

CC	Type	CC	Type
<b>Rock Shore Types - characterized by a lack of classic sediments such as gravel or sand</b>		<b>Sediment Shore Types - have substrates that have little or no bedrock cropping out</b>	
1	Black Beach, Wide	21	Gravel Flat, Wide
2	Rock Platform, Wide	22	Gravel Beach
3	Rock Cliff, Narrow	23	Gravel Flat, Fan
4	Rock Ramp, Narrow	24	Sand and Gravel Flat or Fan, Wide
5	Gravel Platform, Narrow	25	Sand and Gravel
6	Gravel Beach, Wide	26	Sand and Gravel Flat or Fan, Narrow
7	Platform with Gravel Beach, Wide	27	Gravel Beach, Wide
8	Cliff with Gravel Beach	28	Sand Flat
9	Platform with Gravel Beach, Narrow	29	Rock Flat
10	Platform with Gravel Beach, Narrow	30	Sand Beach, Narrow
11	Ramp with Sand and Gravel Beach, Wide	31	Shoals
12	Platform with Sand and Gravel Beach, Wide	<b>Man-Made Materials</b>	
13	Cliff with Sand and Gravel Beach	32	Man-made, permeable
14	Ramp with Sand and Gravel Beach, Narrow	33	Man-made, impermeable
15	Platform with Sand and Gravel Beach, Narrow	<b>Current Dominated</b>	
16	Ramp with Sand Beach, Wide	34	Shoal
17	Platform with Sand Beach, Wide	35	Bar
18	Cliff with Sand Beach	36	Deep Lagoon
19	Ramp with Sand Beach, Narrow		
20	Platform with Sand Beach, Narrow		

CC	Type
	<b>Sediment Shore Types</b> - have substrates that have little or no bedrock cropping
23	Gravel Flat, Wide
23	Gravel Beach
23	Gravel Flat or Fan
24	Sand and Gravel Flat or Fan, Wide
24	Sand and Gravel Beach
24	Sand and Gravel Flat or Fan, Narrow
27	Sand Beach, Wide
28	Sand Flat
29	Mud Flat
30	Sand Beach, Narrow
31	Shoals
	<b>Man-Made Materials</b>
62	Man-made, permeable
63	Man-made, impermeable
	<b>Current Dominated</b>
14	Channel
35	Total Lagoon

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24	Sand and Gravel Flat or Fan, Wide
24	Sand and Gravel Beach
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28	Sand Flat
29	Mud Flat
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	<b>Man-Made Materials</b>
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62	Man-made, permeable
63	Man-made, impermeable
	<b>Current Dominated</b>
14	Channel
35	Total Lagoon

The Habitat Type provides a simplified picture of the "look" of the unit overall, based on the detailed biophysical attributes that have been mapped. The Habitat Type category is a summary of the observations of both the unit's biological and geomorphological attributes.

Each Habitat Type has a definition that includes the typical substrate, wave exposure and biobands. For example, for the Semi-exposed, immobile substrate Habitat Type, part of the definition of that class is a certain combination of the most likely biobands and indicator species present at a bedrock shoreline with no mobile sediment present.

How is Habitat Type determined?

Each Habitat Type has typical biological features (including both an indicator species list and typical associated biobands). To determine the Habitat Type, the biomapper looks at the along-shore units as designated and described by the physical mapper, and:

1. records the observations of the biobands in the unit and looks for indicator species,
2. assigns a bio-(wave) exposure category,
3. reviews the physical mapped information, and
4. assigns the Habitat Type that best describes the unit.

The Habitat Type is based on the whole unit and is similar to the physical mappers use of the 'Coastal Class' category, in that the detailed across-shore data are summarized into one attribute. The simplified category describes the features of the whole unit.

Habitat Type is a summary of the biophysical classification of the whole shore unit, based on:

- the biobands observed,
- the wave exposure as indicated by the bands, and
- the substrate types in the unit.

Legend Definitions

CC - Coastal Classification number

Wave Exposure

E - Exposed - Very high wave exposure, open ocean swells usually fetches >500km

VE - Very Exposed - Extreme high wave exposure

SE - Semi Exposed - High wave exposure, open shorelines, areas between fully exposed and more sheltered, usually fetches 50 to 500 km

P - Protected - Low wave exposure, sheltered inlets, usually fetches less than 10km

SP - Semi Protected - Moderate wave exposure, partly sheltered, usually fetches 10-50km

SH - Sheltered - Low wave exposure, fetches < 1km, sheltered anchorages at heads of bays and inlets

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- the biobands observed,
- the wave exposure as indicated by the bands, and
- the substrate types in the unit.

**Legend Definitions**  
**CC - Coastal Classification number**

**Wave Exposure**

E - Exposed - Very high wave exposure, open ocean swells usually fetches >500km  
 VE - Very Exposed - Extreme high wave exposure  
 SE - Semi Exposed - High wave exposure, open shorelines, areas between fully exposed and more sheltered, usually fetches 50 to 500m  
 P - Protected - Low wave exposure, sheltered inlets, usually fetches less than 10km  
 SP - Semi Protected - Moderate wave exposure, partly sheltered, usually fetches 10-50km  
 VP - Protected - Very low wave exposure, fetches < 10km, sheltered anchurages at heads of bays and inlets

detailed across-shore data are summarized into one attribute. The simplified category describes the features of the whole unit.

**Habitat Type** is a summary of the biophysical classification of the whole shore unit, based on:

- the boulders observed,
- the wave exposure as indicated by the bands, and
- the substrate types in the unit.

**Legend Definitions**  
**CC - Coastal Classification number**

**Wave Exposure**  
**E - Exposed** - Very high wave exposure, open ocean swellings usually fetches ~500km  
**VE - Very Exposed** - Extreme high wave exposure  
**Ex - Exposed** - High wave exposure, open sheltered, areas between fully exposed and more sheltered, usually fetches 50 to 500 km  
**P - Protected** - Moderate wave exposure, partly sheltered, usually fetches less than 10km  
**SP - Semi Protected** - Moderate wave exposure, partly sheltered, usually fetches 10-50km  
**Sh - Sheltered** - Very low wave exposure, fetches < 1km, sheltered anchorages at heads of bays and inlets

Wave Exposure

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- VE - Very Exposed - Extreme high wave exposure
- SE - Semi Exposed - High wave exposure, open shorelines, areas between fully exposed and more sheltered, usually fetches 50 to 500km
- P - Protected - Low wave exposure, sheltered inlet, usually fetches less than 10km
- SP - Semi Protected - Moderate wave exposure, partly sheltered, usually fetches 10-50km
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SUBSTRATE STABILITY	IMMOBILE SUBSTRATES						MOBILE OR PARTIALLY MOBILE SUBSTRATES				CURRENT-DOMINANT	TIDAL LAGOON
	BEDROCK	BEDROCK/BOULDER	BEDROCK/GRAVEL	BEDROCK/GRAVEL	SAND & GRAVEL	SAND & GRAVEL	SAND/MUD	SEDIMENT	SEDIMENT OR SEDIMENT	SEDIMENT OR SEDIMENT	SEDIMENT OR SEDIMENT	
MAJOR SUBSTRATE CLASSES	1-20	1-23, 32, 33	1-23, 33	1-23, 33	24-30, 32 no S&L band	24-30, 32 no S&L band	24-30, 31 no S&L band	24-30	34	35		
EXPOSURE	E	SE	SP	VP, P	SP	VP, P	VP, P, SP	SE, E	VP, P	VP, P, SP		
COMMUNITY CODE (REAL OBS)	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>		
upper	<i>Ferrissina</i> <i>Ectenopora</i>	<i>Ferrissina</i> <i>Ectenopora</i>	<i>Ferrissina</i> <i>Ectenopora</i>	<i>Ferrissina</i> <i>Ectenopora</i>	<i>Ferrissina</i> <i>Ectenopora</i>	<i>Ferrissina</i> <i>Ectenopora</i>	<i>grasses &amp; tubers</i> <i>Salicornia virginica</i>					
	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>	<i>Balanus glandula</i> <i>Puccinellatia</i>					
middle	<i>Polysiphonia polyneura</i> <i>Mytilus californianus</i>	<i>Mytilus californianus</i>	<i>Mytilus rosaceus</i> *	<i>Mytilus rosaceus</i> *			<i>Mytilus rosaceus</i>					
	<i>Semibalanus carterius</i>	<i>Semibalanus carterius</i>	<i>Semibalanus carterius</i>	<i>Ulex Ulex</i> spp.	<i>Semibalanus carterius</i>	<i>Ulex Ulex</i> spp.	<i>Ulex Ulex</i> spp.					
mid low		<i>Phlebobranchia scabra</i>										
lower	<i>Laminaria littoralis</i>	<i>Phlebobranchia scabra</i>										
	<i>Alaria wrightii</i> morph											
	<i>Lithothamnion</i>											
mid/high	<i>Nereocystis luteolens</i>	<i>Nereocystis luteolens</i>	<i>Nereocystis luteolens</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>					
	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>					
	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>					
	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>					

SUBSTRATE STABILITY MAJOR SUBSTRATE COASTAL CLASSES EXPOSURE DUE TO COMMUNITY COLOR	IMMOBILE SUBSTRATES				MOBILE OR PARTIALLY MOBILE SUBSTRATES				CURRENT-DOMINATED	TIDAL LAGOON	
	BEETROCK	BEETROCK/BOULDER	BEETROCK/GRAVEL	BEETROCK/GRAVEL	SAND & GRAVEL	SAND & GRAVEL	SAND/MUD	SEDIMENT			
	1-20	1-23, 32, 33	1-23, 33	1-23, 33	24-30, 32 no SAIL band	24-30, 32 no SAIL band	24-30, 31 has SAIL band	24-30	SE, E	34	35
	E	SE	SP	VP, P	SP	VP, P	VP, P, SP	VP, P, SP	SE, E	VP, P, SP	VP, P, SP
	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>		<b>11</b>
upper	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>Vernicaria</i> <i>Enteromorpha</i>	<i>grasses &amp; rushes</i> <i>Salicornia virginica</i>				
middle	<i>Balanus glandula</i> <i>Polidoriopsis polydora</i> <i>Mytilus californianus</i>	<i>Balanus glandula</i> <i>Pecora dictyota</i> <i>Mytilus californianus</i>	<i>Balanus glandula</i> <i>Pecora dictyota</i> <i>Mytilus rosalia</i> *	<i>Balanus glandula</i> <i>Pecora dictyota</i> <i>Mytilus rosalia</i> *	<i>Balanus glandula</i> <i>Pecora dictyota</i>	<i>Balanus glandula</i> <i>Pecora dictyota</i>	<i>Balanus glandula</i> <i>Pecora dictyota</i>	<i>Balanus glandula</i> <i>Pecora dictyota</i>	no visible macrofauna due to sediment mobility	littoral current dominated, may be a Protea wave exposure but no assemblage of indicator species and a reduced bivalve wave exposures. Assemblage observed is "anomalous" for the wave energy of the site	<i>Balanus glandula</i> <i>Pecora dictyota</i>
mid low		<i>Hydrophilum variegatum</i>			<i>Semibalanus cariosus</i>	<i>Semibalanus cariosus</i>					
lower	<i>Leontopodium littorale</i>	<i>Leontopodium scaber</i>									
	<i>Alaria nana</i> morph.										
	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>	<i>Laminaria saccharina</i>				
	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>	<i>Lobosiphonia littoralis</i>				
	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>				
	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>				
mid/hi	<i>Nereocystis luteolus</i>	<i>Nereocystis luteolus</i>	<i>Nereocystis luteolus</i>	<i>Nereocystis luteolus</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Agardhiopsis</i>			
	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>	<i>Macrocystis integrifolia</i>				
	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>	<i>Agardhiopsis</i>				
	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>	<i>Strongylocentrotus purpuratus</i>				
	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>	<i>Zostera marina</i>				

