

**PRELIMINARY ASSESSMENT FOR WESTERN YORKE PENINSULA MARINE PARK LOCAL
ADVISORY GROUP TO ASSIST WITH MEETING ON THE 14th of MAY 2011
VERSION 2**

**Rapid Assessment on Comprehensive, Adequate and Representative (CAR) Principles for the
Eastern Spencer Gulf Marine Park (Marine Park 11) suggested zoning options**

Overview

DENR has undertaken a rapid assessment of the CAR principles for the possible sanctuary zone options for the Eastern Spencer Gulf Marine Park. Possible sanctuary zones were suggested at the Marine Parks Local Advisory Group (MPLAG) meeting held on the 23 February 2011.

Community feedback and MPLAG advice has resulted in possible sanctuary zones suggested at three locations within the marine park (Zones A, C, D) (See Figure 1).

This rapid assessment¹ helps to determine if the zoning option meets 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.

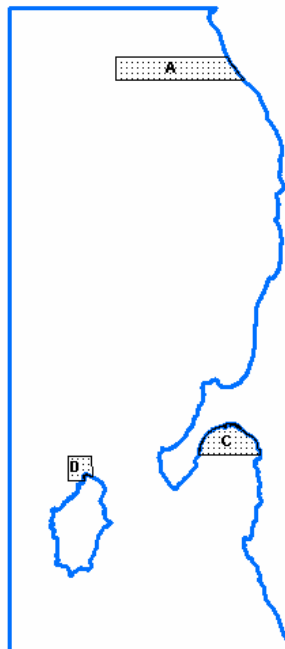
Adequate: To be adequate the marine parks system should provide for the maintenance of the ecological viability and integrity of populations, species and communities

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

Note: this rapid assessment was not intended to be an assessment against each marine park design principle.

Possible zoning option for marine park 11 using the three suggested zones

Figure 1: Zoning Option 1 (3% of marine park)
(possible zones: A, C, D)



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.

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.**

Comprehensiveness

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

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

- ✓ Macro algae
- ✓ Reef
- ✓ Seagrass
- ✓ Soft bottom habitat
- ✓ Unmapped habitat
- ✓ Bedrock platform
- ✓ Coarse sand beach
- ✓ Saltmarsh

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

- ✗ Boulder Beach
 - ✗ Mixed Beach
-

Representativeness

Each option was assessed against the proportion of environmental values² 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: $\geq 20\%$, 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 in the zoning option at a level $\geq 20\%$:

- ✓ Australian sea lions (haulout)
- ✓ Coastal wader bird sites
- ✓ Emergent land
- ✓ Offshore islands
- ✓ Surveyed Reef fish sites
- ✓ Sea bird sites
- ✓ Coarse sand beach (moderate)
- ✓ Saltmarsh (sheltered)

Environmental values that are represented in this zoning option between 10-19%:

- ✓ Macroalgae on sand (0 to -10m)
- ✓ Reef (-10 to -30m)
- ✓ Soft bottom habitat (0 to -10m)

² In this assessment an environmental value include features which are ecologically important, underwater habitats and shoreline habitats.

Environmental values that are represented in this zoning option at a level <10%:

- ✓ Reef (0 to -10m)
- ✓ Seagrass (0 to -10m)
- ✓ Unmapped (-10 to -30m)
- ✓ Bedrock Platform (Moderate)
- ✓ Bedrock Platform (Sheltered)

Environmental values that are not represented (0%):

- ✗ Seagrass (-10m to -30m)
- ✗ Unmapped (0 to -10m)
- ✗ Macroalgae on sand (-10 to -30m)
- ✗ Soft bottom habitat (-10 to -30m)
- ✗ Bedrock platform (exposed)
- ✗ Boulder beach (moderate)
- ✗ Coarse sand beach (sheltered)
- ✗ Mixed Beach (sheltered)

Note:

- A more detailed assessment of environmental values and the percentage included in each zoning option can be viewed in Appendix A.
- Environmental values included within each suggested individual zone can be viewed in Appendix B.
- 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 for the option 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 (areas rounded to the nearest half km for length and width and nearest whole number for area).

Zone	From the coast to offshore (length) (km)	Coastline along shore (width) (km)	Size of zone (km²)
A	8	2	15
C	2.5	4	7
D	1.5	1	3

Note: Size is not necessarily length x width, it will vary because of the shape of the zones and because the numbers have been rounded to the nearest whole number.

Area of Zoning Option

Only one zoning option was developed with zones suggested at three locations. The total area (km²) and the percentage of possible sanctuary zones for the option can be seen in Table 2.

Table 2. Total area and percentage of suggested sanctuary zones.

Suggested zoning option	Total area of sanctuary zones (km ²)	% of sanctuary zones located in the marine park
1	24	3

The total area of the Eastern Spencer Gulf Marine Park is approximately 784 km².

Appendix A.

Table 3: The percentage of each environmental value included in zoning Option 1. (percentages have been rounded to the nearest whole number)

Ecological Importance	Option 1 Total in all zones (%)
Australian Sealions (haulout)	100
Coastal Wader Bird Sites	52
Emergent Land	25
Offshore Islands	67
Surveyed Reef Fish Sites	50
Sea Bird Sites	67

Underwater Habitats	% in Marine Park
Macroalgae on sand (0 to -10m)	10
Macroalgae on sand (-10 to -30m)	0
Reef (0 to -10m)	6
Reef (-10 to -30m)	12
Seagrass (0 to -10m)	5
Seagrass (-10 to -30m)	0
Soft bottom habitat (0 to -10m)	15
Unmapped (0 to -10m)	0
Unmapped (-10 to -30m)	1
Total	3

Shoreline Habitats	% in Marine Park
Bedrock Platform (Exposed)	0
Bedrock Platform (Moderate)	8
Bedrock Platform (Sheltered)	6
Boulder Beach (Moderate)	0
Coarse Sand Beach (Moderate)	25
Coarse Sand Beach (Sheltered)	0
Mixed Beach (Sheltered)	0
Saltmarsh (sheltered)	40
Total	11

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

Appendix B.

Table 4. Environmental values represented in each suggested zone.

Ecological Importance	Units	A5	C1	D5	Total in Marine Park (count)
Australian Sealions (haulout)	Count			2	2
Coastal Wader Bird Sites	Count		77	7	161
Emergent Land	Count		1		4
Offshore Islands	Count			6	9
Surveyed Reef Fish Sites	Count	2			4
Sea Bird Sites	Count			6	9

Underwater Habitats		A5	C1	D5	Total in Marine Park
Macroalgae on sand (0 to -10m)	km ²		<1		2
Macroalgae on sand (-10m to -30m)	km ²				<1
Reef (0 to -10m)	km ²	3		1	74
Reef (-10 to -30m)	km ²	5		1	46
Seagrass (0 to -10m)	km ²	<1	5	<1	106
Seagrass (-10 to -30m)	km ²				27
Soft-bottom habitat (0 to -10m)	km ²	<1	1	<1	10
Unmapped (0 to -10m)	km ²				18
Unmapped (-10 to -30m)	km ²	6		<1	499
Total	km ²	15	7	3	782

Shoreline Habitats	Units	A5	C1	D5	Total in Marine Park (km²)
Bedrock Platform (Exposed)	km				2
Bedrock Platform (Moderate)	km			1	10
Bedrock Platform (Sheltered)	km			<1	5
Boulder Beach (Moderate)	km				1
Coarse Sand Beach (Moderate)	km	2			9
Coarse Sand Beach (Sheltered)	km				57
Mixed Beach (Sheltered)	km				1
Saltmarsh (sheltered)	km		8		20
Total	km	2	8	1	104

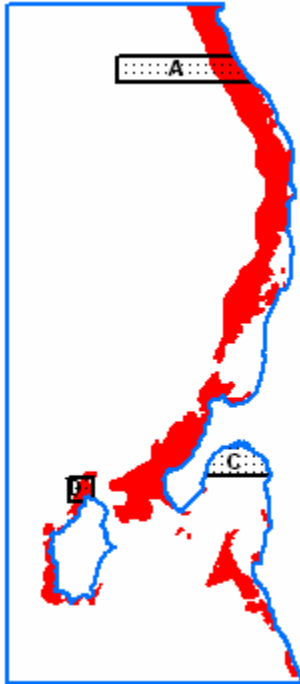
Note: numbers have been rounded to the nearest whole number.

Appendix C. Location of the environmental values <10% represented.

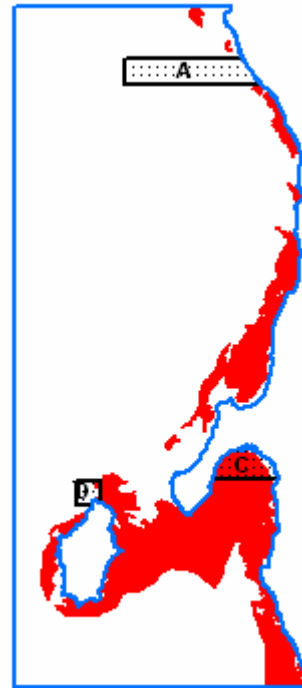
Environmental values that have <10% representation are shown in red, identifying where they could be represented within the marine park.

Note: maps are best viewed in colour.

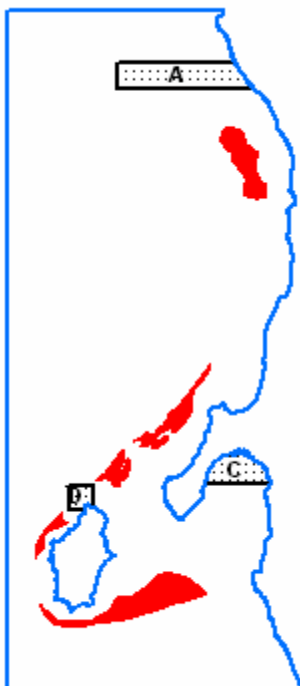
Reef (0 to -10m)



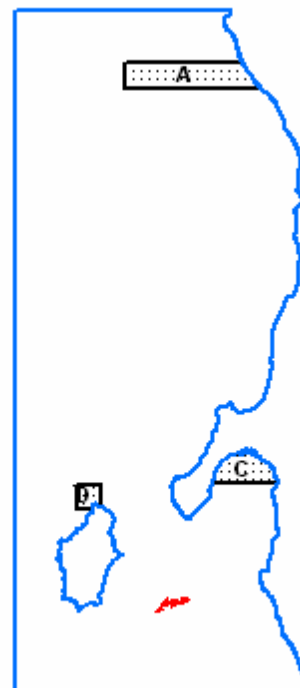
Seagrass (0 to -10m)



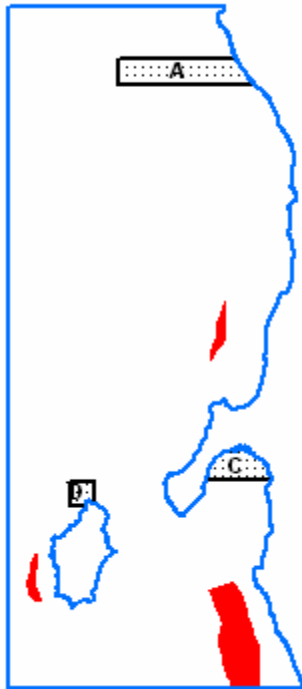
Seagrass (-10m to -30)



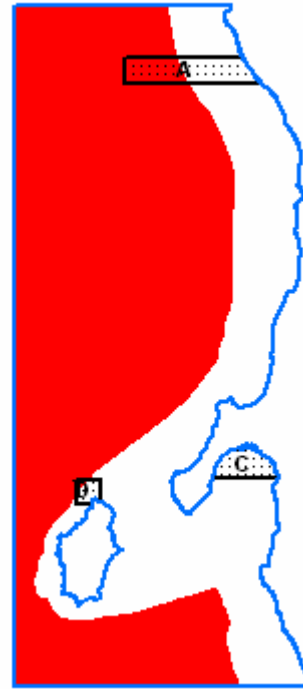
Macroalgae on sand (-10m to -30m)



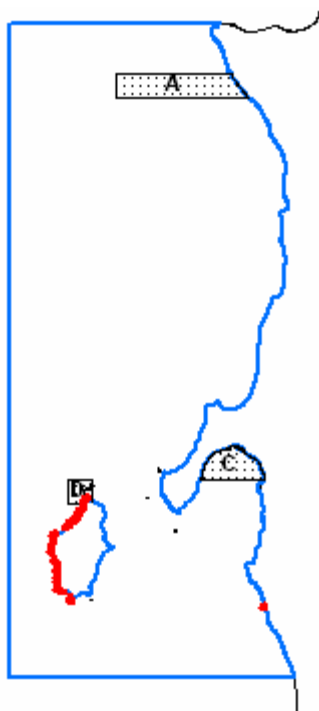
Unmapped (0 to -10m)



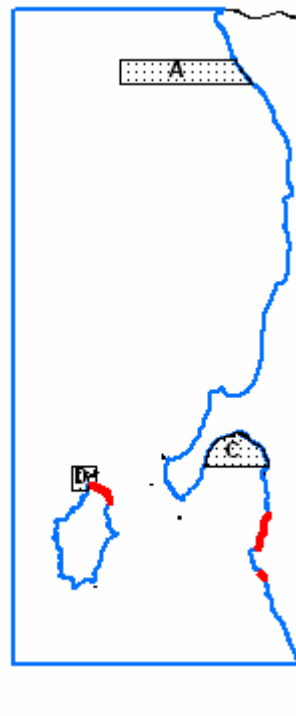
Unmapped (-10m to -30m)



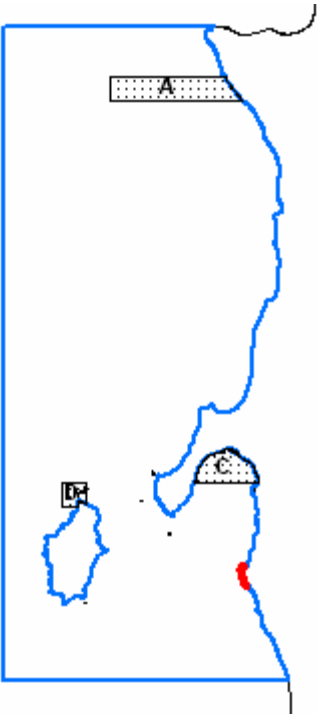
Bedrock Platform (Moderate)



Bedrock Platform (Sheltered)



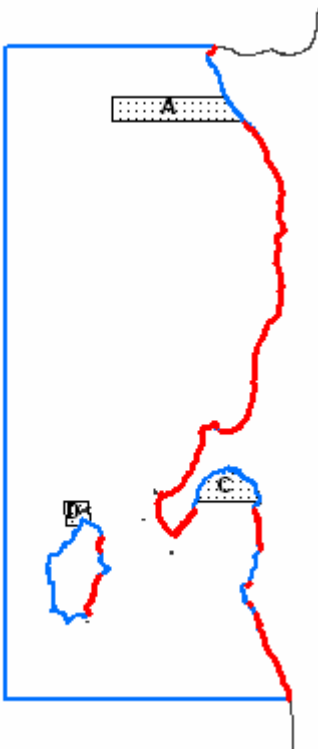
Bedrock Platform (Exposed)



Boulder Beach (Moderate)



Coarse Sand Beach (Sheltered)



Mixed Beach (Sheltered)



Mapping information:

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