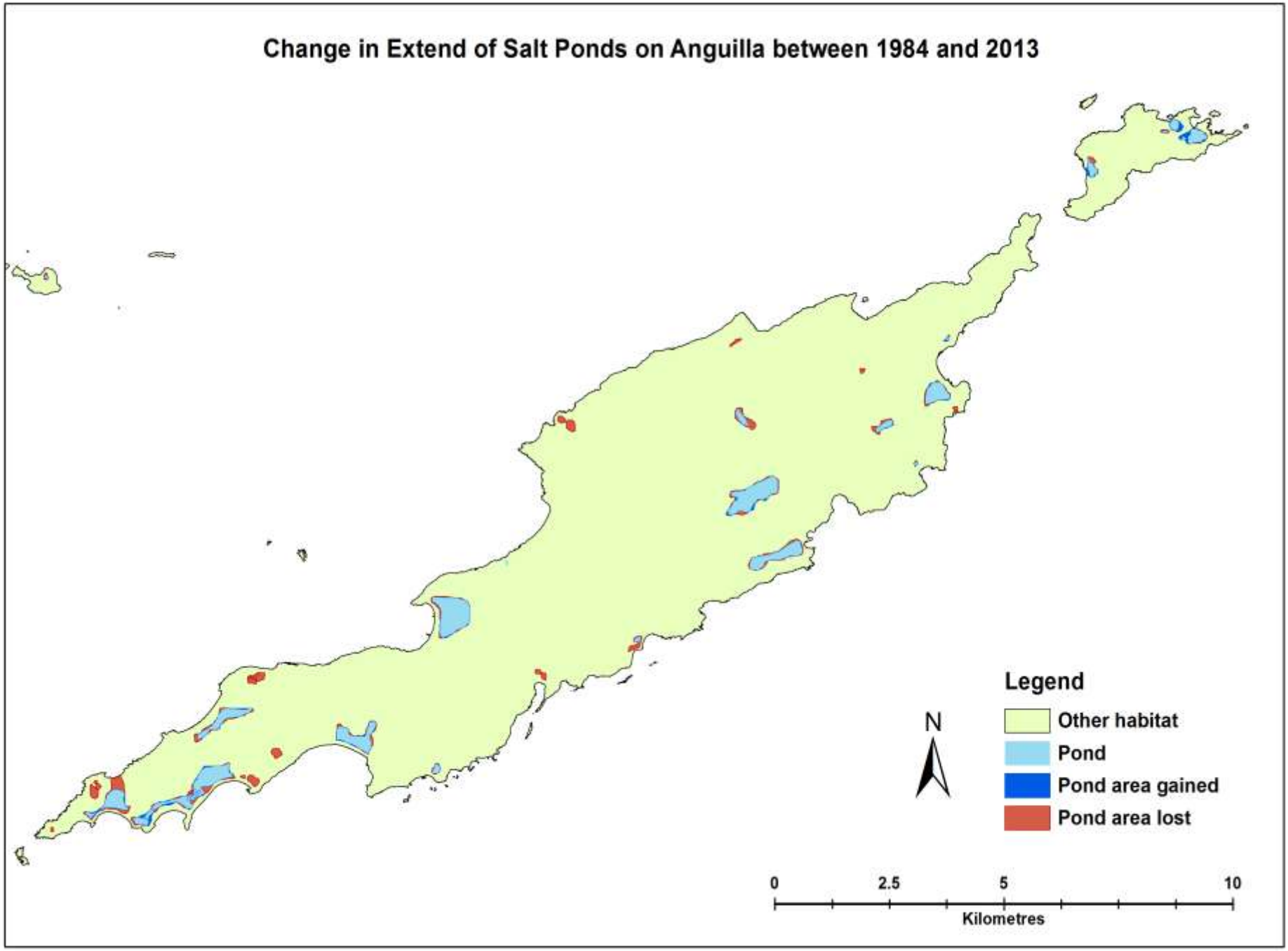
- Fisheries matrix
- EEZ/EFZ boundaries and imagery
- Marine habitat Map of nearshore reefs (Bathymetry included)
- Coral cover designations
- Relative species abundance
- 8-Band Imagery of EFZ/EEZ
- Application of remote sensing

COMMUNICATING .....

COMMUNICATING WITH THE PUBLIC

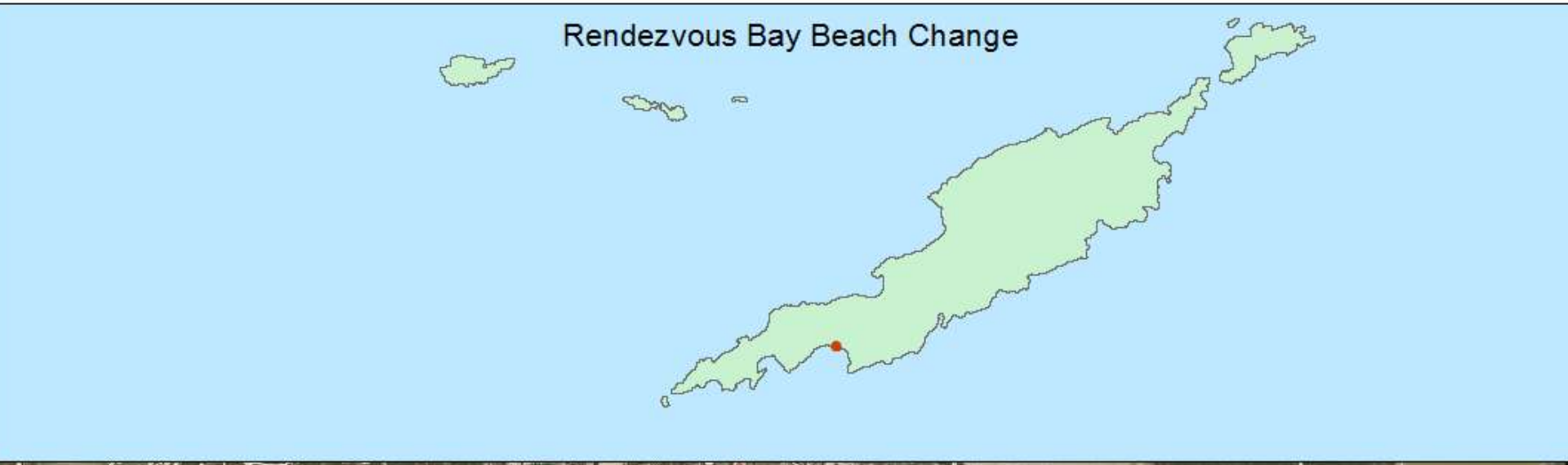
Putting validation to the test!

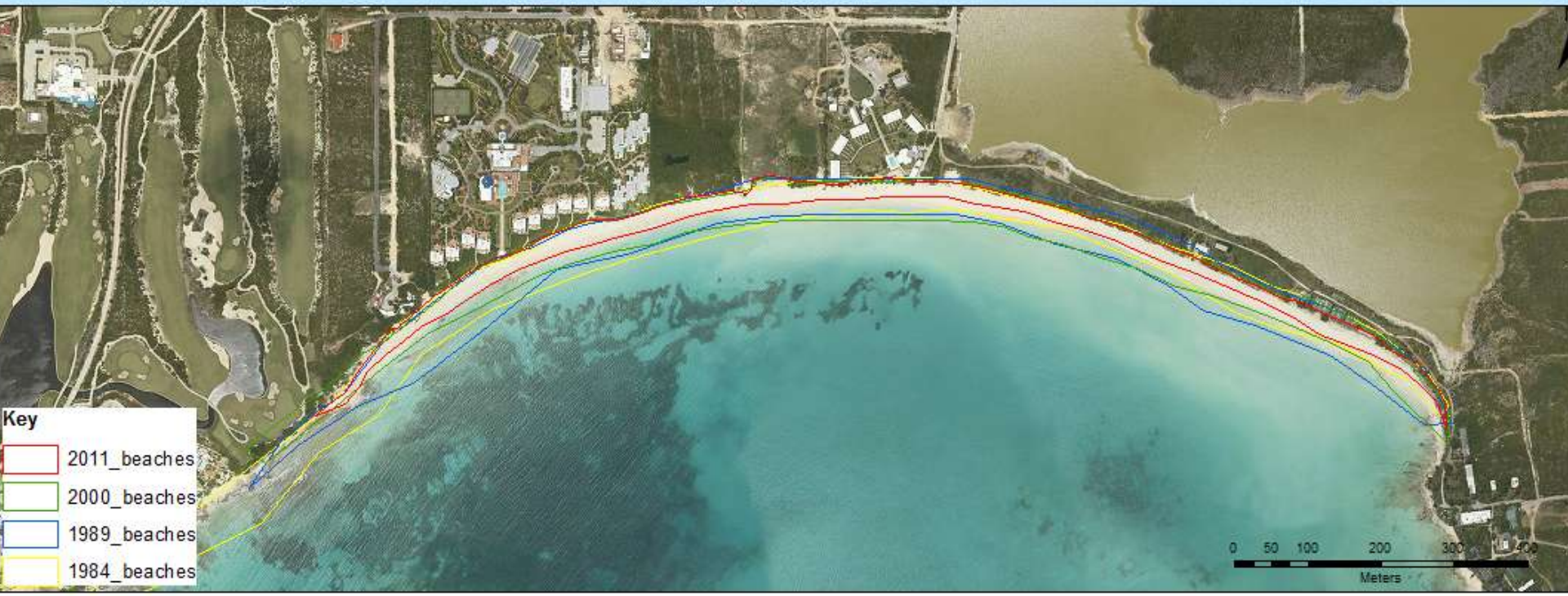
Current and relevant


Change in Extend of Salt Ponds on Anguilla between 1984 and 2013
Legend
Other habitat
Pond
Pond area gained
Pond area lost
N
0
2.5
5
10
Kilometres

1968

Rendezvous Bay Beach Change





RECOMMENDATIONS

- **Validate, Validate, Validate!**
- **Ensure the maps produced are part of a larger plan eg. Communication plan/strategy**
- **The audience perception is most important**
- **Simple clear messages work best**
- **Incorporate the public perceptions**
- **Remember!!!!!Seeing is believing**

THANK YOU!

DARWIN INITIATIVE

ANGUILLA STRENGTH AND ENDURANCE

JNCC
Joint Nature Conservation Committee

CAICOS PINE RECOVERY &
NATIVE PLANT BIODIVERSITY
CONSERVATION NURSERY
OTEP