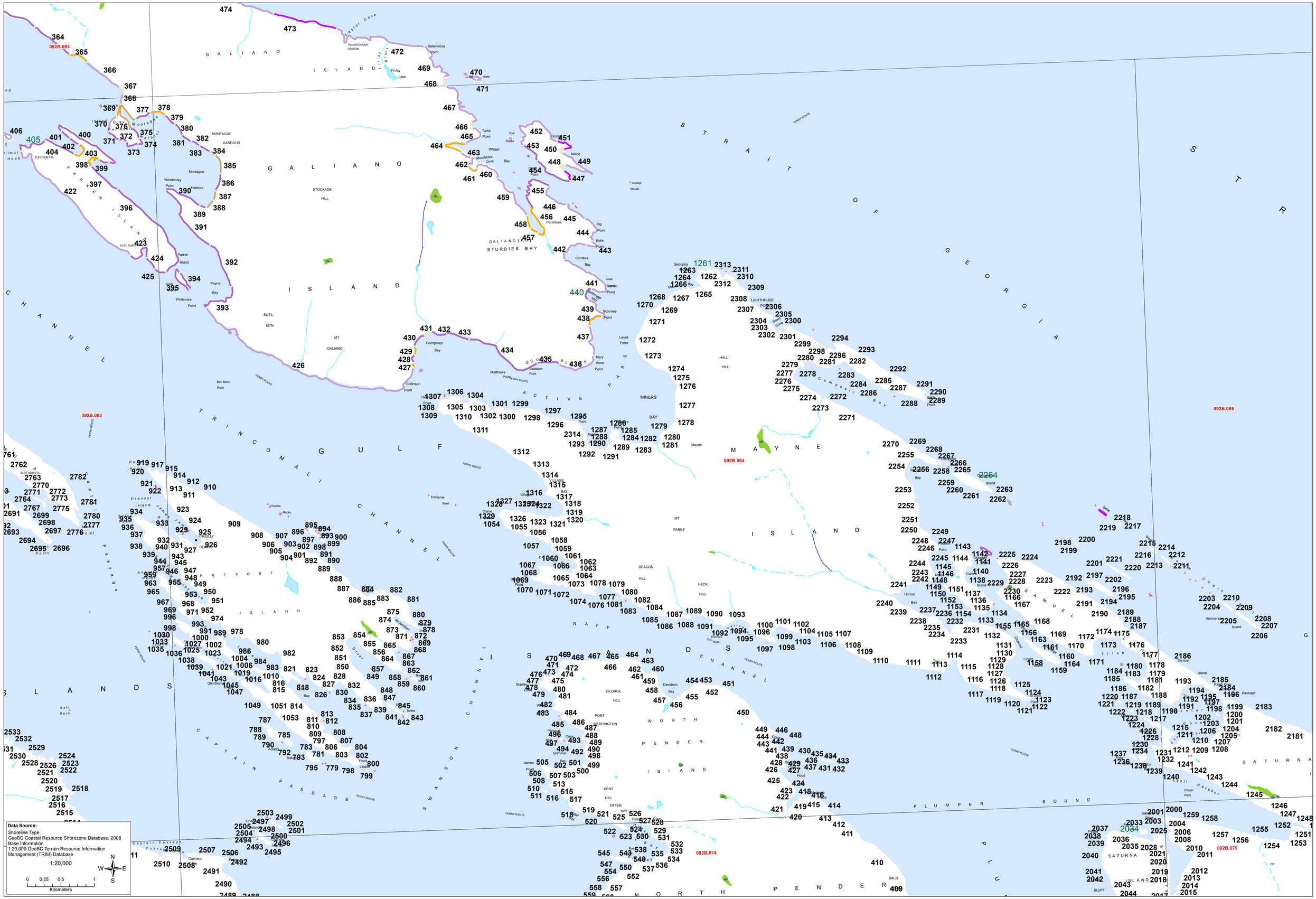



## Legend

- 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 |

| CC | Type |
|---|---|
| **Sediment Shore Types - have substrates that have little or no bedcrock cropping out** | |
| 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.

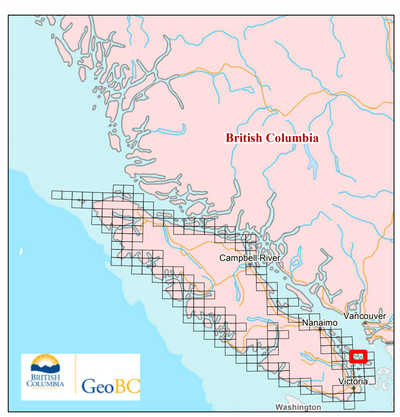
How is Habitat Type determined?
Each Habitat Type has typical biological features (including both an indicator species list and typical associated biobands).
To determine the Habitat Type, the biomapper looks at the along-shore Units as designated and described by the physical mapper, and
1. records 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 expsoure, sheltered inlets, usually fetches less than 10km
SP - Semi Protected - Moderate wave expsoure, partly sheltered, usually fetches 10-50km
VP - Very Protected - Very low wave exposure, fethces < 1km, sheltered anchorages at heads of bays and inletes

**Table WCVI, GOES WITH BIO_AREAS WCVI, SCVI, WCVINorth, JdF**
**Habitat Classification for "Exposure Bio" (EXP_BIO) and "Habitat Observed" (HAB_OBS) based on visible macro-biota assemblages for the West Coast Vancouver Island bio-mapping.**

| MAJOR SUBSTRATE | BEDROCK/BOULDER | BEDROCK/BOULDER | BEDROCK/BOULDER | BEDROCK/BOULDER | SAND & GRAVEL | SAND & GRAVEL | SAND/MUD | SEDIMENT | BEDROCK OR SEDIMENT |
|---|---|---|---|---|---|---|---|---|---|
| COASTAL CLASSES | 1-20 | 1-20 | 1-23, 32, 33 | 1-23, 33 | 24, 25, 26, 32 | 24, 25, 26, 32 | 27, 28, 29, 30, 31 | 24 - 30 | |
| EXPOSURE (EXP_BIO) | E | SE | SP | P, VP | SP | P, VP | SP, P, VP | SE, E | VP, P, SP |
| HABITAT OBSERVED (HAB_OBS) | 2 | 3 * | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| upper | *Verrucaria* | *Verrucaria* | *Verrucaria* | *Verrucaria* | *Verrucaria* | *Verrucaria* | **marsh grasses & rushes** | 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. |
| | | *Enteromorpha* | *Enteromorpha* | *Enteromorpha* | *Enteromorpha* | *Enteromorpha* | | | |
| | | | | | | | ***Salicornia virginica*** | | |
| | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | | |
| middle | *Pelvetiopsis limitata* | *Fucus distichus* | *Fucus distichus* | *Fucus distichus* | *Fucus distichus* | *Fucus distichus* | *Fucus distichus* | | |
| | | | | | | | | | |
| | *Semibalanus cariosus* | *Semibalanus cariosus* | *Semibalanus cariosus* | | *Semibalanus cariosus* | *Semibalanus cariosus* | | | |
| | | | | | | | | | |
| | ***Pollicipes polymerus*** | | *Mytilus trossulus* | *Mytilus trossulus* | *Mytilus trossulus* | *Mytilus trossulus* | *Mytilus trossulus* | | |
| | | | *Ulva/ Ulvaria spp.* | *Ulva/ Ulvaria spp.* | *Ulva/ Ulvaria spp.* | *Ulva/ Ulvaria spp.* | *Ulva/ Ulvaria spp.* | | |
| mid/low | ***Mytilus californianus*** | ***Mytilus californianus*** | | | | | | | |
| | | *Microcladia/Iridea type mixed reds* | *Gigartina/Odonthalia type mixed reds* | *Gigartina/Odonthalia type mixed reds* | *Gigartina/Odonthalia type mixed reds* | *Gigartina/Odonthalia type mixed reds* | | | |
| | ***Postelsia palmaeformis*** | | | | | | | | |
| | | ***Hedophyllum sessile*** | | | | | | | |
| | | *Codium fragile* | *Codium fragile* | | *Codium fragile* | | | | |
| lower | ***Lessoniopsis littoralis*** | | *Laminaria saccharina* | ***Laminaria saccharina*** | *Laminaria saccharina* | *Laminaria saccharina* | | | |
| | | ***Egregia menziesii*** | | | | | | | |
| | *Laminaria setchellii* | *Laminaria setchellii* | | | | | | | |
| | | *Laminaria groenlandica* | *Laminaria groenlandica* | | *Laminaria groenlandica* | | | | |
| | *Alaria nana* | *Alaria marginata* | *Alaria marginata* | | *Alaria marginata* | | | | |
| | | *Eisenia arborea* | | | | | | | |
| | *Ishiokamenia* | *Ishiokamenia* | *Ishiokamenia* | | *Ishiokamenia* | | | | |
| | | | ***Sargassum muticum*** | | ***Sargassum muticum*** | | | | |
| | | *Agarum sp* | *Agarum sp* | *Agarum sp* | *Agarum sp* | *Agarum sp* | | | |
| | | ***Phyllospadix scouleri*** | | | | | | | |
| subtidal | | ***Macrocystis integrifolia*** | ***Macrocystis integrifolia*** | ***Macrocystis integrifolia*** | ***Macrocystis integrifolia*** | ***Macrocystis integrifolia*** | | | |
| | *Nereocystis luetkeana* | *Nereocystis luetkeana* | *Nereocystis luetkeana* | | *Nereocystis luetkeana* | | | | |
| | | ***Strongylocentrotus franciscanus*** | ***Strongylocentrotus franciscanus*** | | *Strongylocentrotus franciscanus* | | | | |
| | | | ***Zostera marina*** | ***Zostera marina*** | ***Zostera marina*** | ***Zostera marina*** | | | |