PRELIMINARY FEEDBACK FOR WESTERN YORKE PENINSULA MARINE PARK LOCAL ADVISORY GROUP TO ASSIST WITH MEETING ON 14TH MAY 2011

Rapid Assessment on Comprehensive, Adequate and Representative (CAR) Principles for the Southern Spencer Gulf (Marine Park 12, Yorke Peninsula) suggested zoning options

Overview

DENR has undertaken a rapid assessment of the CAR principles for the possible sanctuary zone options for the Southern Spencer Gulf Marine Park suggested by community and MPLAG members at workshops and through discussions following the Marine Park Local Advisory Group meeting on the 23rd of February 2011.

Community feedback and MPLAG advice has resulted in one sanctuary zone option with zones being suggested at 9 locations within the marine park (see Figure 1).

This rapid assessment[1] helps to measure the zoning option against the core biophysical principles of:

Comprehensive: To be comprehensive, examples of all ecosystems and habitats within the marine park should be included within sanctuary zones.

Adequate: To be adequate, the marine parks system should provide for the maintenance of the ecological viability and integrity of populations, species and communities

Representative: To be representative, the system of sanctuary zones should reflect the biodiversity and variability naturally present in the marine park.

MPLAGs should seek to apply the full suite of 14 design principles in any further zoning advice generated.

This assessment has been carried out for the Yorke Peninsula portion of the Marine Park to advise the Western Yorke Peninsula MPLAG. A separate assessment has been carried out for the Kangaroo Island portion.

How to use this document

The rapid assessment shows the range of environmental values/features that are included in MPLAG zoning options and that are omitted. It also shows those features that are well represented and those that are under-represented. **For each under-represented feature, the maps in Appendix C show alternative locations where the feature is mapped.**

The rapid assessment also provides a measure of each suggested sanctuary zone to assist consideration of the adequacy of those zones. **Note: It is better to have fewer, larger sanctuary zones than many smaller ones**.

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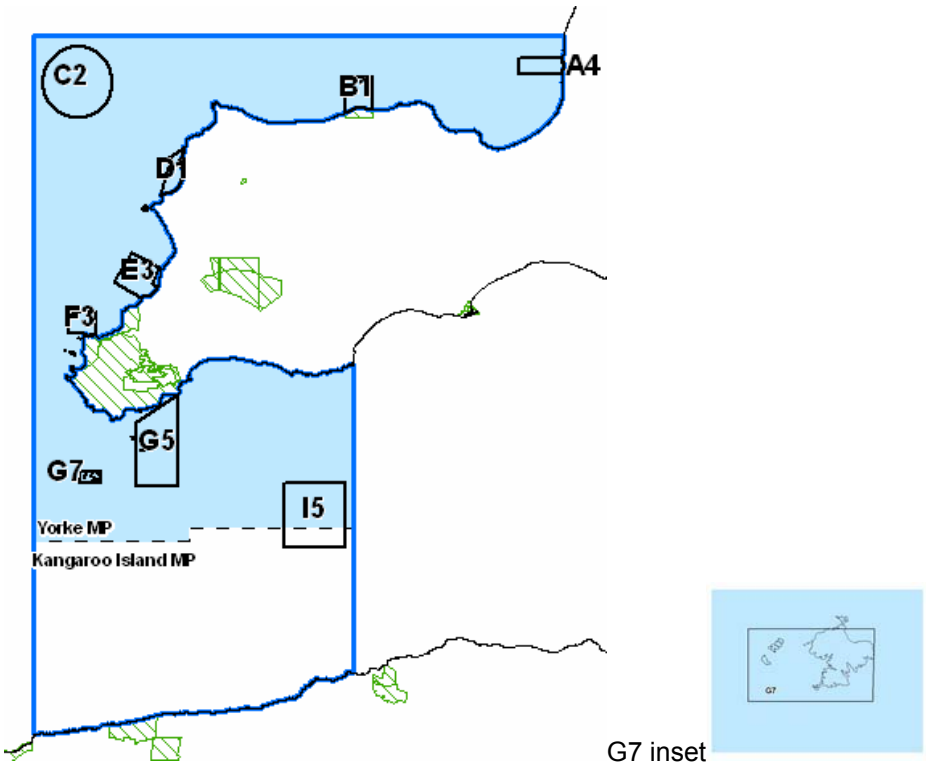
[1] GIS processing formed the basis of the rapid assessments. A number of data layers captured at various scales were used in the analysis, these include layers such as: state and national benthic mapping; coastal shoreline types; and sea lion haul out and breeding locations. Procedures such as intersections, unions, frequency analysis as well as manual measurements were used in this assessment. All information is subject to the scale and accuracy of the data used.

Possible zoning options for marine park 12 (Yorke Peninsula section)

Figure 1: Zoning Option 1 (12% of MP)



Note:

- The blue shaded area identifies the region the assessment was undertaken on.
- There is a suggested zone outside of the Park, the information relating to this zone can be viewed in Appendix D
- An alternative zone has been suggested for G7, due to time constraints this was not assessed in this rapid assessment.

Comprehensiveness

Each option was assessed for the inclusion of examples of shoreline types and seafloor (benthic) habitats in the suggested sanctuary zones.

The zoning option includes the following shoreline and seafloor (benthic) habitats:

- ✓ Soft bottom habitat
- ✓ Macroalgae
- ✓ Rocky reef
- ✓ Seagrass
- ✓ Unmapped habitat
- ✓ Bedrock platform
- ✓ Coarse sand beach

The zoning option does not include the following shoreline and seafloor (benthic) habitats:

- × Boulder beach
- × Cliff
- × Fine sand beach

Representativeness

Each option was assessed against the proportion of environmental values[2] represented in the suggested sanctuary zones. To consider the full diversity and variability of the coastal and marine features, this assessment included benthic habitat types at different depths, shoreline types at different exposures and a range of other ecologically important features. Each zoning option was assessed for the proportion (as a %) of environmental values represented in the suggested sanctuary zones. Proportions were broken into 4 categories: ≥20%, between 10% and 19%, <10% and 0%.

Environmental values represented within the possible zoning options as a proportion of their availability within the park

Environmental values that are represented >20%:

- ✓ Australian sealion (haul out)
- ✓ New Zealand Fur seal (breeding)
- ✓ Sea bird sites
- ✓ Surveyed reef fish sites
- ✓ Offshore Islands
- ✓ Emergent land
- ✓ Macroalgae (-10 to -30m)
- ✓ Rocky reef (0 to -10m)

Environmental values that are represented between 10-19%:

- ✓ Cosema endangered macroalgae
- ✓ Soft bottom habitat (0 to -10m)
- ✓ Soft bottom habitat (-10 to -30m)
- ✓ Rocky reef (-10 to -30m)
- ✓ Unmapped (-10 to -30m)
- ✓ Unmapped (-30 to -50m)
- ✓ Bedrock platform (sheltered)

Environmental values that are represented <10%:

- ✓ Coastal wader sites
- ✓ Macroalgae (0 to -10m)
- ✓ Rocky reef (-30 to -50m)
- ✓ Seagrass (0 to -10m)
- ✓ Seagrass (-10 to -30m)
- ✓ Unmapped (0 to -10m)
- ✓ Unmapped (>50m)
- ✓ Coarse sand beach (sheltered)

Environmental values that are not represented (0%):

- × Soft bottom habitat (-30 to -50m)
- × Macroalgae (-30 to -50m)
- × Boulder beach (sheltered)
- × Bedrock platform (exposed)
- × Bedrock platform (moderate)
- × Cliff (exposed)
- × Cliff (moderate)
- × Cliff (sheltered)
- × Coarse sand beach (moderate)
- × Fine sand beach (exposed)
- × Fine sand beach (moderate)
- × Fine sand beach (sheltered)

Note:

- A more detailed assessment of environmental values and the percentage included in Zoning Option 1 can be viewed in Appendix A.
- Environmental values included within each suggested individual zone can be viewed in Appendix B.

[2] In this assessment an environmental value include seafloor habitats and shoreline habitats and ecologically important features available within the outer boundary.

- The locations of environmental values that are not included or are under represented are shown in Appendix C.

Adequacy

Each of the suggested zones was measured for their approximate lengths (from coast to offshore or longitudinal lengths) and widths (coastline or latitudinal lengths), these are shown in Table 1. The total area of each of the four options was then calculated, as shown in Table 2.

Note: The guideline is that a zone should include whole habitats or areas with minimum linear dimensions of 7-10 km (or 5km where State waters are limited to 3 nautical miles). Smaller dimensions are likely to have a value but not for all organisms.

Table 1. Approximate length, width and size of each suggested zone.

Zone	From the coast to offshore (length) (km)	Coastline along shore (width) (km)	Size of zone (km^2)
A1	7	6	35
A4	5.5	2	12
B1	5	1.5	15
C2	8	8	78
D1 (part a) Existing Rock Lobster Sanctuary	2	8	10
D1 (part b) Daly Head Islet	500m	500m	<1
E3	5	5	20
F3	3	3	10
G5	13	5	54
G7	2	2	3
I5 (entire zone)	9	7	63

Area of Zoning Option 1

One zoning option was developed with zones suggested at 9 locations.

The total area (km^2) and the percentage sanctuary zones for the option can be seen in Table 2.

Table 2. Comparison of the total area and percentage of sanctuary zones in each zoning option (rounded to the nearest whole number).

Suggested zoning option	Total area of sanctuary zones in the Yorke Peninsula portion of Marine Park 12 (km^2)	% of sanctuary zones located in the in the Yorke Peninsula portion of Marine Park 12
1	246	12

Appendix A

Table 3. The percentage of each environmental value included in Zoning Option 1.

Ecological Importance	Option 1 Total in all Zones (%)
Australian Sealion Sites (haulout)	80
New Zealand Fur Seals (breeding)	100
Coastal Waders	8
Sea Birds	55
COSEMA Endangered Macroalgae	11
Surveyed Reef Fish Sites	50
Offshore Islands	50
Emergent Land	80
Underwater Habitats	**Option 1 Total in all Zones (%)**
Soft-bottom Habitat (0 to -10m)	10
Soft-bottom Habitat (-10 to -30m)	10
Soft-bottom Habitat (-30m to -50m)	0
Macroalgae (0 to -10m)	7
Macroalgae (-10m to -30m)	21
Macroalgae (-30m to -50m)	0
Rocky Reef (0 to -10m)	20
Rocky Reef (-10m to -30m)	19
Rocky Reef (-30m to -50m)	<1
Seagrass (0 to -10m)	7
Seagrass (-10m to -30m)	7
Unmapped (0 to -10m)	3
Unmapped (-10m to -30m)	10
Unmapped (-30m to -50m)	15
Unmapped (>-50m)	1
Total	12

Shoreline Habitats	Option 1 Total in all Zones (%)
Boulder Beach (Sheltered)	0
Bedrock Platform (Exposed)	0
Bedrock Platform (Moderate)	0
Bedrock Platform (Sheltered)	18
Cliff (Exposed)	0
Cliff (Moderate)	0
Cliff (Sheltered)	0
Coarse Sand Beach(Moderate)	0
Coarse Sand Beach (Sheltered)	5
Fine Sand Beach (Exposed)	0
Fine Sand Beach (Moderate)	0
Fine Sand Beach (Sheltered)	0

Environmental values represented
Represented ≥20%
Represented between 10-19%
Represented <10%
Not Represented 0%

Note: percentages rounded to the nearest whole number

Appendix B.
Table 4. Environmental values represented in each suggested zone.

Ecological Importance	A4	B1	C2	D1	E3	F3	G5	G7	I5 (entire area)	Total in Marine Park - YP side (count)
Australian Sea lion Sites (haulout)				1			1	2		4
New Zealand Fur Seals (breeding)							1			1
Coastal Waders		1		10		1	2	4		18
Sea Birds				2			2	2		6
COSEMA Endangered Macroalgae						1		2		3
Surveyed Reef Fish Sites							2	2		4
Offshore Islands				1			1	5		7
Emergent Land				1			1	6		8

Underwater Habitats	A4	B1	C2	D1	E3	F3	G5	G7	I5 (entire area)	Total in Marine Park - YP side (km^2)
Soft-bottom Habitat (0 to -10m)	<1	3		1	<1	<1	<1			60
Soft-bottom Habitat (-10 to -30m)				1	3	2	2			72
Soft-bottom Habitat (-30m to -50m)										3
Macroalgae (0 to -10m)	2	<1					<1			30
Macroalgae (-10m to -30m)				<1			2			9
Macroalgae (-30m to -50m)										2
Rocky Reef (0 to -10m)	8			3	1	<1	2			71
Rocky Reef (-10m to -30m)				2	3	<1	13			95
Rocky Reef (-30m to -50m)							<1			15
Seagrass (0 to -10m)		11		1			1			177
Seagrass (-10m to -30m)		<1		1			6			114
Unmapped (0 to -10m)	2						<1	1		86
Unmapped (-10m to -30m)					6	4	4	<1	<1	155
Unmapped (-30m to -50m)			78		6	3	24	1	62	175
Unmapped (>-50m)								1		98

Shoreline Habitats	A4	B1	C2	D1	E3	F3	G5	G7	I5 (entire area)	Total in Marine Park - YP side (km)
Boulder Beach (Sheltered)										<1
Bedrock Platform (Exposed)										8
Bedrock Platform (Moderate)										25
Bedrock Platform (Sheltered)	3									15
Cliff (Exposed)										5
Cliff (Moderate)										15
Cliff (Sheltered)										1
Coarse Sand Beach(Moderate)										10
Coarse Sand Beach (Sheltered)		3								68
Fine Sand Beach (Exposed)										18
Fine Sand Beach (Moderate)										7
Fine Sand Beach (Sheltered)										4

Shore fishing allowed

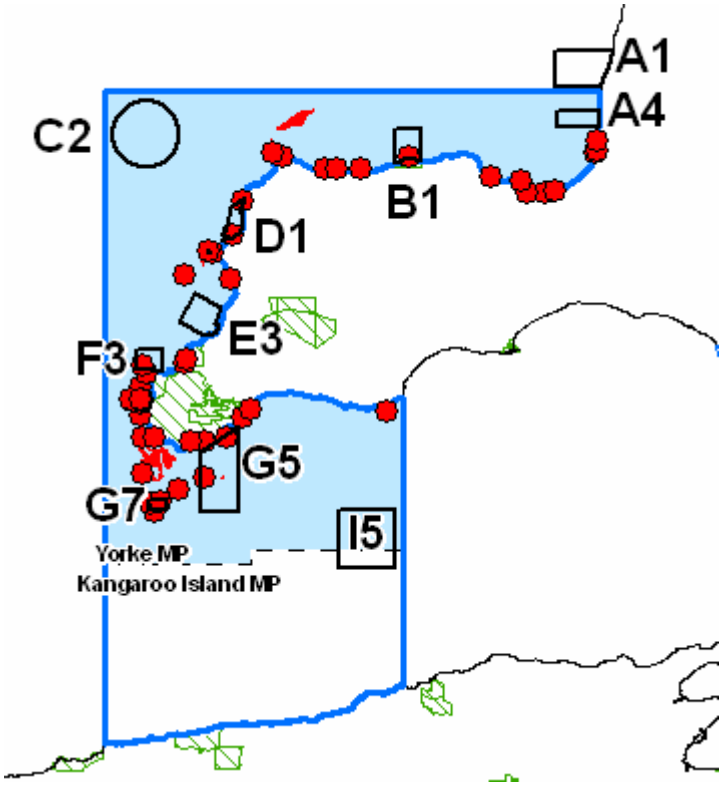
Note: numbers have been rounded to the nearest whole number

Appendix C. Location of the environmental values <10% or not represented.

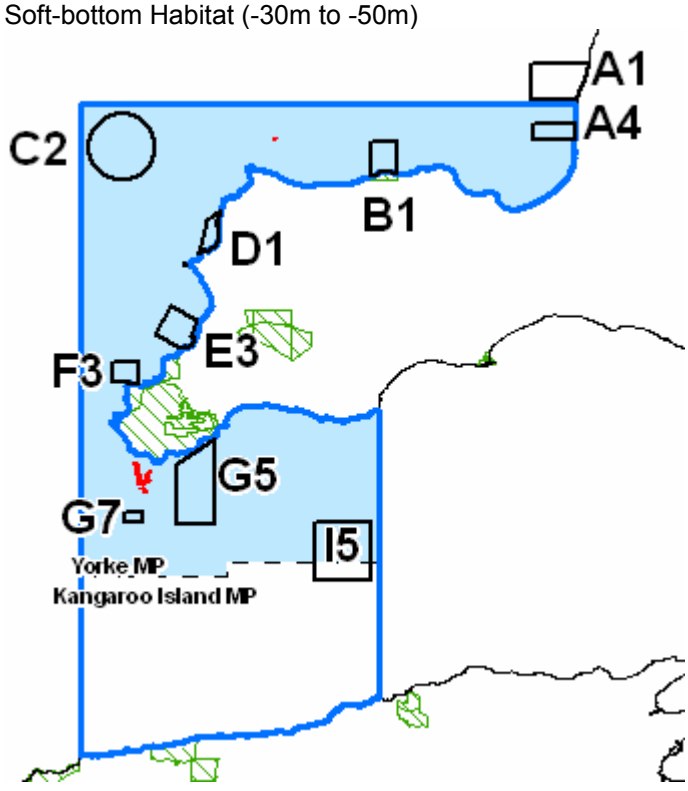
Environmental values are represented in red.

Note: maps are best viewed in colour.

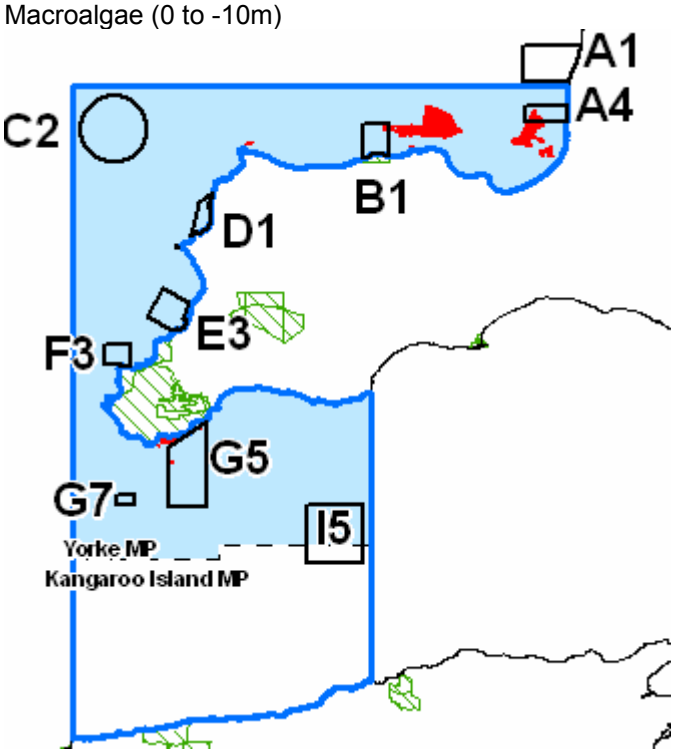
Coastal Waders



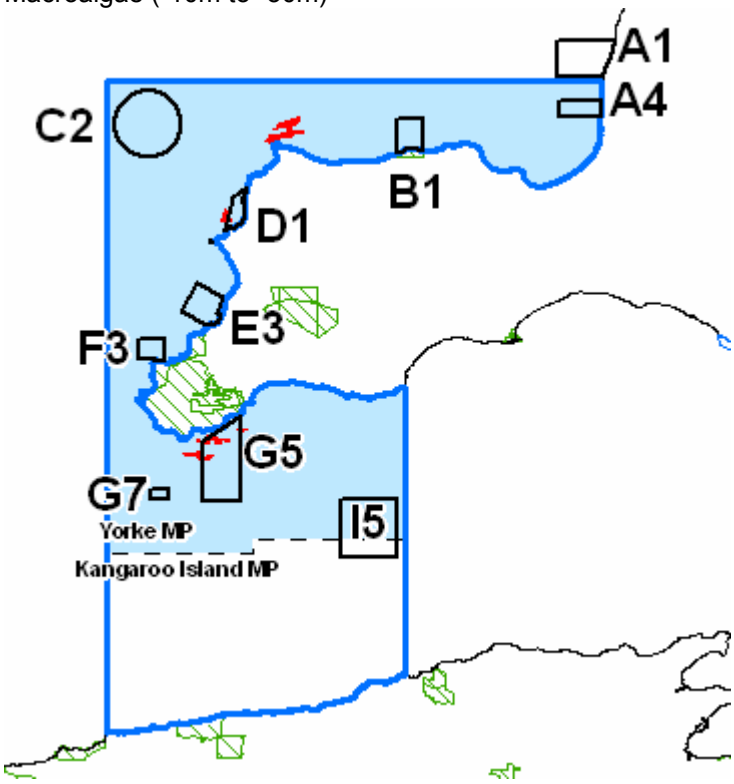
Soft-bottom Habitat (-30m to -50m)



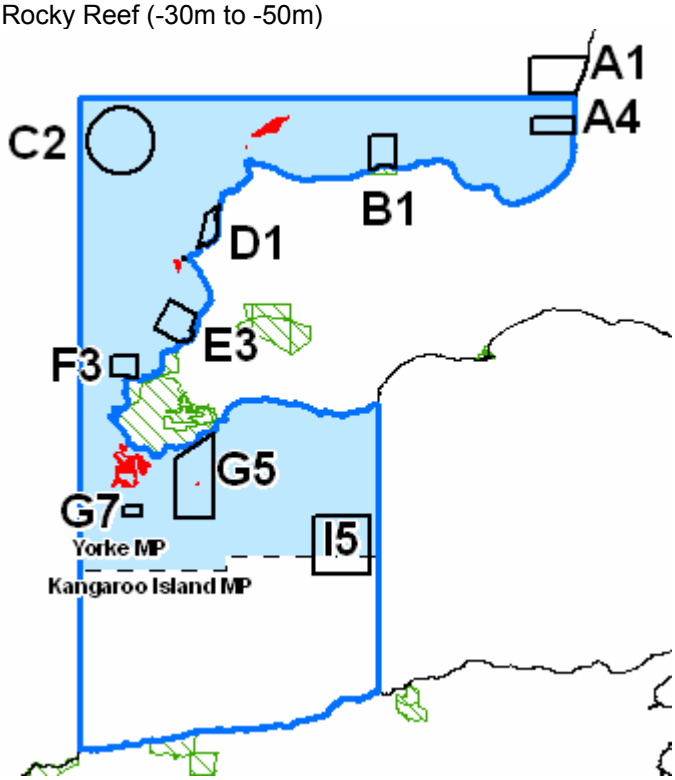
Macroalgae (0 to -10m)



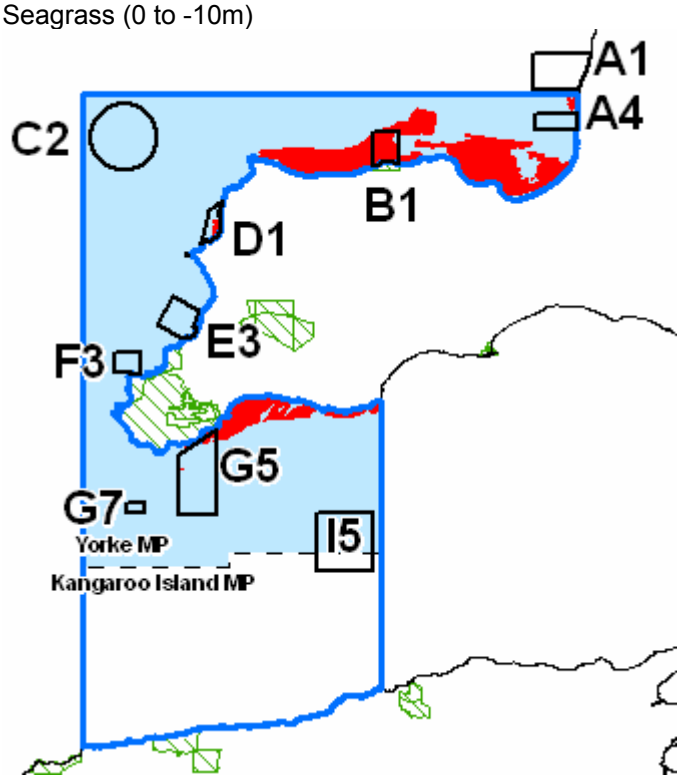
Macroalgae (-10m to -30m)



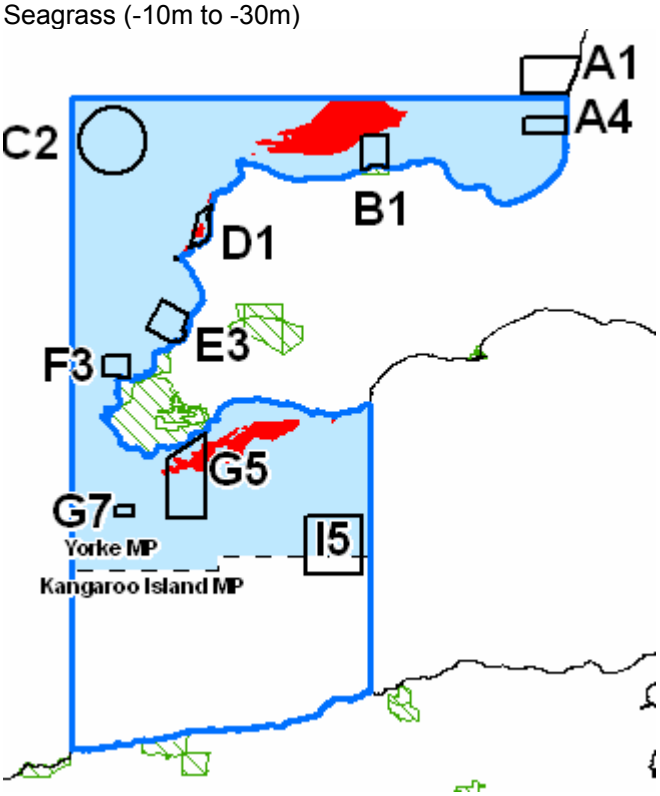
Rocky Reef (-30m to -50m)



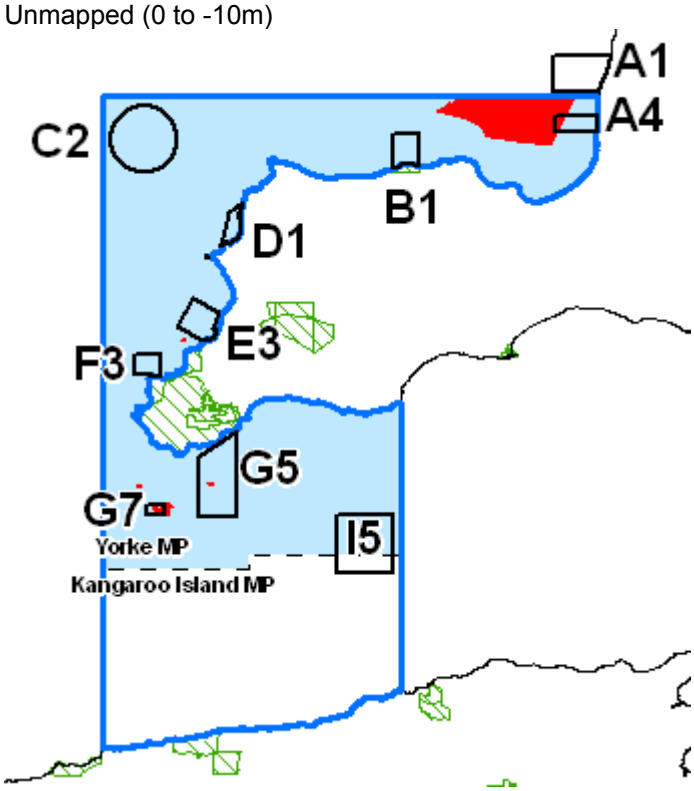
Seagrass (0 to -10m)



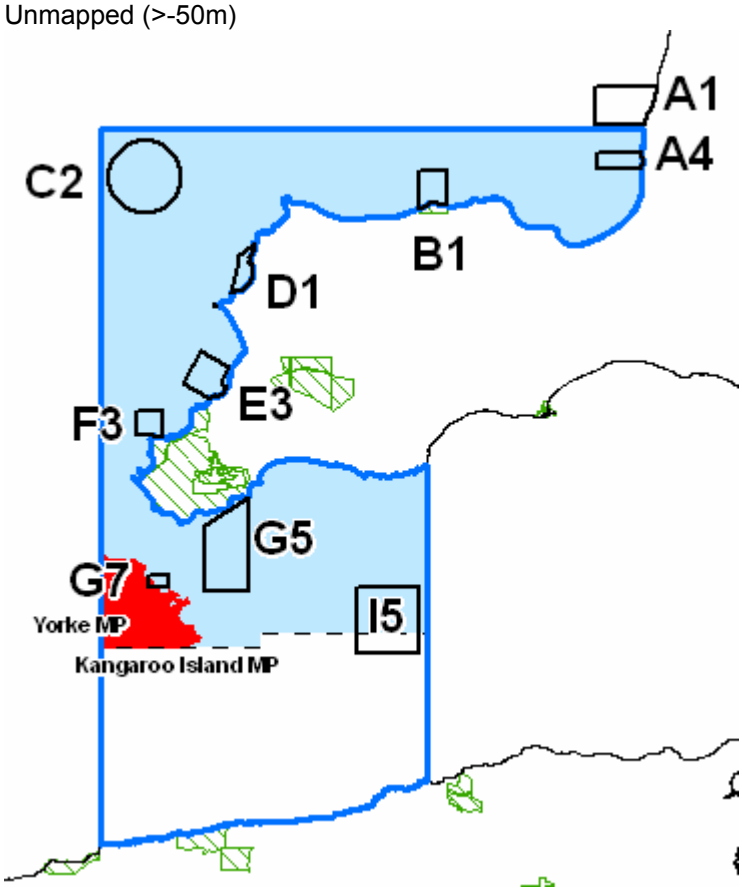
Seagrass (-10m to -30m)



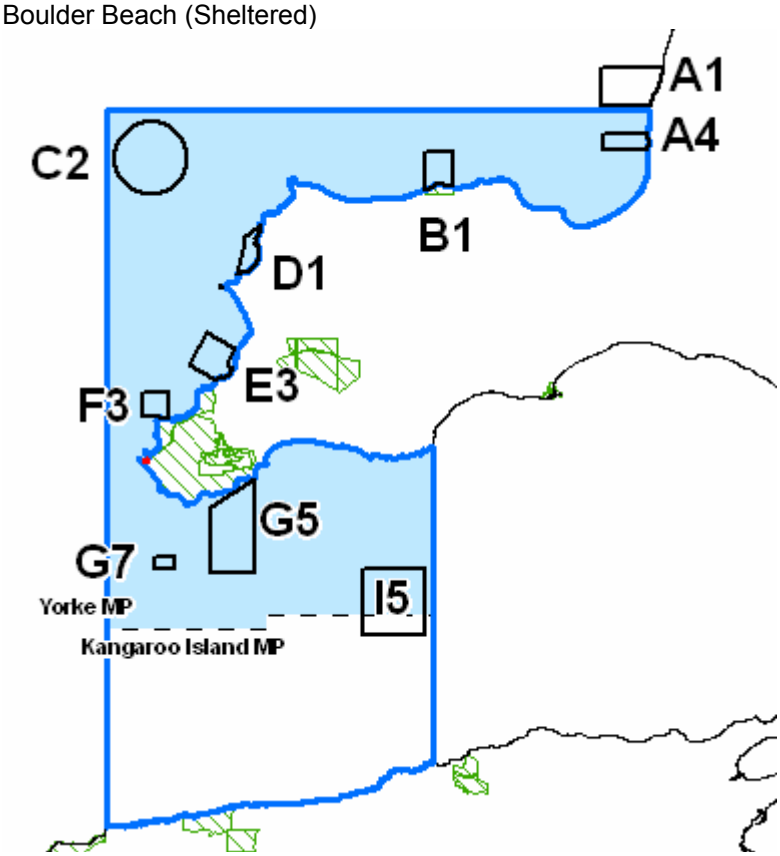
Unmapped (0 to -10m)



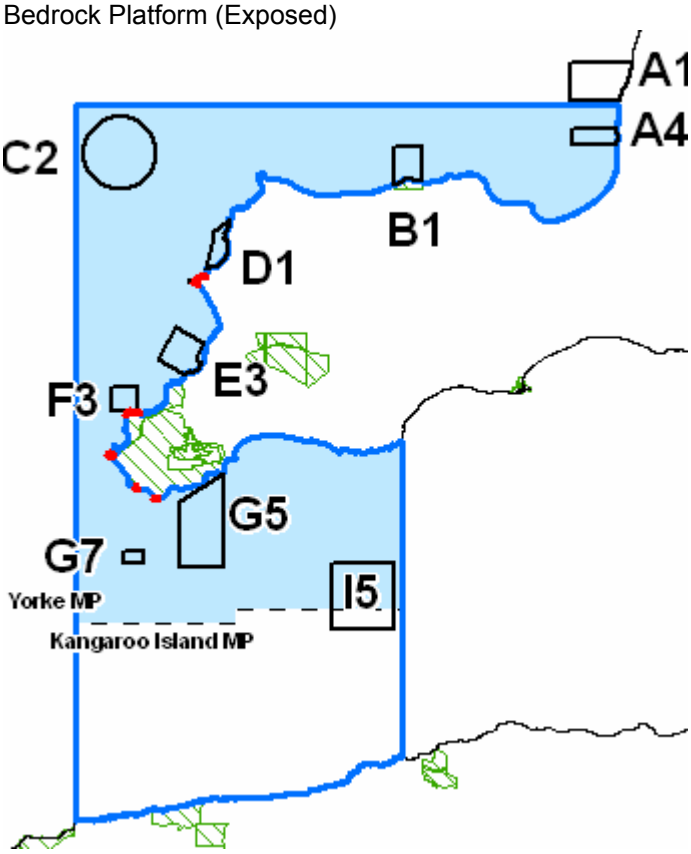
Unmapped (>-50m)



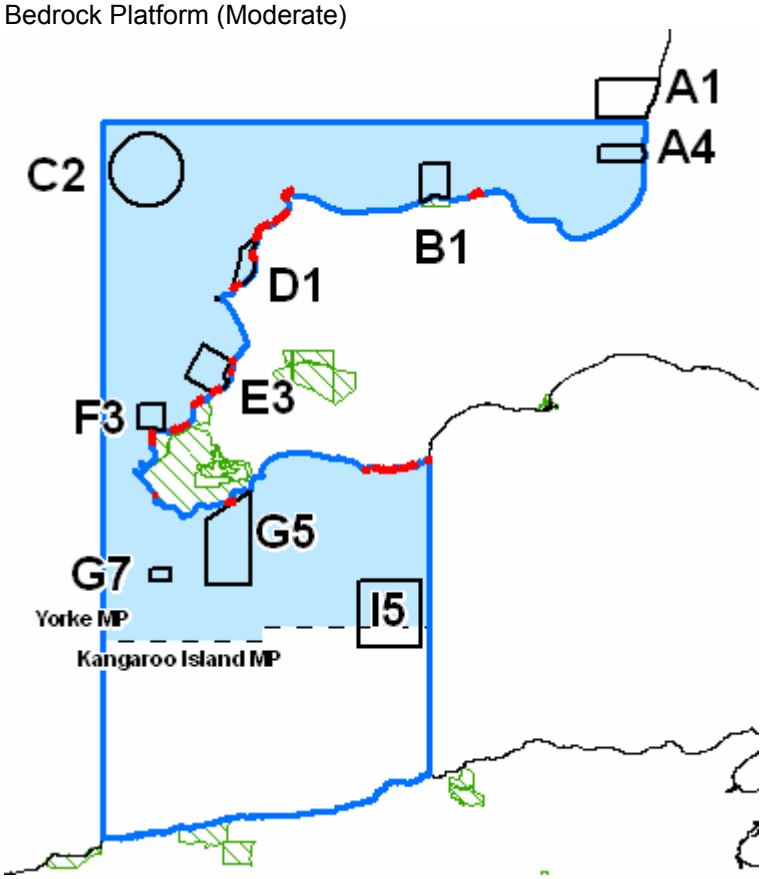
Boulder Beach (Sheltered)



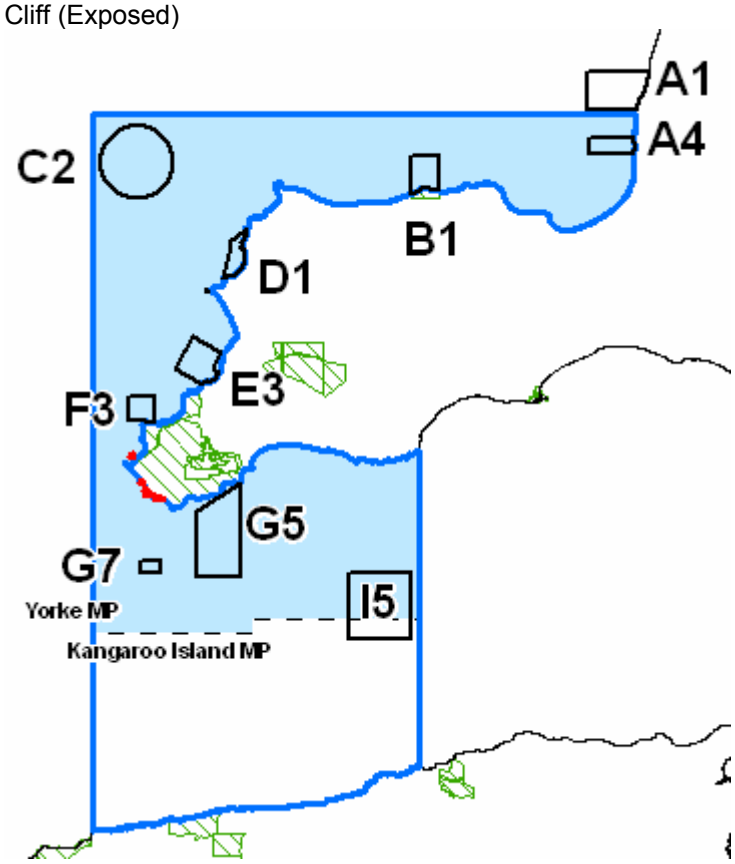
Bedrock Platform (Exposed)



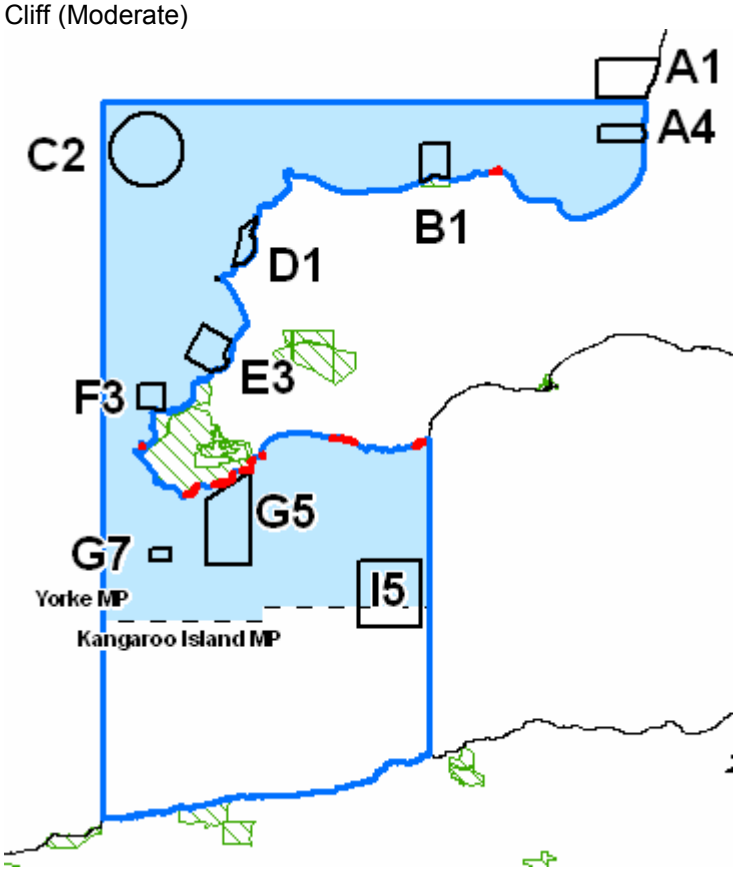
Bedrock Platform (Moderate)



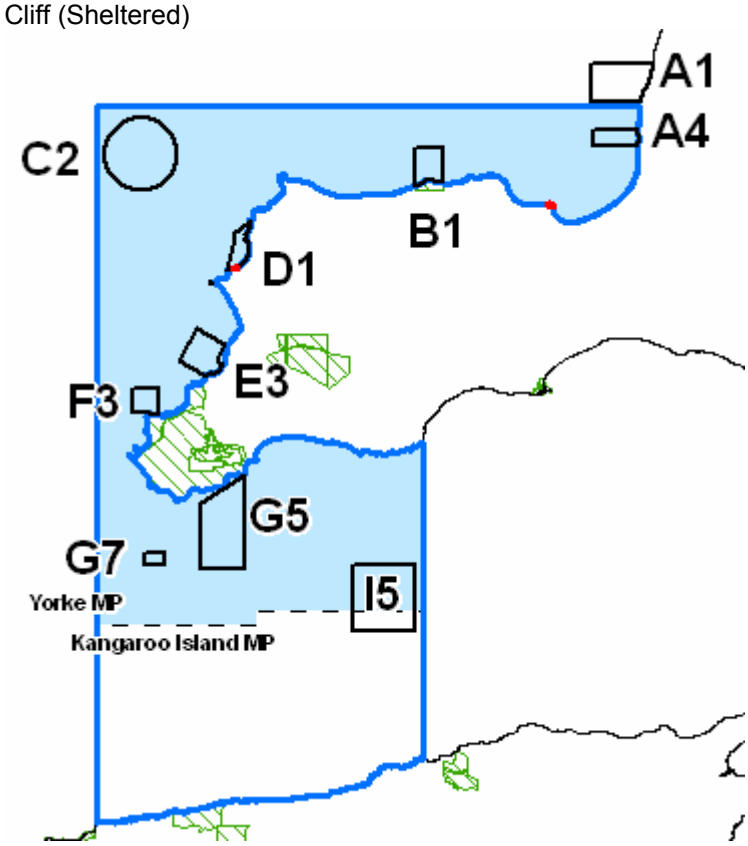
Cliff (Exposed)



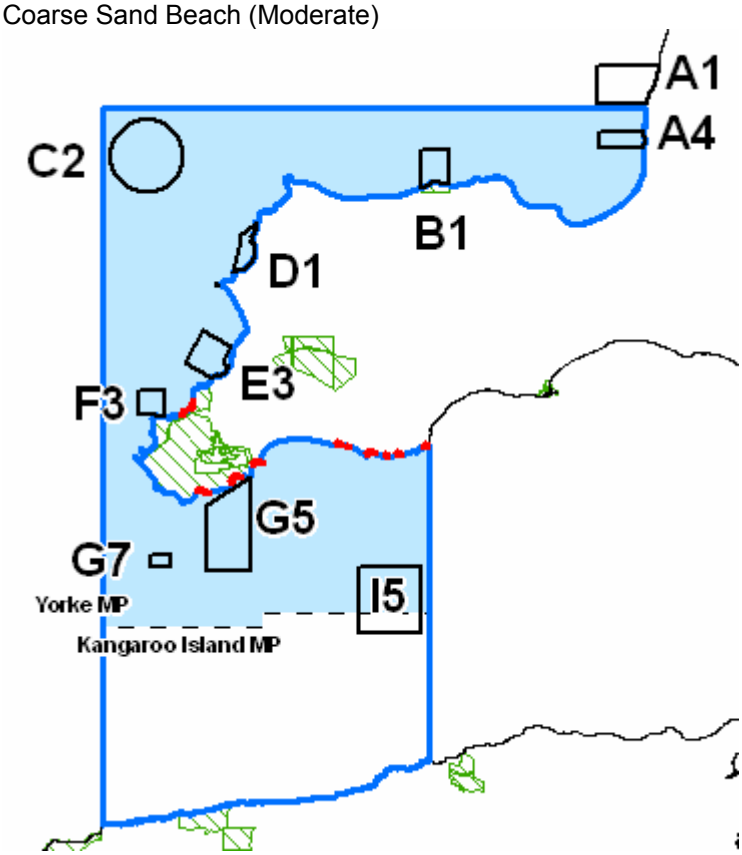
Cliff (Moderate)



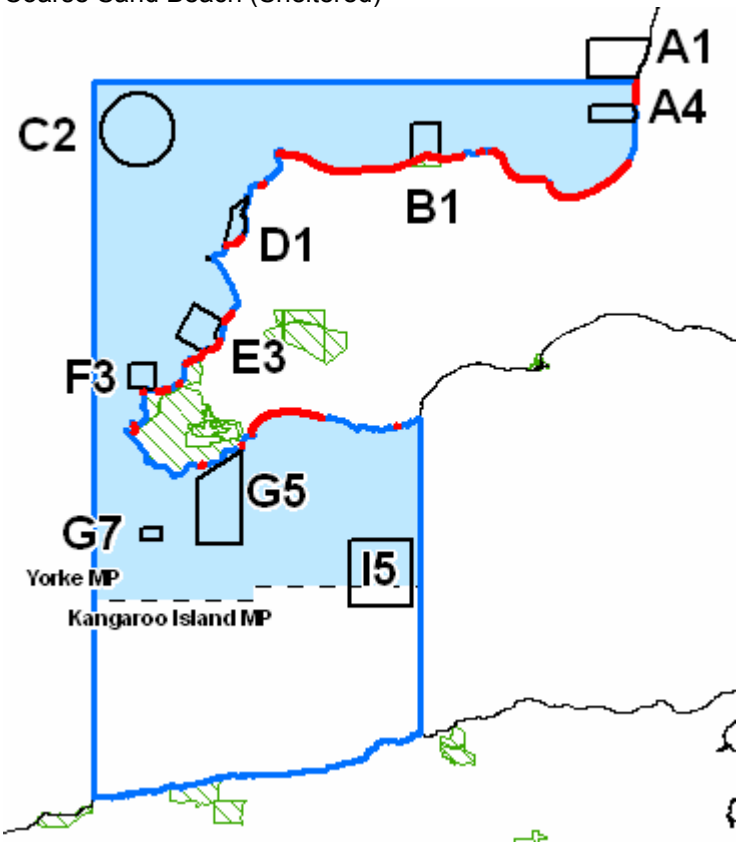
Cliff (Sheltered)



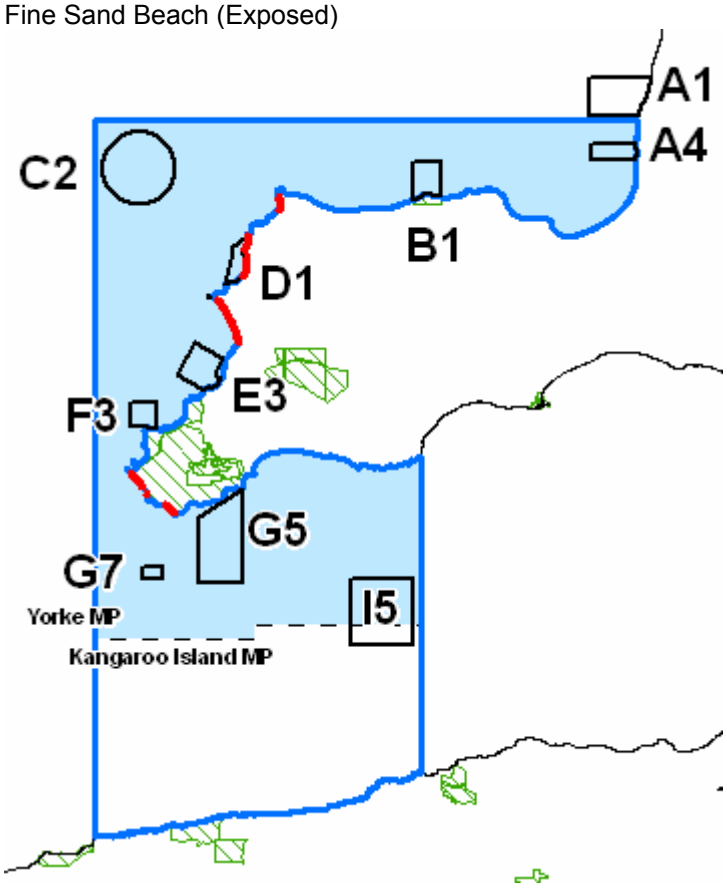
Coarse Sand Beach (Moderate)



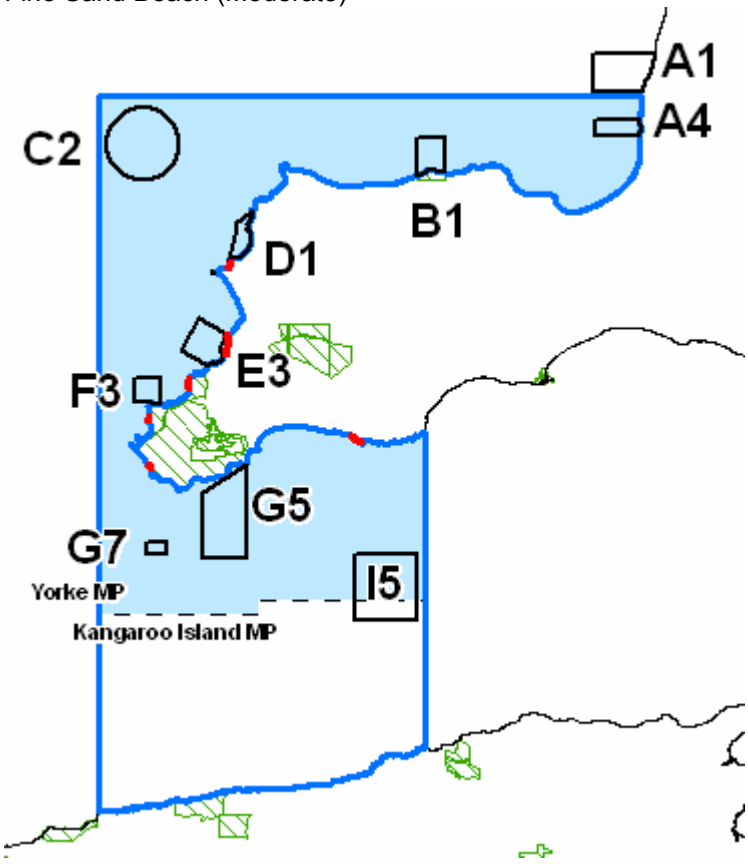
Coarse Sand Beach (Sheltered)



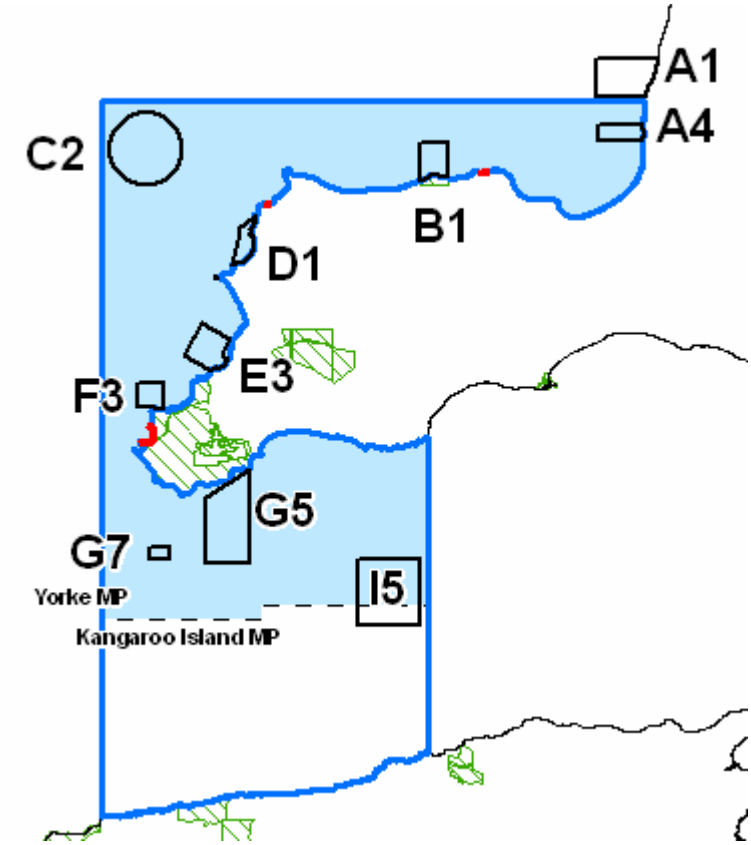
Fine Sand Beach (Exposed)



Fine Sand Beach (Moderate)



Fine Sand Beach (Sheltered)



Appendix D – Feedback A1 outside of the marine park (analysed separately)

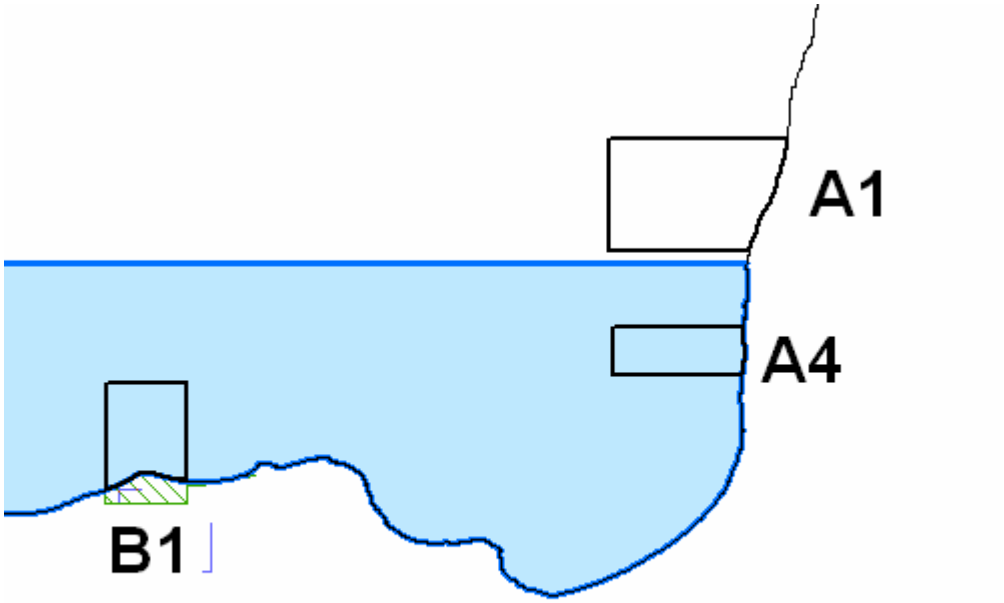


Table 5. Environmental values represented in zone A1.

Underwater Habitats	**Units**	**A1 (outside of park)**
Soft-bottom Habitat (0 to -10m)	km^2	17
Rocky Reef (0 to -10m)	km^2	18
Seagrass (0 to -10m)	km^2	1
Total	km^2	**35**

Shoreline Habitats		**A1 (outside of park)**
Coarse Sand Beach (Sheltered)	km	6

Note: numbers have been rounded to the nearest whole number

Mapping information: