



Presentation to CCI Environment Committee 26 May 2015

# “Whose values?” Mapping community values for the Kimberley coast

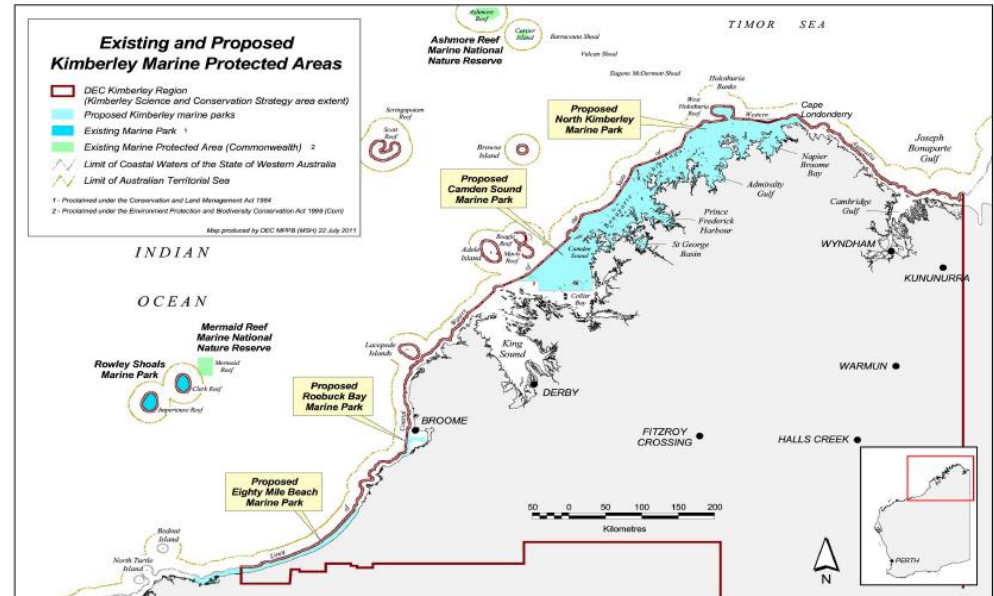


**Jennifer Strickland-Munro, Susan Moore, Halina Kobryn & David Palmer**

# Scope of talk



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**KIMBERLEY MARINE RESEARCH PROGRAM:** Marine research program for North Kimberley, Camden Sound, Roebuck Bay & Eighty Mile Beach marine parks & other coastal waters. 24 projects

**WAMSI SOCIAL RESEARCH PROJECT:** Human values & aspirations for coastal waters of the Kimberley. 2013-2015

# Why community values matter

Understanding the values of people associated with coastal & marine environments is essential.

Without this support:

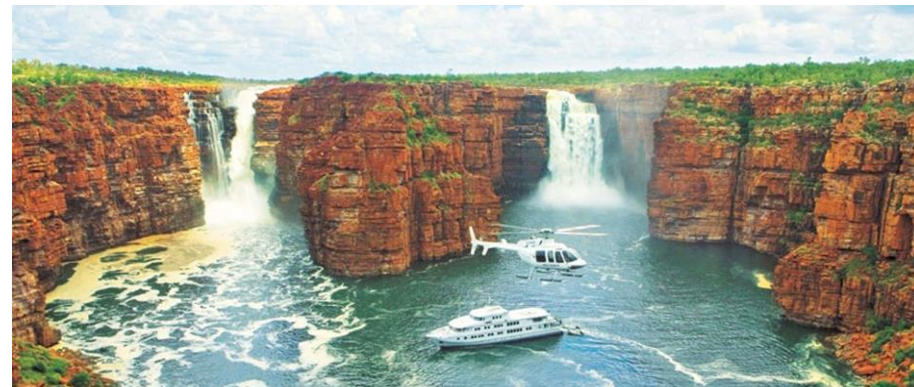
- ✘ Local communities oppose development & conservation proposals
- ✘ No marine parks created/few resources for their management

Community values neglected in marine planning & management (Voyer et al. 2012 *Marine Policy*)



# Research design

- RQ: *What are the values of people associated with the Kimberley coast?*
- Marine park focus
- In-depth face-to-face interviews: Kimberley, Perth & Darwin
- Engage greatest possible range of stakeholders
- Gather data in a form useful for management & decision-making





APT

## Kimberley Cruising

Featuring Small Group Land Journeys

Exclusive Sailing | Small Group 4WD Adventures | Independent Air Safaris

REWARD  
SAVE \$1,500

Saltwater Traditional Owners



Department of Parks and Wildlife



# Whose values?



Mount Gibson Iron



WWF



## PROTECT THE KIMBERLEY



**COMMUNITY RALLY** Sun 28th Nov. 11am  
Marine sanctuaries not oil & gas!

Cottesloe Civic Centre Lawns, Napier Street, Cottesloe.  
Guest speakers. Live bands. Face painting for kids. Wear red or orange.



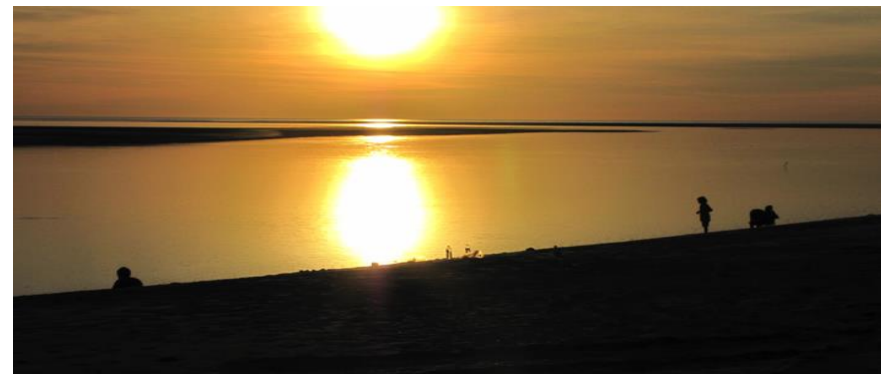
Department of Fisheries



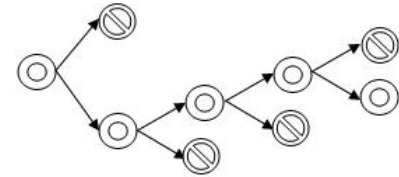
# Methods

## Agreement-based research with Traditional Owners

1. Introductions, scoping & project adjustments
2. Interviews & conversations on country
3. Community feedback



# Methods



- Purposive, “snowball” sampling
- Key questions:
  - What places are important to you? (how, why)
  - Mark up to 5 places on 1: 1,000,000 maps
- Participatory mapping as an integral part of interview (spatial delineation of social values)

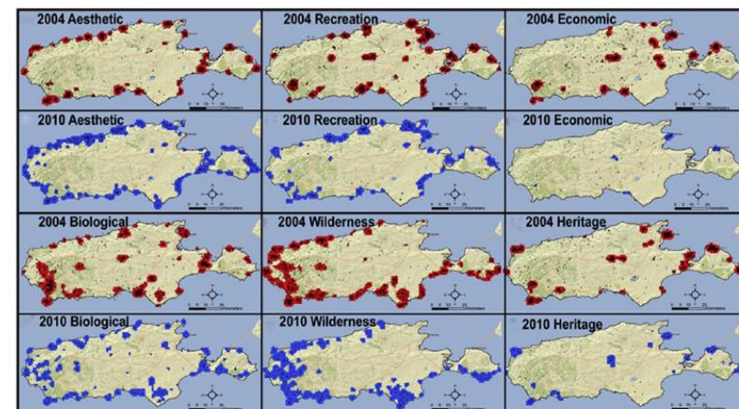
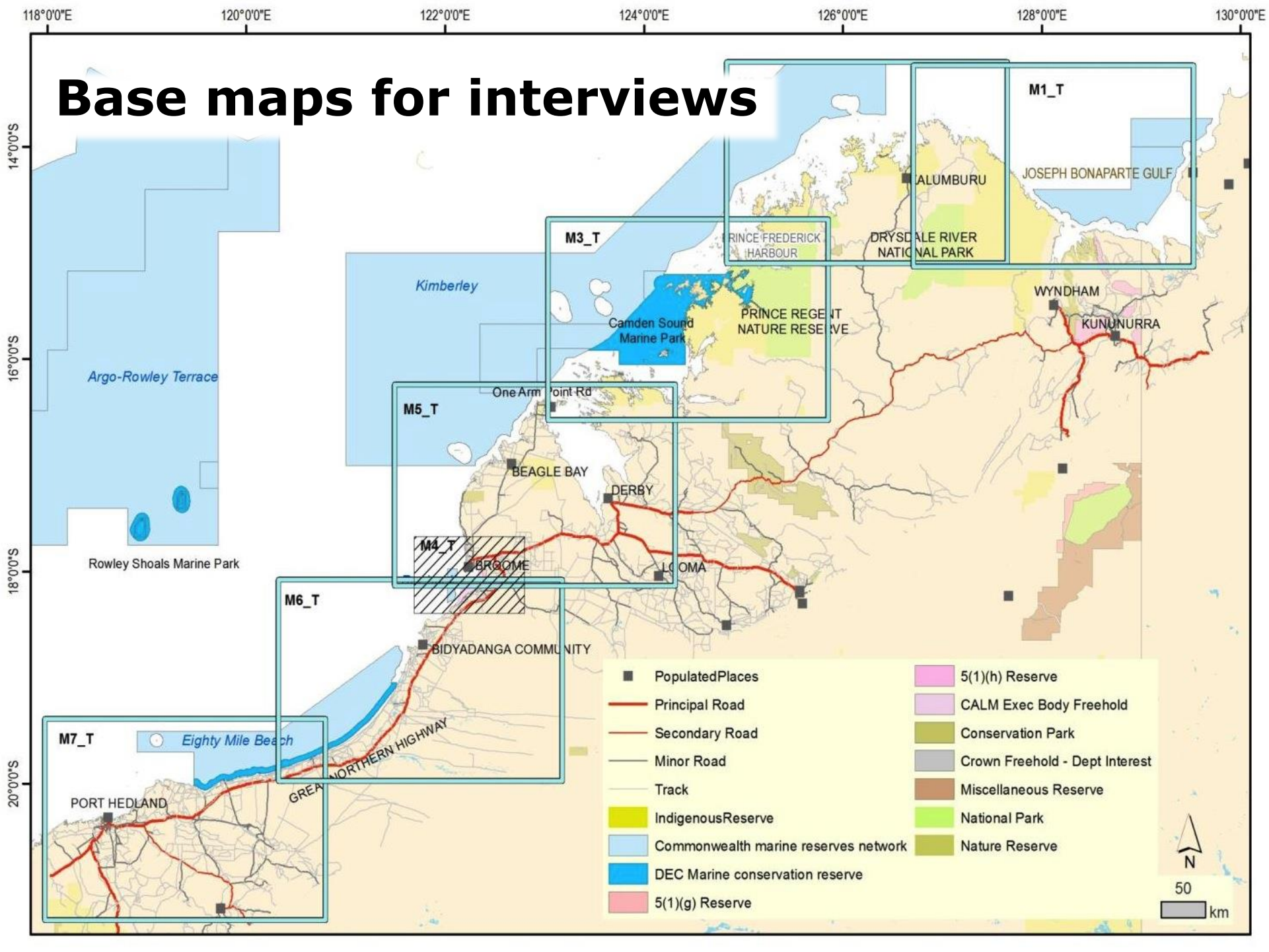


Fig. 3. Distribution of six landscape values in 2004 and 2010. Higher densities of values appear in red (2004) and blue (2010) based on standardized scores using kernel density estimation. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

# Base maps for interviews



- |  |                                  |
|--|----------------------------------|
| ■ Populated Places                     | ■ 5(1)(h) Reserve                |
| — Principal Road                       | ■ CALM Exec Body Freehold        |
| — Secondary Road                       | ■ Conservation Park              |
| — Minor Road                           | ■ Crown Freehold - Dept Interest |
| — Track                                | ■ Miscellaneous Reserve          |
| ■ Indigenous Reserve                   | ■ National Park                  |
| ■ Commonwealth marine reserves network | ■ Nature Reserve                 |
| ■ DEC Marine conservation reserve      |                                  |
| ■ 5(1)(g) Reserve                      |                                  |





# Results overview



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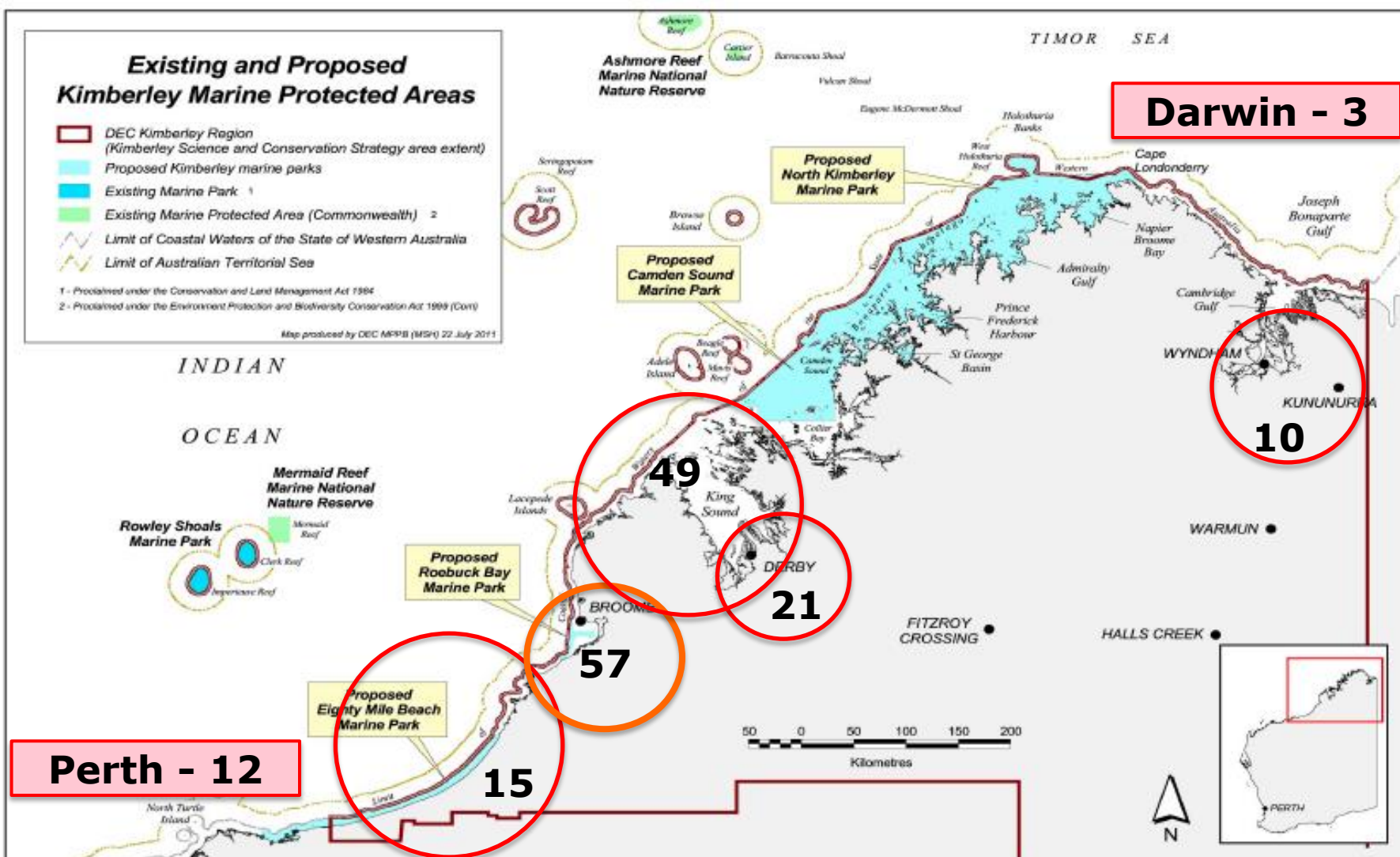
- 167 interviews (232 people), with 5 months in the field
- Transcribed interviews 'coded' to identify emergent values (value definitions not imposed)
- 986 polygons drawn by respondents
- 8 Aboriginal groups contributed to/engaged in the research



# 167 interviews in 2013



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# Interviews with:



Aboriginal traditional owners  
& rangers (30)

Residents (Aboriginal & non-  
Aboriginal) (27)

Commercial fishing (3)

Aquaculture (4)

Recreation fishing groups (4)

Mining, oil, gas & energy (3)

Marine transport, servicing &  
ports (5)

Tourists (33)

Tourism industry (14)

Local government (3)

State government (inc.  
Department of Parks &  
Wildlife (11)

Federal government (1)

Environmental non-  
government organisations (7)

Aviation (6)

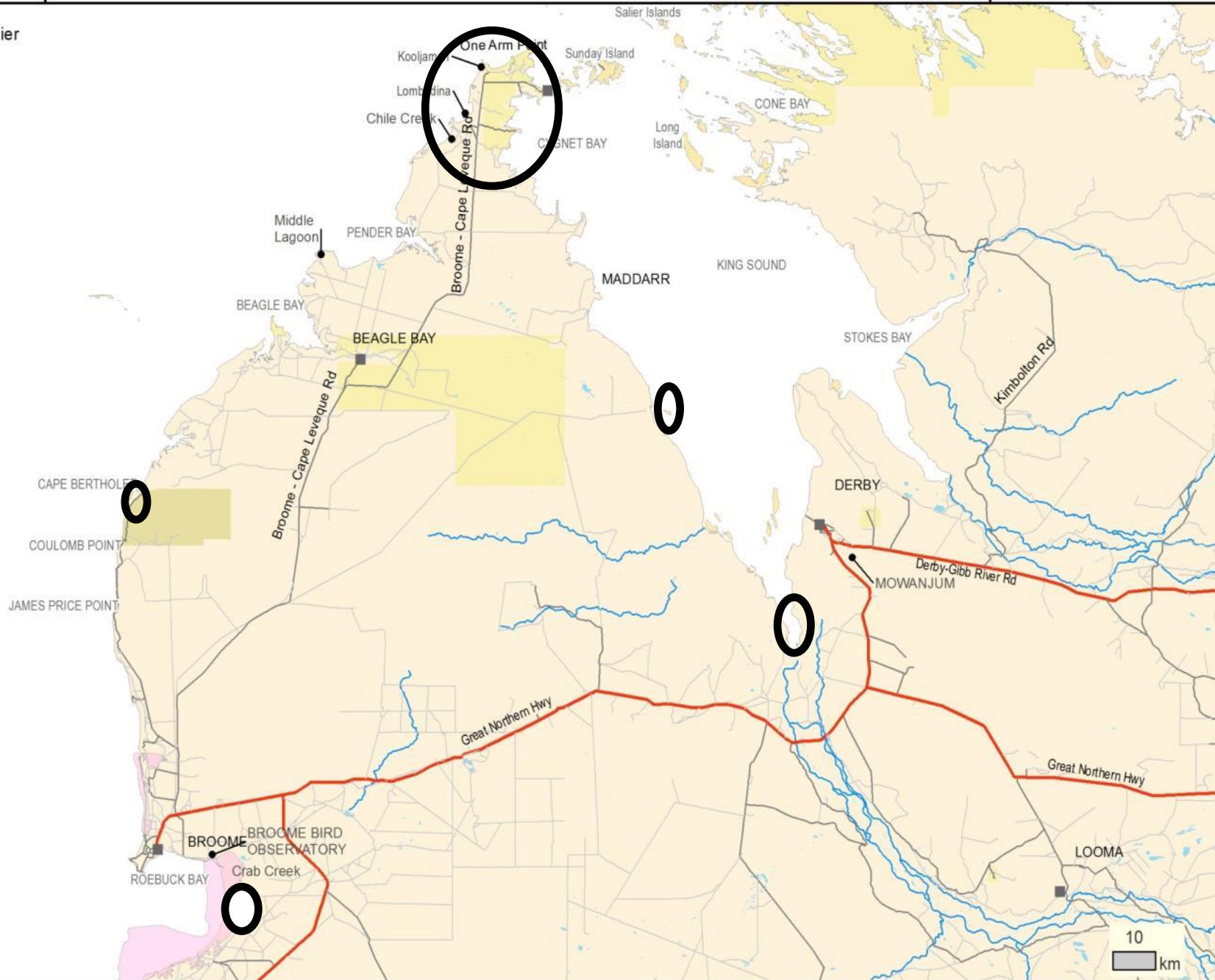
Yatchies (12)

Other (4)

122°0'0"E

124°0'0"E

M5\_T Dampier

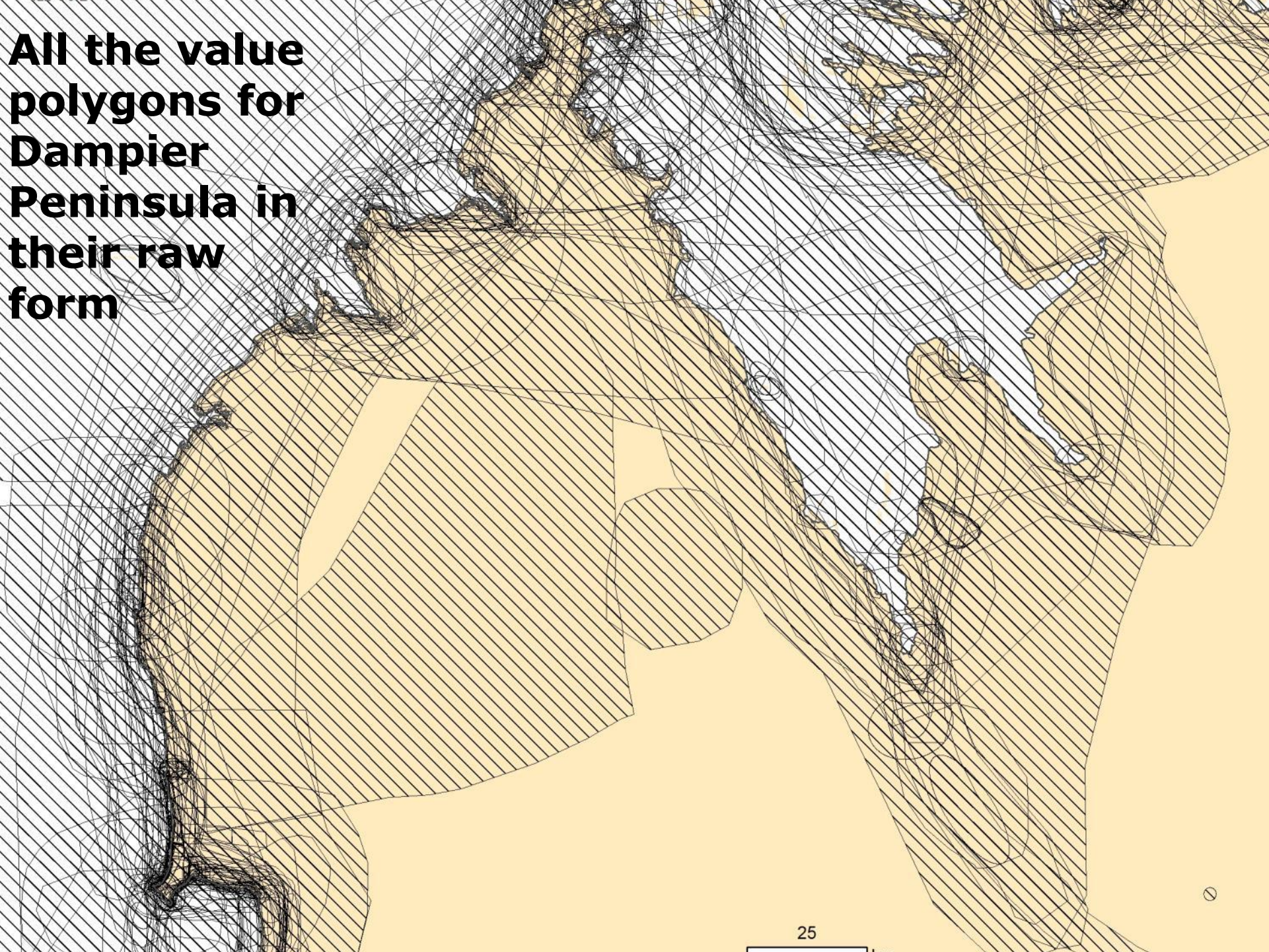


18°0'0"S

10

km

**All the value  
polygons for  
Dampier  
Peninsula in  
their raw  
form**



Value	Definition
<i>Direct use, non-consumptive values</i>	
1. Physical landscape (77%)	Valued aspects of the physical landscape including 'aesthetics', 'wilderness', 'remoteness', 'pristine'
2. Aboriginal culture (63%)	Transmission of Aboriginal wisdom, knowledge, traditions, way of life
3. Therapeutic (62%)	Places that make people feel physically or mentally better, calm or recharged
4. Social interaction & memories (56%)	Social values of a place e.g. 'family time', 'childhood memories'
5. Recreation – other (62%)	All other recreation opportunities e.g. exploration
6. Experiential (51%)	Personal experience of a place e.g. 'awe inspiring', 'adventure'
7. Learning & research (34%)	Ability to learn from a particular place
8. Historical (19%)	Natural & human history that matters to individual, others, Australia or world
9. Spiritual (11%)	Places that are sacred, religious, unique, or provide deep &/or profound experiences of nature. Does not include Aboriginal culture.
<i>Direct use, consumptive values</i>	
10. Recreation – camping (58%)	Camping opportunities
11. Recreation – fishing (54%)	Fishing & other gathering of marine life
12. Subsistence (44%)	Places providing for basic human needs such as subsistence food collection & fresh water provision; includes Aboriginal hunting
13. Economic – tourism (36%)	Relating to tourism activity
14. Economic – commercial fishing (24%)	Values derived from commercial fishing, pearling or other aquaculture
<i>Indirect use values</i>	
15. Biodiversity (80%)	Presence of a range of plants, animals etc e.g. 'wetlands', 'turtles', 'whales'
<i>Non-use values</i>	
16. Bequest (7%)	Ability for future generations to know landscapes & habitats as they are now
17. Existence (4%)	Knowing that a particular place exists, regardless of having been to a place

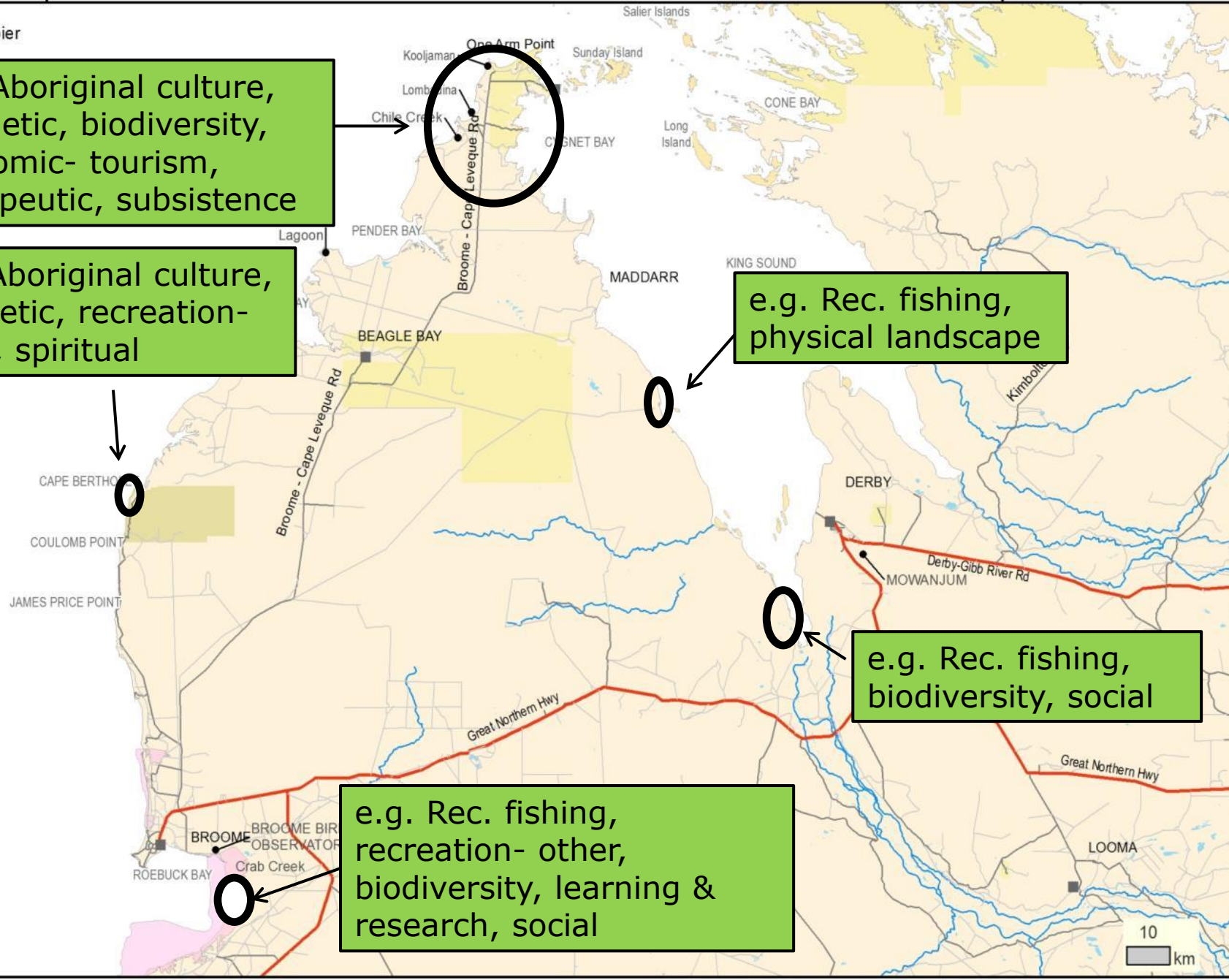
e.g. Aboriginal culture, aesthetic, biodiversity, economic- tourism, therapeutic, subsistence

e.g. Aboriginal culture, aesthetic, recreation- other, spiritual

e.g. Rec. fishing, physical landscape

e.g. Rec. fishing, biodiversity, social

e.g. Rec. fishing, recreation- other, biodiversity, learning & research, social



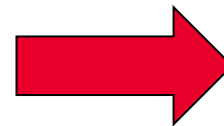
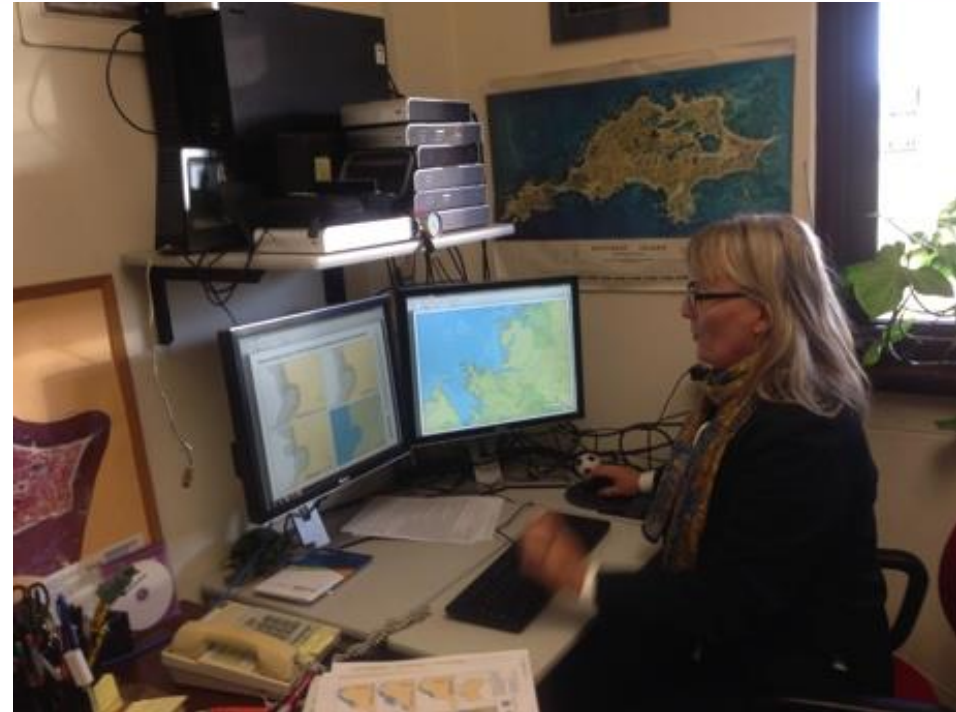
# Heat maps

Digitisation of all polygons

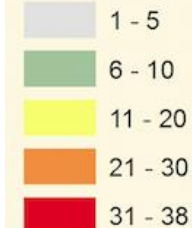
Assignment of values to polygons

Development of a heat map for each value by counting overlapping polygons

Assign colours to show counts



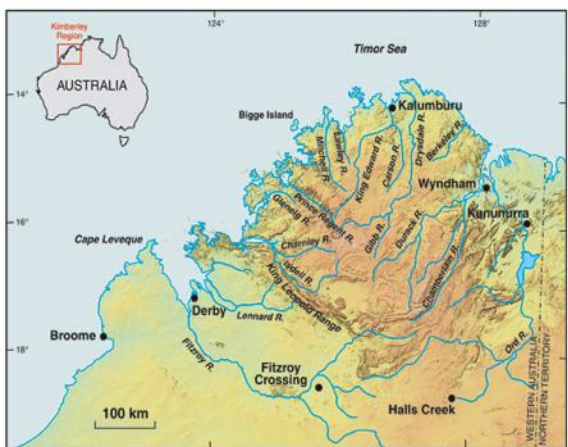
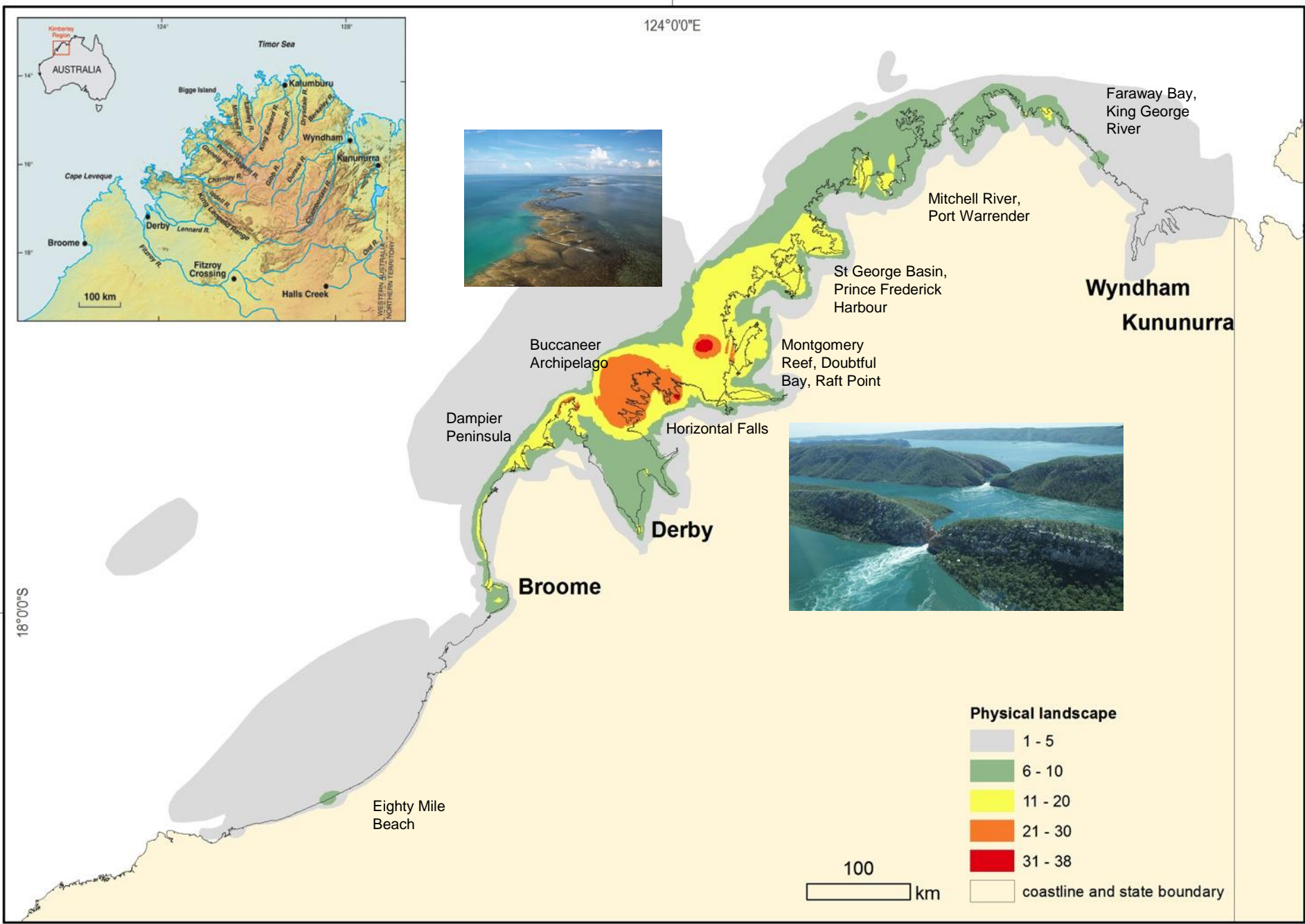
## Physical landscape



coastline and state boundary

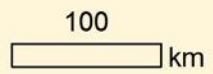
i.e. 11-20  
people  
indicated  
this 'space'  
was valued

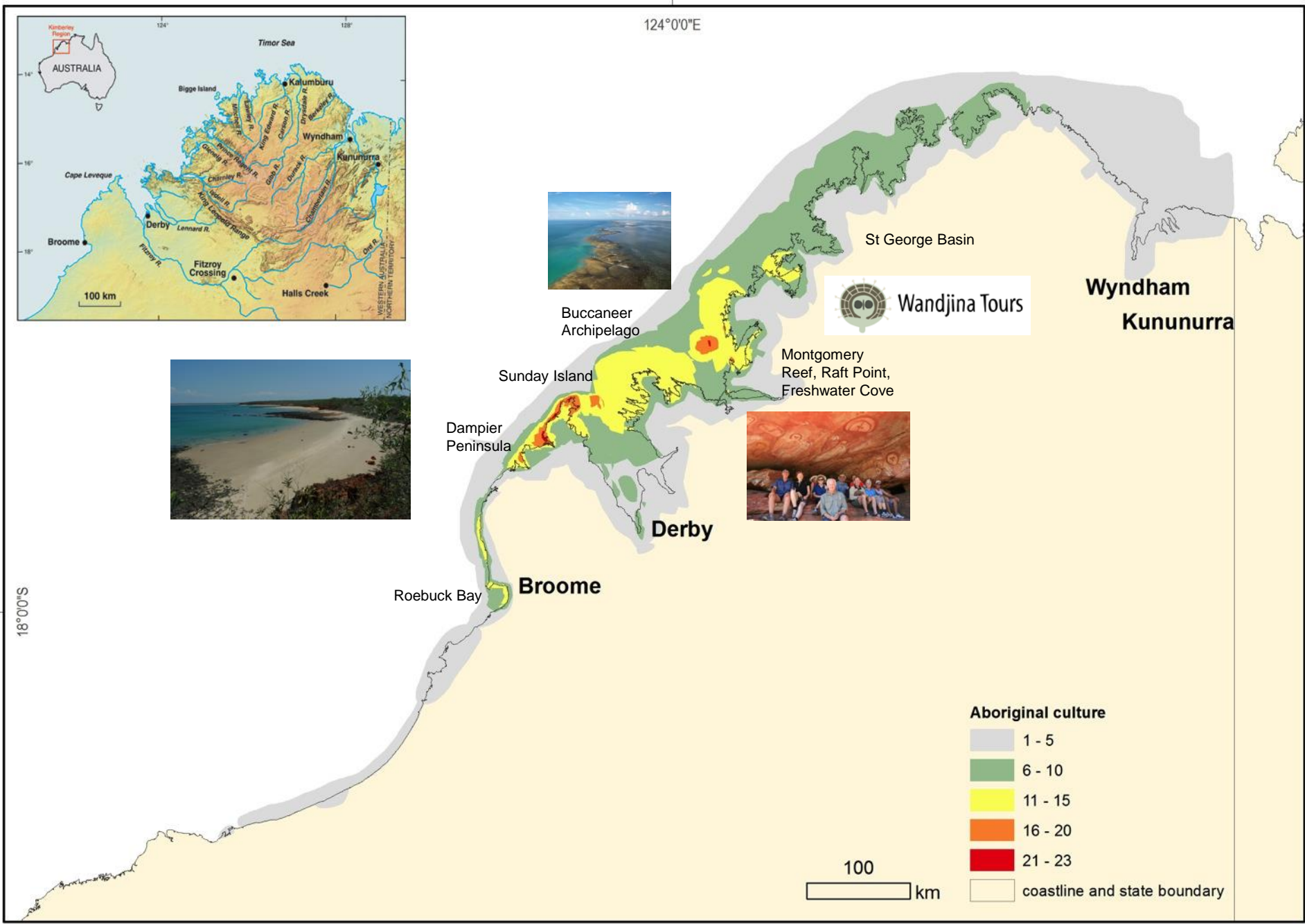




124°0'0"E

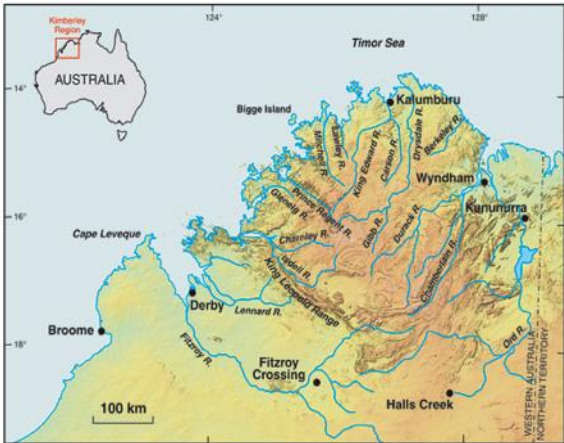
18°0'0"S





124°00'E

18°00'S



Buccaneer Archipelago



Sunday Island



Montgomery Reef, Raft Point, Freshwater Cove



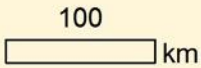
St George Basin

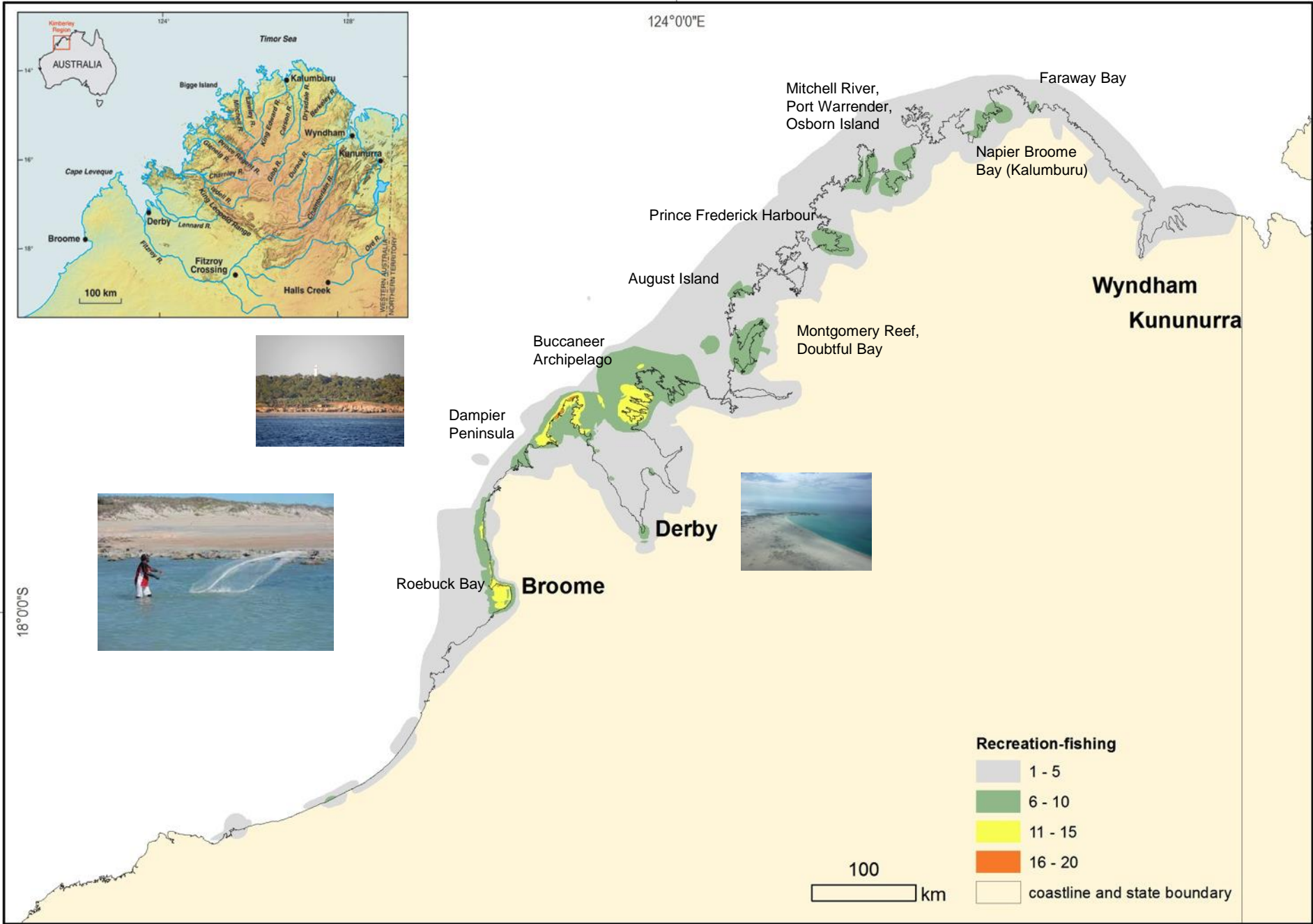
Wyndham  
Kununurra

Dampier Peninsula

Derby

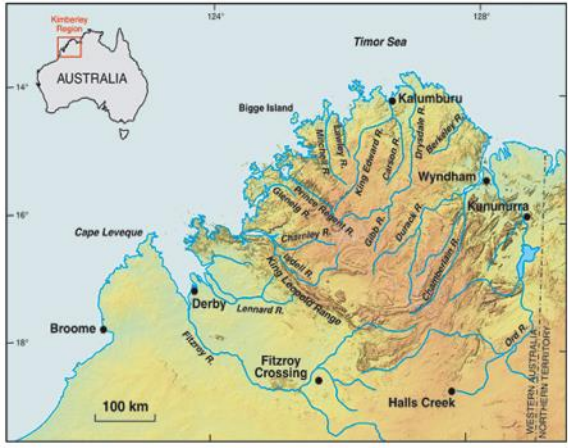
Roebuck Bay  
**Broome**





124°0'0"E

18°0'0"S



**Recreation-fishing**

- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20

coastline and state boundary

100  
km

Timor Sea

Bigge Island

Kalumburu

Wyndham

Kununurra

Cape Leveque

Derby

Lennard R.

Fitzroy Crossing

Halls Creek

One R.

Mitchell River, Port Warrender, Osborn Island

Faraway Bay

Napier Broome Bay (Kalumburu)

Prince Frederick Harbour

August Island

Wyndham

Kununurra

Buccaneer Archipelago

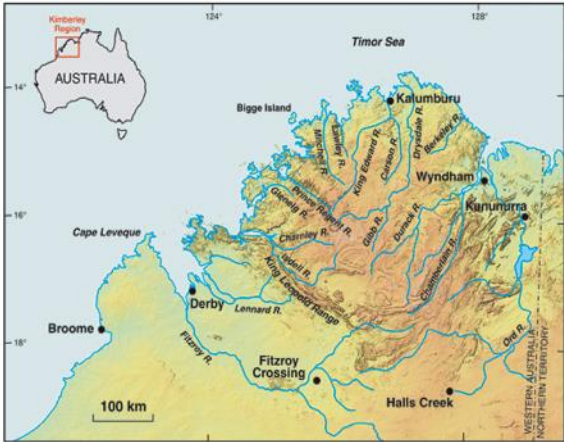
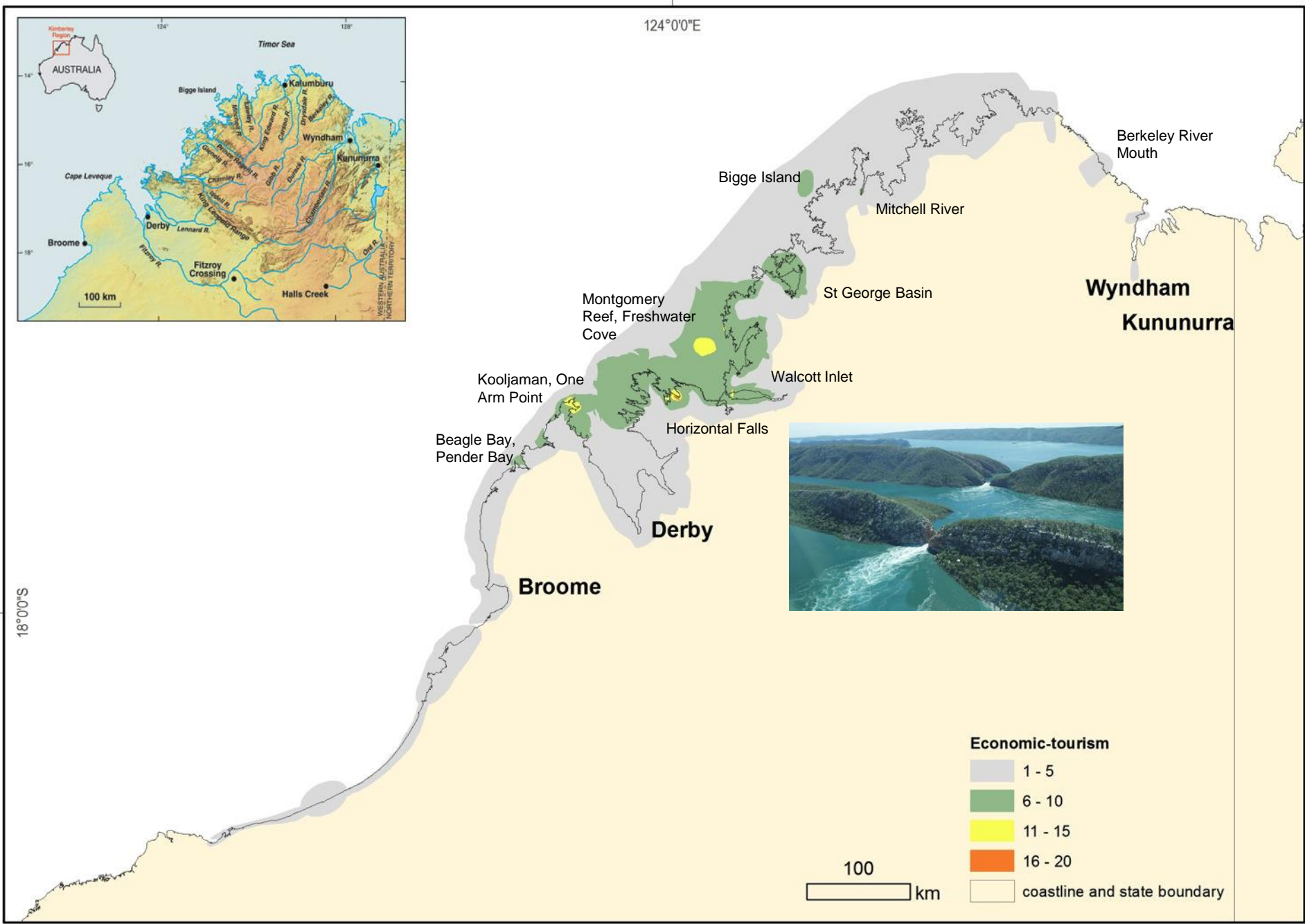
Montgomery Reef, Doubtful Bay

Dampier Peninsula

Derby

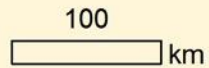
Roebuck Bay

Broome

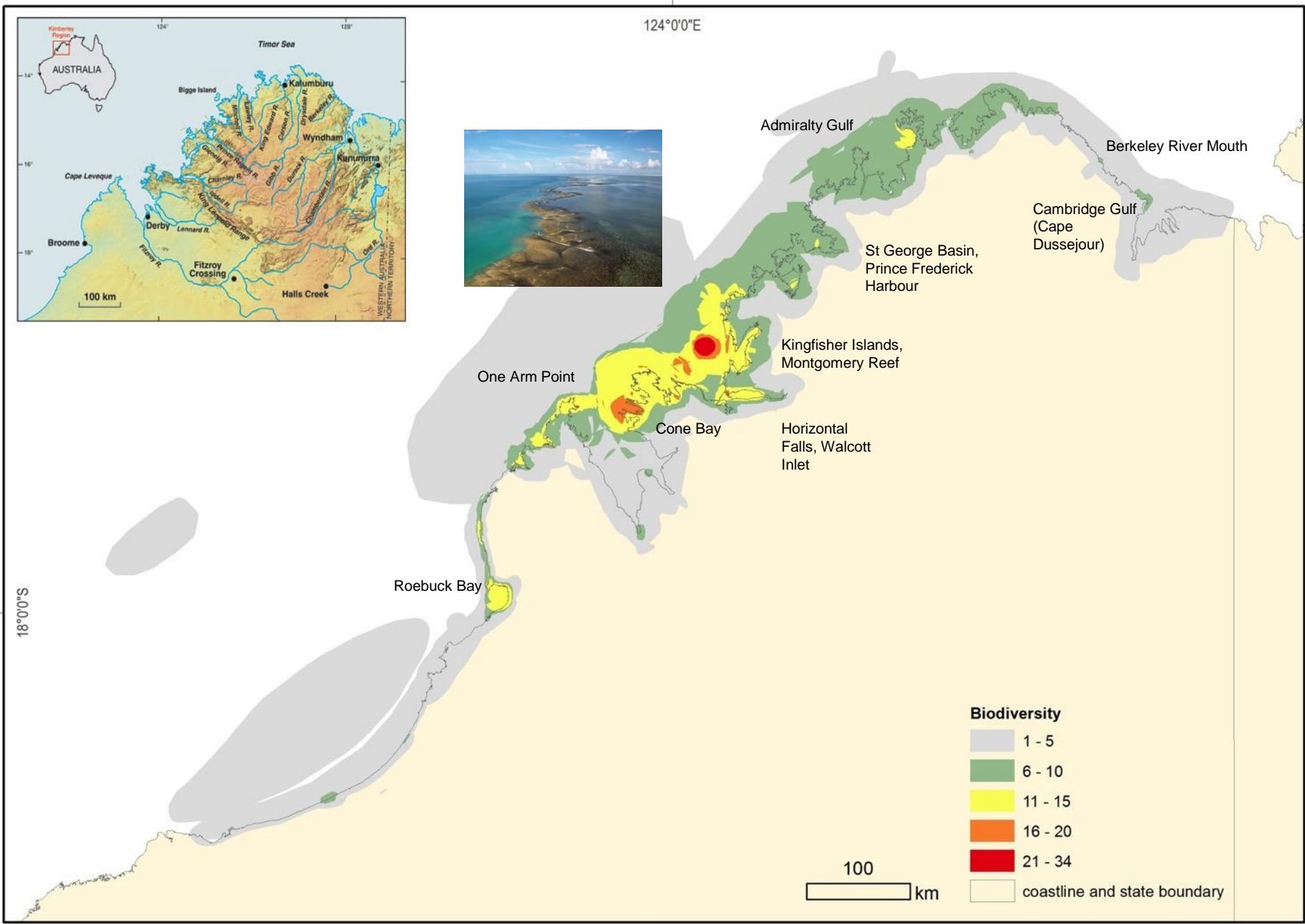


**Economic-tourism**

- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20

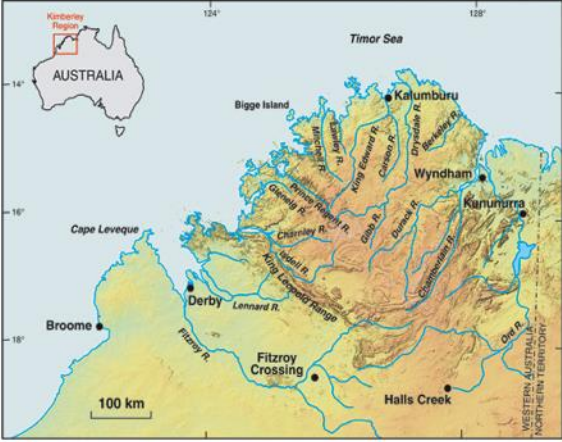


coastline and state boundary



124°0'0"E

18°0'0"S



Admiralty Gulf  
Berkeley River Mouth

Cambridge Gulf  
(Cape Dussejour)

St George Basin,  
Prince Frederick  
Harbour

Kingfisher Islands,  
Montgomery Reef

One Arm Point

Cone Bay

Horizontal  
Falls, Walcott  
Inlet

Roebuck Bay

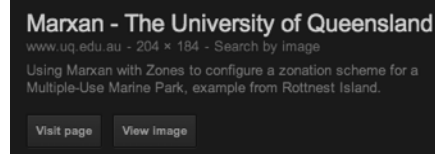
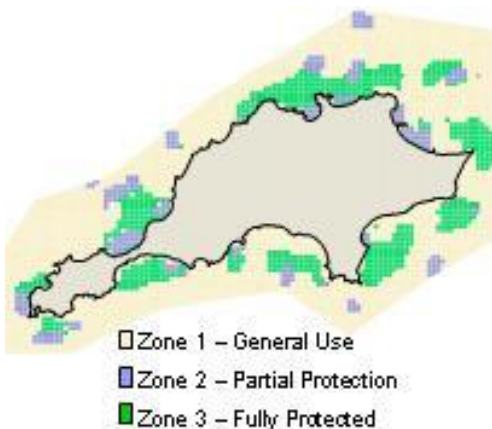
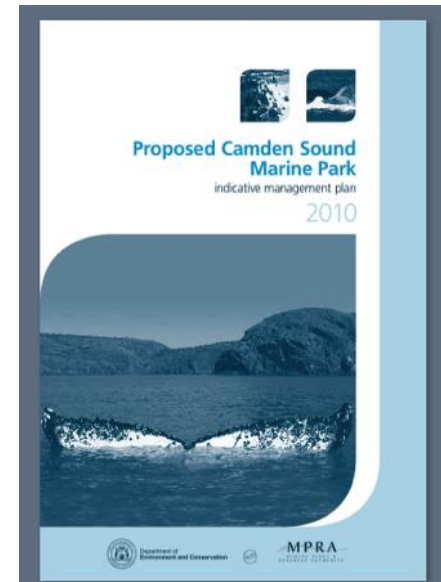
**Biodiversity**

- 1 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- 21 - 34

100 km  
coastline and state boundary

# Uses of data

- Values information for coastal & marine policy & planning
- Digital data for spatial planning (e.g. for marine parks & zoning)
- “Picture books” for planning & management
- Helping joint management



# WHAT DO YOU VALUE ABOUT THE KIMBERLEY COAST?



We are gathering information on what you value about the Kimberley coast and how you would like to see it managed. The research aims to assist Government to make decisions about the coast, now and into the future.

We want to hear from as many different people as possible through our online survey:

<http://www.landscapemap2.org/kimberley>

The survey will take around 25- 30 minutes and your input will be anonymous.

**When you finish you can choose a \$10 gift as our way of saying thanks for your help.**

For further information, contact Dr. Jennifer Strickland-Munro  
([J.Strickland-Munro@murdoch.edu.au](mailto:J.Strickland-Munro@murdoch.edu.au)).