The value of Data Mapping and Modelling Examples from Anguilla

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Government of Anguilla

Why map

- To provide data as an evidence base for good policy making
- To monitor existing policy and implement changes where they are not having the desired effect
- Spatial data allows you to understand the effect of different features that occur at one location
- Underpinning the National Ecosystem Assessment for Anguilla (A 30year visionary plan for the island)

Factors that affect the functioning of the marine environment in Anguilla?

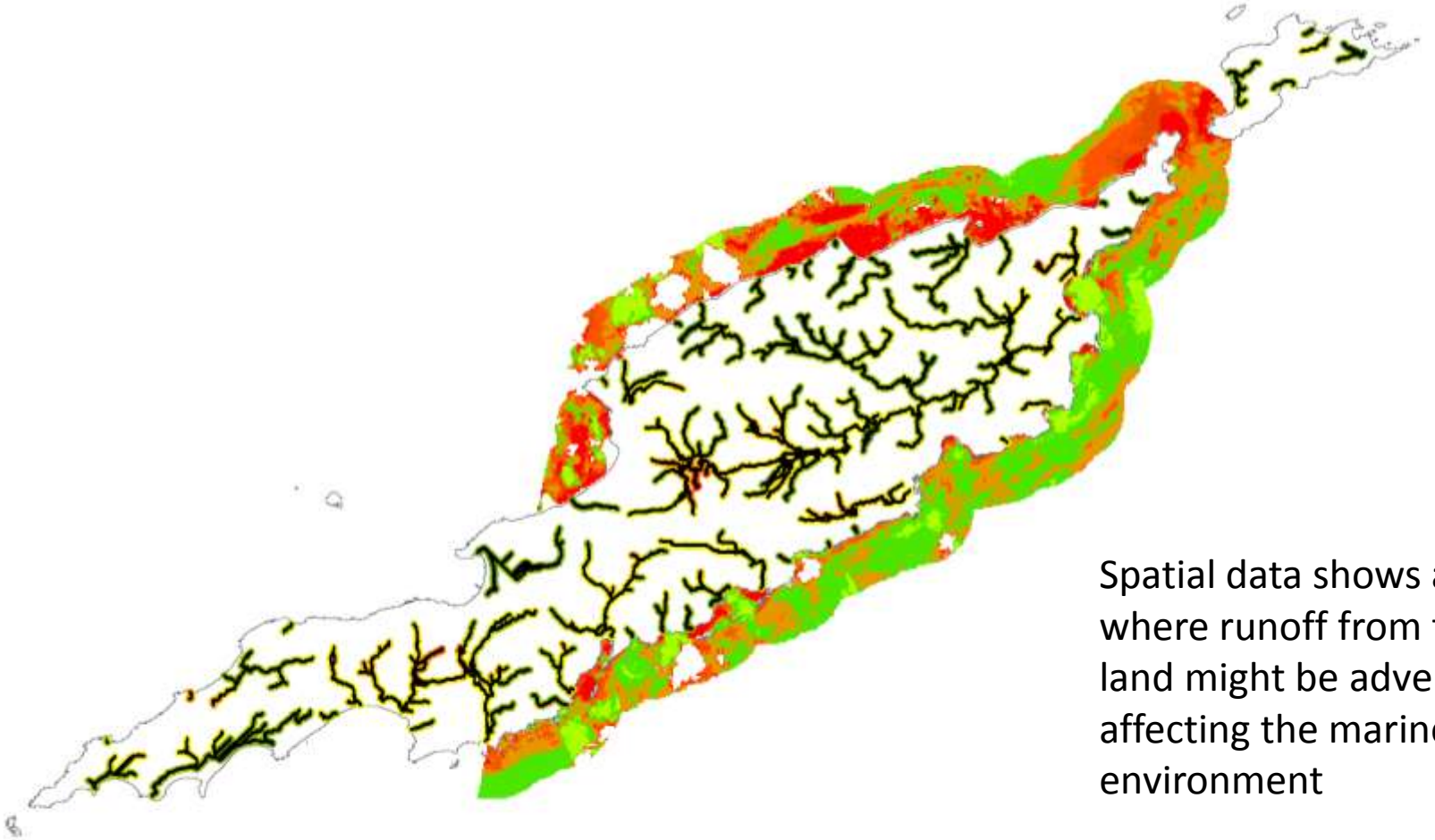
Coastal protection

Pollution from the land

Tourism

Runoff and suspended sediments

Erosion channels (from SciMap) LiDAR DTM and Suspended Sediments in the inshore environment 2104 (2 days post Gonzalo)



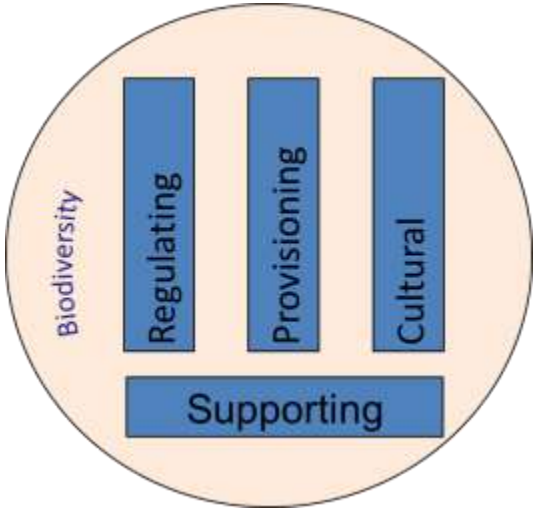
Spatial data shows areas where runoff from the land might be adversely affecting the marine environment

Geographical Information System allows multiple ecosystem services to be mapped

Environment

Culture

Economics



Ecosystem services from the MEA

Mapping Ecosystem services: Outcomes

Integrating ecosystem services into national decision making

- Meaningfully engage private land owners
- Consistently implemented plans
- Zoning of ecosystems critical for:
  - Water
  - Food
  - Mineral
  - Agricultural production
  - Biodiversity
  - Medicinal plants
  - Cultural uses of land and beaches

Four key factors

What the habitat is

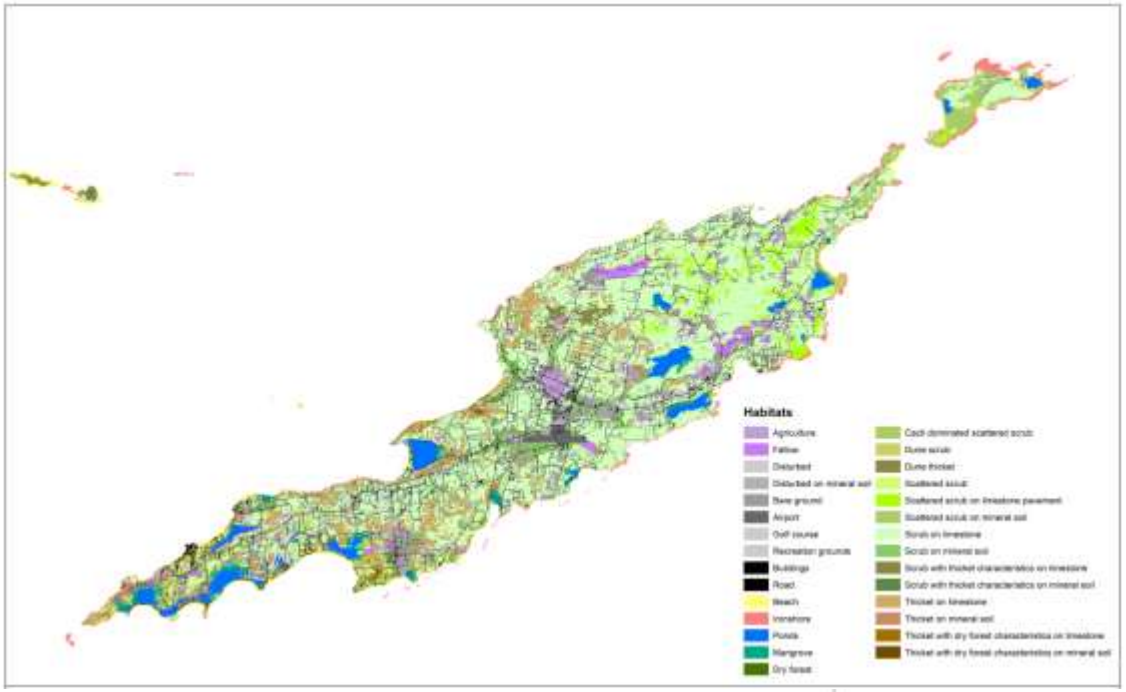
Where the habitat is

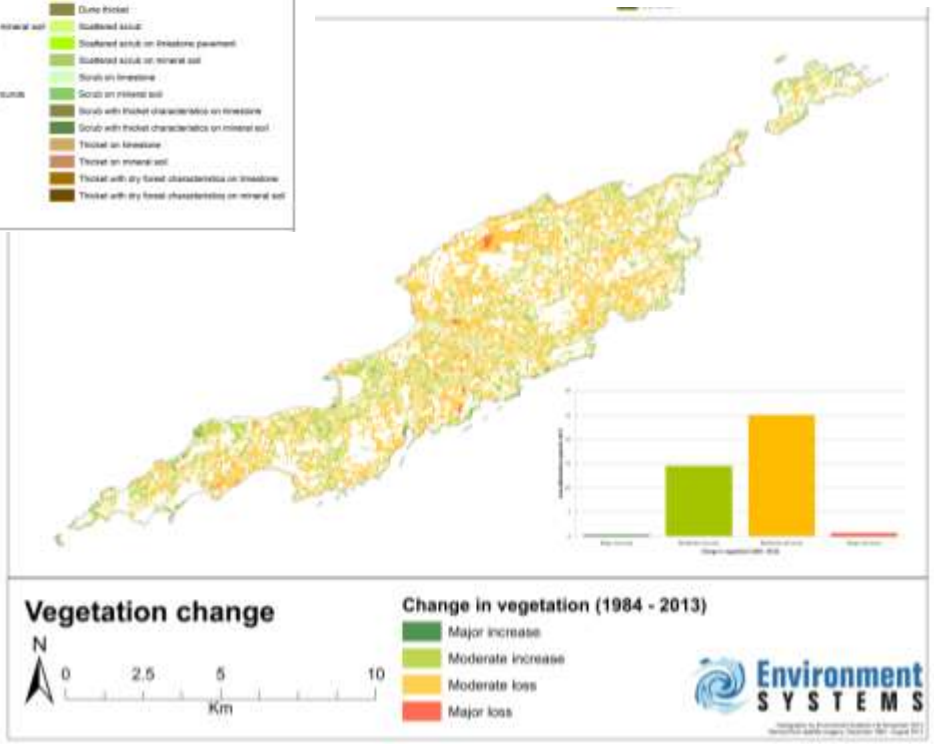
Four key influencing factors

What the habitat is on

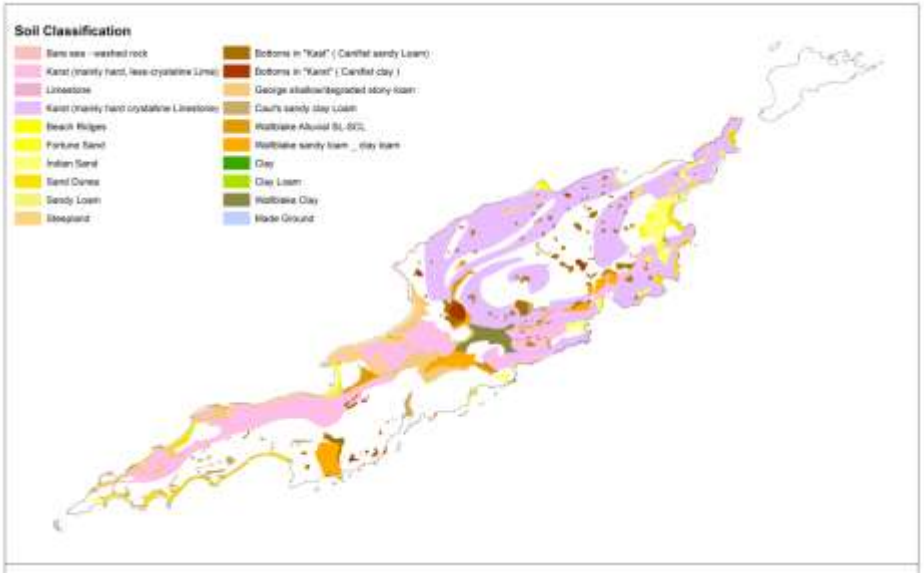
How the habitat is managed

Habitat map

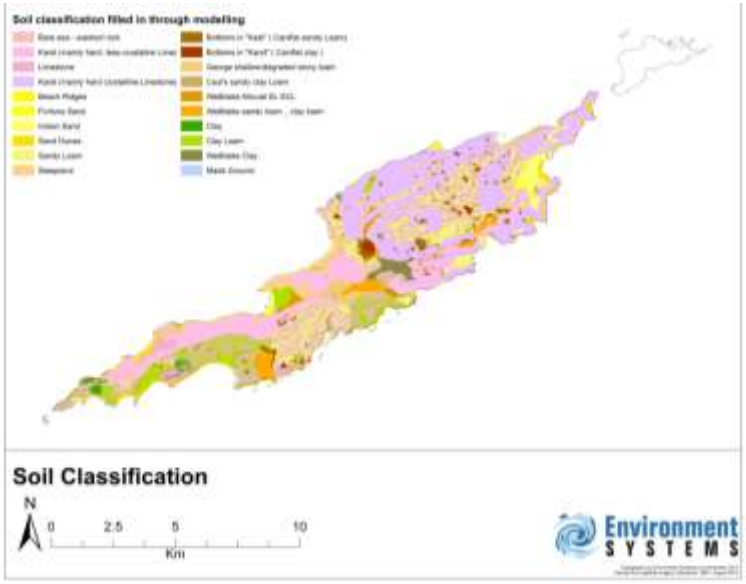

Habitats


Vegetation change
N
0
2.5
5
10
Km
Change in vegetation (1984 - 2013)
Major increase
Moderate increase
Moderate loss
Major loss
Environment SYSTEMS

Soil / Geology



Existing soil map

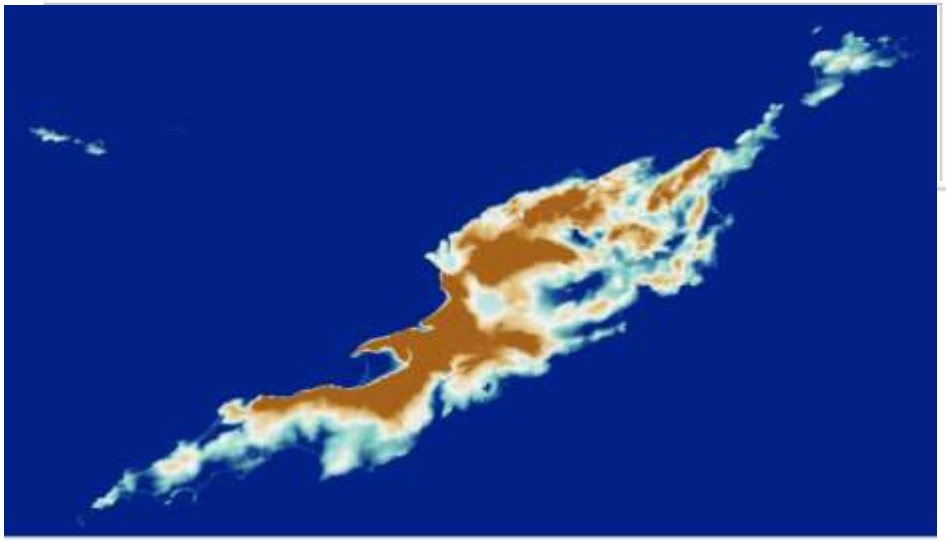


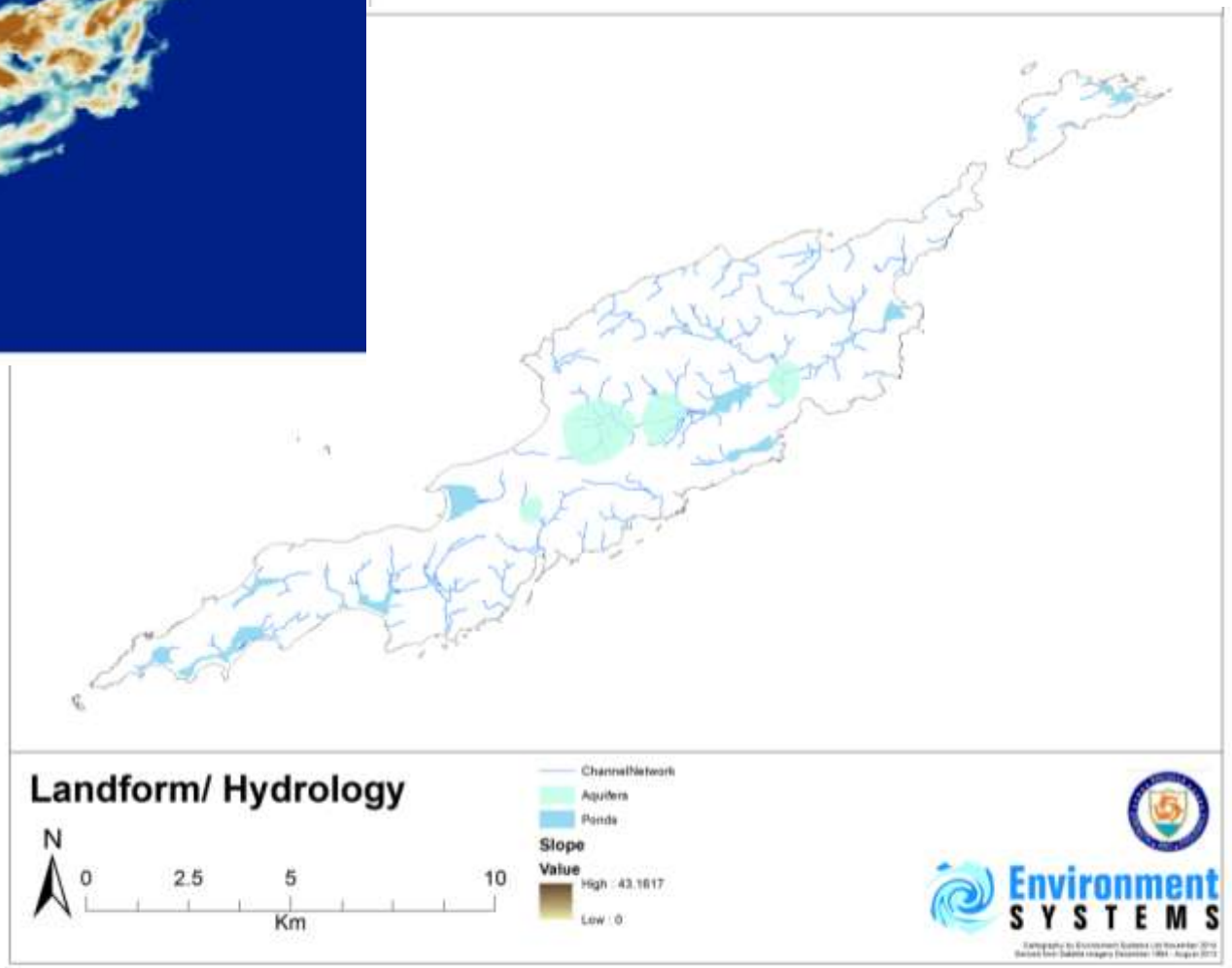
Modelled soil map:

- For unknown areas > selected ridges and assume limestone kast
- For areas not ridges chose the soil time with the most similar reflectance

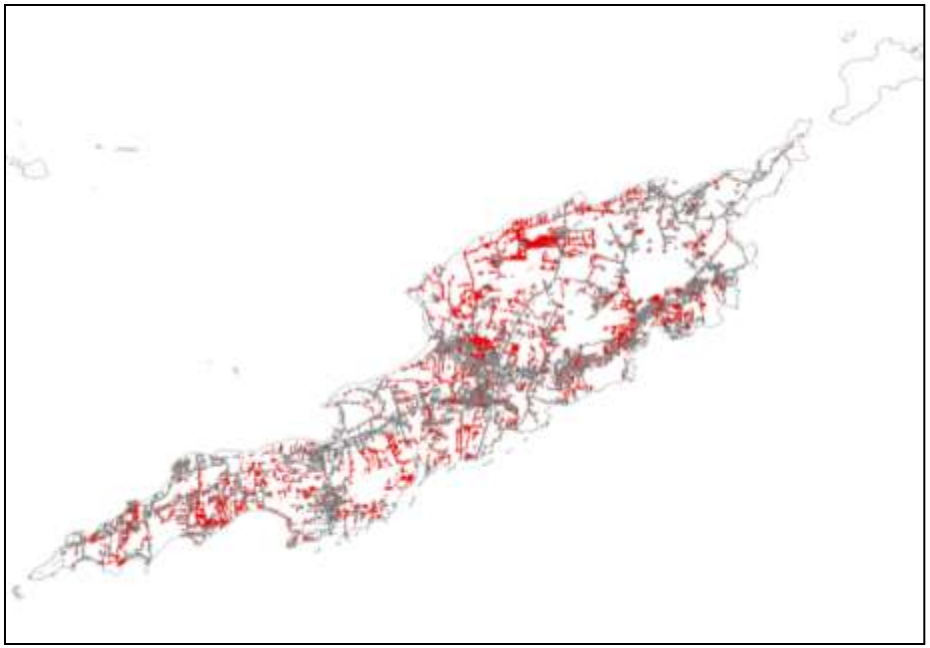
MPhl Student David Greenwell

Land form and Hydrology



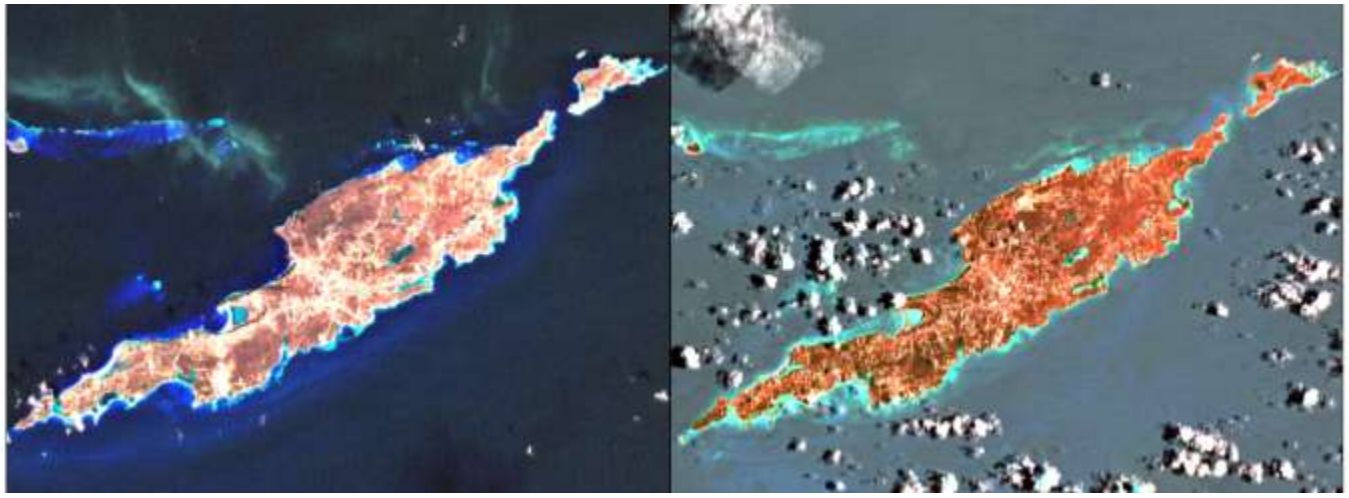


Management

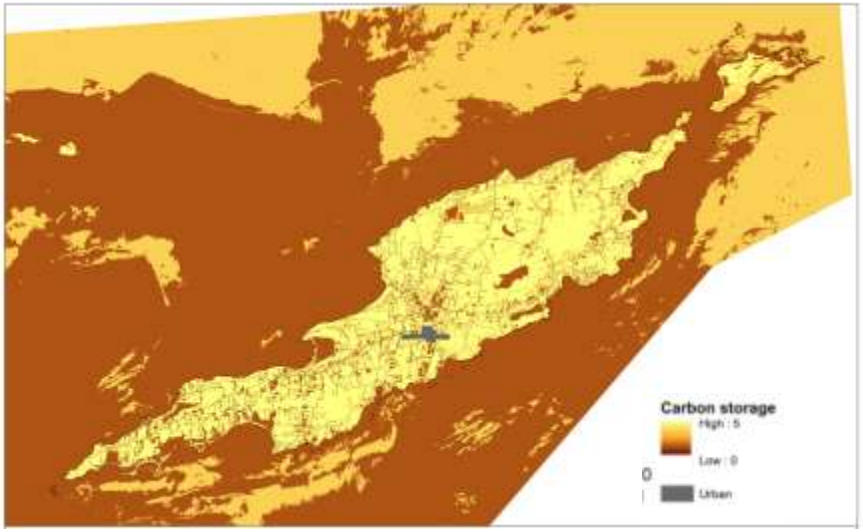


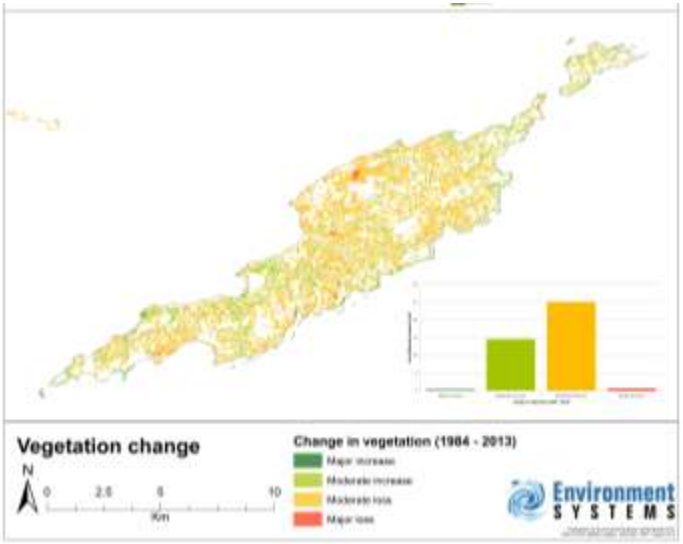
Main areas of development 1984-2014

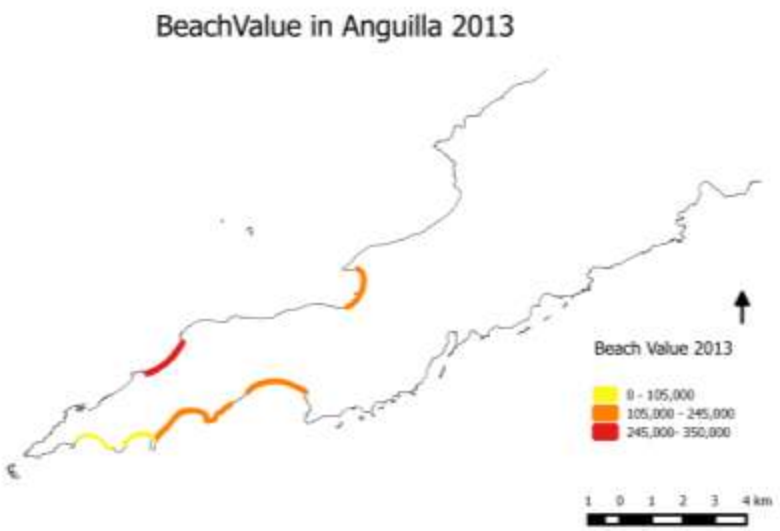
Red =development since 1984



Some example draft maps







Uses of the layers

- Raising awareness of issues across departments and with the general public
- Discussion documents for making decisions and choosing scenarios
- Evidence base to underpin decision making
- Evidence base for GI planning to maximise the value of the resource
- Showing the best place to place development and/or habitat reinstatement