International Coastal Management

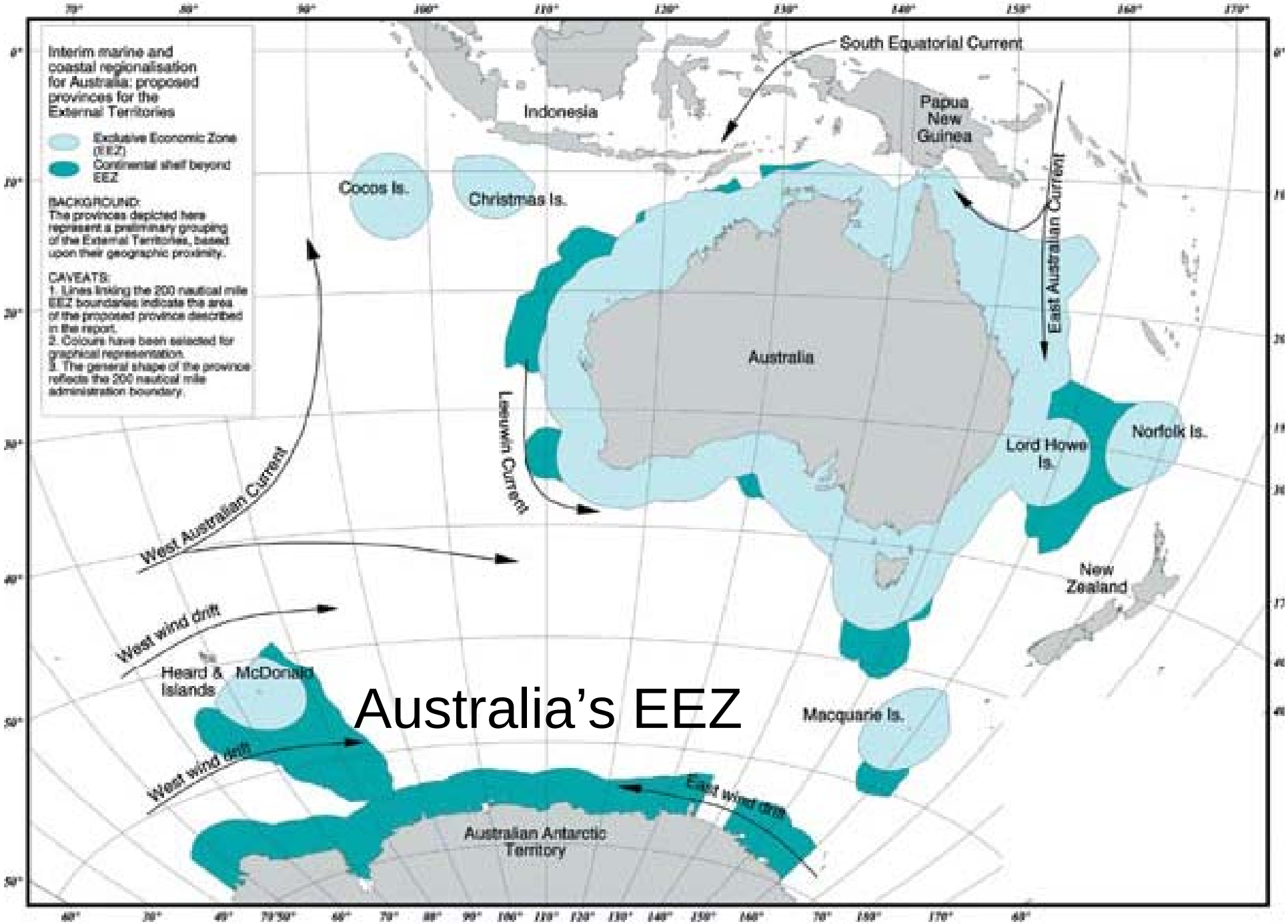
Tools for successful regional partnerships and initiatives
Dean Rusk Center June 13-14 2003

The Australian Experience in Establishing Marine Protected Areas

Simon Woodley

Themes

- Legal Framework
- Establishment of Marine Protected Areas in Australia – a brief history and status report
- Emerging trends - Australia's Oceans Policy
- Great Barrier Reef Marine Park – lessons of experience
  - *Representative Areas Program*



Australia's EEZ

Legal Framework

- Political-legal context
  - Federation 1901
    - Commonwealth is a “child of the States created with limited powers to act on behalf of the States”
  - Commonwealth powers include
    - Defence, foreign affairs, taxation etc
    - Fisheries beyond 3 nm
  - States powers include
    - Environment eg national parks
    - Land management
    - Fisheries within 3 nm
- Marine protected areas?

Legal Framework

- UN Convention on Law of the Sea 1958-1982 provided the basis for Commonwealth sovereignty over the continental shelf to low water mark (States did not have prior claim to 3nm)
  - obligations for environmental protection
- Commonwealth claimed power to low water
  - Seas and Submerged Lands Act 1973
- High Court (1975) confirmed validity of S&SL Act
  - this ruling provided the basis for the Great Barrier Reef Marine Park Act 1975 and many other Acts for maritime activities eg historic shipwrecks, crimes at sea, whale protection, sea dumping, sea installations….

Legal Framework

- Subsequent High Court decisions extended the power of the Commonwealth to legislate in areas of State responsibility using the “foreign affairs” power of the Australian Constitution
  - Commonwealth signatory to international conventions and other international agreements eg UNCLOS, World Heritage, Biodiversity
  - in the event of conflict Commonwealth law prevails over State law

MPAs in Australia

- Both Commonwealth and State responsibility
  - intermittent and uncoordinated
  - small areas for scenic beauty or fisheries habitat e.g Green Island 1938
- More systematic since 1990's e.g
  - 1985 marine bioregionalisation concept accepted
  - 1990 Commonwealth commitment to the establishment of a ***National Representative System of Marine Protected Areas***
  - 1996 National Strategy for Conservation of Biological Resources
  - 1998 Guidelines for establishment of NRSMPAs
  - 1999 Strategic Plan of Action for NRSMPAs

NRSMPA Goal 1990

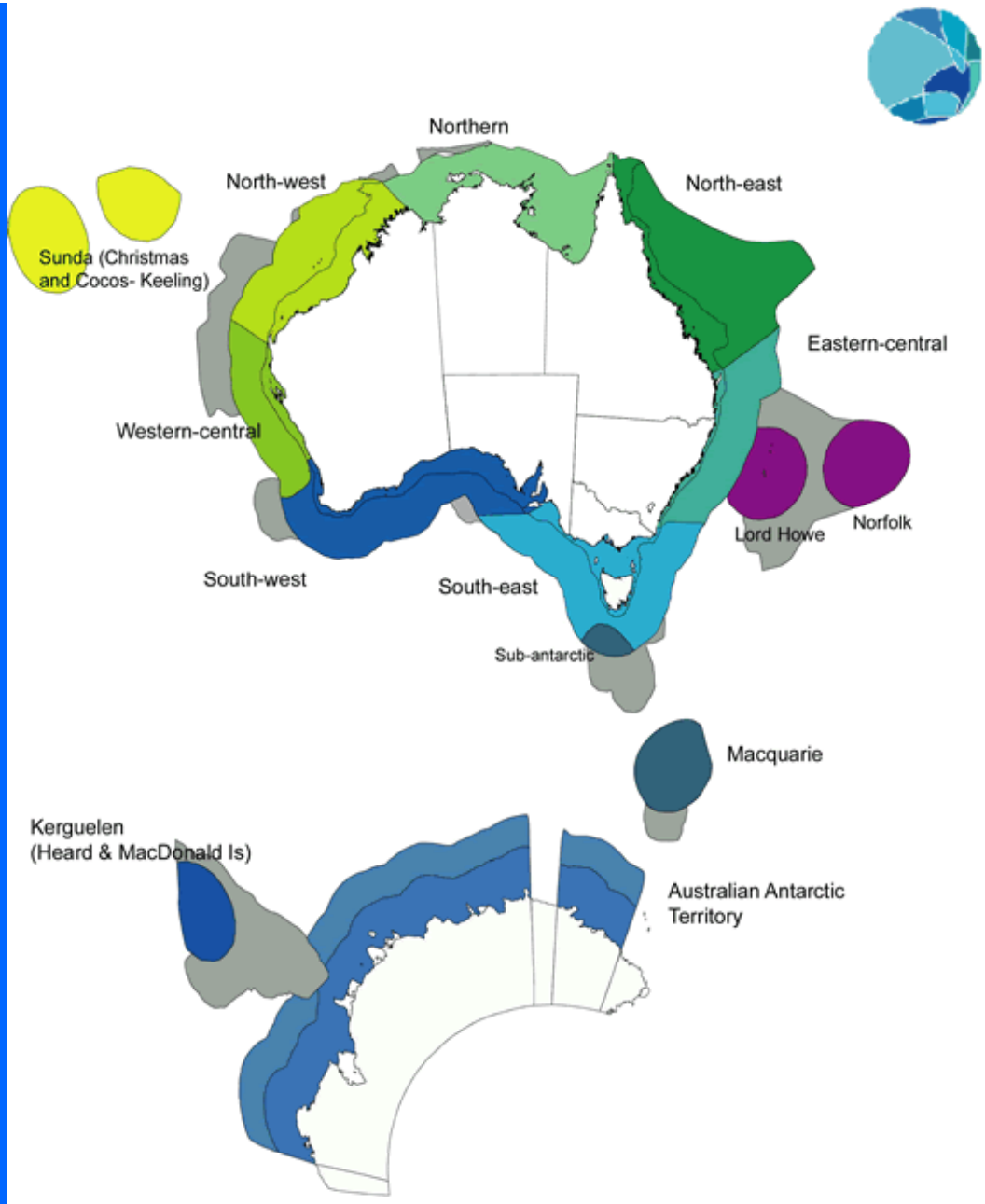
- “to establish and manage a Comprehensive, Adequate and Representative (CAR) system of Marine Protected Areas to contribute to the long term ecological viability of marine and estuarine systems, to maintain ecological processes and systems and to protect Australia’s biological diversity at all levels”

CAR Principles

- Comprehensive
  - full recognition of all ecosystems at appropriate scales within and across each bioregion
- Adequate
  - level of reservation to ensure ecological viability and integrity of populations, species and communities
- Representative
  - marine areas for MPAs should reflect biotic diversity of marine ecosystems from which they derive

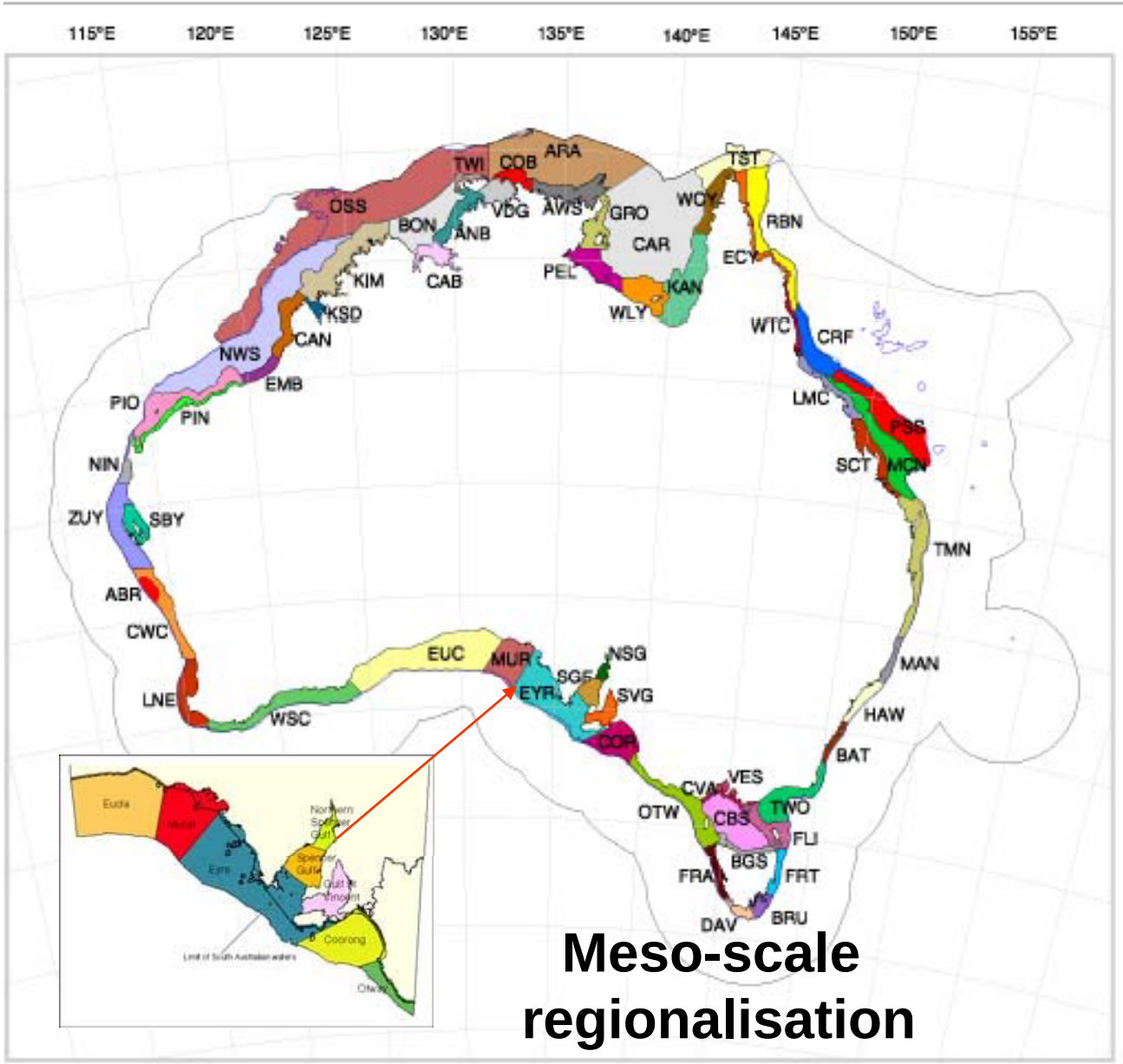
Large Marine Domains (11)

Basis for marine regionalisation and establishment of NRSMPAs



Preliminary large marine domains regionalisation (Modified from CSIRO 1998) and Marine Planning Regions

Map 1 (Version 2.0) Interim Marine and Coastal Regionalisation for Australia: Meso-scale regionalisation (Version 3.1)



Continental shelf meso-scale regionalisation:

ABR Abrolhos Islands
ANB Anson Beagle
ARA Arafura
AWS Arnhem Wessel
BAT Batemans Shelf
BGS Boags
BON Bonaparte Gulf
BRU Bruny
CAB Cambridge-Bonaparte
CAN Canning
CAR Carpentaria
CBS Central Bass Strait
CRF Central Reef
CVA Central Victoria
CWC Central West Coast
COB Cobourg
COR Coorong
DAV Davey
EYR Eyre
ECY East Cape York
EMB Eighty Mile Beach
EUC Eucla
FLI Flinders
FRA Franklin
FRT Freycinet
GRO Groote
HAW Hawkesbury Shelf
KAN Karumba-Nassau
KIM Kimberley
KSD King Sound
LNE Leeuwin-Naturaliste
LMC Lucinda-Mackay Coast
MCN Mackay-Capricorn
MAN Manning Shelf
MUR Murat
NIN Ningaloo
NSG North Spencer Gulf
NWS North West Shelf
OSS Oceanic Shoals
OTW Otway
PEL Pellew
PIN Pilbara (nearshore)
PIO Pilbara (offshore)
PSS Pompey-Swains
RBN Ribbons
SGF Spencer Gulf
SVG St Vincent Gulf
SBY Shark Bay
SCT Shoalwater Coast
TWI Tiwi
TST Torres Strait
TMN Tweed-Moreton
TWO Twofold Shelf
VES Victorian Embayments
VDG Van Diemens Gulf
WSC WA South Coast
WLY Wellesley
WCY West Cape York
WTC Wet Tropic Coast
ZUY Zuytdorp

— Australian Exclusive Economic Zone (AEEZ)
— Continental Shelf

BACKGROUND:
This map was compiled from the most up to date data available as of 7/3/97. The outer seaward extent for the 'meso-scale' IMCRA coverage is defined by the 200 metre isobath except where this boundary extends beyond the Australian Exclusive Economic Zone.

SOURCES:
The meso-scale regionalisation was compiled from information supplied to Environment Australia by the relevant State, Northern Territory and Commonwealth marine research and management agencies.
AUSLIG (1995):"Australian Marine Boundary Information System (AMBIS)"
AUSLIG (1995):"Digital Coastline Dataset".

NOTE:
In some jurisdictions, the landward boundaries of the meso-scale regions may be obscured by the AUSLIG 100,000 coastline digital data.
Produced by: Environment Australia.
Commonwealth of Australia, Canberra, May 1999.

Environment Australia

400 0 400 800 1200 1600 2000 Kilometers

Projection: Albers Equal-Area Conic
Spheroid: SPHEROID_WGS84

Status of Australian MPAs 2002

State	MPAs	Area (ha)
Western Australia	7	1 089 654
Victoria	11	75 494
Tasmania	4	81 713
South Australia	19	186 231
Queensland	101	5 789 523
Northern Territory	3	223 891
New South Wales	18	141 674
Commonwealth	31	61 663 403
Total	194	68 271 583
Oceanic and External Territories	10	25 333

Status of MPAs in Australia

- Network of highly protected sanctuaries being established but it is a huge task
  - over 16 million km^2 and 60 000 km coastline
  - need to consider CAR principles
  - data poor or patchy
  - States establishing small MPAs within 3nm emphasis on habitat or species protection with some access for recreation, limited fishing and collecting
  - conservation NGOs emphasise maximising “no-take” zones whether in highly protected MPAs or multiple-use MPAs
  - Commonwealth approach is at LMD scale through Oceans Policy implementation

Australia's Oceans Policy

"Promote ecologically sustainable development of the resources of our oceans and the encouragement of internationally competitive marine industries, while ensuring the protection of marine biological diversity"

Oceans Policy Goals

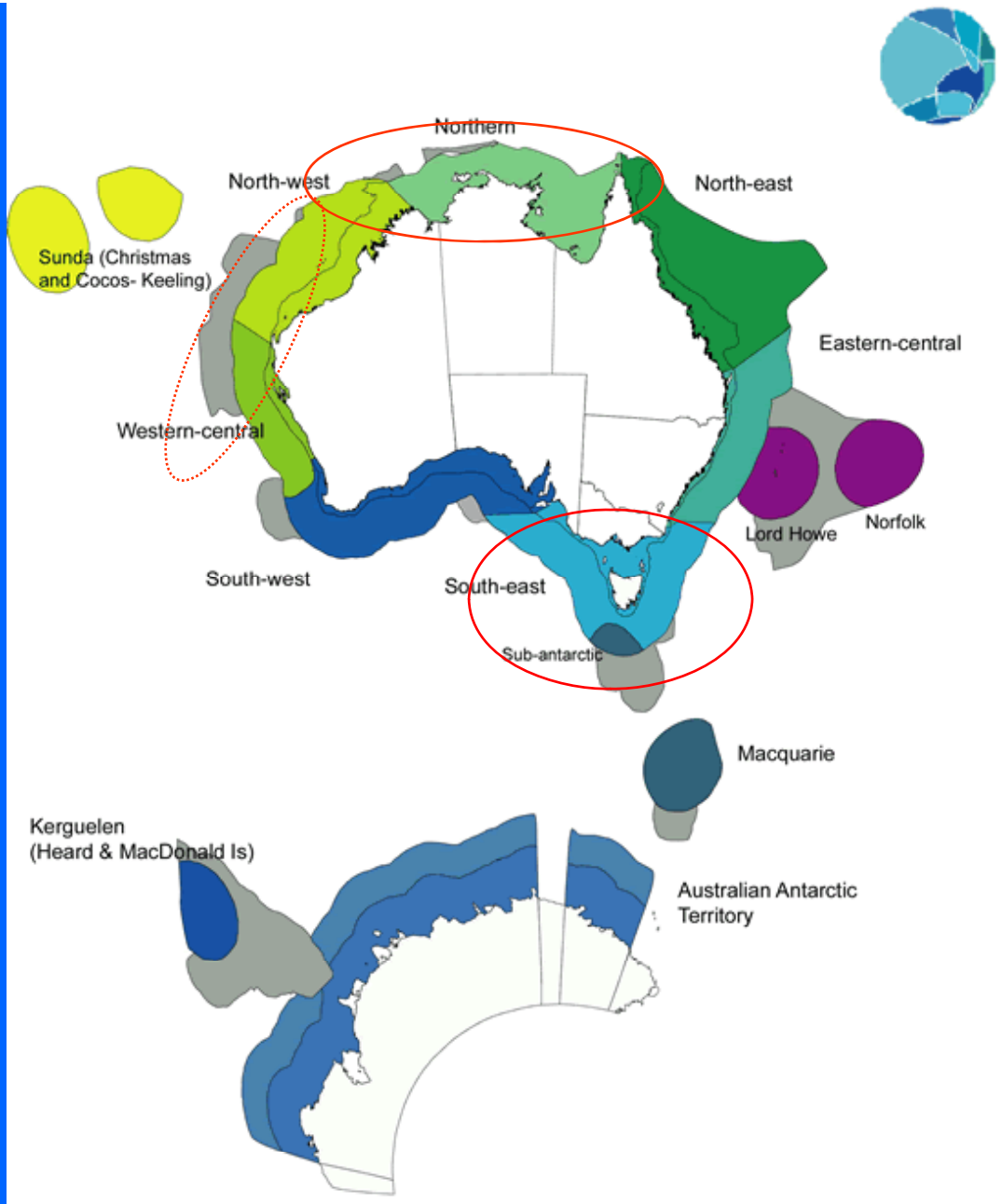
1. To exercise and protect Australia's rights and jurisdiction over offshore areas, including offshore resources.
2. To meet Australia's international obligations under the United Nations Convention on the Law of the Sea and other international treaties.
3. To understand and protect Australia's marine biological diversity, the ocean environment and its resources, and ensure ocean uses are ecologically sustainable.
4. To promote ecologically sustainable economic development and job creation.

Oceans Policy Goals cont.

5. To establish integrated oceans planning and management arrangements.
6. To accommodate community needs and aspirations.
7. To improve our expertise and capabilities in ocean-related management, science, technology and engineering.
8. To identify and protect our natural and cultural marine heritage.
9. To promote public awareness and understanding.

Regional Marine Plans

- mechanism for integrating sectoral activities within large marine ecosystems.
- management model not yet prescribed
- depends on State and stakeholder co-operation



Preliminary large marine domains regionalisation (Modified from CSIRO 1998) and Marine Planning Regions

Great Barrier Reef Marine Park

- Brief History
- “Management”
- Lessons learned
- Take-home messages

GBRMP History

- 1960's – social change, increased public awareness and concern about marine issues, global and national
  - environmental concerns (Carson, Ehrlich etc)
  - increased awareness through SCUBA diving and underwater films
  - crown -of-thorns starfish outbreaks
- 1975 IUCN conference on marine parks and protected areas
- Development emphasis by Queensland Government 1950's and 60's
  - Agriculture and mining
  - Oil drilling and limestone mining

GBRMP History cont.

- Oil spills 1960's
  - Santa Barbara, Torrey Canyon, Amoco Cadiz
  - Oceanic Grandeur in Torres Strait
- extreme public concern
  - rise of conservation movements
  - "Save the Reef" campaign
  - trade unions banned oil drilling rigs
  - Royal Commission into Oil Drilling
  - moratorium on oil drilling 1970
- Federal Labor government elected 1972 - policy to establish a marine park in GBR

GBR Marine Park

- Innovative and unprecedented
  - political response to public concern
  - based on emotions, perceptions and values rather than hard science or facts demonstrating risk
  - not a systematic bio-regionalisation approach
  - bipartisan support in Federal Parliament but strongly resisted by State of Queensland
  - town planning approach rather than national park approach

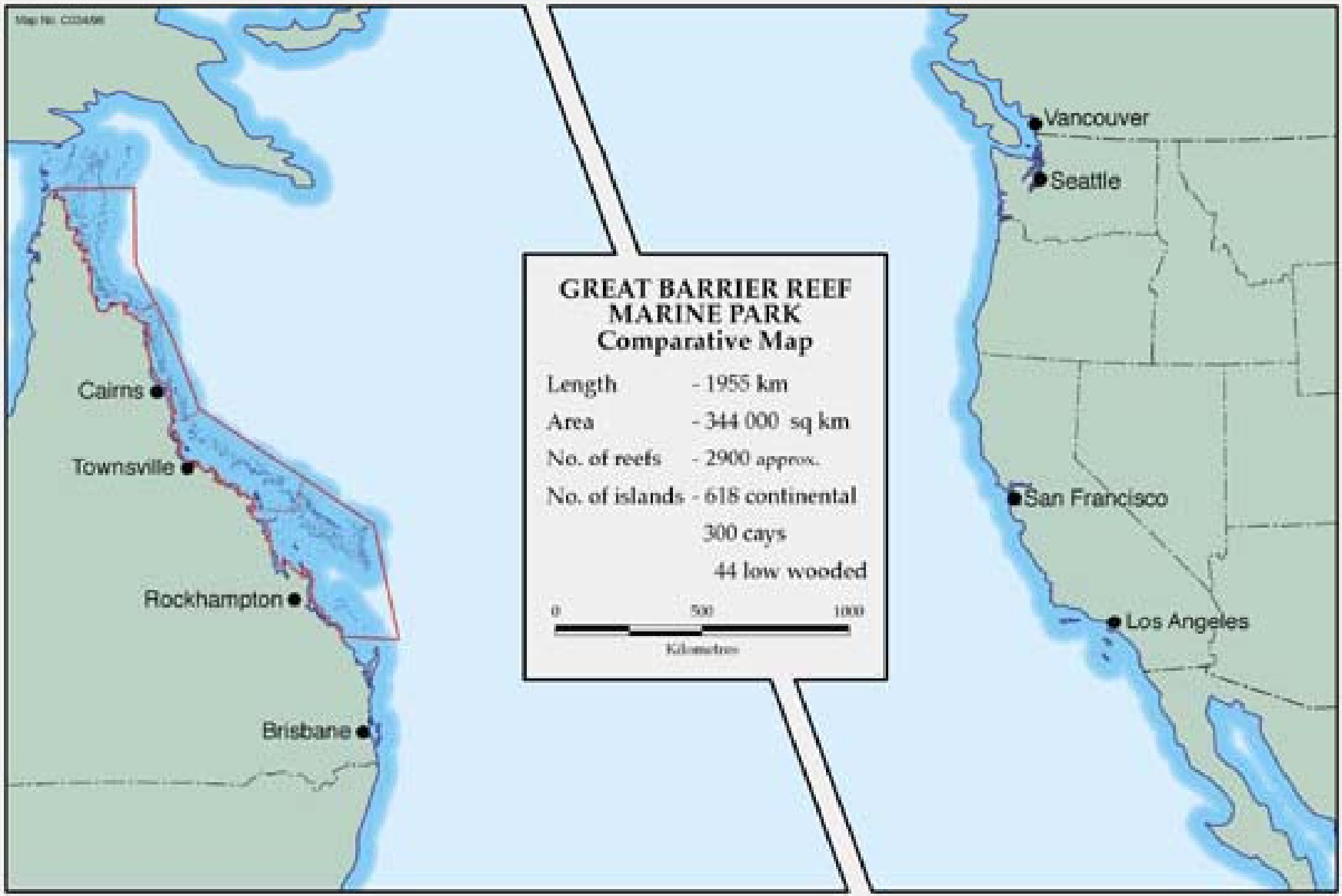
GBRMP Act 1975

- established a Federal statutory authority with sweeping powers
- provided for co-operation with Queensland e.g in management
- established boundary of the GBR Region at low water mark
- provided areas to be declared as part of the GBR Marine Park (and regulations)
- removed threat of mining and oil drilling
- established the concept of a multi-use marine park

Mandate

- "protection,wise use, understanding and enjoyment"
- zoning plans as the main management tool
- public consultation required by law
- research
- education
- day-to-day management

- *World Heritage Listing 1981*


GREAT BARRIER REEF
MARINE PARK
Comparative Map
Length - 1955 km
Area - 344 000 sq km
No. of reefs - 2900 approx.
No. of islands - 618 continental
300 cays
44 low wooded
0
500
1000
Kilometres
Cairns
Townsville
Rockhampton
Brisbane
Vancouver
Seattle
San Francisco
Los Angeles

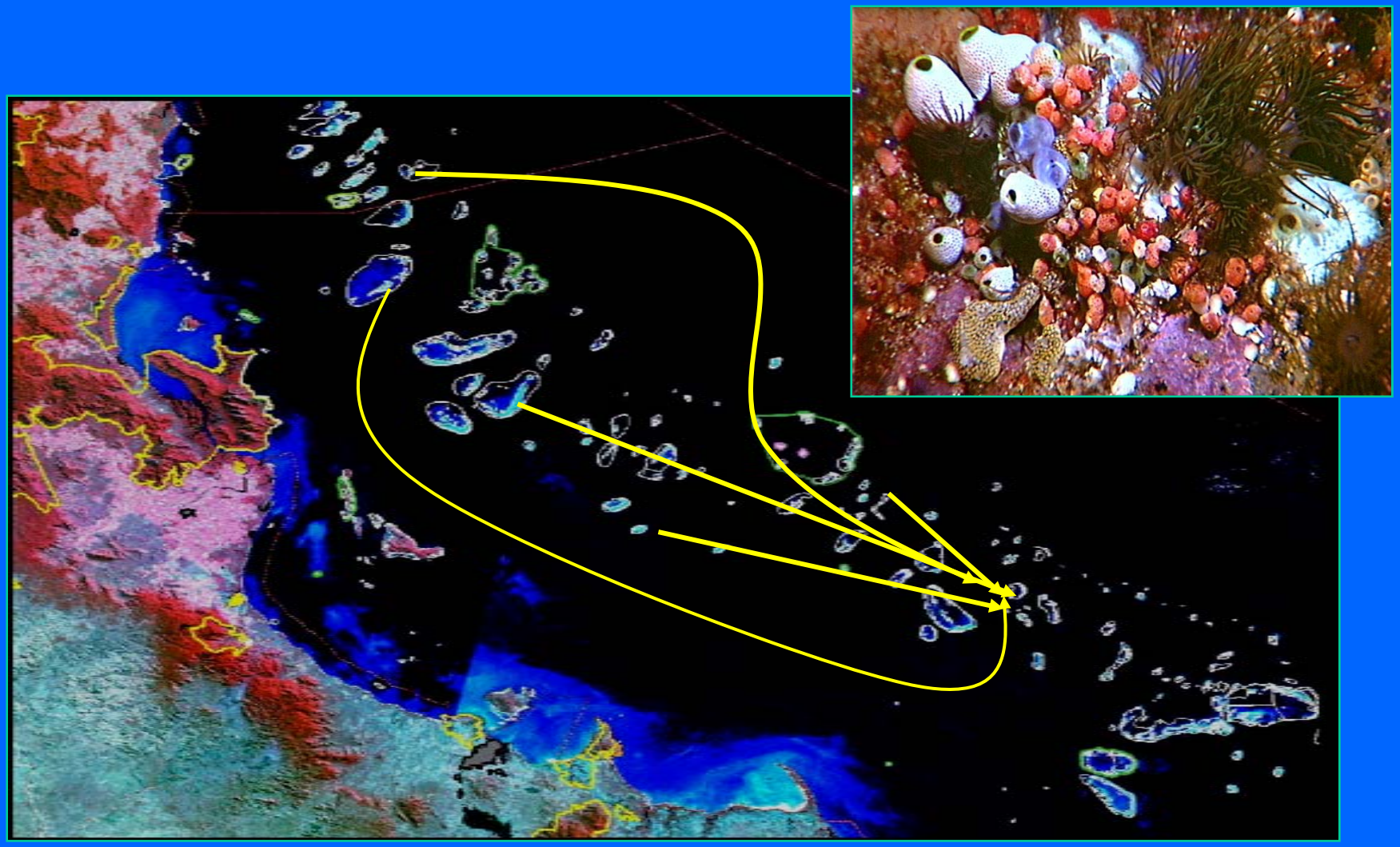
Managing the GBR?

- Conserving biodiversity through
  - management of people's uses, expectations, values and impacts
  - coercion or persuasion
- Community support essential to long-term success
  - social contract and political necessity
- Very little intervention in biological processes

Complexities of management

- management at spatial and temporal scales relevant to ecosystem and life cycle scales
- dynamic 3 dimensional ecosystem
- dynamic socio-economic system
  - changing values and uses and ownership
- risk management approach needed
- adaptive management approach needed
  - management as an experiment subject to verification?
- monitoring essential
  - impacts and effectiveness
  - baselines?

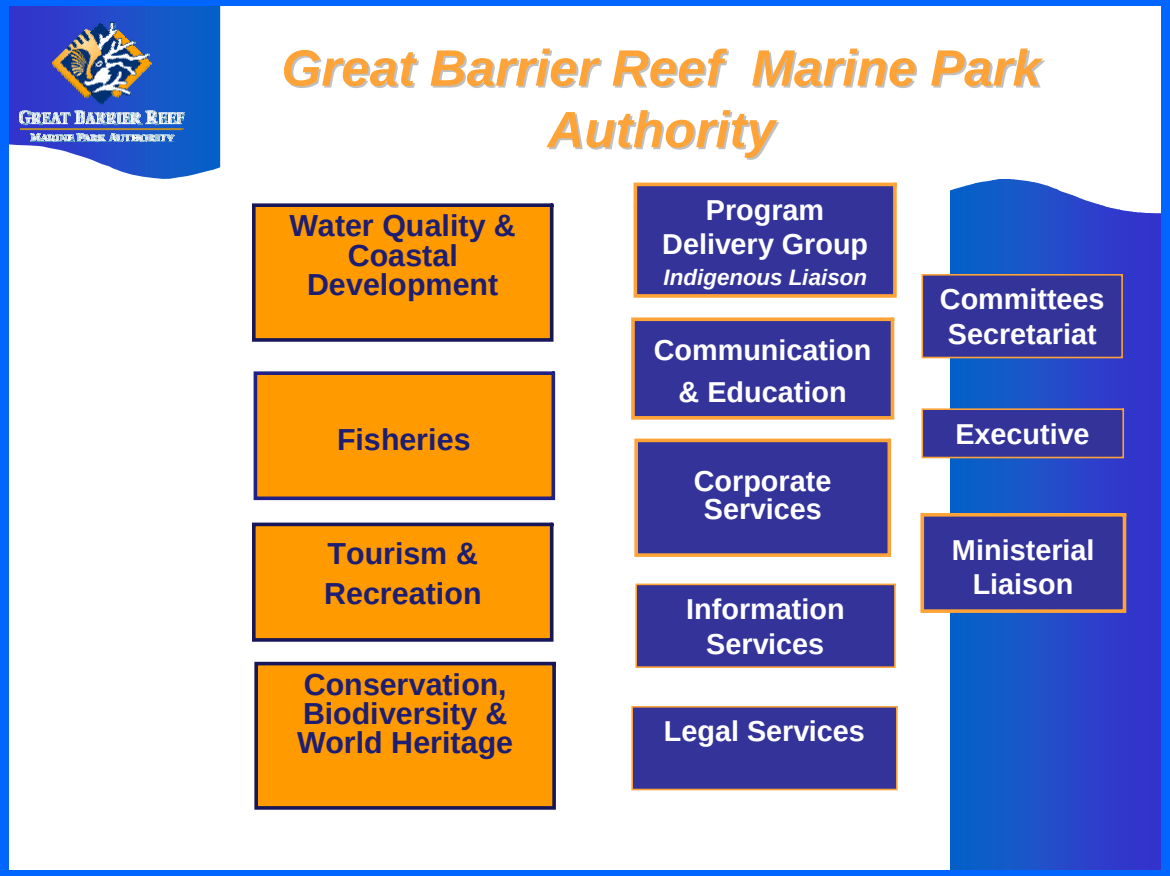
Connectivity Issues



Lessons of Experience

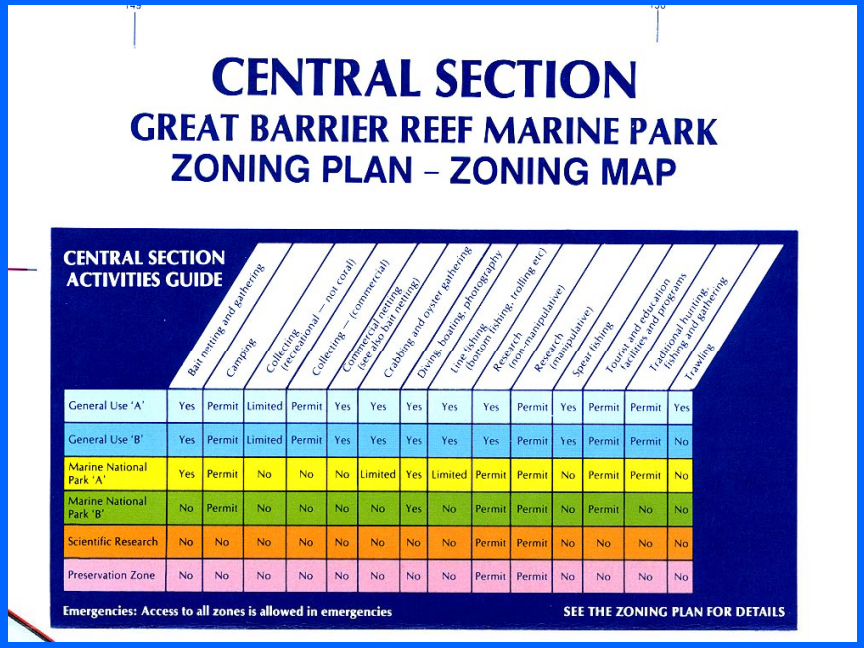
- Managing ourselves
- Managing uses and impacts e.g
  - tourism
  - water quality and coastal development
  - fishing
  - shipping
  - day-to-day management and enforcement
  - *zoning as a management tool*
- Meeting the conservation objective

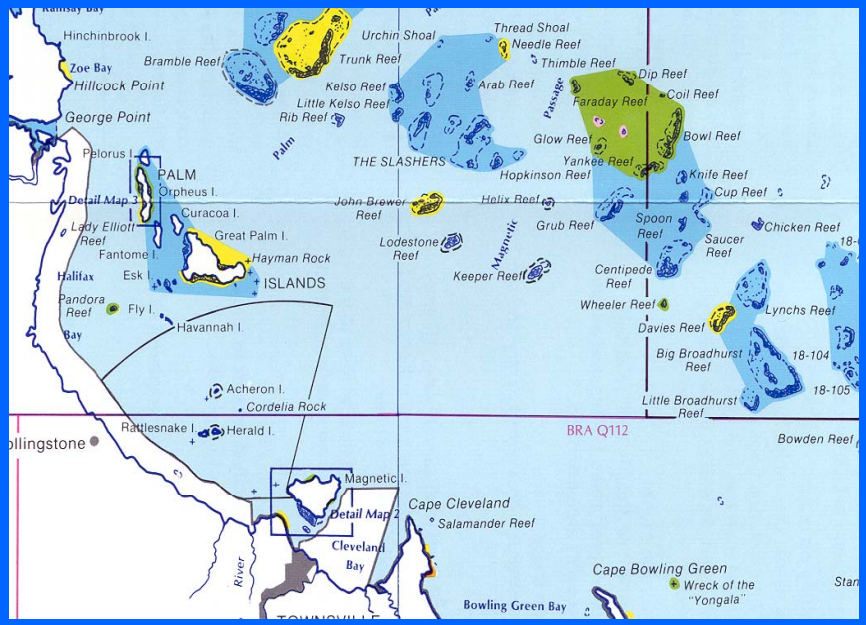
Managing Ourselves



Zoning Plans

- Zones separate conflicting uses spatially
  - General Use
  - Habitat Protection
  - Marine National Park (‘no-take’)
  - Preservation (‘no-go’)
  - Scientific research
- Activities in each zone specified: either
  - “as of right”; or
  - require a permit; or
  - prohibited.





Zoning - lessons from the GBR

- zoning separates fishing from other activities; does not deal with tourism
- inadequate no-take protection of all bioregions
- boundaries hard to enforce
- technology creep for fishing and tourism has increased pressure on remote reefs
- does not deal with external impacts
- acceptable and understandable tool for the public

Tourism

- main commercial use A$4 billion p.a.
- 730 permitted operations (1500 vessels)
- range of nature based operations
- improved technology and different patterns of use
- competition and conflict

Changing tourism

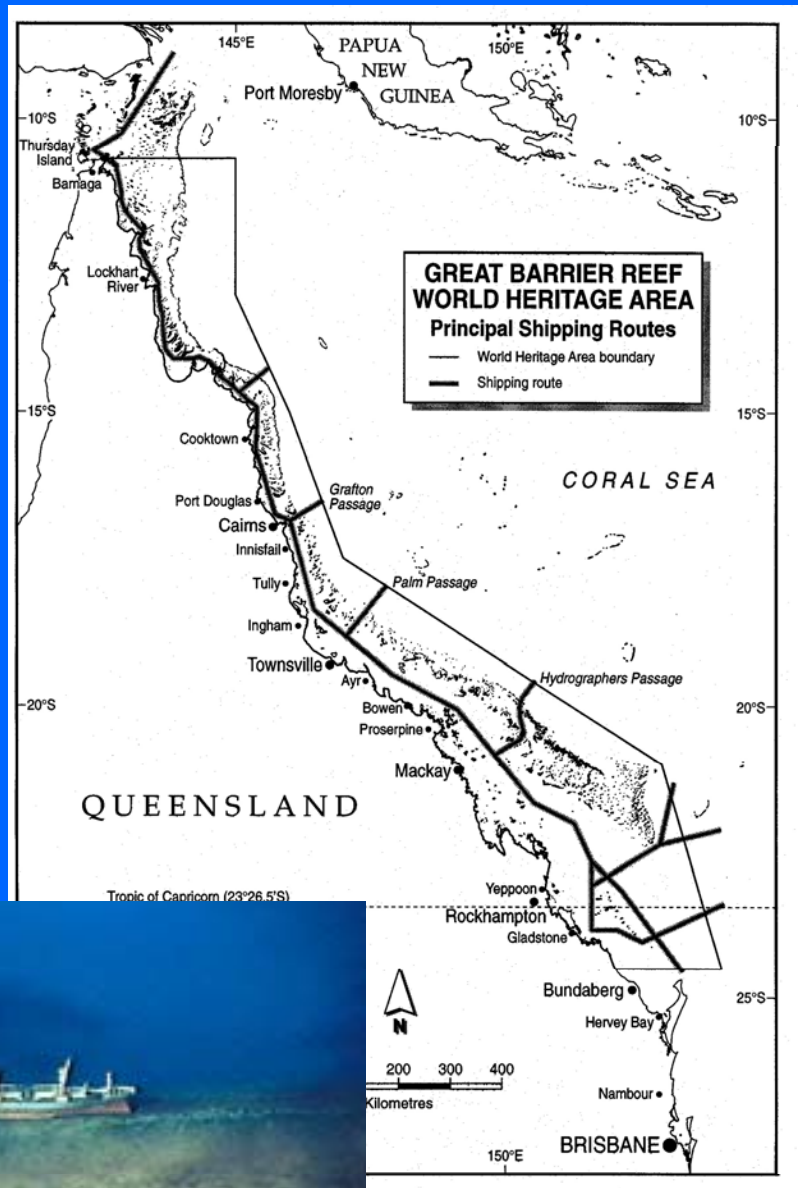
- Lessons learned
  - –Zoning not useful to control tourism
  - –Over-regulatory approach through permits
  - –Operators need long term security of tenure
  - –User pays is effective tool
  - –Codes of practice and agreements useful
  - –Careful environmental impact management essential

Tourism

- New approaches
  - tourism management plans for sites and activities
  - Specific codes of practice for tourism segments eg cruise ships
  - reduction in latency
  - education and communication support
  - moorings systems at sensitive sites
  - reduced regulation and more co-operation
  - increased user pays
  - strategic review underway with industry

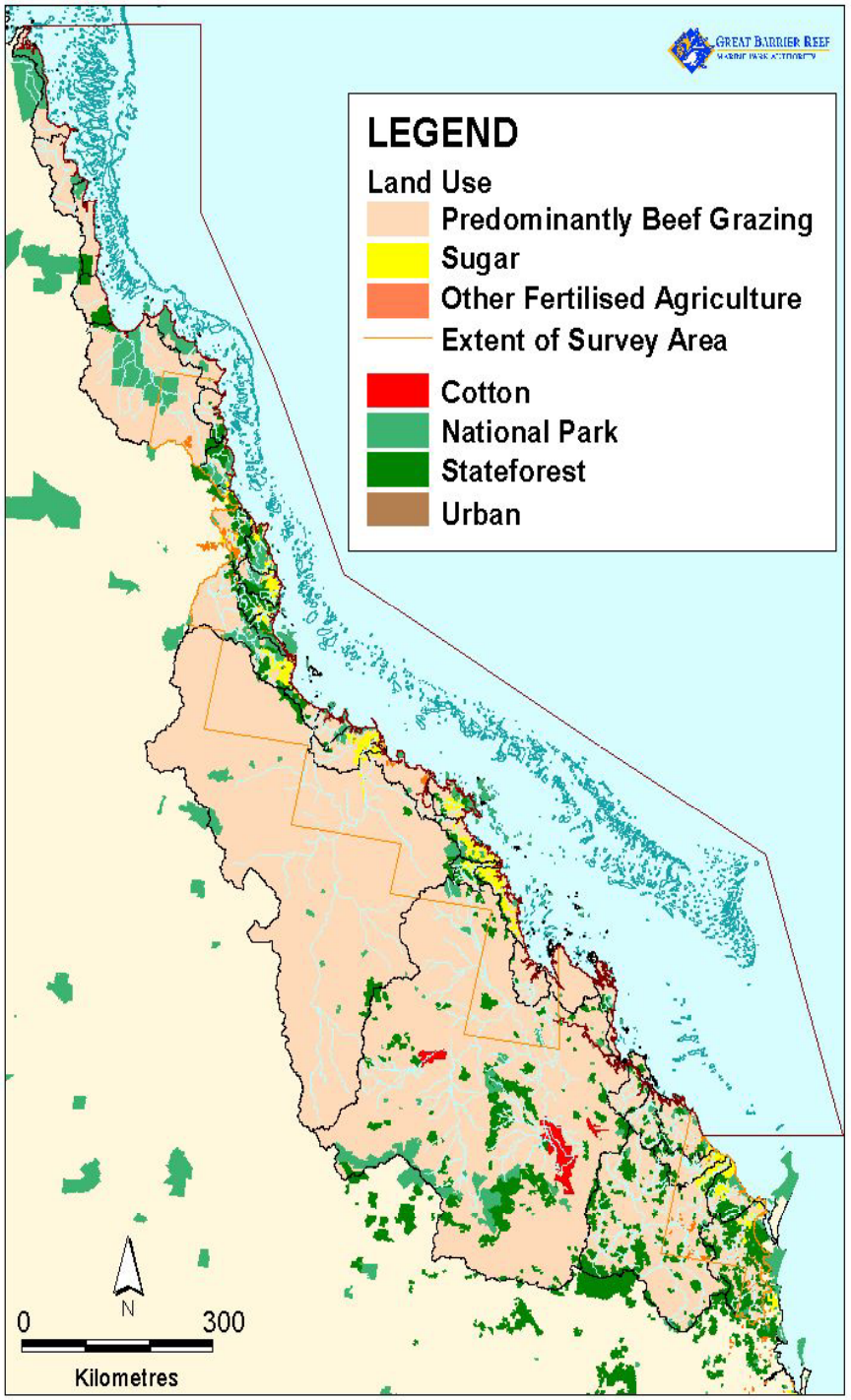
GBR Shipping

- ~7000 vessel passages
- ~ 2000 use the inner route
- 5-10% tanker movements
- Last 5 years ~190 incidents
- On average one vessel sinks every 2 months
- 4 major groundings in the GBR during the past 5 years



Shipping Changes

- 'Particularly Sensitive Sea Area' declared for shipping
- improved navigation and compulsory pilotage in most of the Inner Passage
- mandatory ship reporting system
- heavy penalties for groundings
- oil spill contingency and clean-up plans



Water Quality

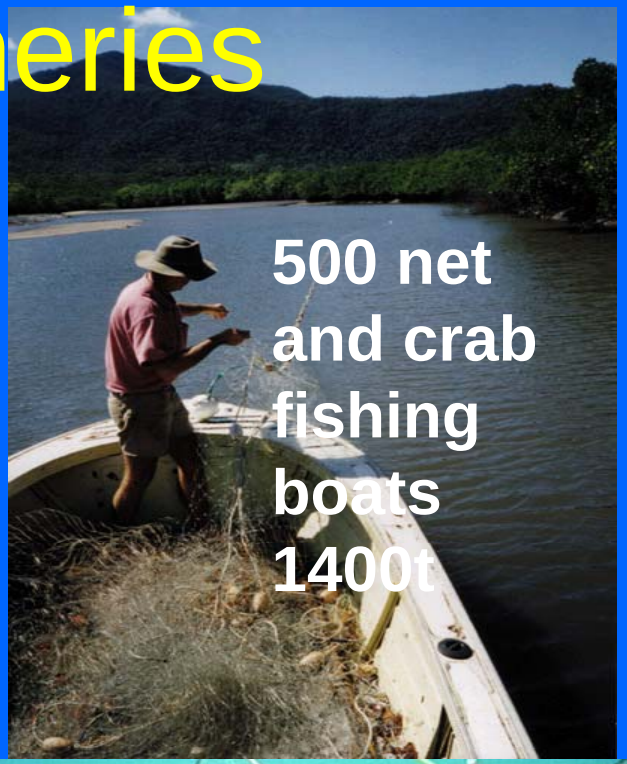
Water Quality

- sources of pollutants are outside the Marine Park
- Zoning useless as tool
- 4 fold increase in nutrient input since European settlement
- reduction in inshore reef growth and coral reproductive success
- codes of practice poor

Water Quality Initiatives

- discharge targets for pollutants from agriculture now set through Reef Water Quality Plan (Commonwealth-State)
- sewage discharge standards set
- monitoring of pollutants and sediments and impacts on inshore reefs and animals
- encouragement of best practice farming
- engagement with Catchment Management groups – education and collaboration
- aquaculture regulation onshore

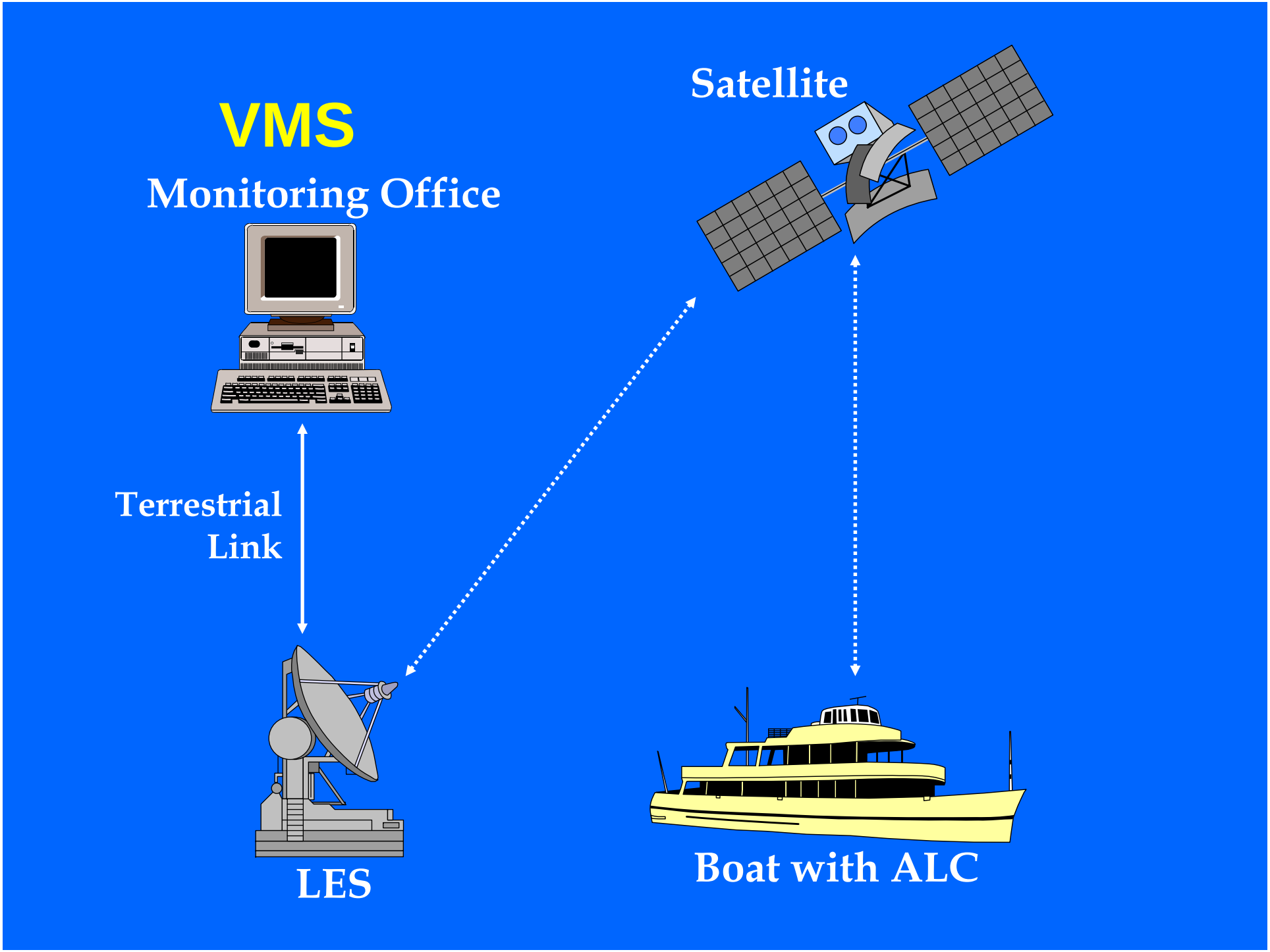
Managing fisheries



Fisheries

- Problems
  - unsustainable trawling practices
  - poor compliance
  - dugong deaths from netting
  - turtle deaths from trawling
  - Latency

- Responses
  - reduction in trawl effort by 15%
  - buyout of licences
  - Vessel Monitoring System
  - risk Management and covert surveillance
  - increased penalties
  - compulsory BRDs and TEDs
  - dugong protected areas and changes to netting practices


VMS
Monitoring Office
Satellite
Terrestrial
Link
LES
Boat with ALC

Meeting Conservation Objectives

- Problems
  - Insufficient no-take areas
  - Insufficient protection of non-reefal areas
  - Zoning plan complicated and unenforceable
  - Threatened species management eg dugong and turtle not adequate
  - Irrelevant and untimely research information
- Responses
  - Representative Areas Program
  - rezone and simplify zones
  - dugong protected areas and reduced netting
  - regional scale management for dugong and turtle
  - traditional hunting policies and co-management
  - Cooperative Research Centre for the GBRWHA

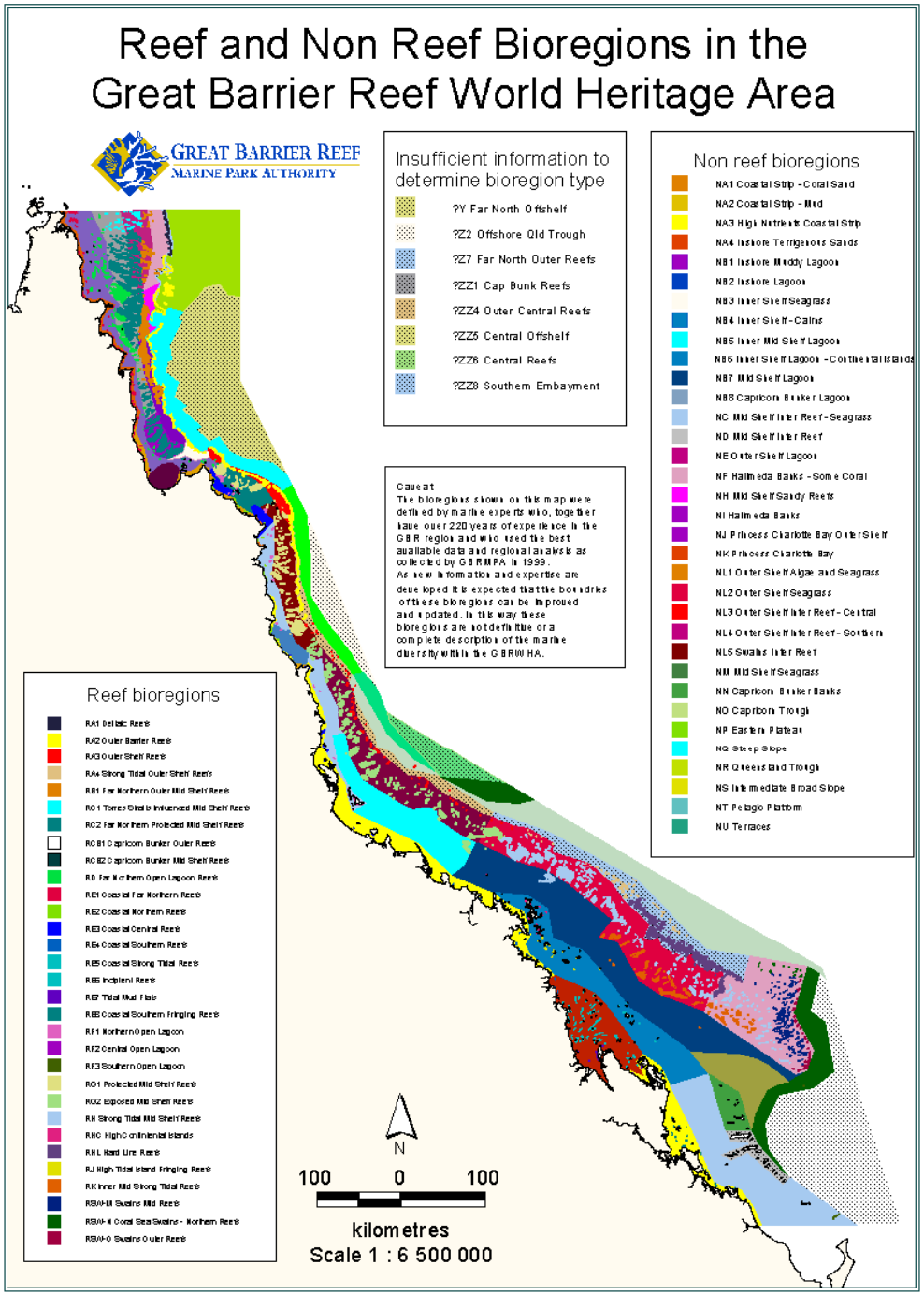
GBRWHA is much more than just coral reefs ….

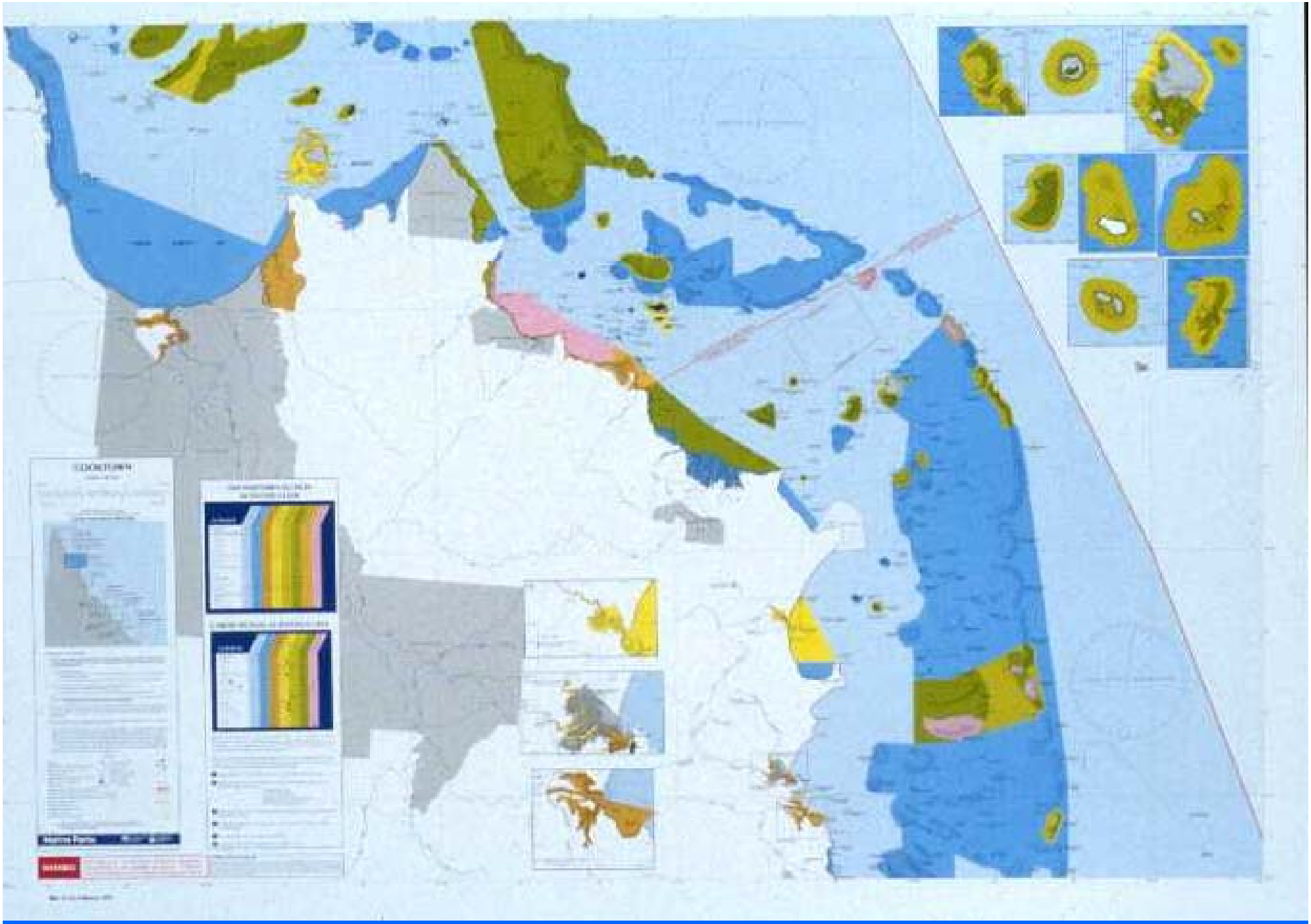
Also includes:

- mangroves
- sandy & coral cays
- seagrass beds (shallow & deepwater)
- continental islands
- algal & sponge ‘gardens’
- deep ocean troughs
- sandy and muddy bottom communities

Representative Areas

- CAR principles apply
- no-take zones increased from 5% to >30% across all bioregions
- 10 000+ submissions in pre-draft stage
- Draft Plan out for public review
- Final Plan by late 2003





Other lessons learnt from Australian MPAs

- Need well-defined objectives and monitoring to measure or judge outcomes
- MPAs will not instantly resolve all marine conservation issues
- each MPA model should be applicable to the local context – there is not one “right’ way of managing marine resources
- Management needs to be scientifically based, transparent and decision-making accountable to the community

Lessons learnt (cont.)

- The ultimate process of establishing MPAs is socio-political, but based on ecological and socio-economic considerations
- MPAs need to be embedded in complementary management regimes.
- Priority should be for a network of typical and representative reserves.
- Take an adaptive and risk management approach

Take home message

"…. it is better to create and manage successfully an MPA which may not be ideal in ecological terms but which nevertheless achieves the purpose for which it is established than it is to labour futilely and vainly to create the theoretically 'ideal' MPA".

… and adapt in the light of new knowledge and changing conditions…

(adapted from Kelleher & Kenchington, 1992)

Thank You