

Physical Representation – Feature Count

description

One of the goals of BC Marine Conservation Analysis (BCMCA) is to collaboratively identify marine areas of high conservation value and areas important to human use in Canada's Pacific Ocean, and to make these products available for use in marine planning. In order to identify areas of high conservation value the BCMCA ran Marxan analyses using a wide range of ecological data, recommended by subject matter experts, as conservation features. These and other data are illustrated in the BCMCA Atlas.

Features that represent the abiotic components of the marine environment are commonly used by researchers as surrogates for the occurrence of specific species as well as to characterise a particular habitat or community. Representation of all habitat types is often one of the goals of systematic conservation planning, which the results of Marxan analyses are intended to inform (Margules and Pressey, 2000; Airame et al, 2003; Fernandes et al, 2005). The purpose of representation is to ensure that habitat for every type of living creature is identified even if data are lacking for many individual species.

This map was generated by overlaying all of the physical features that the BCMCA collated to go into the Marxan analysis. The map illustrates the number of different physical features that inform each 2 kilometre by 2 kilometre planning unit. There were a total of nine different physical features used in the Marxan analysis and, as the facing map shows, up to seven of them overlapped in some of the planning units. Feature count values were classified for illustration using quantiles. (A quantile is established by dividing the frequency distribution of a variable into equal groups: that is, each quantile contains the same fraction of the total number of values being measured.)

Nine physical features were included in this tally:

- Benthic Classes
- Coastal Classes
- Ecosctions
- High Rugosity
- Hydrothermal Vents
- Oceanographic Regions
- Seamounts
- Shorezone Exposure
- High Tidal Current

(Note: The atlas page called *Physical Representation- Tidal Current* illustrates all levels of current velocity, but only areas of high tidal current were targeted in the Marxan analysis.)



PHOTO: ROLF HICKER



PHOTO: STUDIO TOUCH

data sources

- Baja California to the Bering Sea (B2B) study
- Fisheries and Oceans Canada
- InterRidge
- Living Oceans Society
- Marine Geoscience Data System
- Natural Resources Canada
- Parks Canada
- Province of British Columbia
- Seamounts Online

(Note: Please see individual feature atlas pages and/or metadata for feature specific data sources.)

data resolution

- Features were tallied by their presence in 2 kilometre by 2 kilometre planning units.

date compiled

- 2010

reviewers

- Not reviewed.

reviewer comments

- None provided.

caveats of use

- Most of the physical features are comprehensive for the study area meaning there are no data gaps. Exceptions are seamounts and hydrothermal vents.
- Please see individual feature atlas pages and metadata for feature specific caveats.
- Recommended date of expiry for use of these data in a marine planning context: none provided.

map, feature data and metadata access

- Visit www.bcmca.ca/data for more information.

references

- Airamé, S., Dugan, J.E., Lafferty, K.D., Leslie, H., McArdle, D.A. and Warner, R.R. "Applying Ecological Criteria to Marine Reserve Design: A Case Study from the California Channel Islands." *Ecological Applications*, 13. 2003. 170 -184.
- Fernandes, L., Day, J., Lewis, A., Slegers, S., Kerrigan, B., Breen, D., Cameron, D., Jago, B., Hall, J., Lowe, D., Innes, J., Tanzer, J., Chadwick, V., Thompson, L., Gorman, K., Simmons, M., Barnett, B., Sampson, K., De'ath, G., Mapstone, B., Marsh, H., Possingham, H., Ball, I., Ward, T., Dobbs, K., Aumend, J., Slater, D., and Stapleton, K. "Establishing representative no-take areas in the Great Barrier Reef: large-scale implementation of theory on marine protected areas." *Conservation Biology*, 19 (6). 2005.
- Margules, C. R. and Pressey, R. L. "Systematic Conservation Planning." *Nature*. 2000. 405: 242 -253.

BCMCA Atlas
Physical Representation
Feature Count

Legend

Feature Count
 (by planning unit)



Note:
 - Classification based on 6 quantiles.

Data Sources:

Baja California to the Bering Sea (B2B) study,
 Fisheries and Oceans Canada,
 InterRidge,
 Living Oceans Society,
 Marine Geoscience Data System,
 Natural Resources Canada,
 Parks Canada,
 Province of British Columbia,
 Seamounts Online

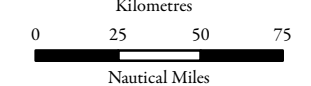
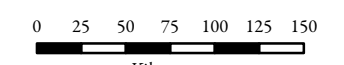
Base Data:

ESRI Base Data, GeoBase, GeoBC,
 NOAA, Natural Resources Canada,
 USGS, Washington State Government

Thematic Data:

For more information on data sources
 and methods please refer to the
 facing page to this map

Projection: BC Albers NAD83



1:4,250,000 *

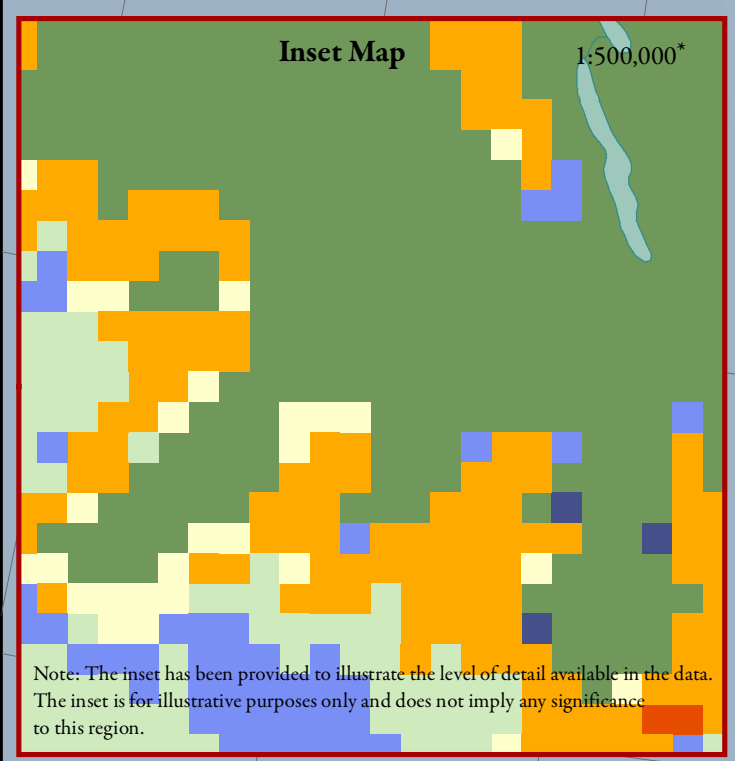
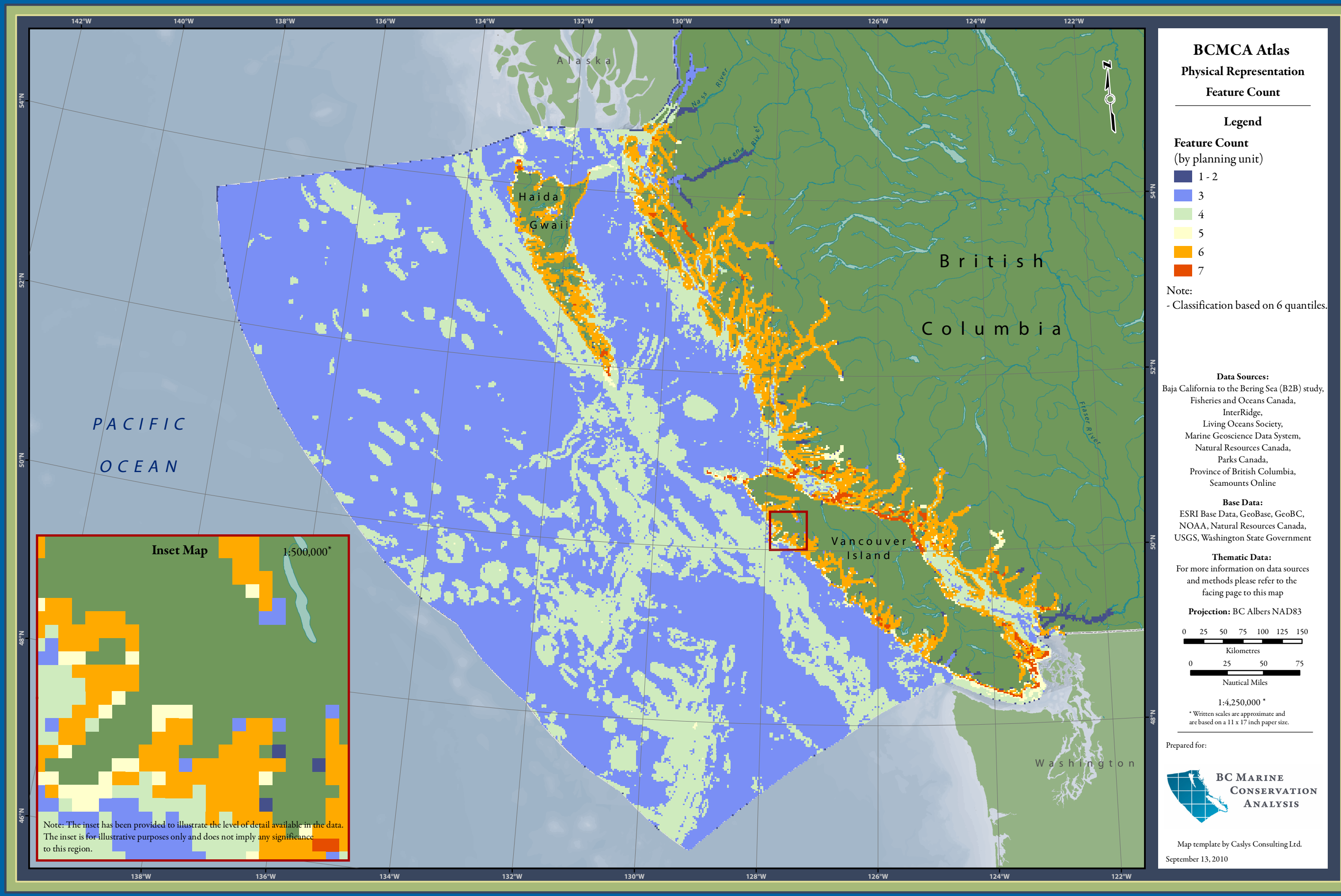
* Written scales are approximate and
 are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

September 13, 2010



Note: The inset has been provided to illustrate the level of detail available in the data. The inset is for illustrative purposes only and does not imply any significance to this region.