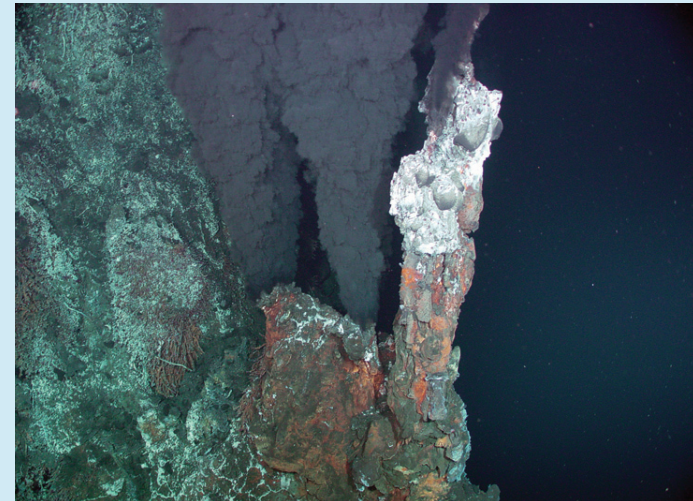
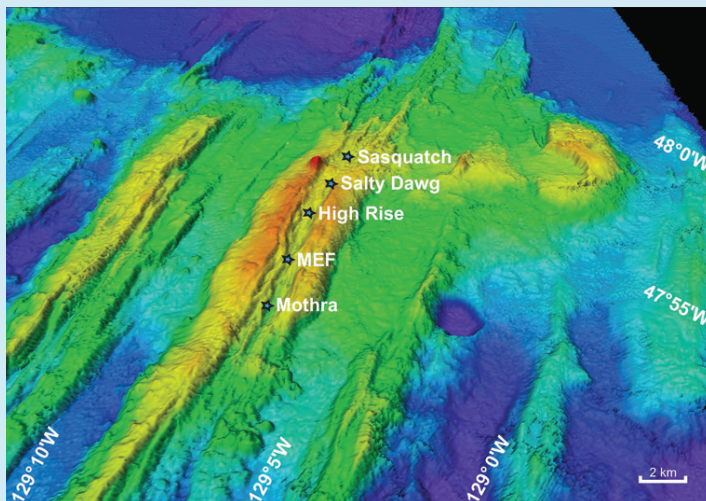


## Physical Representation – Hydrothermal Vents

### description

A submarine hydrothermal vent can be thought of as a hot spring on the seafloor. It continuously spews warm to super-hot, mineral-rich water that helps support a diverse community of organisms. Active vent sites are biologically more productive than the majority of the deep sea because vent chemicals provide the energy and raw materials for microorganisms to grow. These microorganisms form the basis of the food chain around the vents, in which high organism densities and growth rates occur. Unique biological communities are formed around vents, which host unusual creatures such as red-plumed giant tubeworms and specialized vent clams.

Most of the known hydrothermal vent sites in the world are found in international waters and have been discovered in the last 25 years. The only known sites of hydrothermal vents in Canadian waters are located along the Juan de Fuca/Explorer ridge. This atlas page illustrates hydrothermal vents of varying and unconfirmed activity levels within the BC Marine Conservation Analysis (BCMCA) study area that were obtained from InterRidge, an international research organization. Boundaries for the Endeavour vent zones and Endeavour Hydrothermal Vents Marine Protected Area, as described in the Endeavour Hydrothermal Vents Marine Protected Area Management Plan by Fisheries and Oceans Canada (DFO), are also illustrated.



### data sources

- Fisheries and Oceans Canada – Endeavour Vent Zones (Management Areas) and Marine Protected Area Boundary
- InterRidge Vents Database, Version 2.0

### data resolution

- None provided.

### data compiled

- Fisheries and Oceans Canada – 2004
- InterRidge Vents Database, Version 2.0 – 2010

### reviewers

- Kevin Conley, Fisheries and Oceans Canada
- Kim Conway, Natural Resources Canada
- Zach Ferdana, The Nature Conservancy
- Kim Juniper, University of Victoria
- Verena Tunnicliffe, University of Victoria

### reviewer comments

- Additional individual vent site locations along the Endeavour Ridge, at very fine scale, are available through the Ridge 2000 program <http://www.ridge2000.org/>
- The Ridge 2000 data portal is hosted by the Marine Geosciences Data System <http://www.marine-geo.org/portals/ridge2000/>
- Expert reviewers were not aware of additional data, aside from the Ridge 2000 data, but said that bathymetric data suggests much wider distribution of hydrothermal vents.

### caveats of use

- BCMCA did not display additional vents sites from the Ridge 2000 program as they provided no additional information relevant at this coast wide scale.
- 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](http://www.bcmca.ca/data) for more information.



### references

- Beaulieu, S.E. *InterRidge Global Database of Active Submarine Hydrothermal Vent Fields*: prepared for InterRidge, Version 2.0. 2010. [www.interridge.org/IRvents](http://www.interridge.org/IRvents)
- Fisheries and Oceans Canada. *Occurrence, susceptibility to fishing, and ecological function of corals, sponges, and hydrothermal vents in Canadian waters*. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/041. 2010.
- Glickson D.A., D.S. Kelley, J.R. Delaney. *Geology and hydrothermal evolution of the Mothra Hydrothermal Field, Endeavour Segment, Juan de Fuca Ridge*. *Geochemistry Geophysics Geosystems*. 2007. 10.1029/2007GC001588.






**BCMCA Atlas**  
**Physical Representation**  
**Hydrothermal Vents**

**Legend**

-  Endeavour Vent Zones
-  Endeavour Hydrothermal Vents Marine Protected Area

**Vent Activity (InterRidge)**

-  Active
-  Inactive
-  Unconfirmed

**Data Sources:**

Fisheries and Oceans Canada,  
 InterRidge Vents Database

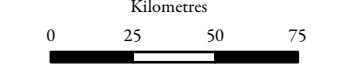
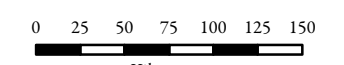
**Base Data:**

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 \*

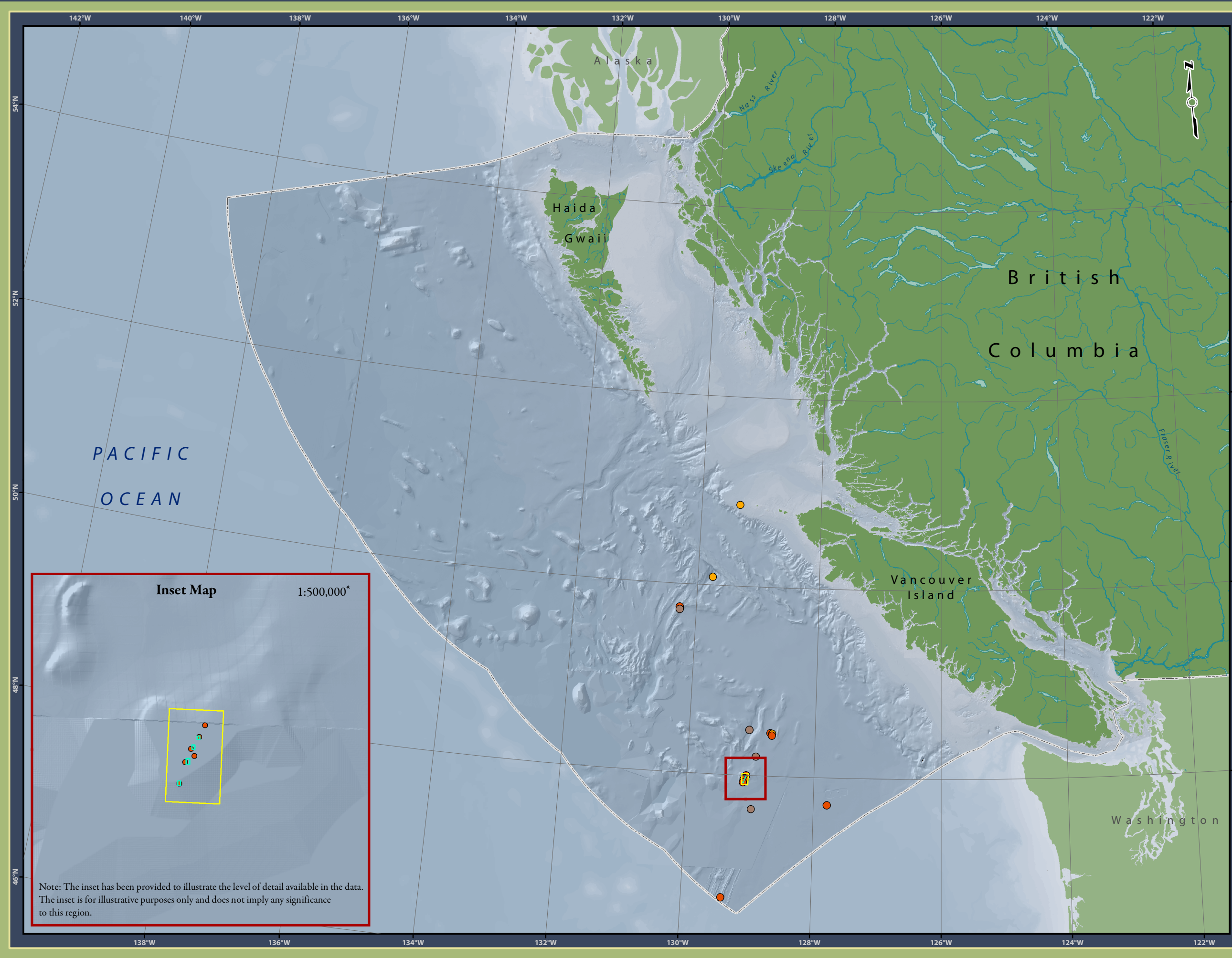
\* Written scales are approximate and  
 are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

October 7, 2010



**Inset Map** 1:500,000\*

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.