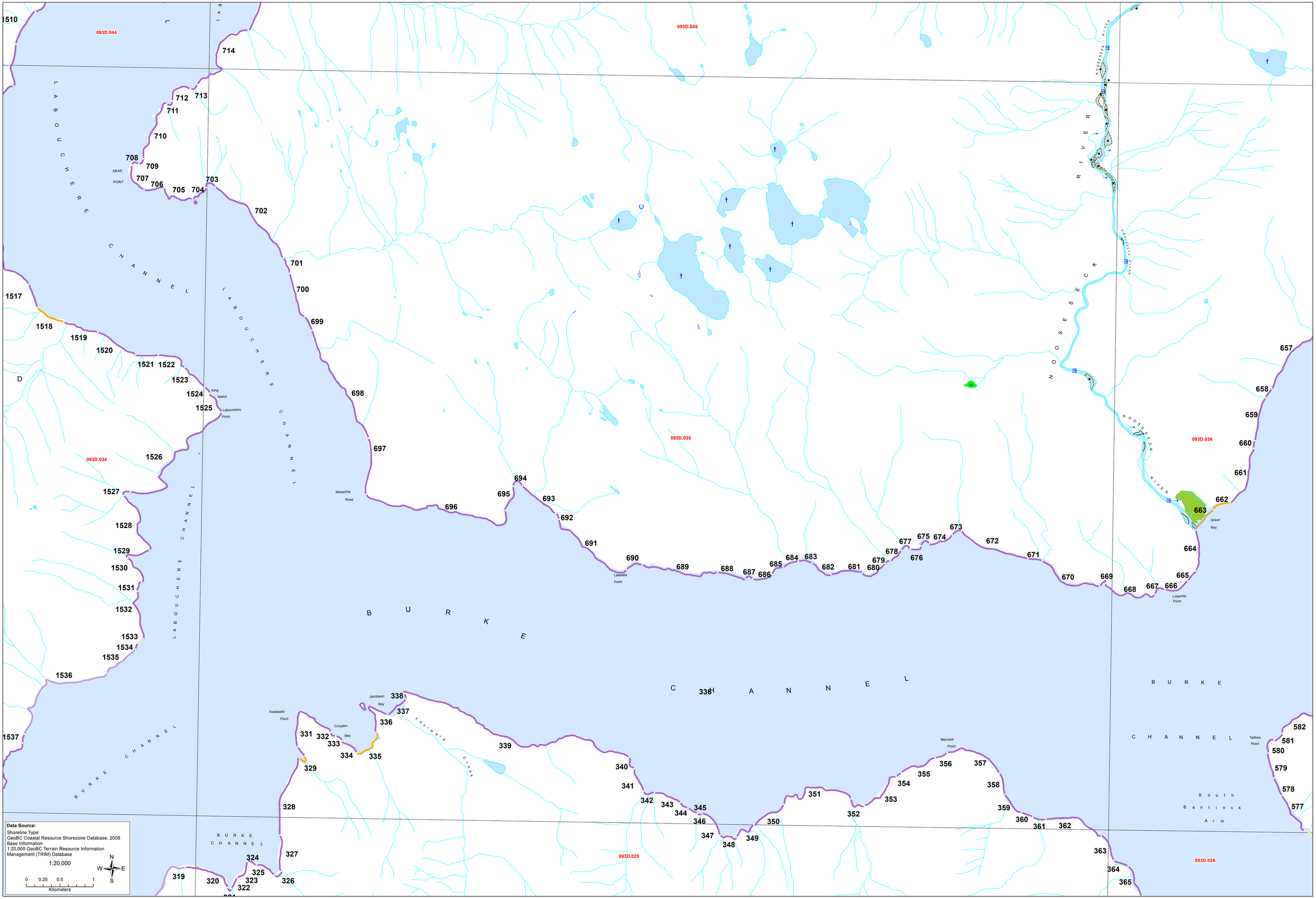
093D.035




**Data Source:**
Shoreline Type
GeoBC Coastal Resource Shorezone Database, 2008
Base Information
1:20,000 GeoBC Terrain Resource Information
Management (TRIM) Database

1:20,000

0 0.25 0.5 1 Kilometers

N W E S

**Legend**

- Unit Break Points
- Undefined

**Immobile Substrates**

- 1 - Bedrock - CC 1-20 - VE
- 2 - Bedrock - CC 1-20 - E
- 3 - Bedrock/Boulder - CC 1-23, 32, 33 - SE
- 4 - Bedrock/Gravel - CC 1-23, 33 - SP
- 5 - Bedrock/Gravel - CC 1-23,33 - P/VP

**Mobile/Partially Mobile Substrates**

- 6 - Sand & Gravel - CC 24-26, 32 -SP
- 7 - Sand & Gravel - CC 24-26,32 - VP/P
- 8 - Estuary or Sand/Mud - CC 27-31 - VP/P/SP
- 9 - Sediment - CC 21 - 30 - SE/E

**Current Dominated**

- 10 - Bedrock or Sediment - CC 34 - VP/P/SP

**Tidal Lagoon**

- 11 - Bedrock or Sediment - CC 35 - VP/P/SP

| CC | Type |
|---|---|
| **Rock Shore Types - characterized by a lack of clastic sediments such as gravel or sand.** | |
| 1 | Rock Ramp, Wide |
| 2 | Rock Platform Wide |
| 3 | Rock Cliff Narrow |
| 4 | Rock Ramp, Narrow |
| 5 | Rock Platform Narrow |
| **Rock and Sediment Shore Types - rock and pockets of clastic sediments** | |
| 6 | Ramp with Gravel Beach, Wide |
| 7 | Platform with Gravel Beach, Wide |
| 8 | Cliff with Gravel Beach |
| 9 | Ramp with Gravel Beach, Narrow |
| 10 | Platform with Gravel Beach, Narrow |
| 11 | Ramp with Sand and Gravel Beach, Wide |
| 12 | Platform with Sand and Gravel Beach, Wide |
| 13 | Cliff with Sand and Gravel Beach |
| 14 | Ramp with Sand and Gravel Beach, Narrow |
| 15 | Platform with Sand and Gravel Beach, Narrow |
| 16 | Ramp with Sand Beach, Wide |
| 17 | Platform with Sand Beach, Wide |
| 18 | Cliff with Sand Beach |
| 19 | Ramp with Sand Beach, Narrow |
| 20 | Platform with Sand Beach, Narrow |
| 21 | Gravel Flat, Wide |
| 22 | Gravel Beach |
| 23 | Gravel Flat or Fan |
| 24 | Sand and Gravel Flat or Fan, Wide |
| 25 | Sand and Gravel Beach |
| 26 | Sand and Gravel Flat or Fan, Narrow |
| 27 | Sand Beach, Wide |
| 28 | Sand Flat |
| 29 | Mud Flat |
| 30 | Sand Beach, Narrow |
| 31 | Estuaries |
| **Man- Made Materials** | |
| 32 | Man-made, permeable |
| 33 | Man-made, impermeable |
| **Current Dominated** | |
| 34 | Channel |
| 35 | Tidal Lagoon |

# Shoreline Habitat

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 biologial and geomorphological features.
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 indictor species present at a bedrock shoreline with no mobile sediment present.

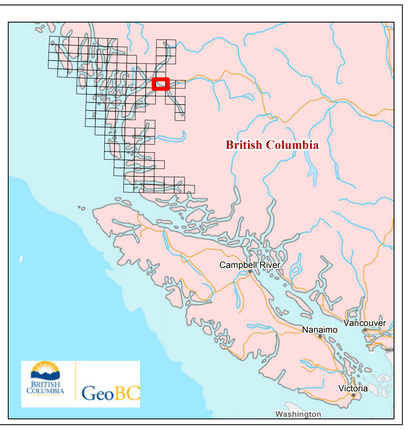
How is Habitat Type determined?
Each Habitat Type has typical biological features (including both an indicator species list and typical associated biobands).
To determine the Habitat Type, the biomapper looks at the along-shore Units as designated and described by the physical mapper, and
1. records 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 swellsm 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 500km
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 - Very Protected - Very low wave exposure, fethces < 1km, sheltered anchorages at heads of bays and inletes

**Table MIDCOAST and NORTH COAST project area which includes BIO_AREAS CC, JS and NC.**
**The Species/ wave exposure/ substrate table for Habitat Classification (HAB_OBS), , for the Mid-coast BC study area, from Johnstone Strait/Central Coast Mapping Regions 5, 6 and 7.**

| SUBSTRATE STABILITY | IMMOBILE SUBSTRATES | | | | MOBILE OR PARTIALLY MOBILE SUBSTRATES | | | | CURRENT-DOMINATED | TIDAL LAGOON |
|---|---|---|---|---|---|---|---|---|---|---|
| MAJOR SUBSTRATE | BEDROCK | BEDROCK/BOULDER | BEDROCK/GRAVEL | BEDROCK/GRAVEL | SAND & GRAVEL | SAND & GRAVEL | SAND/MUD | SEDIMENT | BEDROCK OR SEDIMENT | BEDROCK OR SEDIMENT |
| COASTAL CLASSES | 1-20 | 1-23, 32, 33 | 1-23, 33 | 1-23, 33 | 24 - 30, 32 no SAL band | 24 - 30, 32 no SAL band | 24 - 30, 31 has SAL band | 24-30 | 34 | 35 |
| EXPOSURE (BIO_AREA) | E | SE | SP | VP, P | SP | VP, P | VP, P, SP | SE, E | VP, P, SP | VP, P, SP |
| COMMUNITY CODE (HAB_OBS) | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| upper | *Verrucaria* *Balanus glandula* | *Verrucaria* *Enteromorpha* *Balanus glandula* *Fucus distichus* | *Verrucaria* *Enteromorpha* *Balanus glandula* *Fucus distichus* | *Verrucaria* *Enteromorpha* *Balanus glandula* *Fucus distichus* | *Verrucaria* *Enteromorpha* *Balanus glandula* *Fucus distichus* | *Verrucaria* *Enteromorpha* *Balanus glandula* *Fucus distichus* | **grasses & rushes** ***Salicornia virginica*** *Balanus glandula* *Fucus distichus* | no visible macrobiota due to sediment mobility | tidal current dominated; may be a Protected wave exposure but shows an assemblage of indicator species from higher wave exposures. Assemblage observed is "anomalous' for the wave energy of the site. | *Balanus glandula* *Fucus distichus* ponded water in lagoon creates narrow intertidal and a reduced biota in brackish water, may have associated current dominated at outflow |
| middle | ***Pollicipes polymerus*** *Mytilus californianus* *Semibalanus carriosus* | *Mytilus californianus* *Semibalanus carriosus* | *Mytilus trossulus** *Semibalanus carriosus* ***Ulva/ Ulvaria spp.*** | *Mytilus trossulus ** ***Ulva/ Ulvaria spp.*** | *Semibalanus carriosus* ***Ulva/ Ulvaria spp.*** | ***Ulva/ Ulvaria spp.*** | *Mytilus trossulus*** *Ulva/ Ulvaria* | | | |
| mid/low | *Alaria 'nana' morph* | ***Hedophyllum sessile*** ***Phyllospadix scouleri*** | | | | | | | | |
| lower | ***Lessoniopsis littoralis*** *Lithothamnion* | *Alaria 'marginata' morph* *Lithothamnion* | *Laminaria groenlandica* ***Laminaria saccharina*** *Alaria 'marginata' morph* *Lithothamnion* | ***Laminaria saccharina*** | *Laminaria groenlandica* ***Laminaria saccharina*** *Alaria 'marginata' morph* *Lithothamnion* | ***Laminaria saccharina*** | | | | |
| subtidal | *Nereocystis luetkeana* | *Nereocystis luetkeana* ***Macrocystis integrifolia*** *Agarum spp.* ***Strongylocentrotus franciscanus*** | *Nereocystis luetkeana* *Macrocystis integrifolia* *Agarum spp.* ***Strongylocentrotus franciscanus*** ***Zostera marina*** | *Macrocystis integrifolia* *Agarum spp.* ***Zostera marina*** | *Nereocystis luetkeana* *Macrocystis integrifolia* *Agarum spp.* ***Strongylocentrotus franciscanus*** ***Zostera marina*** | *Macrocystis integrifolia* *Agarum spp.* ***Zostera marina*** | ***Zostera marina*** | | | |