

PRELIMINARY ASSESSMENTS FOR UPPER GULF ST VINCENT MARINE PARK LOCAL ADVISORY GROUP TO ASSIST WITH THE MEETING ON THE 5th of MAY 2011

Rapid Assessment on Comprehensive, Adequate and Representative (CAR) Principles for the Upper Gulf St Vincent Marine Park (Marine Park 14) suggested zoning options

Overview

DENR has undertaken a rapid assessment of the CAR principles for the possible sanctuary zone options for the Upper Gulf St Vincent Marine Park. Possible zones were suggested at the Marine Park Local Advisory Group meeting held on 17th February 2011.

Community feedback and MPLAG advice has resulted in sanctuary zones suggested at four locations within the marine park, with alternative zones suggested at two of the locations (Zones C, D).

Using combinations of alternate suggested zones (Zones D1, D2) with the suggested zones (A, B, C), two zoning options for the marine park were developed (See Figures 1, 2). Zone C2 is the Defence Prohibited Zone not a suggested sanctuary zone. The rapid assessment includes environmental values within Zone C2.

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.

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

Possible zoning options for marine park 14 using combinations of the 4 suggested zones

Figure 1: Zoning Option 1 (24% of MP)
(possible zones:A1, B2, C1, C2, D1)

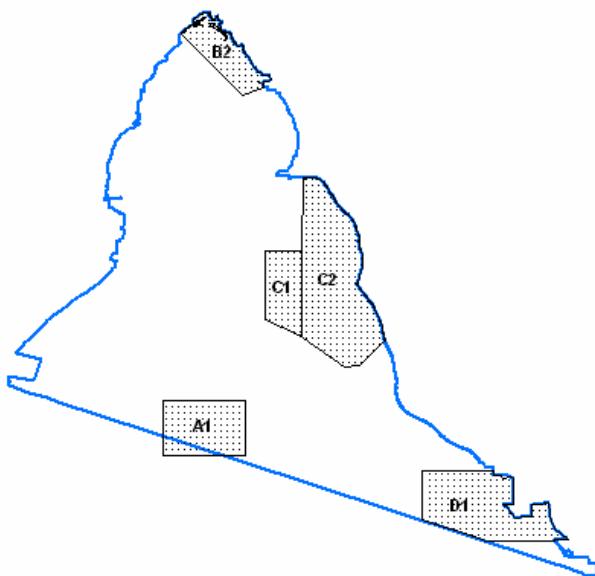
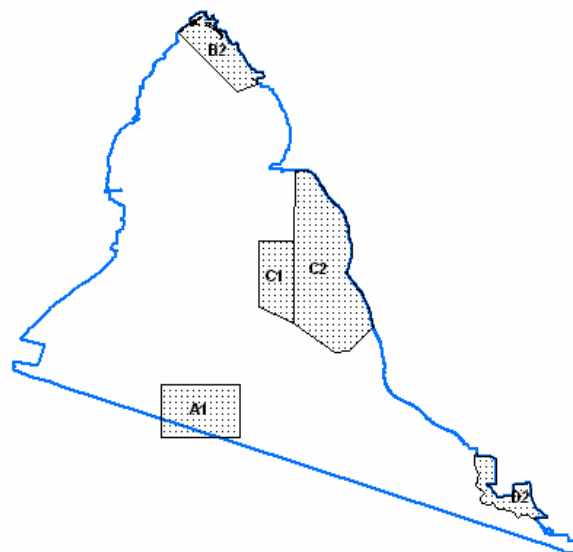


Figure 2: Zoning Option 2 (19% of MP)
(possible zones: A1, B2, C1, C2, D2)



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.

Both suggested zoning options include the following shoreline types and seafloor (benthic) habitats:

- ✓ Seagrass
- ✓ Soft bottom habitat
- ✓ Unmapped habitat
- ✓ Mixed beach
- ✓ Mangrove
- ✓ Saltmarsh

Both suggested zoning options do not include the following shoreline types and seafloor (benthic) habitats:

- ✗ Cliff
 - ✗ Coarse sandy beach
 - ✗ Mudflats and sandflats
-

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 at a level in $\geq 20\%$ in both suggested zoning options:

- ✓ Coastal wader birds
- ✓ Unmapped habitat (-10 to -30m)
- ✓ Mixed beach (sheltered)
- ✓ Mangrove
- ✓ Saltmarsh
- ✓ Estuary

In addition Option 1 also includes:

- ✓ Seagrass (0 to -10m)

Environmental values that are represented between 10-19% in both suggested zoning options:

- ✓ Seagrass (-10 to -30m)
- ✓ Soft bottom habitat (0 to -10m)

In addition, Option 2 also includes:

- ✓ Seagrass (0 to -10m)

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

Environmental values that are represented at a level <10% in both suggested zoning options:

- ✓ Emergent land

Environmental values that are not represented in either suggested zoning option (0%):

- × COSEMA endangered macroalgae
- × Soft bottom habitat (-10 to -30m)
- × Cliff (sheltered)
- × Coarse sand beach (sheltered)
- × Mudflats and sandflats (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 represented <10% 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 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 whole number).

Zone	From the coast to offshore (length) (km)	Coastline along shore (width) (km)	Size of zone (km ²)
A1	6	7	37
B2	3	9	24
C1	3	8	24
D1	11	7	56
D2	3	8	16

Areas of alternative Zoning Options

Two alternative zoning options were developed using the different zones suggested at each of the four locations.

A comparison of the total area (km²) of each of the zoning options and the percentage sanctuary zones in each option can be seen in Table 2.

Table 2. Comparison of the total area and percentage of sanctuary zones in each zoning option.

Suggested zoning option	Total area of suggested sanctuary zones (not including Defence Zone) (km ²)	% of suggested sanctuary zones located in the marine park	Area & (%) of existing Defence Prohibited Area	% of suggested sanctuary zones + Defence Prohibited Area located in the marine park
Option 1	141	15	86 (9%)	24
Option 2	187	10	86 (9%)	19

Comparing the two zoning options

- Option 1 includes 15% suggested sanctuary zones within the marine park, compared to Option 2 which has 10%.
- Option 1 (within suggested zone D1) includes the two reef fish sites recorded within the park.
- Option 1 includes slightly higher percentage levels of coastal wader bird sites, seagrass (0 to -10m), soft bottom habitat (0 to -10m), mixed beach (sheltered) and mangrove compared to Option 2.

Appendix A

Table 3: The percentage of each environmental value included in zoning Option 1 and 2.

Ecological Importance	Option 1 Total in all Zones (%)	Option 2 Total in all Zones (%)
Coastal Wader Birds	62	61
Cosema Endangered Macroalgae	0	0
Emergent Land	4	4
Estuary	33	33
Reef Fish	100	0
Sea Bird Sites	0	0

Underwater Habitats	Option 1 Total in all Zones (%)	Option 2 Total in all Zones (%)
Seagrass (0 to -10m)	25	19
Seagrass (-10 to -30m)	11	11
Soft bottom habitat (0 to -10m)	19	18
Soft bottom habitat (-10m to -30m)	0	0
Unmapped (-10 to -30m)	21	21
Saltmarsh	58	58
Mangrove	42	40
Total	24	20

Shoreline Habitats	Option 1 Total in all Zones (%)	Option 2 Total in all Zones (%)
Cliff (Sheltered)	0	0
Coarse Sand Beach (Sheltered)	0	0
Mixed Beach (Sheltered)	41	39
Mudflats and Sandflats (Sheltered)	0	0
Total	12	11

Note:

- percentages rounded to the nearest whole number
- C2 has been included within the Option analysis, however it is an existing Defence Prohibited Zone not a suggested sanctuary zone by the MPLAG.

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	A1	B2	C1	C2	D1	D2	Total in Marine Park
Coastal Wader Birds	Count		931		17	55	37	1626
Cosema Endangered Macroalgae	Count							3
Emergent Land	Count				1			23
Estuary	Count					1	1	3
Reef Fish	Count					2		2
Sea Bird Sites	Count							3

Underwater Habitats	Units	A1	B2	C1	C2	D1	D2	Total in Marine Park
Seagrass (0 to -10m)	km ²	8	12	24	71	40	1	624
Seagrass (-10 to -30m)	km ²	19						166
Soft bottom habitat (0 to -10m)	km ²		2		14	1		87
Soft bottom habitat (-10m to -30m)	km ²							4
Unmapped (-10 to -30m)	km ²	6						29
Saltmarsh	km ²		4		1	5	4	42
Mangrove	km ²		6		<1	8	8	22
Total		33	23	24	86	54	13	911

Shoreline Habitats	Units	A1	B2	C1	C2	D1	D2	Total in Marine Park
Cliff (Sheltered)	km							2
Coarse Sand Beach (Sheltered)	km							4
Mixed Beach (Sheltered)	km		1		19	3	2	56
Mudflats and Sandflats (Sheltered)	km							<1
Total		0	1	0	19	3	2	191

Note:

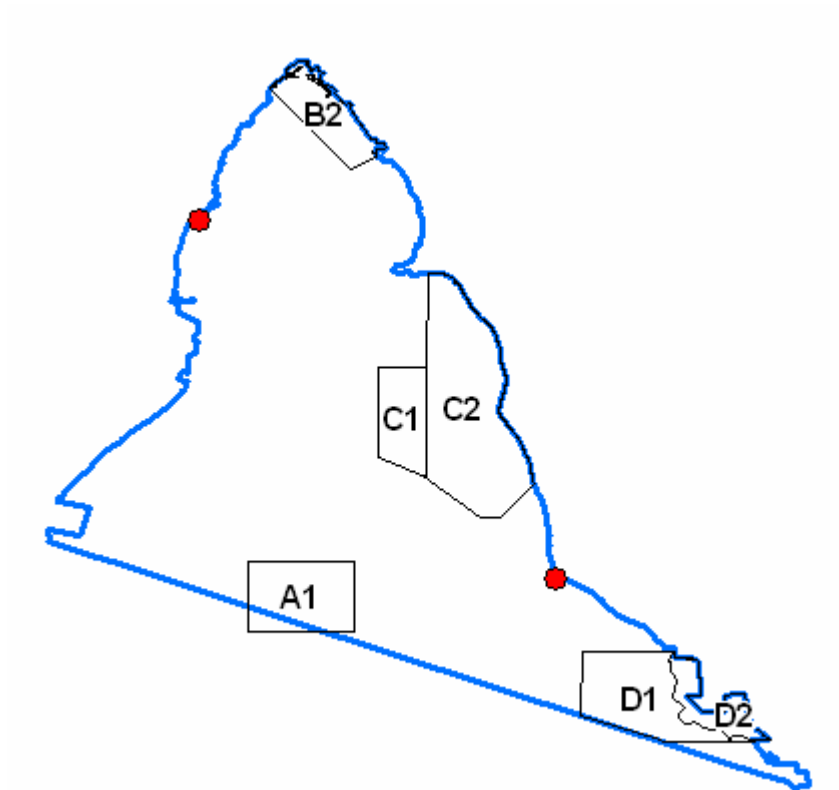
- numbers have been rounded to the nearest whole number
- C2 has been included in this table, however it is an existing Defence Prohibited Zone not a suggested sanctuary zone by the MPLAG

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

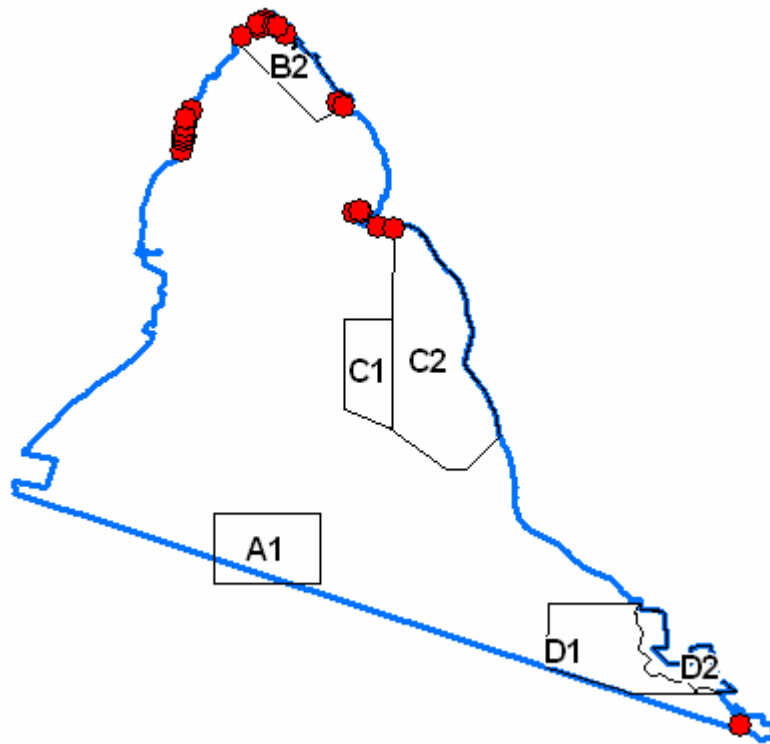
Environmental values that have <10% representation are shown in red, identifying where they could be represented within the marine park.

Note: maps are best viewed in colour.

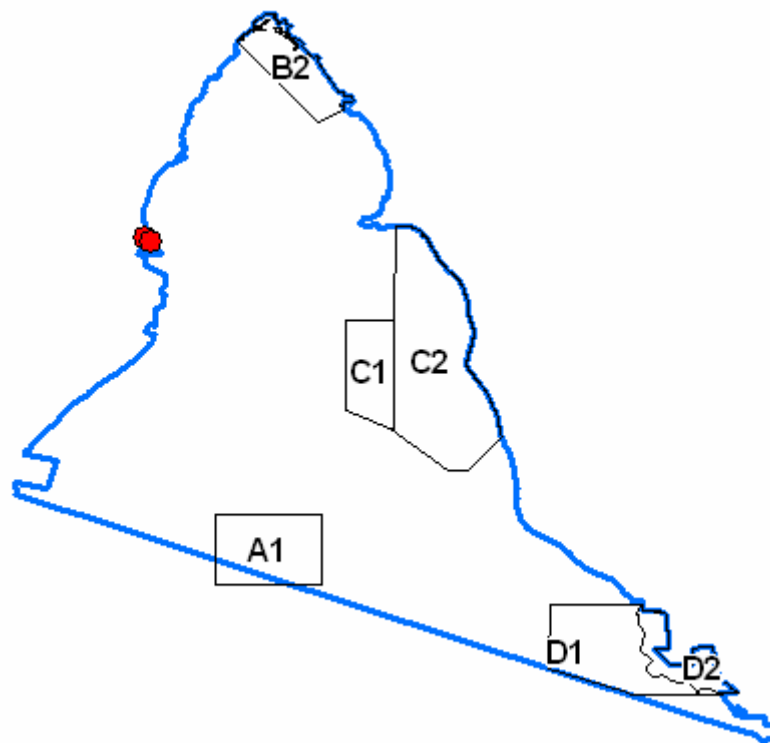
COSEMA - endangered macroalgae



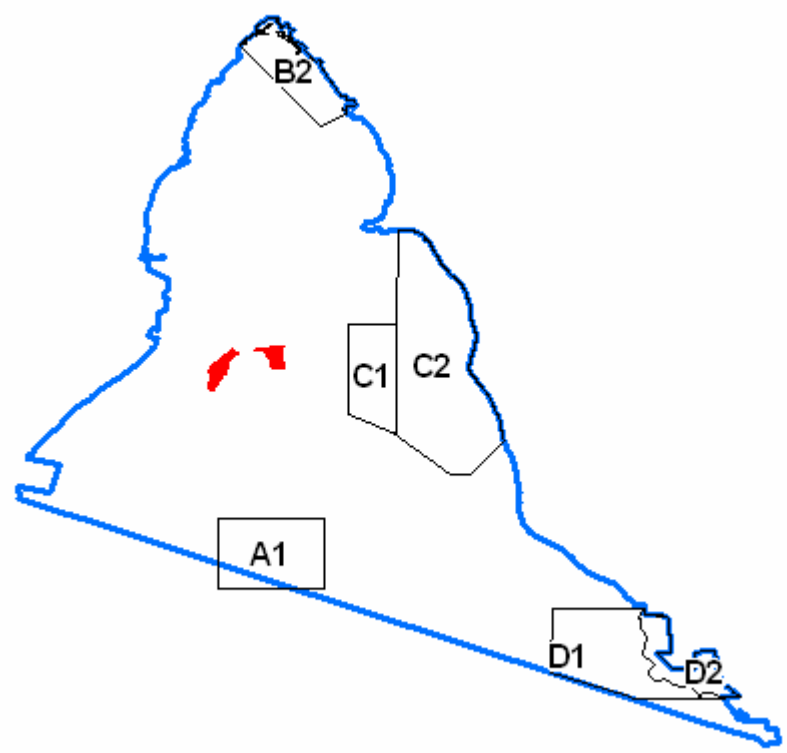
Emergent land



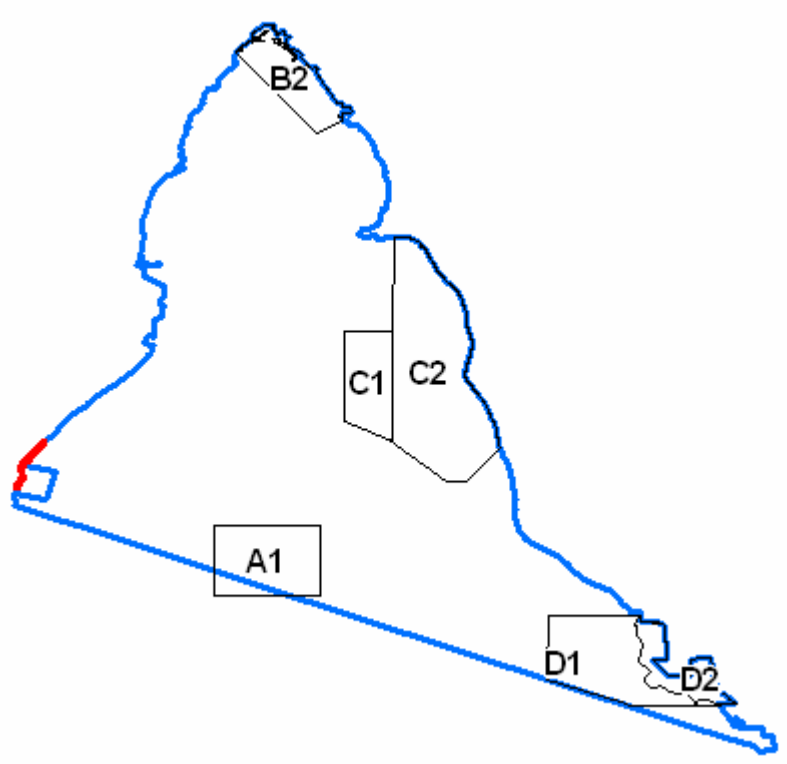
Seabird sites



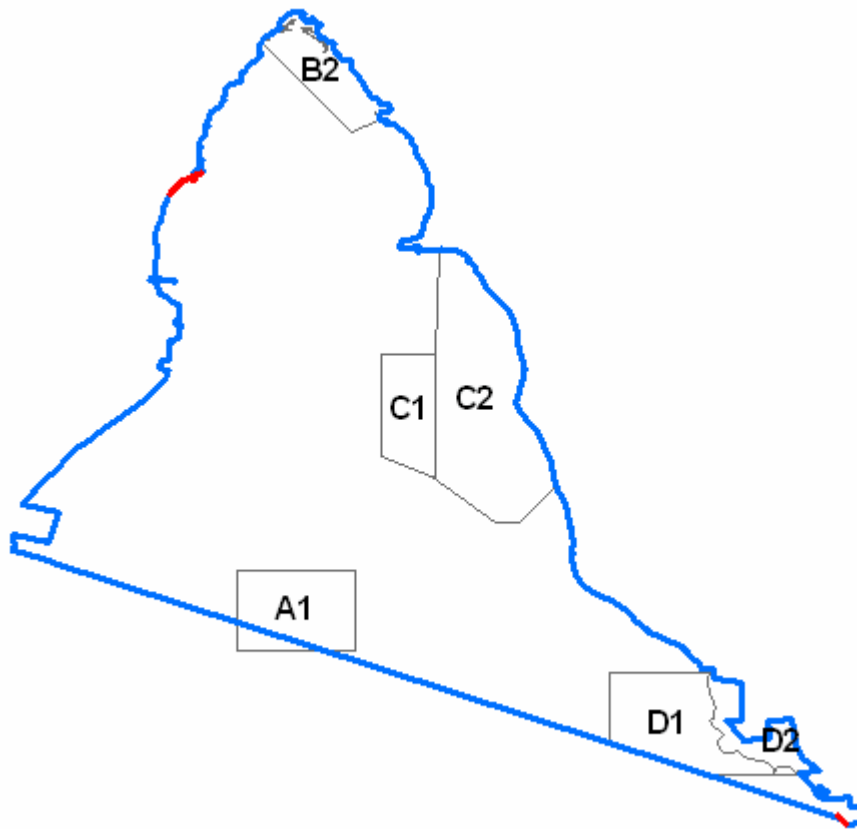
Soft bottom habitat (-10 to -30m)



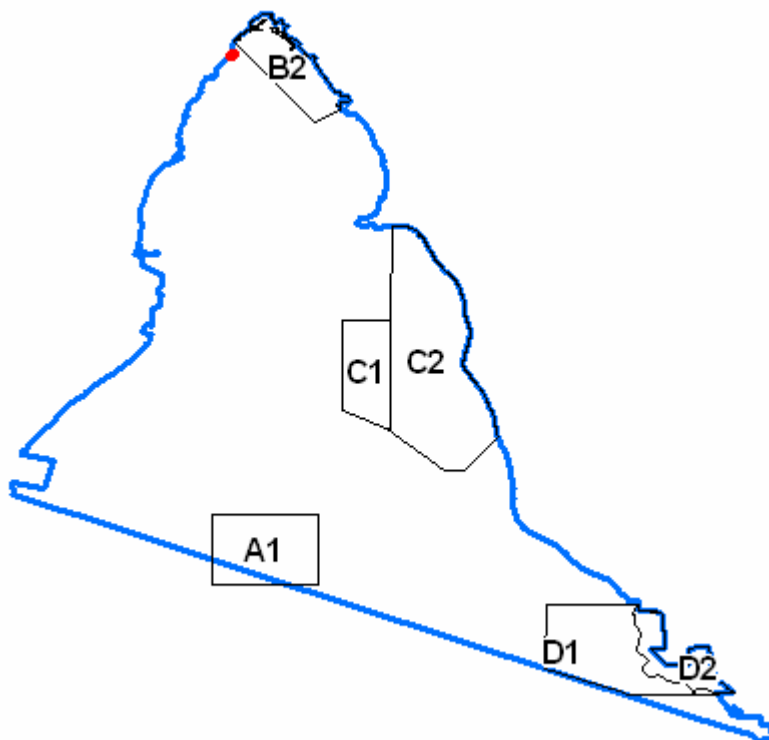
Cliff (sheltered)



Coarse sand beach (Sheltered)



Mudflats and sandflats (sheltered)



Mapping information:

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