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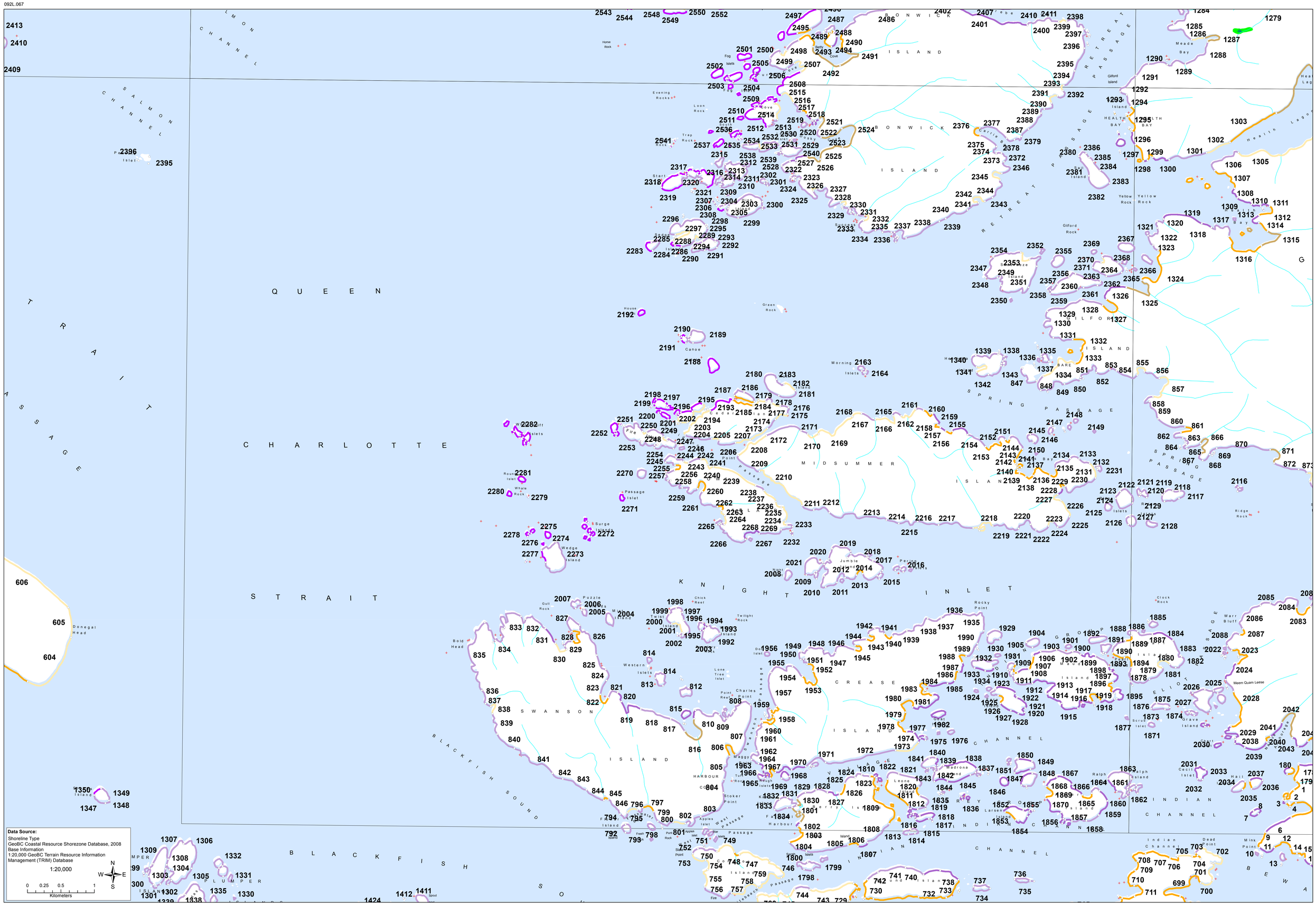



## Legend

- 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 | CC | Type |
|---|---|---|---|
| **Rock Shore Types - characterized by a lack of clastic sediments such as gravel or sand.** | | **Sediment Shore Types - have substrates that have little or no bedcrock cropping out** | |
| 1 | Rock Ramp, Wide | 21 | Gravel Flat, Wide |
| 2 | Rock Platform Wide | 22 | Gravel Beach |
| 3 | Rock Cliff Narrow | 23 | Gravel Flat or Fan |
| 4 | Rock Ramp, Narrow | 24 | Sand and Gravel Flat or Fan, Wide |
| 5 | Rock Platform Narrow | 25 | Sand and Gravel Beach |
| **Rock and Sediment Shore Types - rock and pockets of clastic sediments** | | 26 | Sand and Gravel Flat or Fan, Narrow |
| 6 | Ramp with Gravel Beach, Wide | 27 | Sand Beach, Wide |
| 7 | Platform with Gravel Beach, Wide | 28 | Sand Flat |
| 8 | Cliff with Gravel beach | 29 | Mud Flat |
| 9 | Ramp with Gravel Beach, Narrow | 30 | Sand Beach, Narrow |
| 10 | Platform with Gravel Beach, Narrow | 31 | Estuaries |
| 11 | Ramp with Sand and Gravel Beach, Wide | **Man-Made Materials** | |
| 12 | Platform with Sand and Gravel Beach, Wide | 32 | Man-made, permeable |
| 13 | Cliff with Sand and Gravel Beach | 33 | Man-made, impermeable |
| 14 | Ramp with Sand and Gravel Beach, Narrow | **Current Dominated** | |
| 15 | Platform with Sand and Gravel Beach, Narrow | 34 | Channel |
| 16 | Ramp with Sand Beach, Wide | 35 | Tidal Lagoon |
| 17 | Platform with Sand Beach, Wide | | |
| 18 | Cliff with Sand Beach | | |
| 19 | Ramp with Sand Beach, Narrow | | |
| 20 | Platform with Sand Beach, Narrow | | |

# 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.

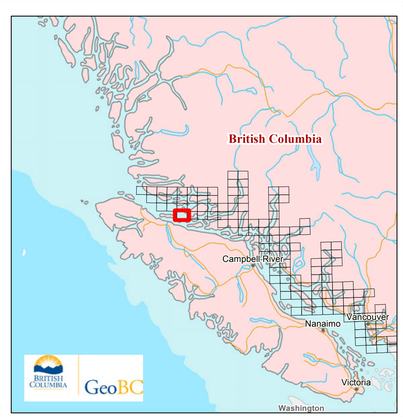
The Habitat Type is based on the whole unit and is similar to the physical mappers use of the 'Coastal Class' category, in that the detailed across-shore data are summarized into one attribute. The simplified category describes the features of the whole unit.

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 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 SOG, GOES WITH SSOG AND NSOG, part of CR**
**Habitat Classification for "Exposure Bio" (EXP_BIO) and "Habitat Observed" (HAB_OBS) based on visible macro-biota assemblages for the Georgia Basin. Species assemblages revised according to analysis of field observations. See summary in Table 5 and Table 6.**

| MAJOR SUBSTRATE | BEDROCK/BOULDER | BEDROCK/BOULDER | BEDROCK/BOULDER | SAND & GRAVEL | SAND & GRAVEL | SAND/MUD | SEDIMENT | BEDROCK OR SEDIMENT |
|---|---|---|---|---|---|---|---|---|
| **COASTAL CLASSES** | **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)** | SE | SP | P, VP | SP | P, VP | SP, P, VP | SE, E | VP, P, SP |
| **HABITAT OBSERVED (HAB_OBS)** | **3 *** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| upper | *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. |
| | | | | | | *Salicornia virginica* | | |
| | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | *Balanus glandula* | | |
| | *Pucus distichus* | *Pucus distichus* | *Pucus distichus* | *Pucus distichus* | *Pucus distichus* | *Pucus distichus* | | |
| middle | | | | | | | | |
| | *Semibalanus cariosus* | *Semibalanus cariosus* | | *Semibalanus cariosus* | | | | |
| | | *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 | *Anthopleura elegantissima* | *Anthopleura elegantissima* | | | | | | |
| | *Gelidium/Gastroclonium/ Leathesia/ Prionitis/* other bleached reds | *Gelidium/Gastroclonium/ Leathesia/ Prionitis/* other bleached reds | | *Gelidium/Gastroclonium/ Leathesia/ Prionitis/* other bleached reds | | | | |
| | | *Crassostrea gigas* | *Crassostrea gigas* | *Crassostrea gigas* | *Crassostrea gigas* | | | |
| | | *Pisaster ochraceus* | | *Pisaster ochraceus* | | | | |
| lower | bleached coralline reds | bleached coralline reds | | | | | | |
| | | *Agarum sp.* | | *Agarum sp.* | | | | |
| | | *Laminaria saccharina* | *Laminaria saccharina* | *Laminaria saccharina* | *Laminaria saccharina* | | | |
| | *Alaria spp.* | | | | | | | |
| | *Sargassum muticum* | *Sargassum muticum* | *Sargassum muticum* ** | *Sargassum muticum* | *Sargassum muticum* ** | | | |
| | | *Microcladia/ Iridaea* type mixed filamentous and foliose reds | | *Microcladia/ Iridaea* type mixed filamentous and foliose reds | | | | |
| subtidal | *Nereocystis luetkeana* | *Nereocystis luetkeana* | | *Nereocystis luetkeana* | | | | |
| | *Strongylocentrotus* | *Strongylocentrotus* | | *Strongylocentrotus* | | | | |
| | *franciscanus* | *franciscanus* | | *franciscanus* | | | | |
| | | *Zostera marina* | *Zostera marina* | *Zostera marina* | *Zostera marina* | *Zostera marina* | | |

* The SE (Semi-exposed) shoreline 'Habitat Observed' in the Strait of Georgia was observed to have the same species assemblage as typical species assemblages found in high SP (semi-protected).
** *Sargassum* does not occur in Very-protected (VP)