



Into the Deep

The Marine Component of South Africa's National Biodiversity Assessment

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Dubai, United Arab Emirates
25 October 2014

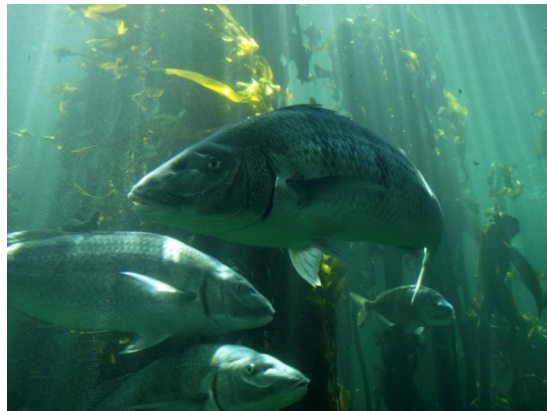
SANBI
Biodiversity for Life



National Biodiversity Assessment Purpose



- High-level assessment for marine, river estuarine and terrestrial environments
 - Ecosystem threat status
 - Ecosystem protection levels
- Reporting, planning & monitoring tool
- Provide national context

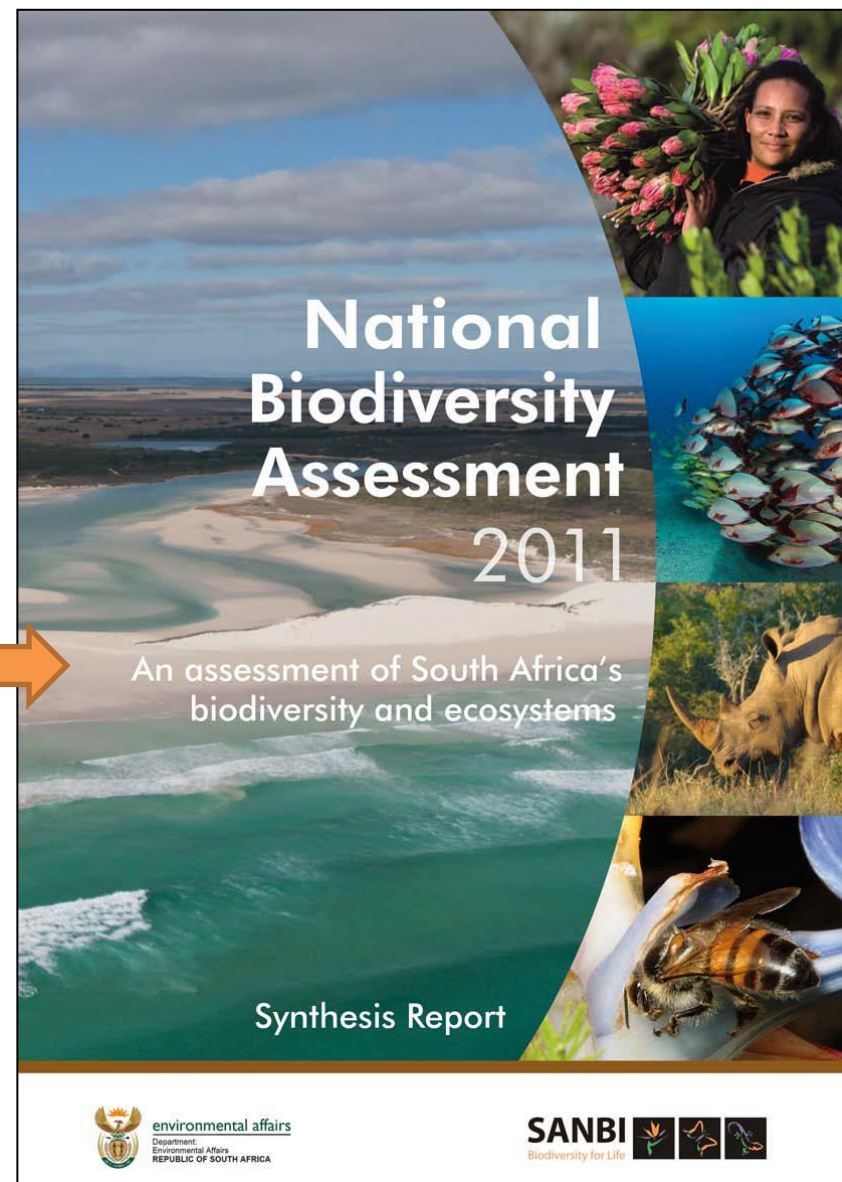
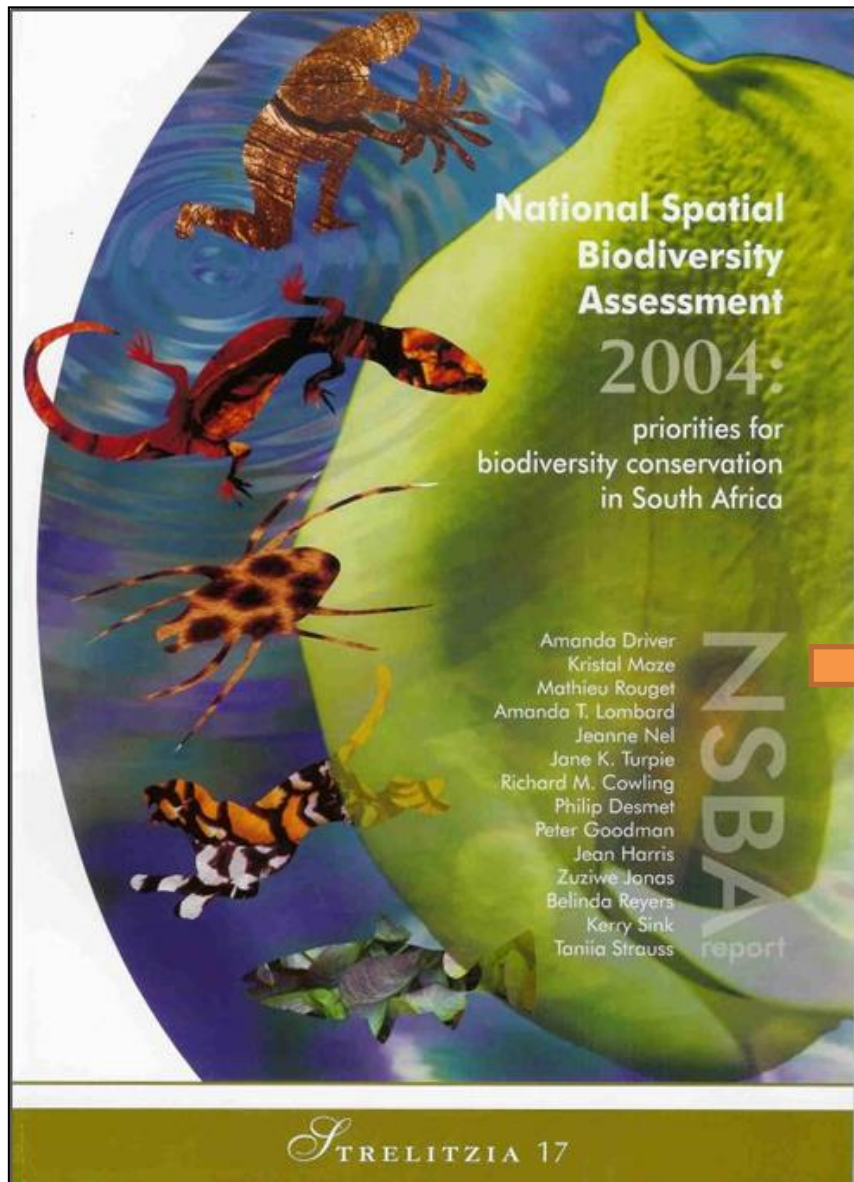


Overall aims of the NBA

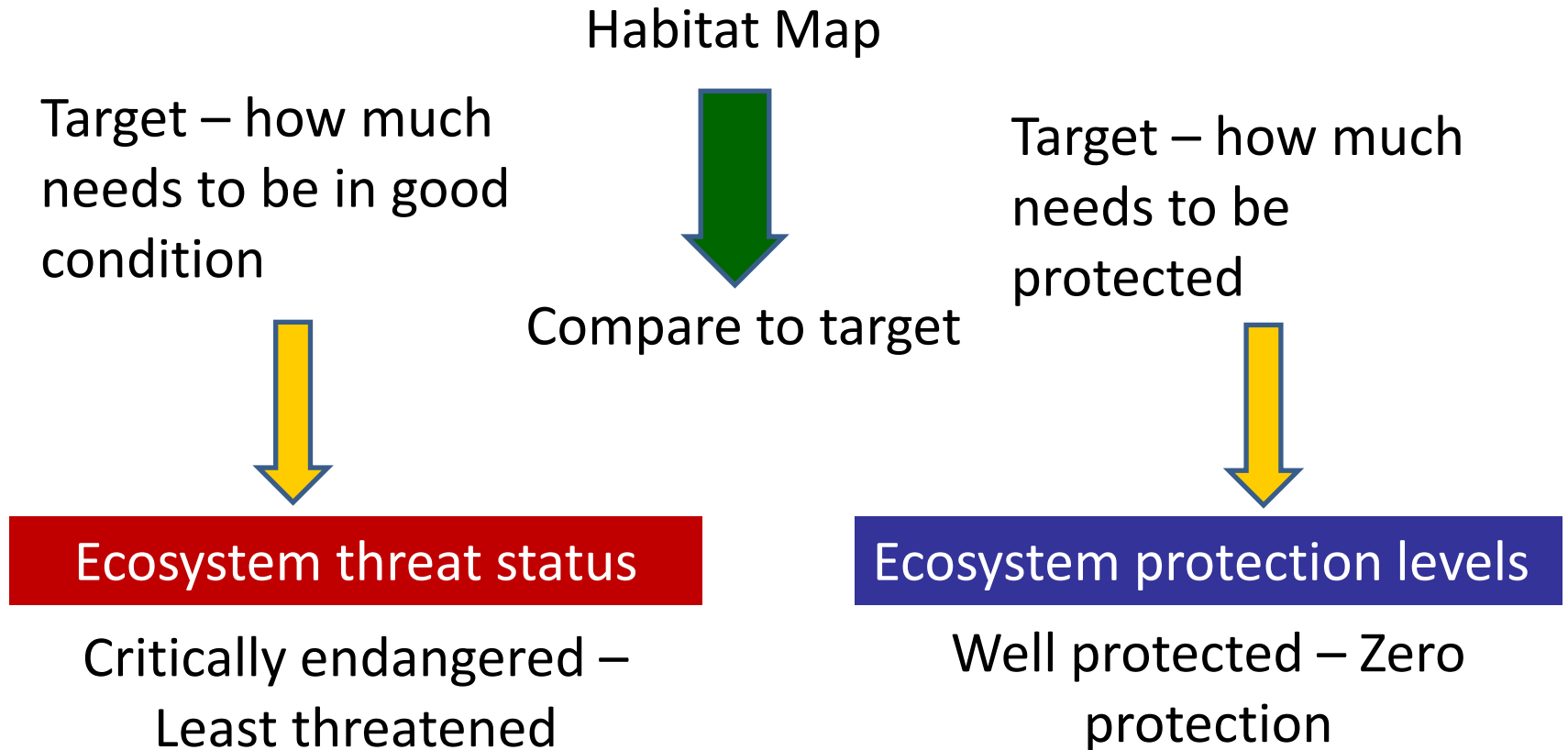
- To identify broad spatial **priority areas** for conservation action
- To make recommendations about **implementation options** for each priority area
- To provide a national context for conservation plans at the sub-national scale

NB Conservation action is **NOT** just about formal protected areas





Systematic Assessment



Minimum Requirements for an Assessment



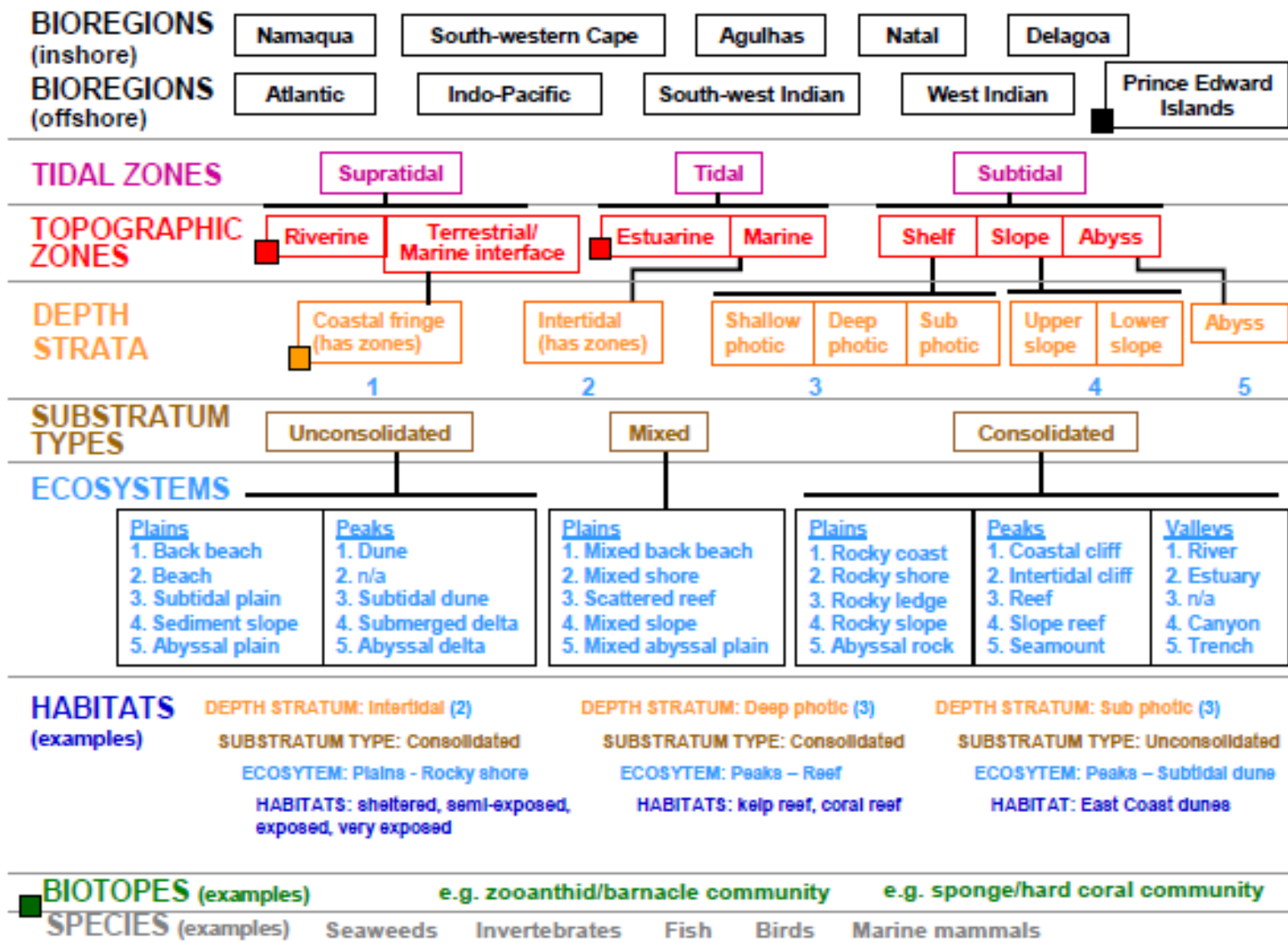
Three Key Ingredients:

- Habitat map
- Map of pressures or threats to biodiversity
- Map of protected areas

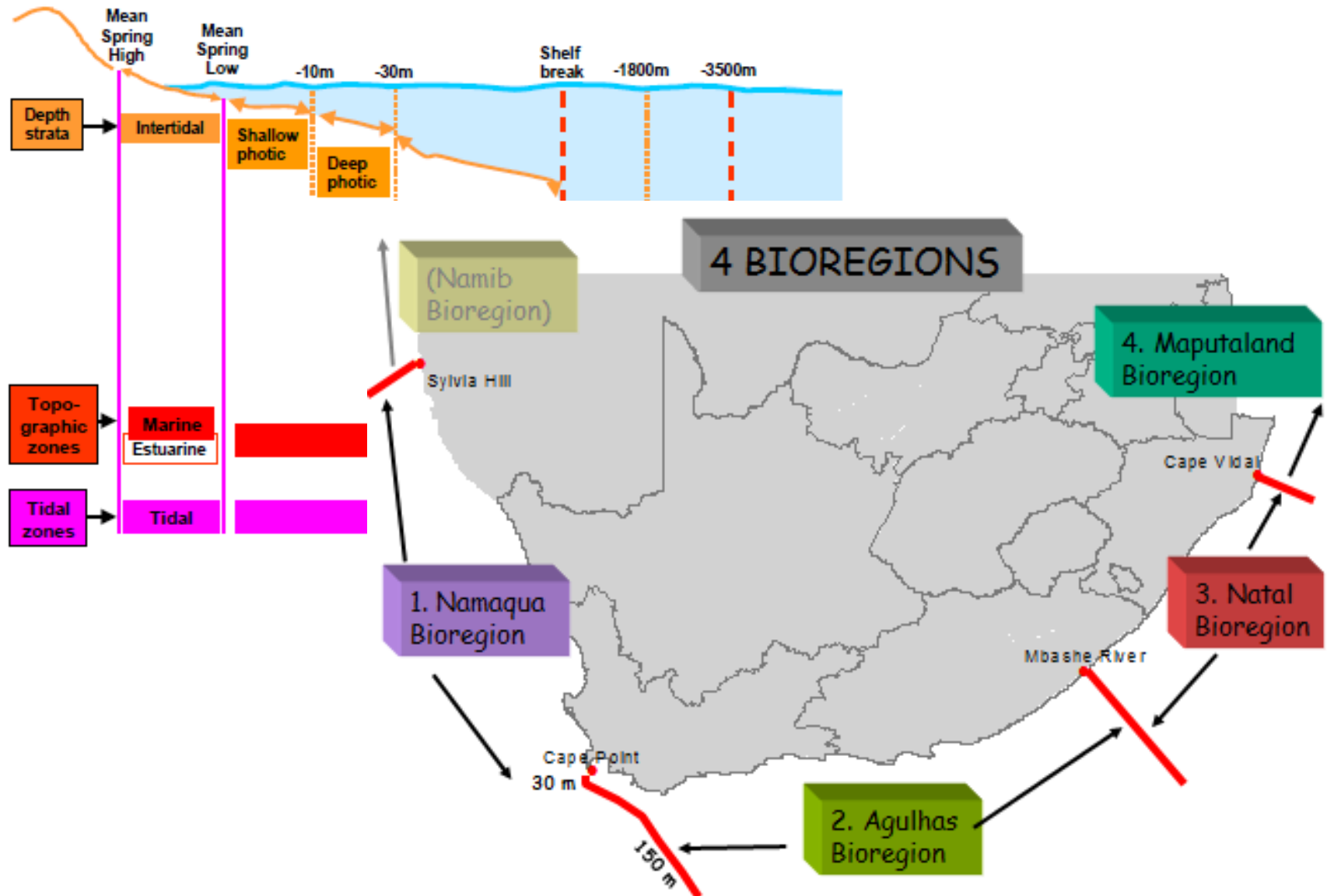
NB – When data is scarce, listen to the experts



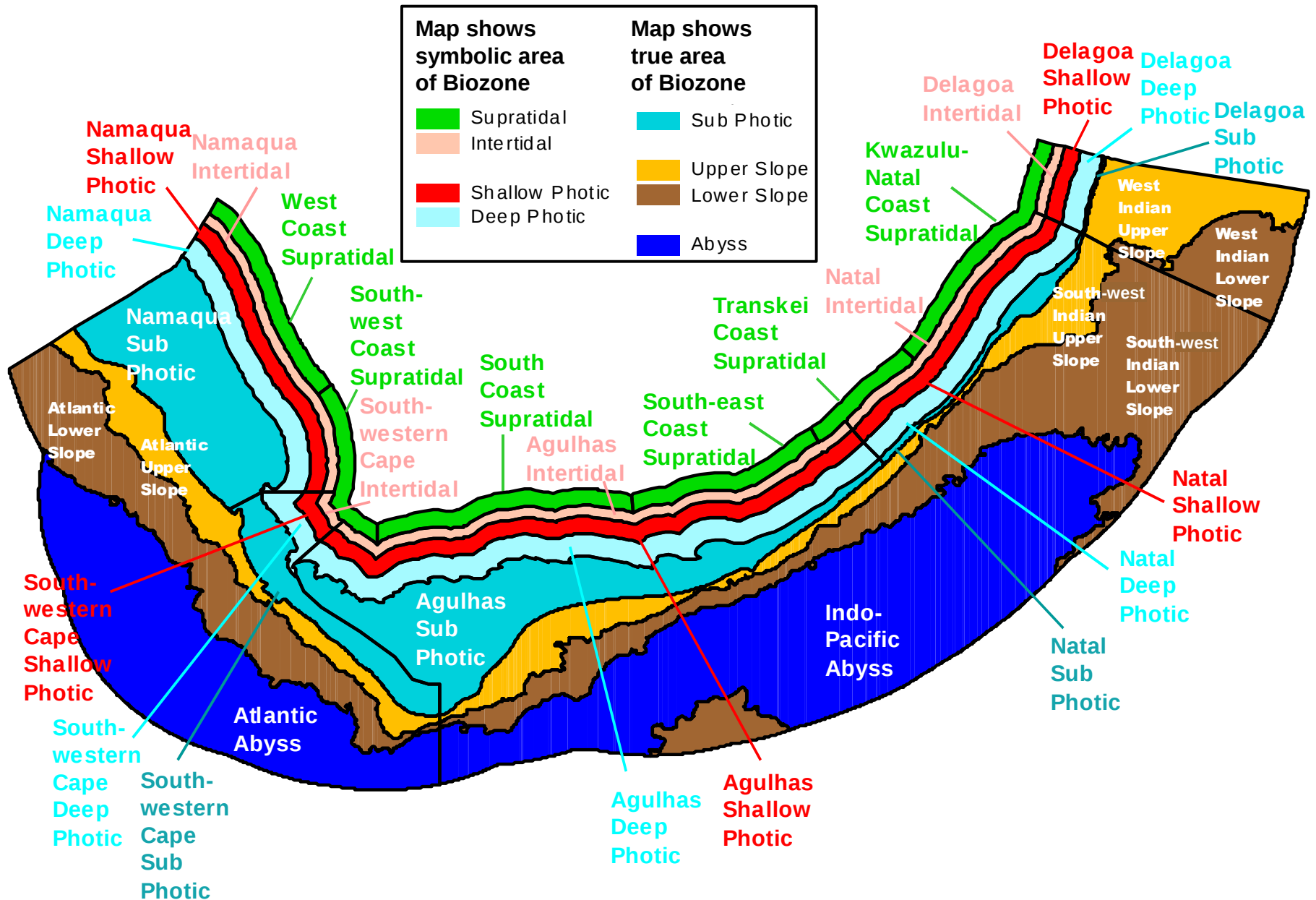
Habitat Classification



Habitat Classification

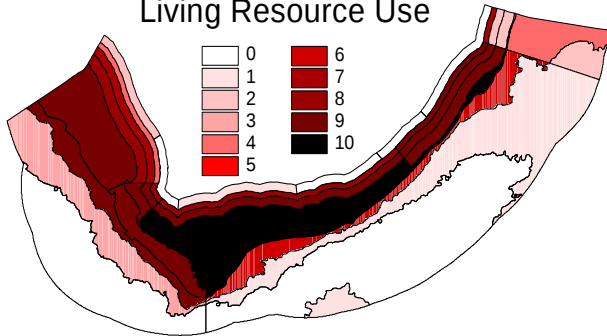
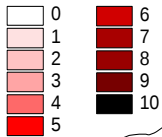


NSBA 2004 - Lombard et al. 2004

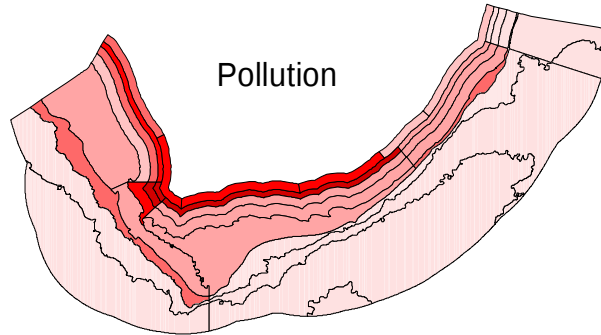


NSBA 2004 – Pressure Data

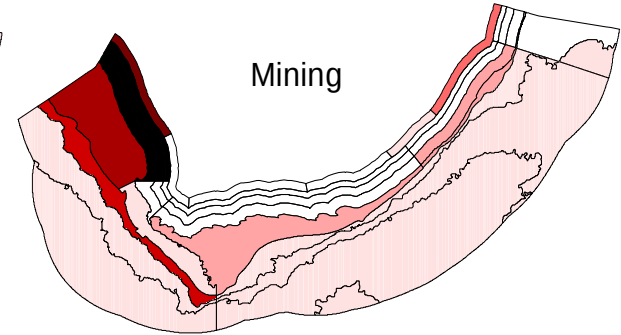
Extractive Marine
Living Resource Use



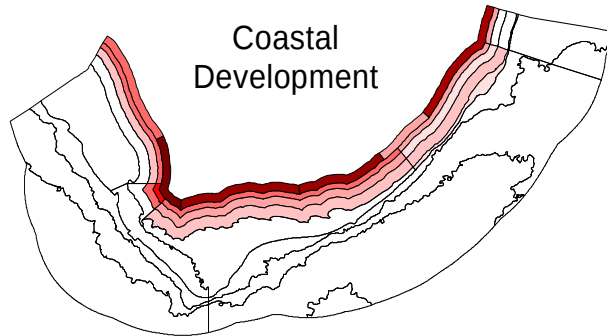
Pollution



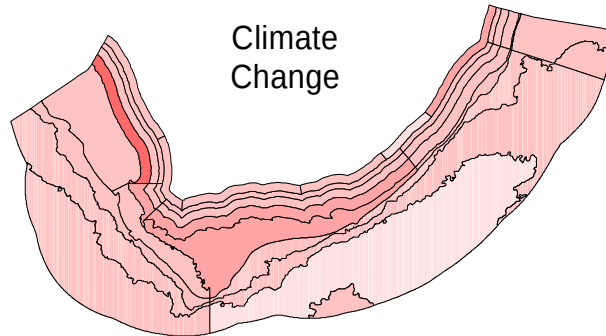
Mining



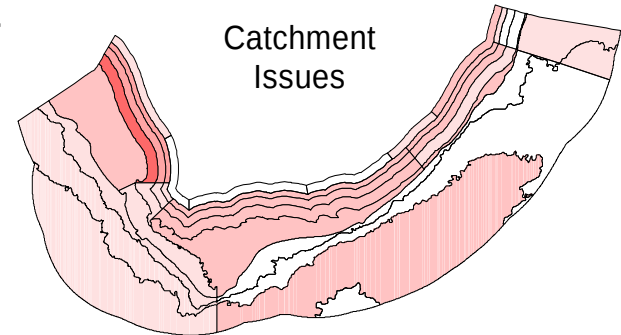
Coastal
Development



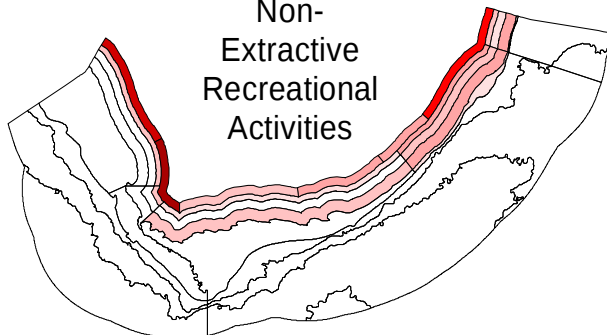
Climate
Change



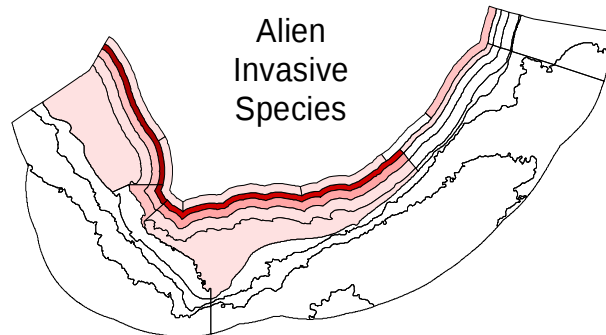
Catchment
Issues



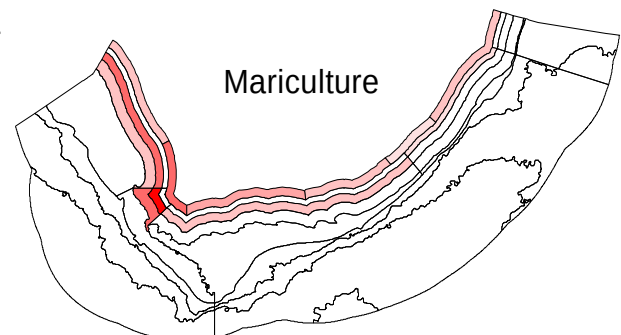
Non-
Extractive
Recreational
Activities



Alien
Invasive
Species

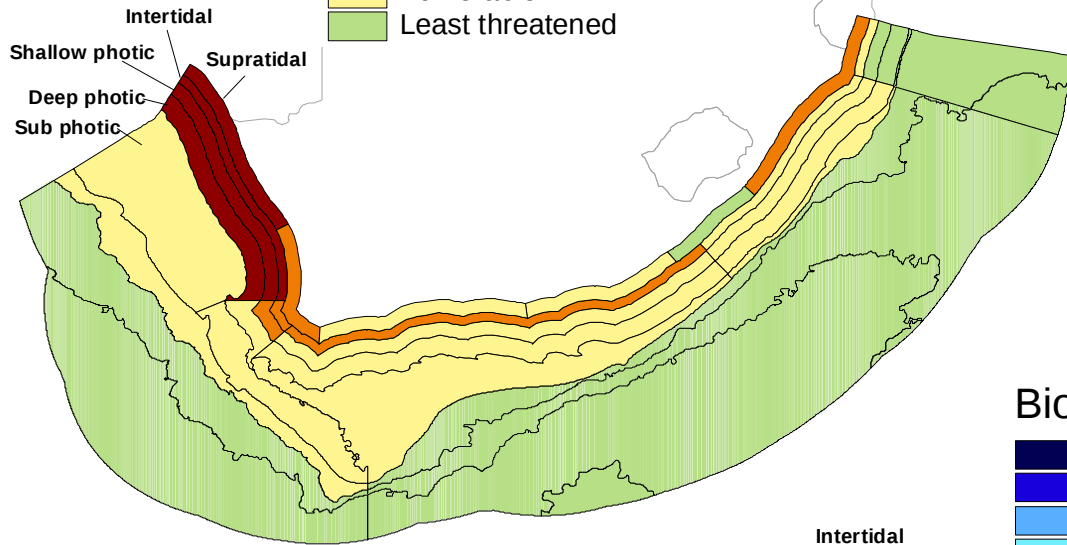
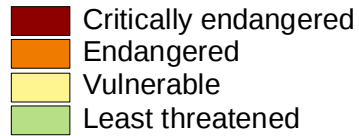


Mariculture

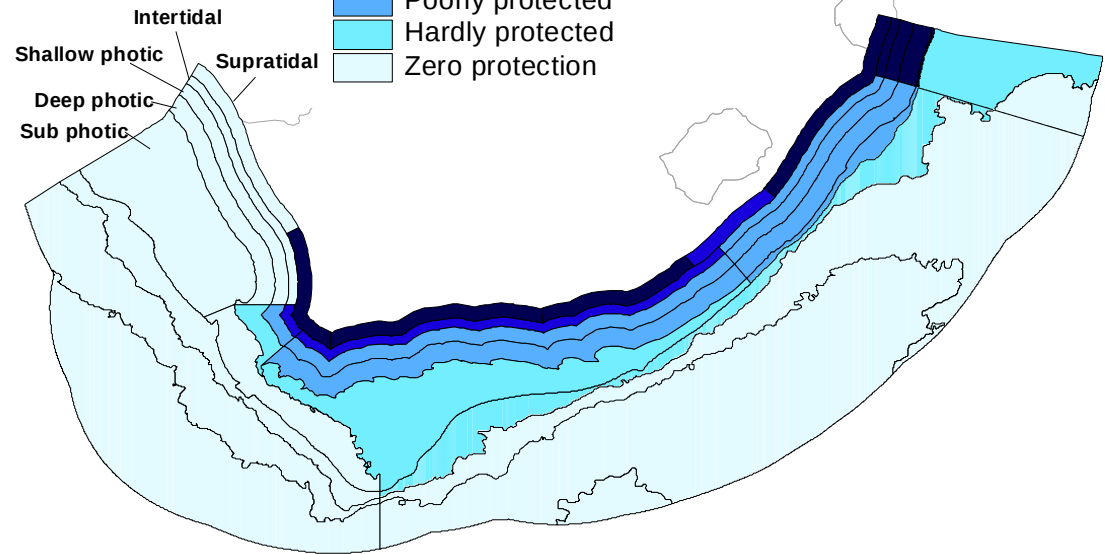
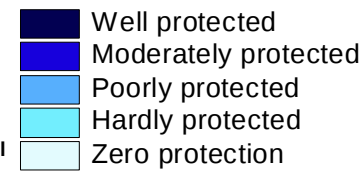


NSBA Results 2004

Biozone Threat Status



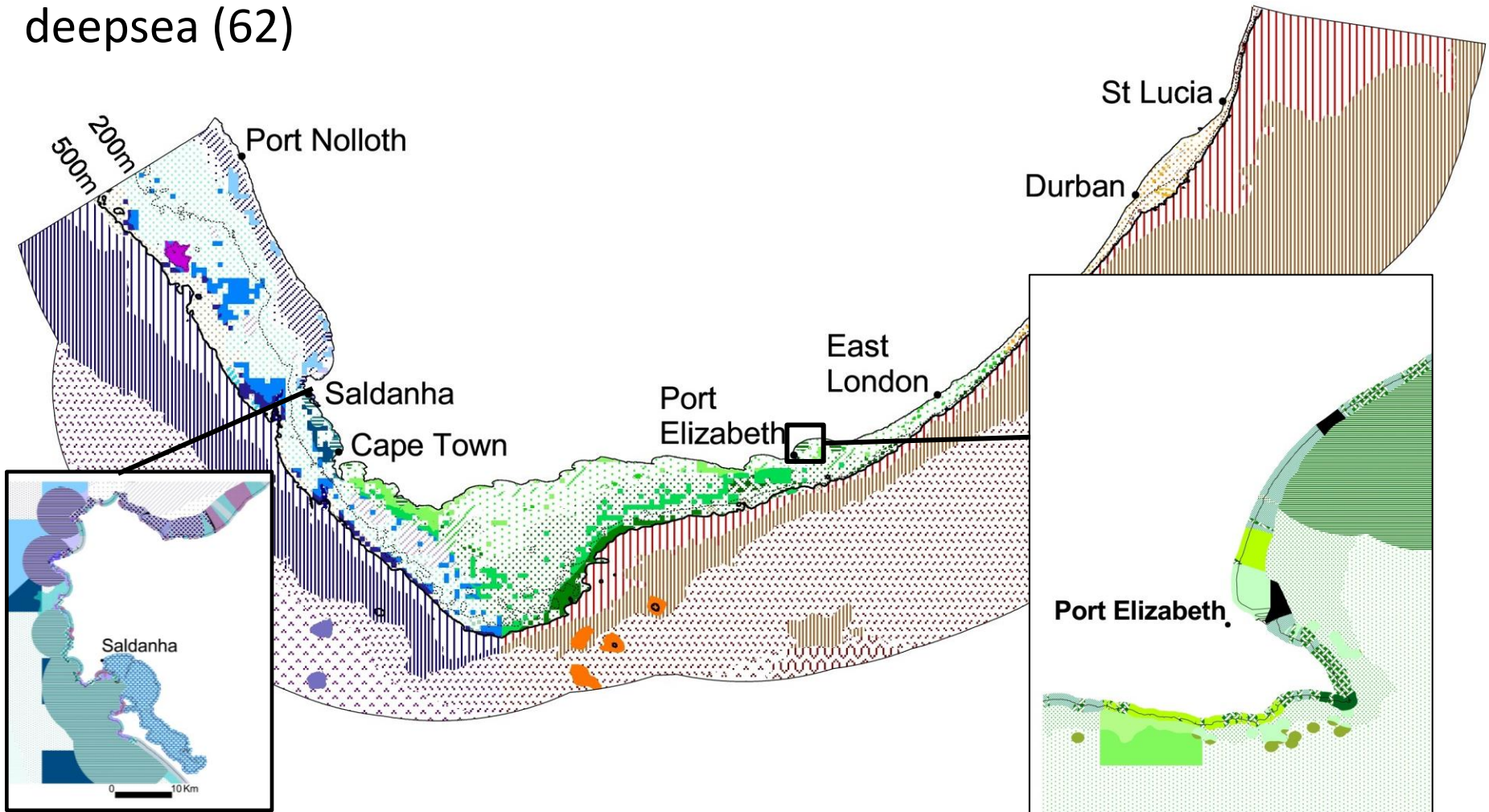
Biozone Protection Status



NBA 2011 Benthic and Coastal Habitat Map

Coastal – 37 coast types, 17 inshore, 3 islands, 1 lagoon (58)

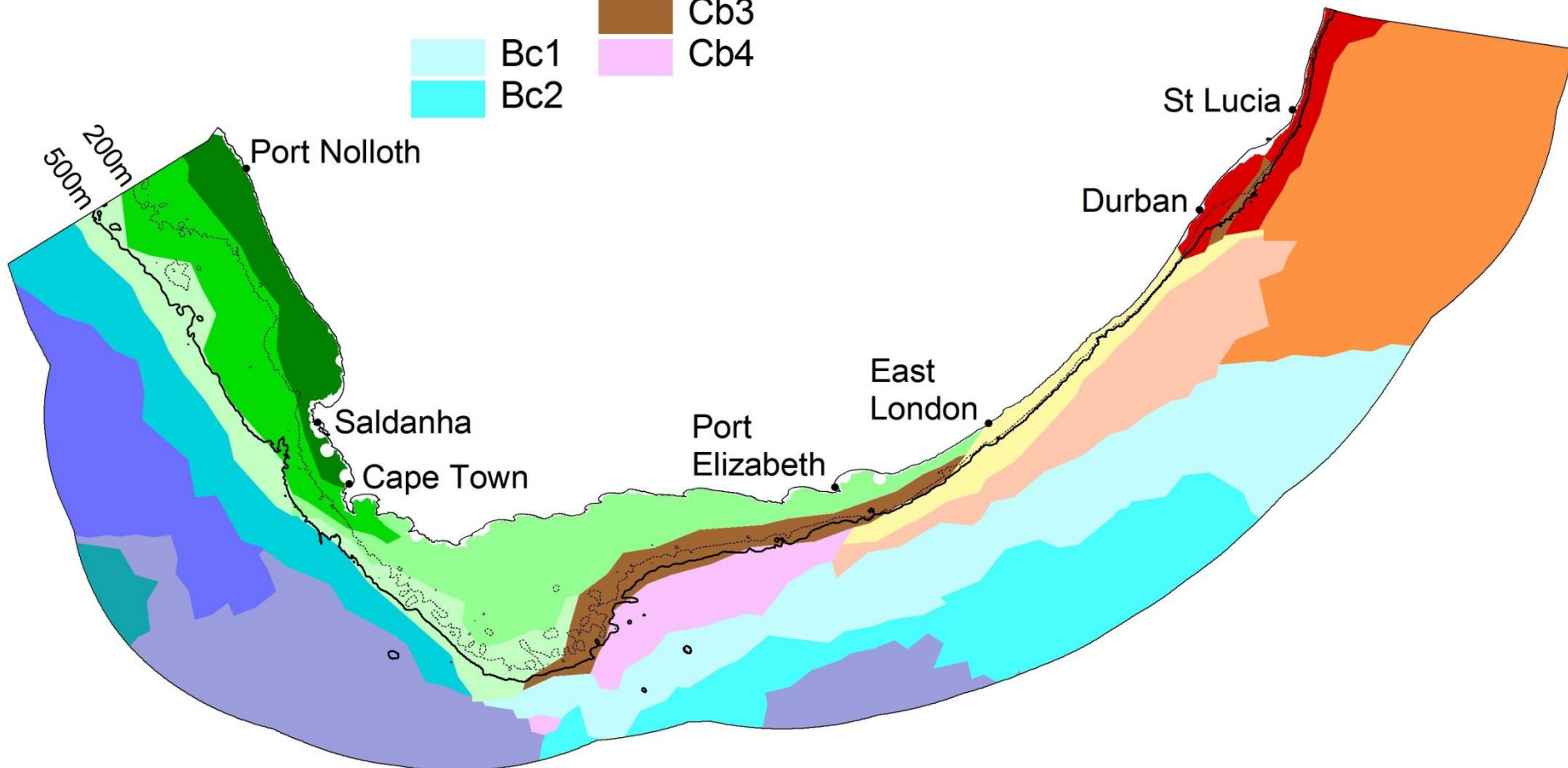
Offshore benthic – 23 rocky, 39 unconsolidated shelf, shelf edge & deepsea (62)



NBA 2011 Pelagic Habitat Map

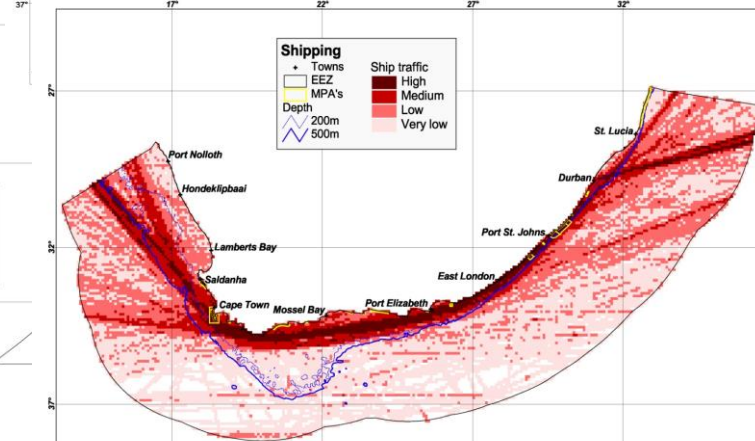
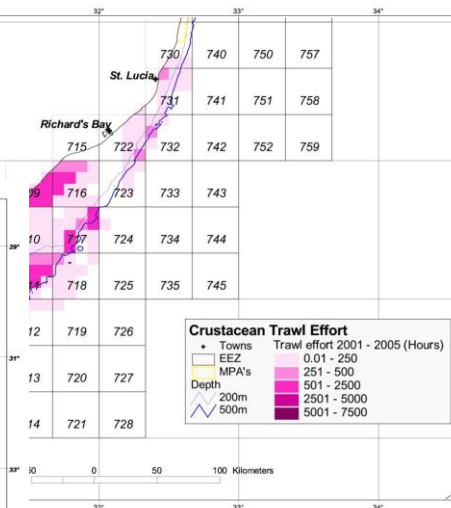
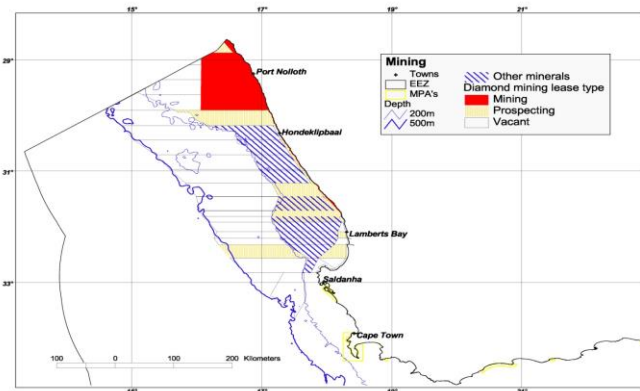
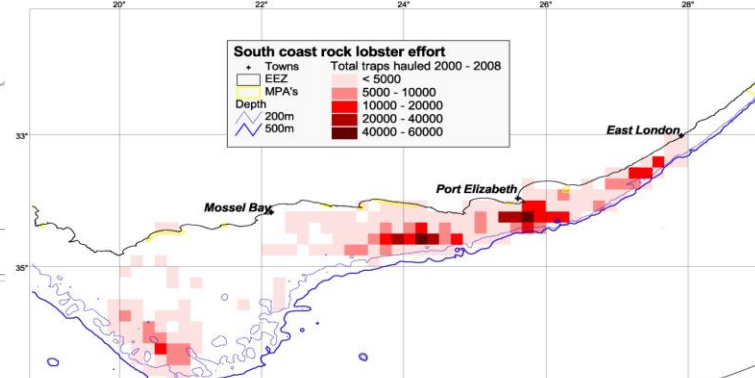
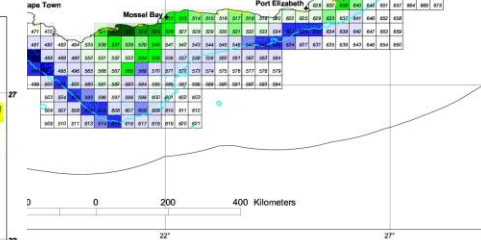
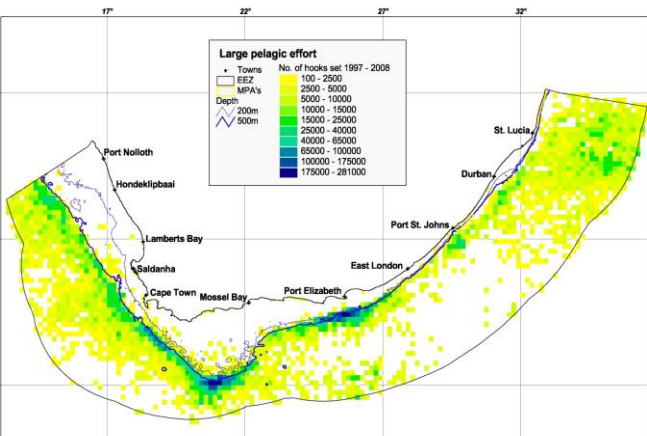
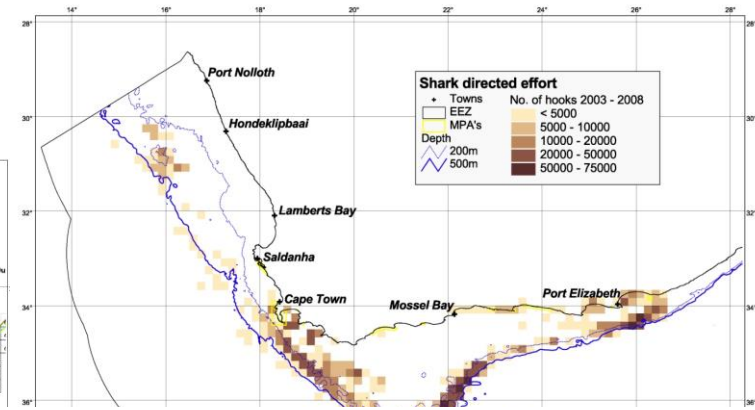
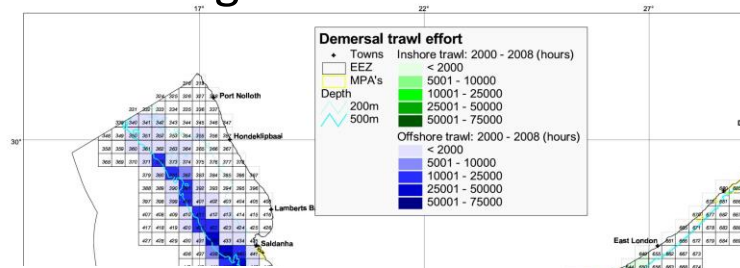
16 Pelagic “habitats”

- Mean & variability in ocean variables
(productivity, nutrients, SST, depth, fronts & eddies)
Lagabrielle 2009

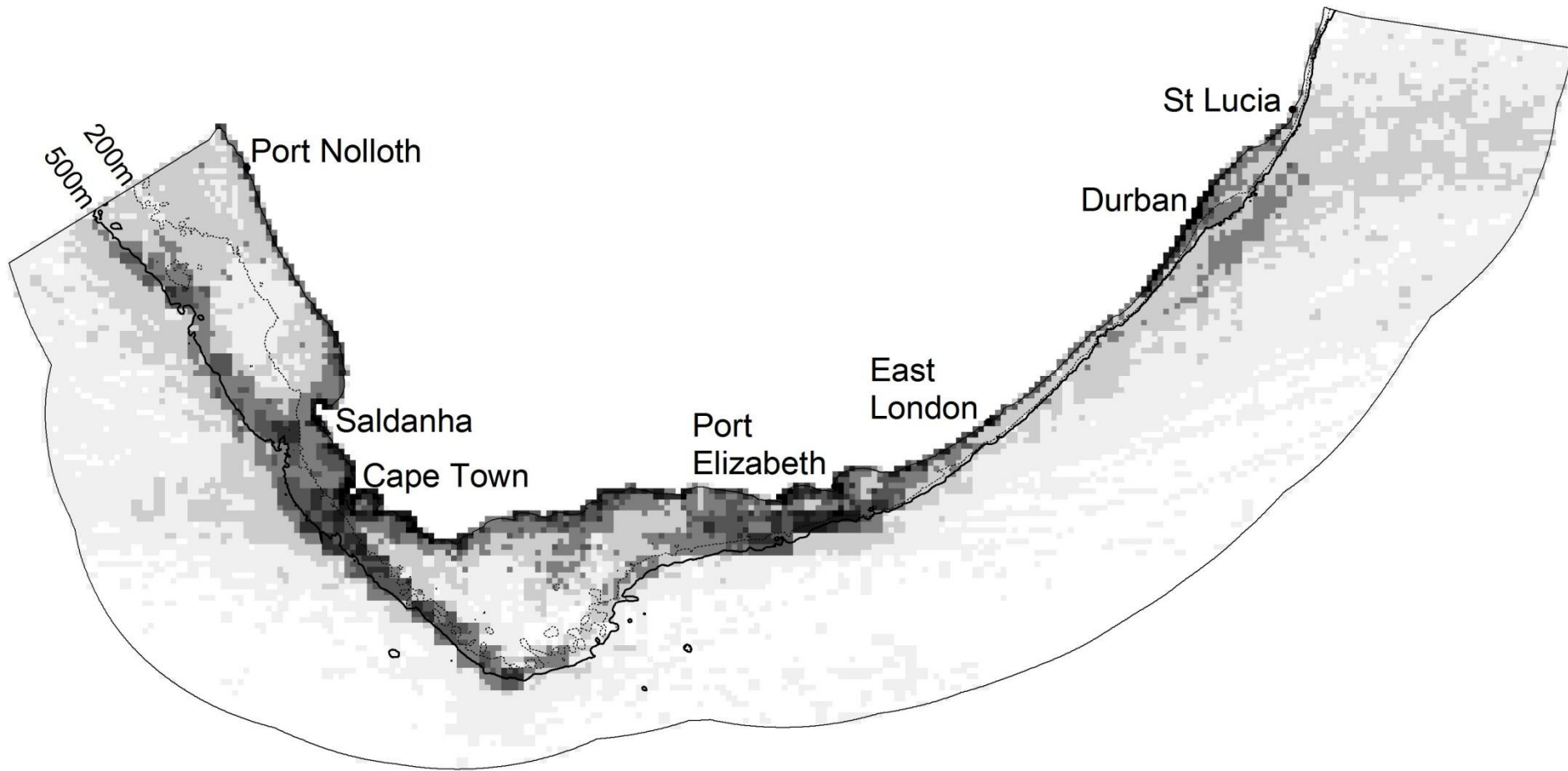


Distribution of pressures

- Fishing (18 sectors)
- Diamond & other mining
- Petroleum
- Shipping



Cumulative Pressures Map

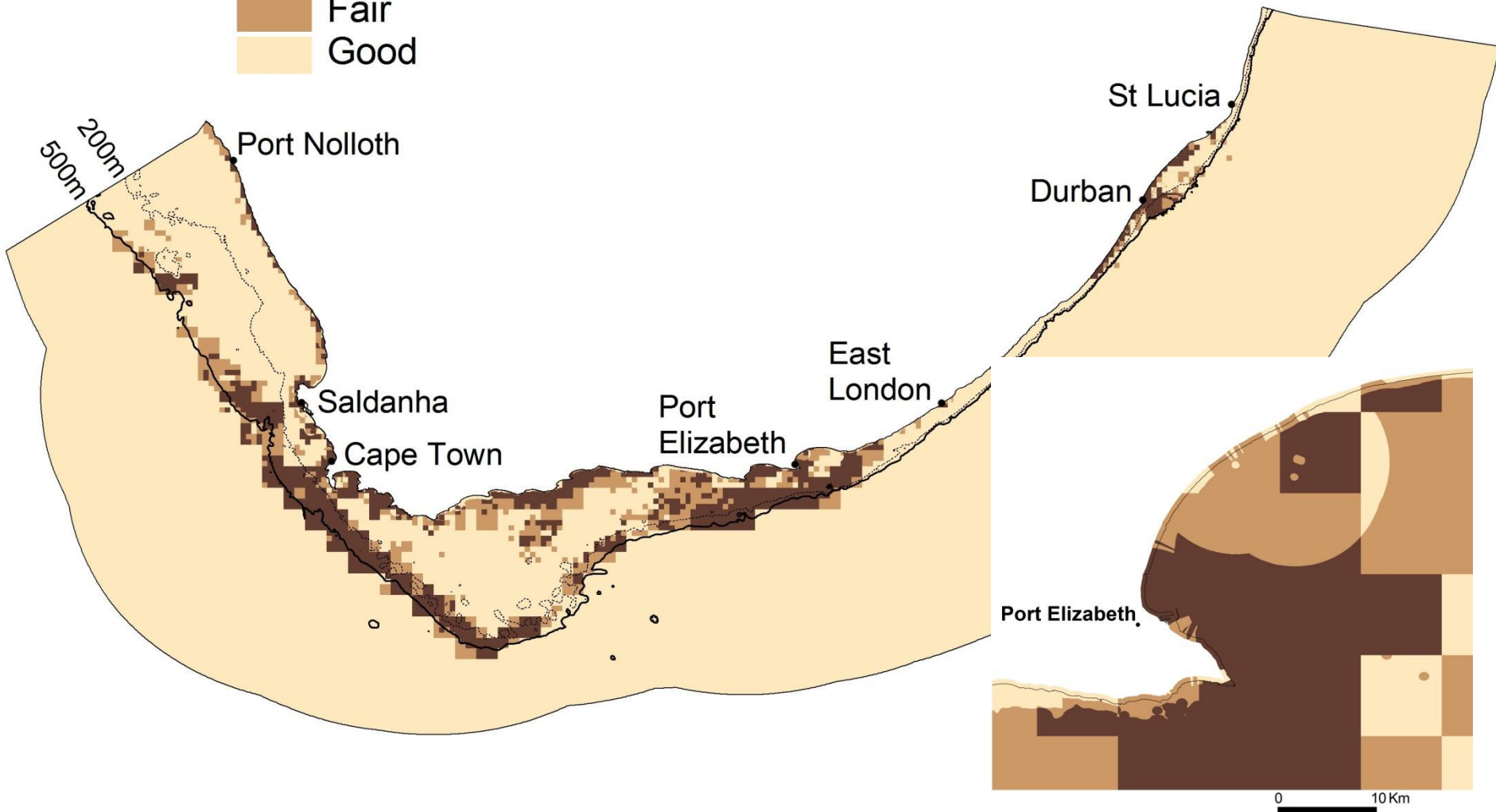


Habitat Condition

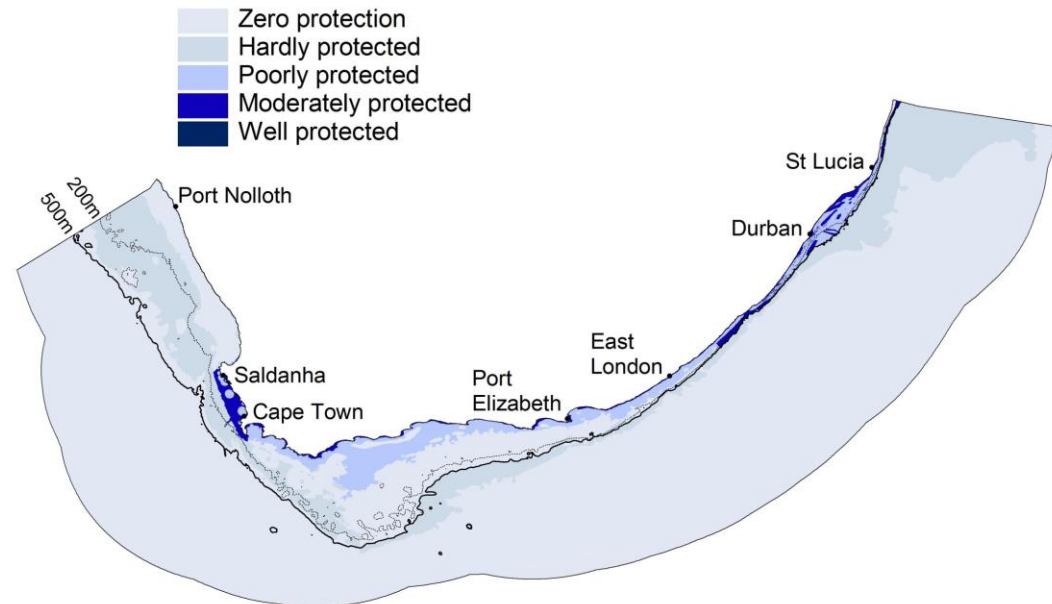
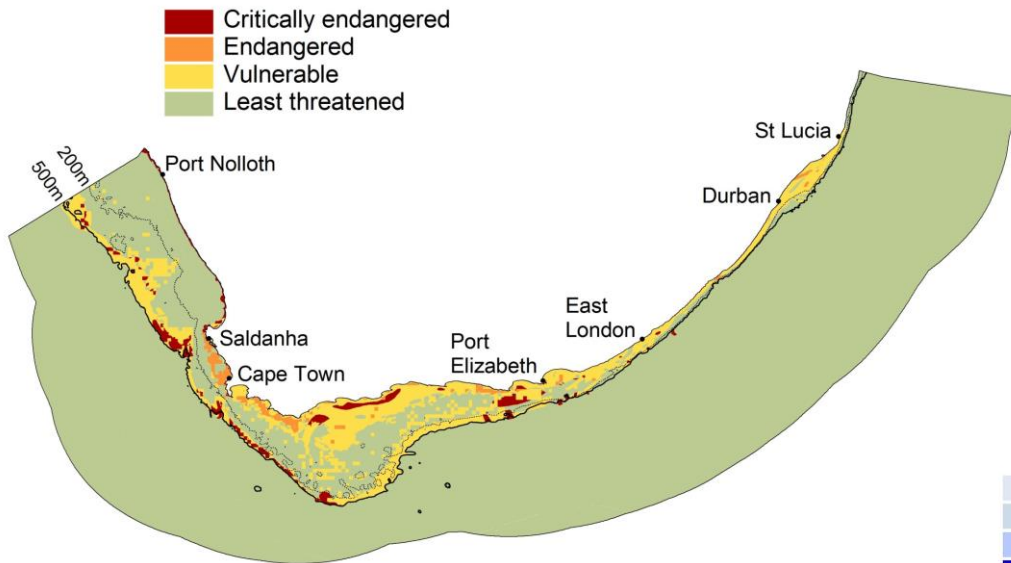
- Assumption– condition is related to the number and intensity of pressures and ecosystem impacts & recovery potential
- Pressure - habitat matrix
- Cumulative impact scores for sites (Halpern *et al.* 2008)
- Condition index for sites (5 min grid)

Pressures	Few pressures, low intensity	Range of pressures, moderate intensity	Many pressures, high intensities
Condition	Good	Fair	Poor
Expected biodiversity impact	Pattern and process intact	Some ecosystem degradation	Loss of biodiversity pattern and disruption of ecological processes.

Coastal & Offshore Benthic Condition



NBA 2011 Results: Coastal & Offshore Habitat Threat Status and Protection Level



Thank you!

- For data downloads go to the SANBI BGIS website

<http://bgis.sanbi.org/>

- For more information on SANBI and its Marine Programme

<http://www.sanbi.org>