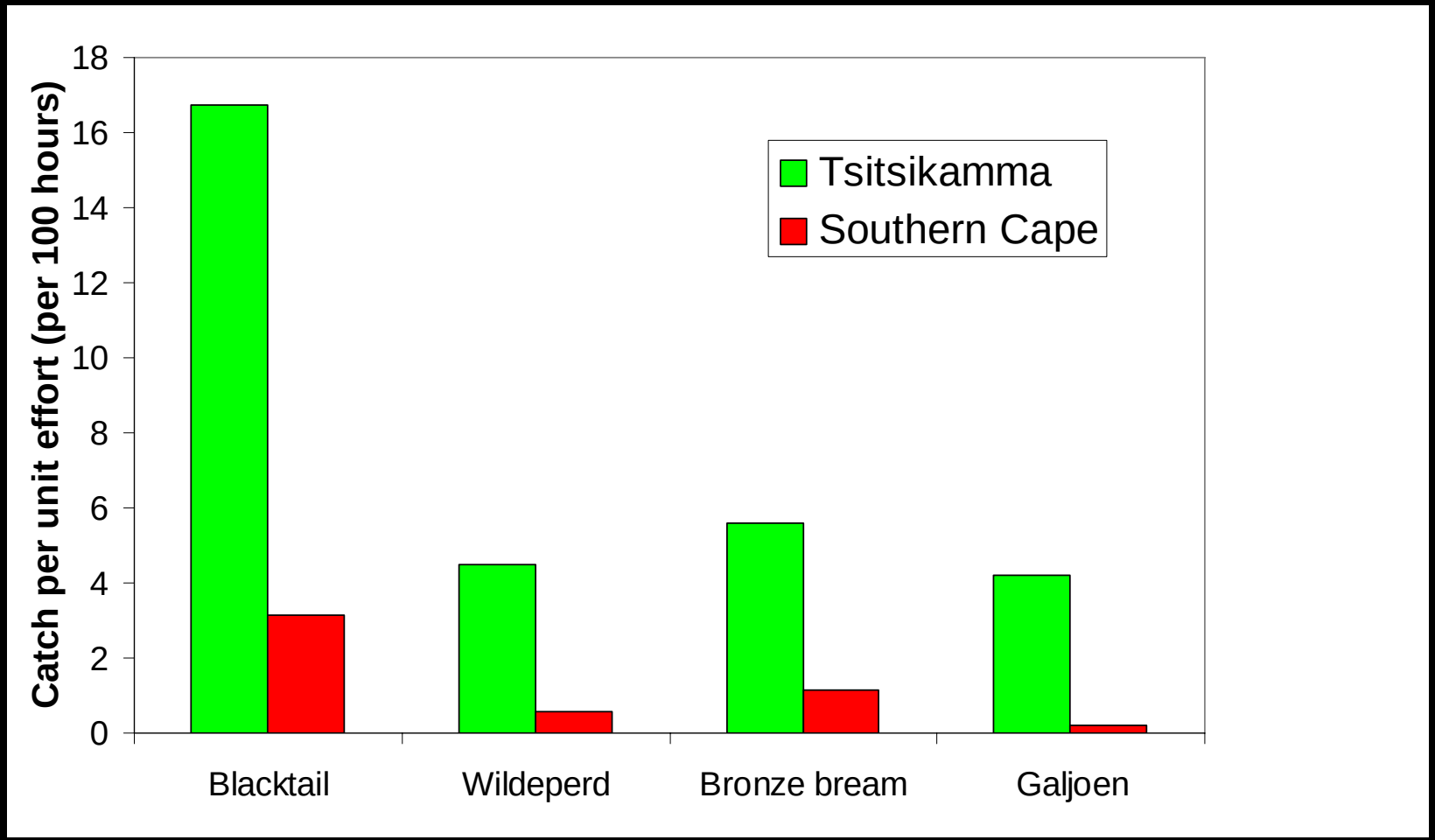
# Marine Protected Areas – lessons learnt

- 10% of land in protected areas
- < 0.5% of our oceans are formally protected

# Why are aquatic systems lagging?

- Original concept of Protected Areas was insular
  - “island mentality”
- Doesn’t work for aquatic systems
  - Much more dynamic and inter-connected
- Only works for protecting sedentary species
  - 1st MPA’s - no-take zones

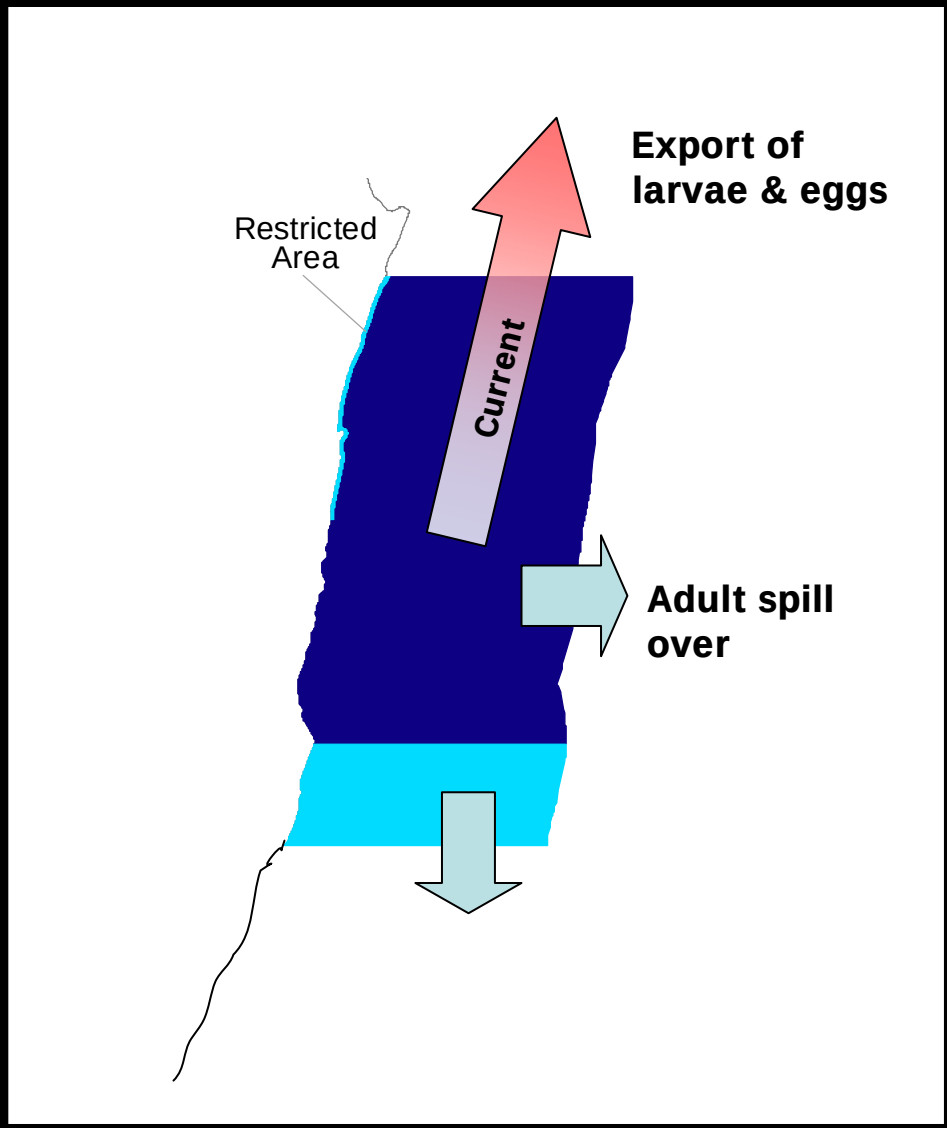
# Protect resident reef fish



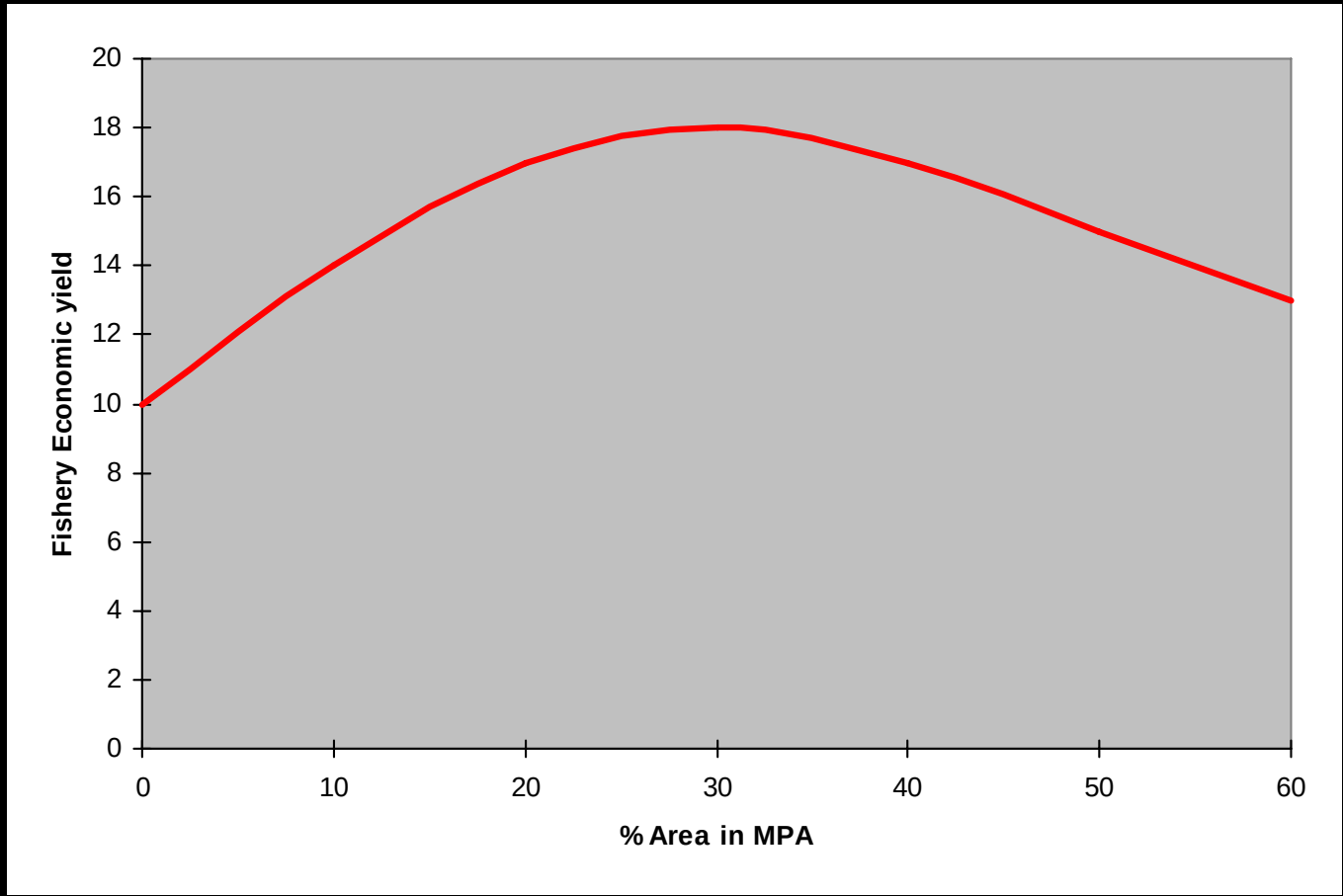
# Evolution in Protected Area management

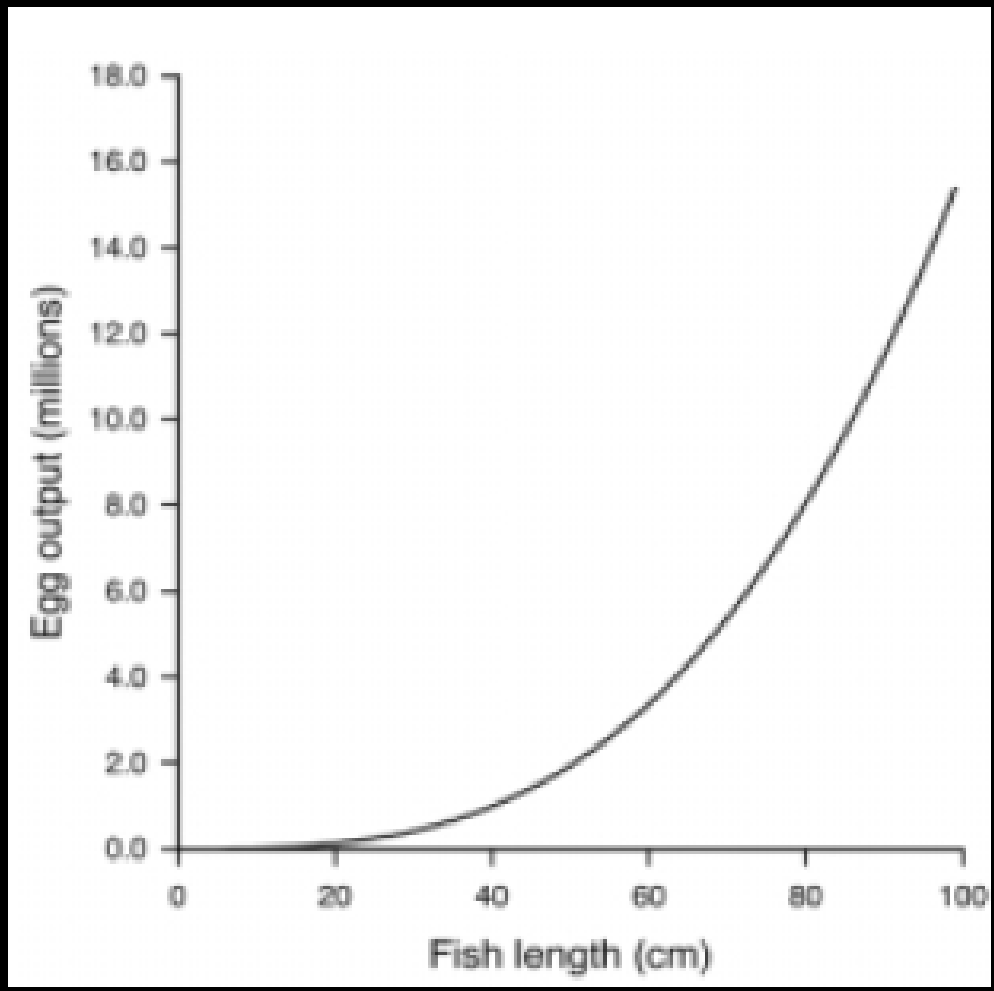
- Protected Areas part of integrated management at a landscape level
- Increased applicability to marine systems
- Open and dynamic  nature of marine systems could benefit MPA function

# Benefits beyond boundaries

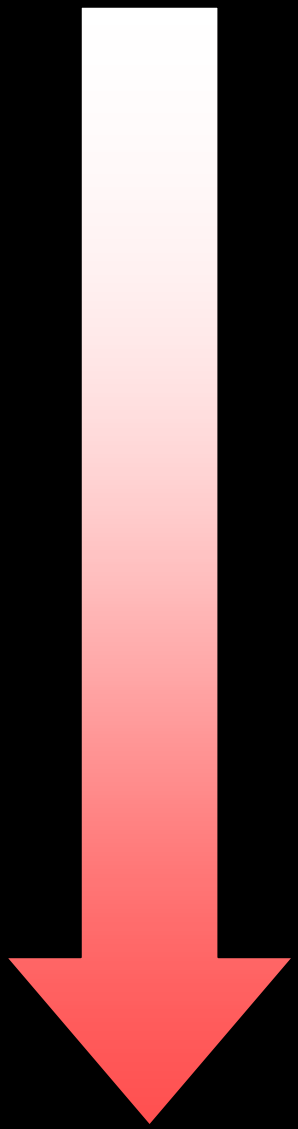


# Fishery benefits of MPAs




18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Egg output (millions)
0
20
40
60
80
100
Fish length (cm)

# International Policy Framework



**1992 – CBD**

**1995 – CBD – Jakarta Mandate**

**2002 – WSSD**

**2003 – World Parks Congress**

- **Targets adopted by many governments & Fisheries Organisations**

# World Parks Congress Target

- ESTABLISH by 2012 a global system of effectively managed, representative networks of MPAs…that:
  a. Greatly increases the … area in MPAs by 2012; these networks should be extensive and include strictly protected areas that amount to at least 20–30% of each habitat, …

## Positive

- Galvanized global commitment
  - Governments (SA, NZ, Aus etc)
  - Regional fishery organisations

## Negative

- Too focused on representation
  - Taken too literally
- Little focus on functionality
- 20 - 30% was actually a fishery target
  - not biodiversity, or ecological functioning

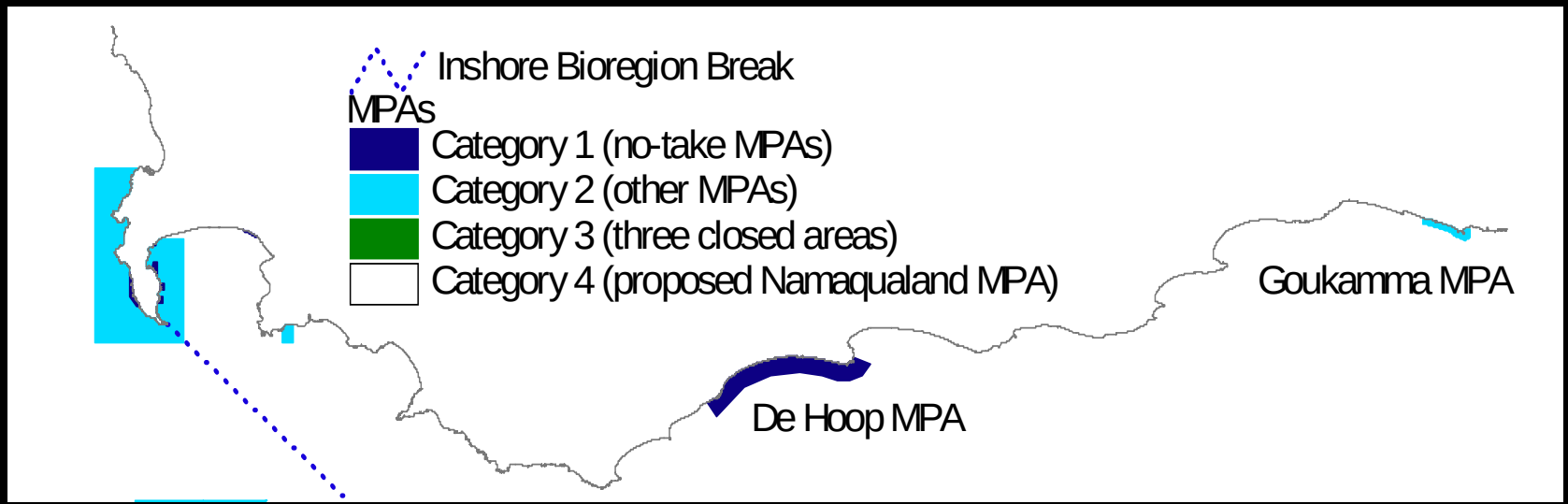
# Modern MPA's - Functions

1. Biodiversity reservoirs
   - Using habitat as a surrogate
2. Protect ecological process (spawning grounds, drivers of productivity etc)
3. Enhance commercial size and resilience of fish stocks
4. Manage ecosystem impacts of fisheries
   - Bycatch, habitat damage
5. Act as scientific reference points
   - Climate change, exploited habitats (mining, fishing)
6. Reduce user group conflict (e.g. scuba diving and fishing)

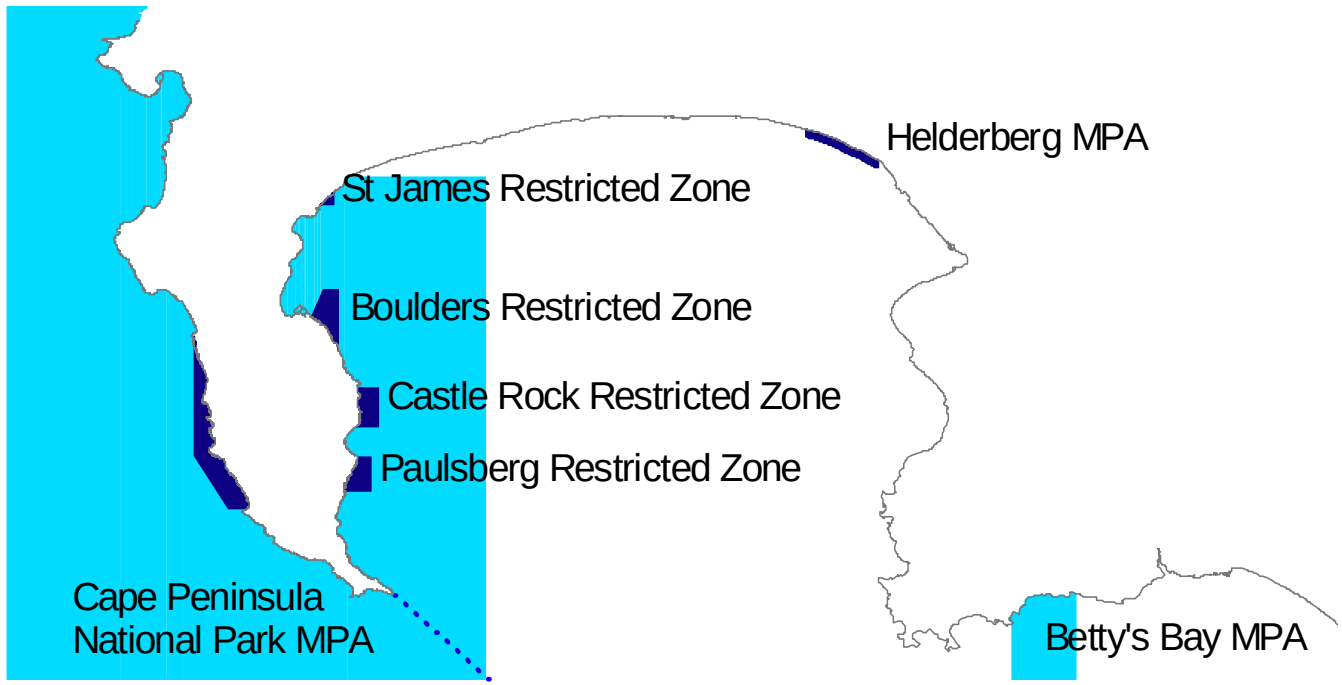
- Increase the overall resilience of the system to short term human impacts and long term change

# Modern MPA concepts

- Part of integrated ecosystem management
- Part of a representative and ecologically linked network
- Large and multi-zoned MPA



# Large multi-zoned MPAs

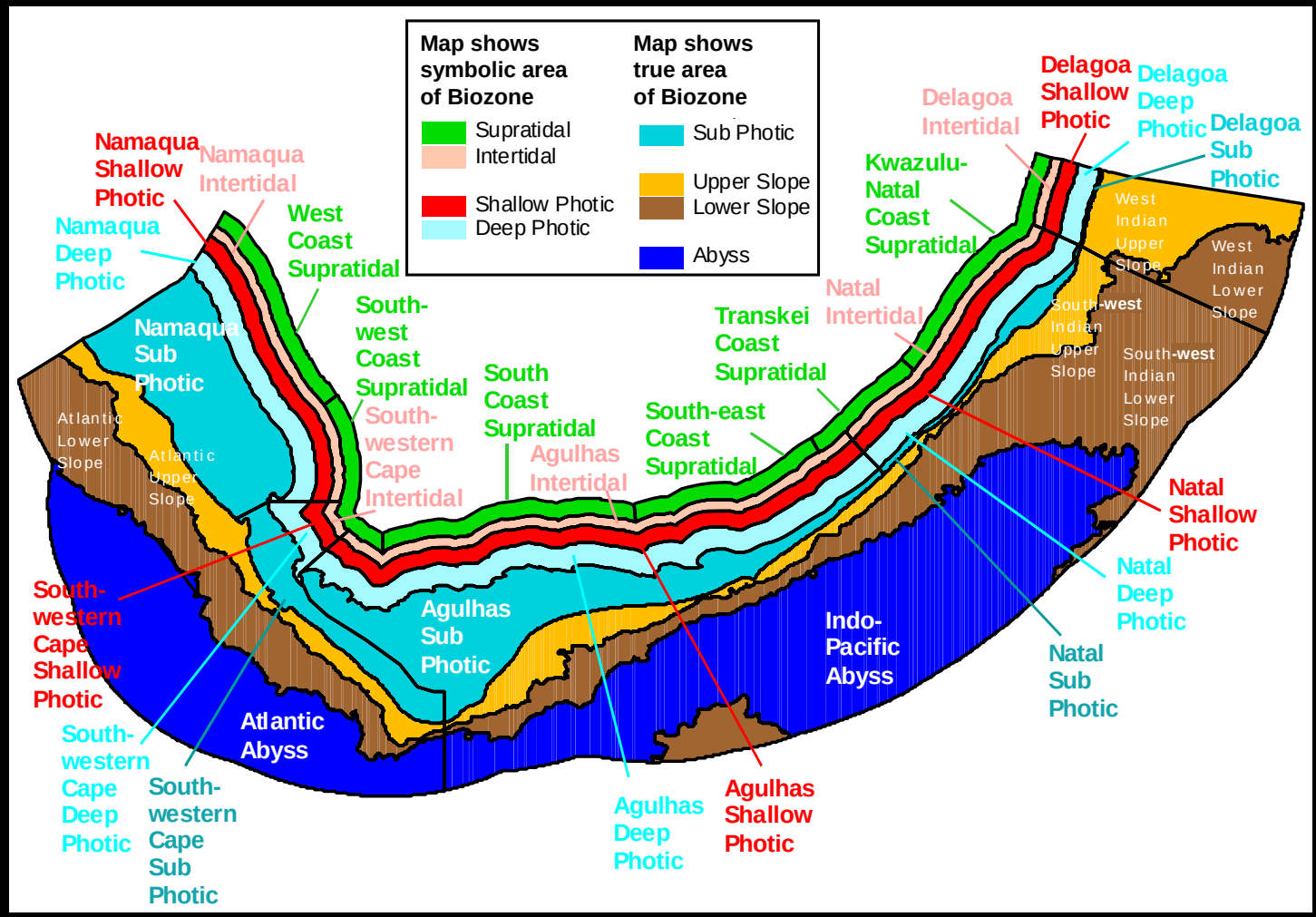


# Developing effective networks of MPAs

1. Planning
   - Regional, national, bioregional plans
   - Set overall targets
   - Gap analysis
   - Local MPA delineation
2. Management effectiveness
   - Institutional arrangements
   - Capacity and skills
   - Resources (business planning)
3. Local community support
   - Outreach
   - Participation in 1 & 2

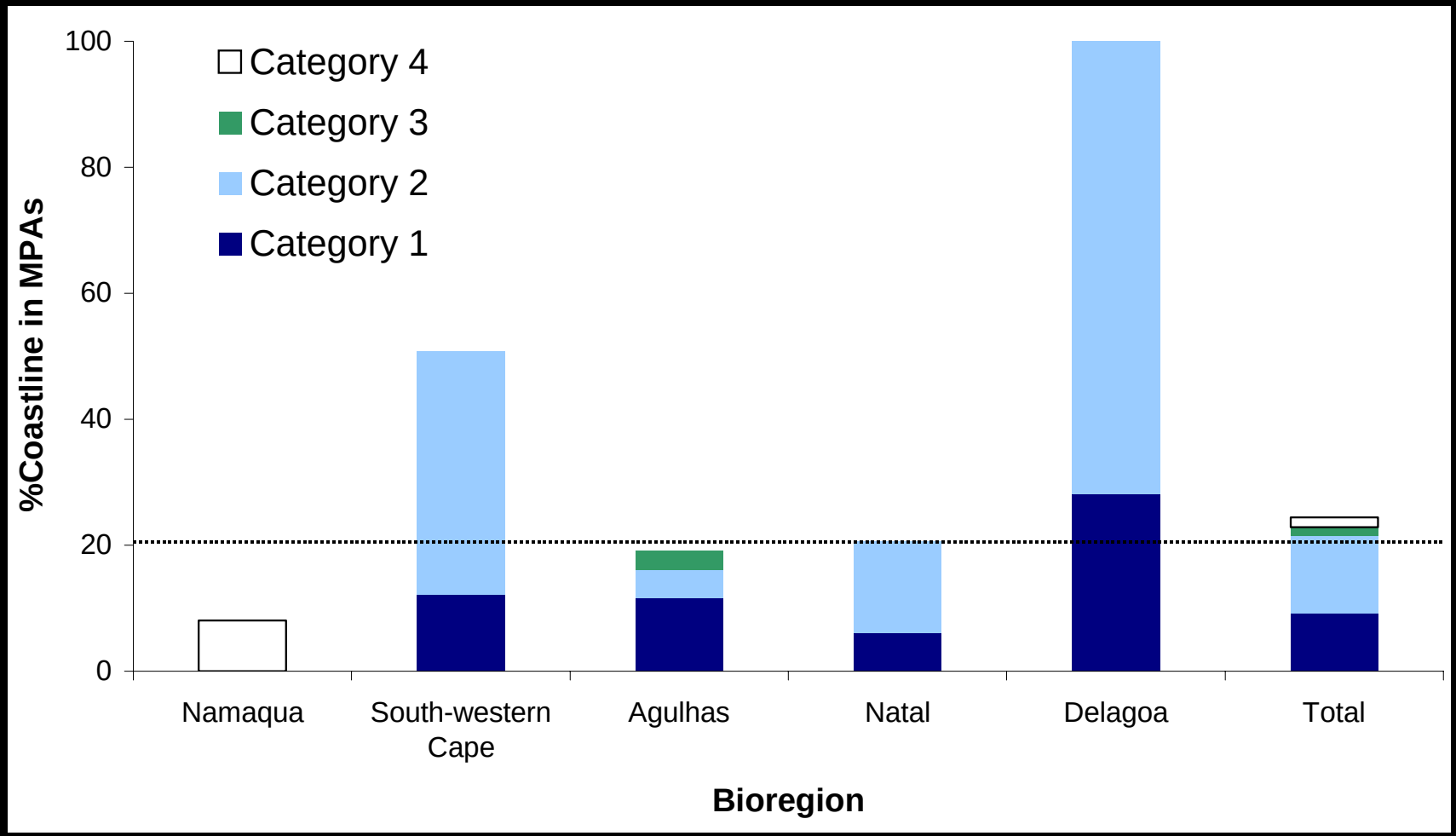
# Regional network planning

## a. Representation



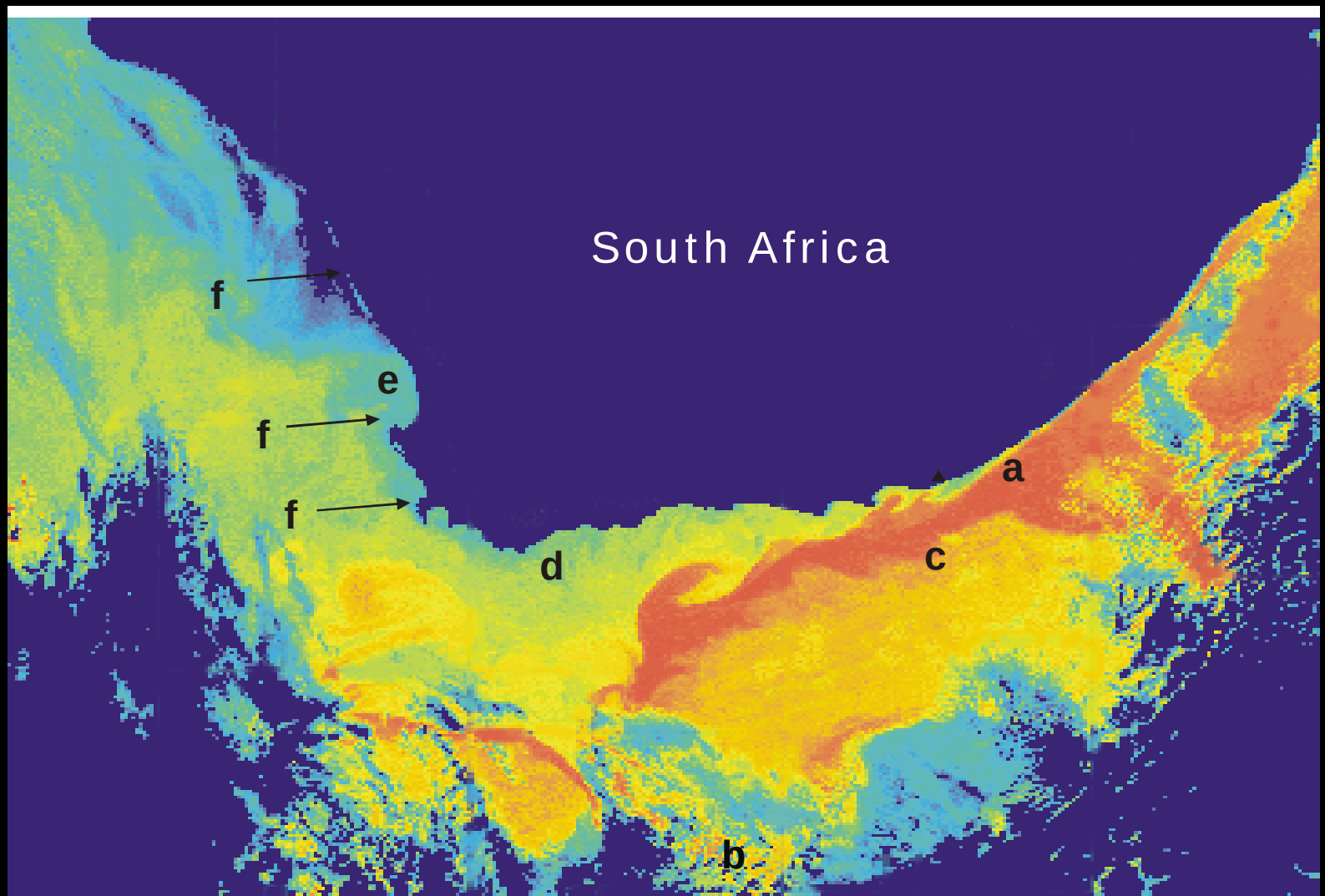
# Regional network Planning

## b. Gap Analysis



# Regional network Planning

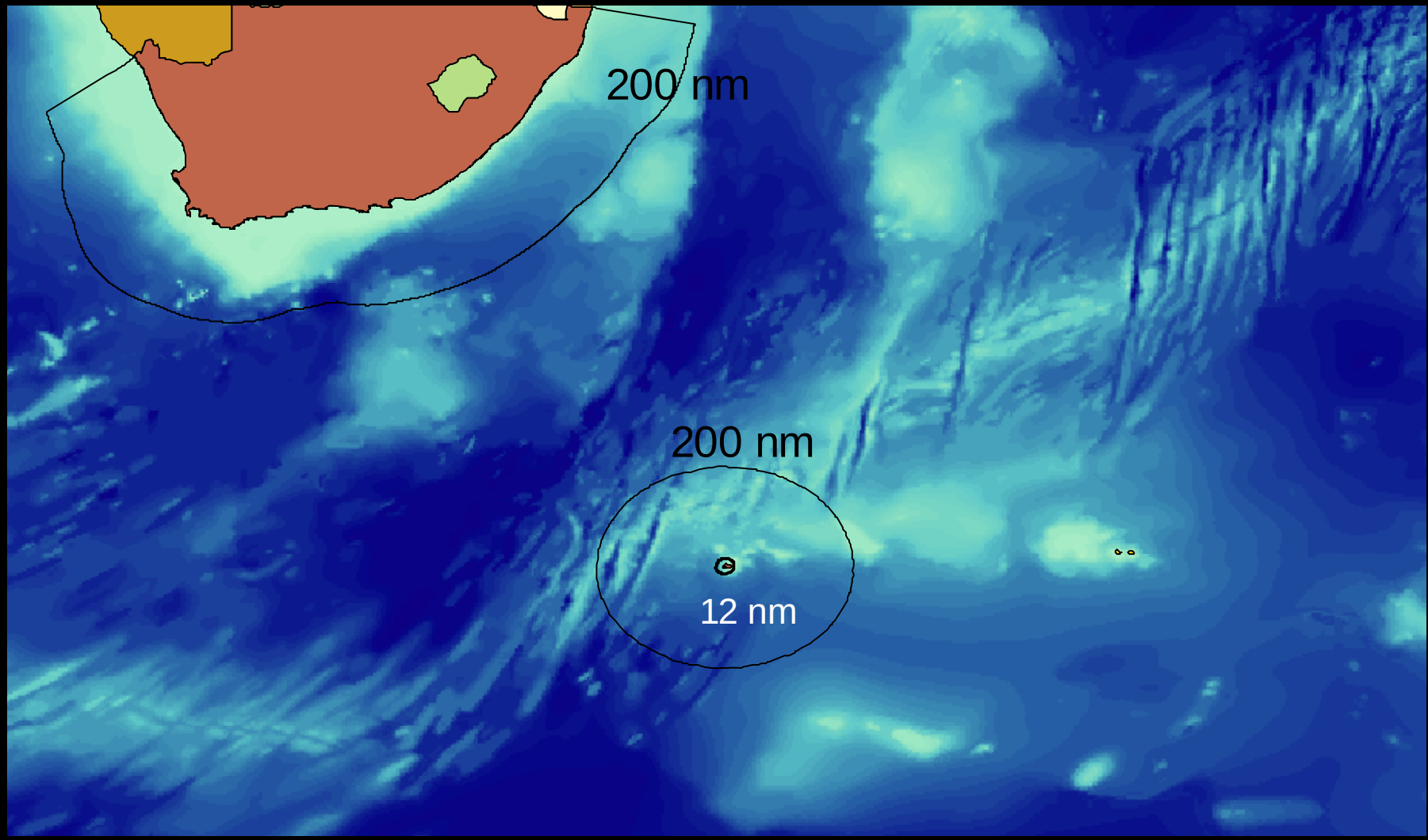
## c. Ecological processes



# Local MPA planning

- Define regional context
  - Why is this area important, or different
- Set objectives for specific MPA
- Set targets
- Systematic planning (pattern and process)
- Consider practicalities of implementation
- Involve stakeholders in planning

# Prince Edward Islands MPA



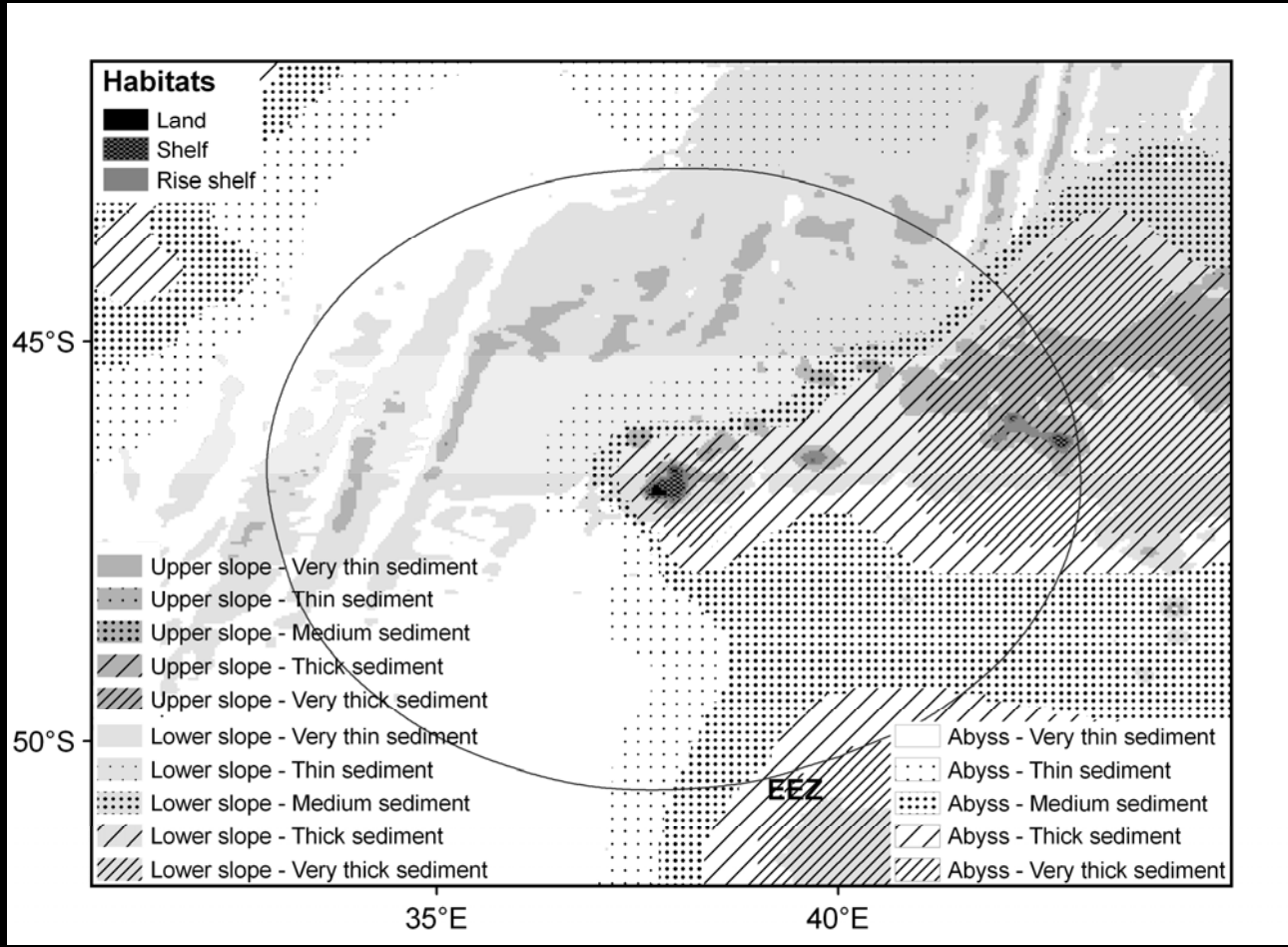
# Objectives

- To contribute to a national and global representative system of Marine Protected Areas, by providing protection for unique species, habitats and ecosystem processes
- To serve as a scientific reference point that can inform the future management of the area,
- To contribute to the recovery of the Patagonian toothfish *Dissostichus eleginoides*
- To reduce the bycatch of albatrosses and petrels in the Patagonian toothfish fishery

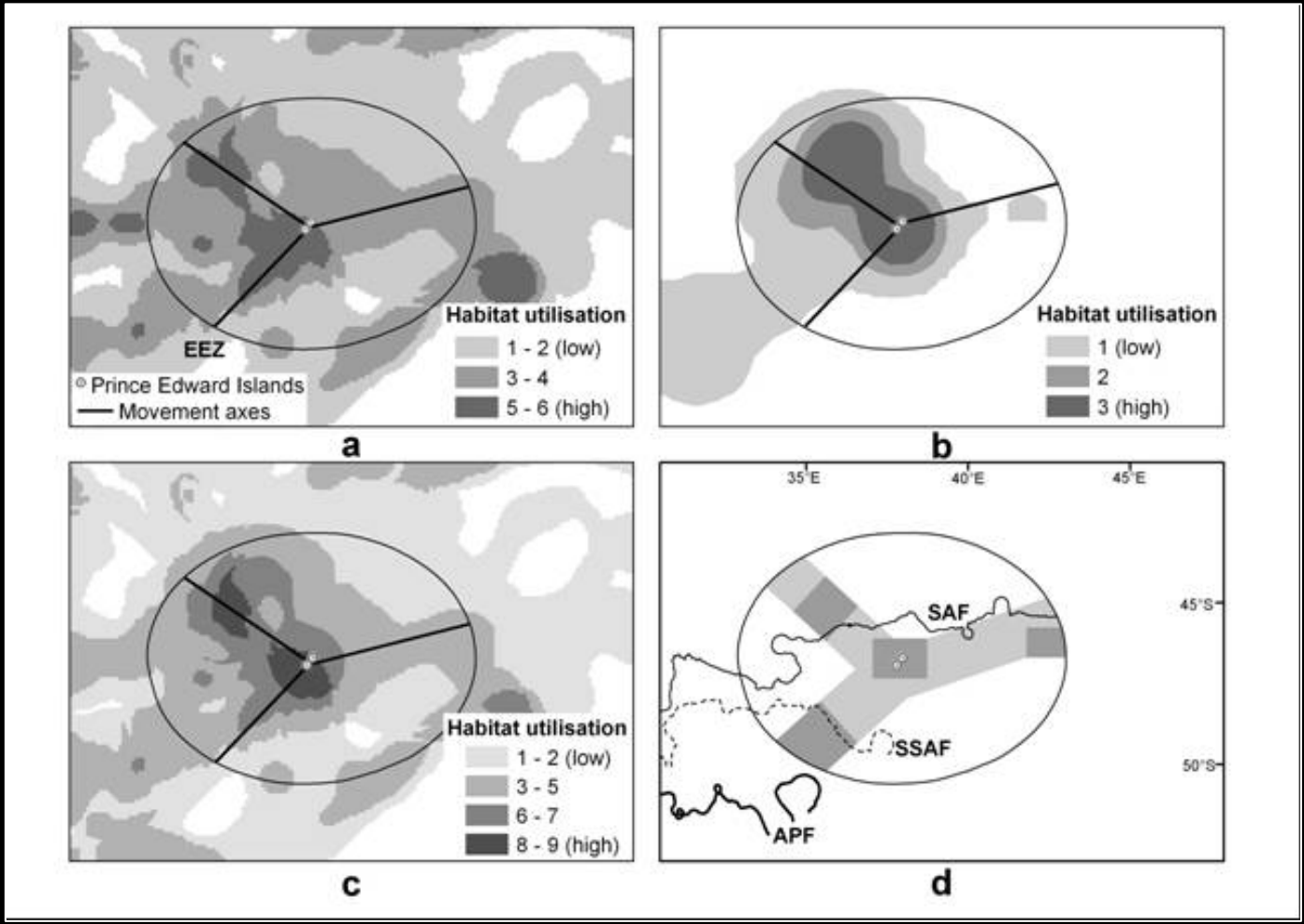
# Set Targets

| Biodiversity patterns and processes | Target |
|---|---|
| ***Biodiversity patterns (species)*** | |
| Fish | All 2-minute cells with 4 to 13 species[1] |
| ***Biodiversity patterns (habitats)*** | |
| Broad scale habitats | MPA to represent each of the four broad scale habitats |
| Benthic habitats | 20% of the area of each of 20 habitats |
| Seamounts | All of the 11 seamounts and rises |
| ***Fixed processes*** | |
| Inshore island shelf | Entire area |
| Productive island areas | Entire area |
| ***Flexible processes*** | |
| Sea bird and elephant seal foraging areas | MPA to incorporate major movement axes |
| Average position of the fronts | MPA to incorporate average positions of the SAF, SSAF and APF |

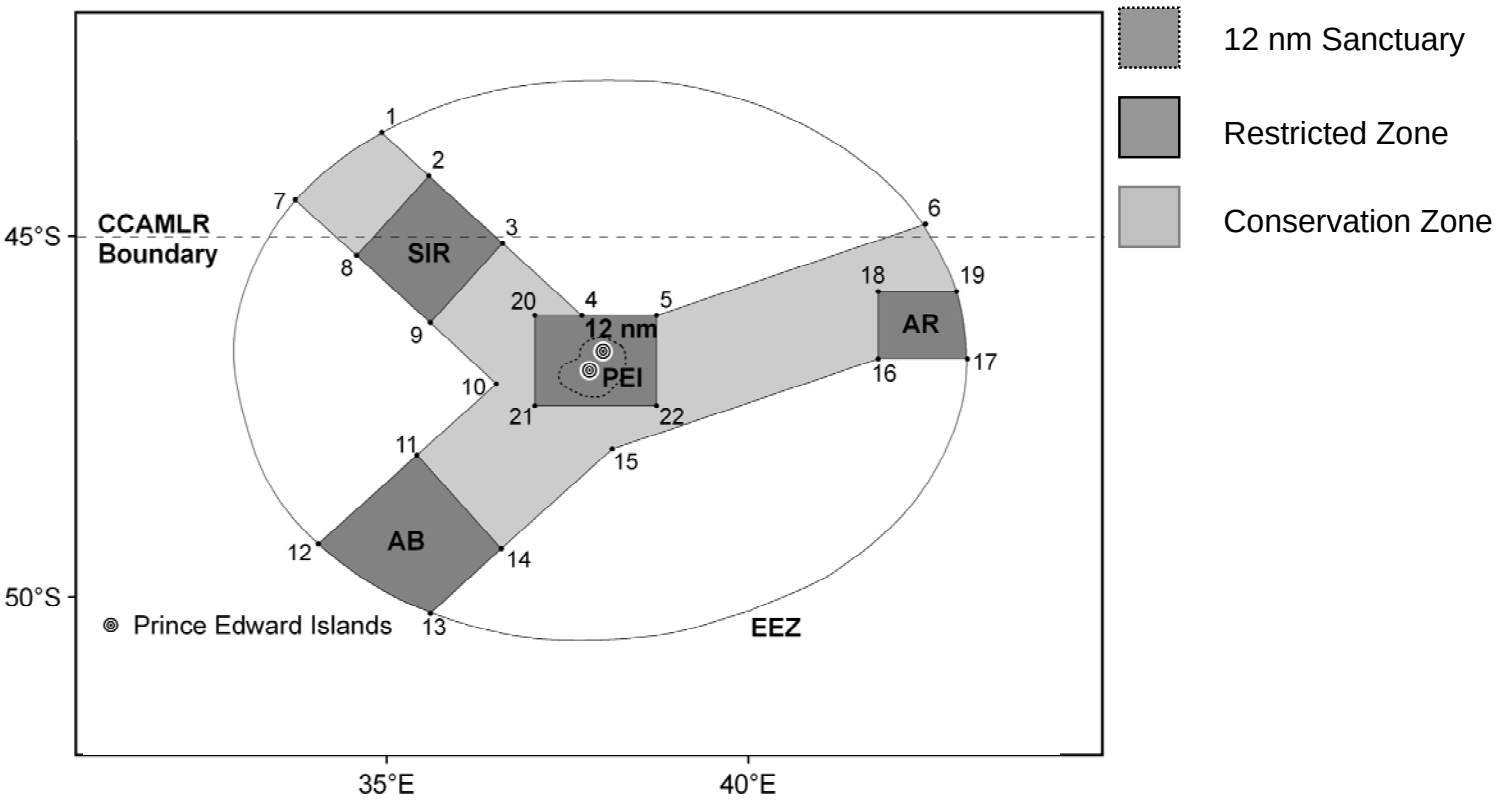
# Develop habitat map



# Foraging areas of predators



# Recommendation



# New MPAs incorporate estuarine habitats

**Stilbaai MPA**