

## Commercial Fisheries – Rockfish Hook and Line (ZN)

### description

A ZN hook and line licence permits vessels to retain rockfish from directed fishing effort. Harvest plans, developed annually, identify fishery openings and total allowable catches (TACs). Rockfish TACs are set on a stock management basis and are allocated annually between the ZN hook and line, halibut, and groundfish trawl sectors.

In response to conservation concerns, a Rockfish Conservation Strategy was established in 2002, resulting in the establishment of Rockfish Conservation Areas (RCAs). These areas ensure that extensive inshore rockfish habitat will be closed to fishing that may impact inshore rockfish. There are currently 164 RCAs. Since 2003, Fisheries and Oceans Canada (DFO) has focused on working with the commercial groundfish harvesters and others to address management and sustainability issues in the commercial groundfish fisheries. In 2006 a three year pilot was introduced to integrate the management of all seven commercial groundfish sector groups consistent with the objectives of improving stock management through improved bycatch monitoring, reducing discarded catch, and requiring harvesters to be accountable and responsible for all species harvested.

There are two types of rockfish hook and line (ZN) licences issued: inside, for inland waters between Vancouver Island and the mainland; and outside, for all other waters. A rockfish category “ZN” or a communal commercial category “FZN” licence is required to commercially harvest rockfish in the ZN fishery. Rockfish licence eligibilities are limited entry and party based (issued to a person or company). Licences are valid for one fishing season, which operates between February 21 and February 20 of the following year.

Rockfish are a groundfish, and include species that are demersal or benthic (fish that dwell at or near the bottom of the ocean) as well as those that are pelagic (found in the upper water column). Many rockfish species are territorial and do not migrate. They reach reproductive maturity at 5 to 20+ years and can have average life spans of more than 50 years. Of the approximate 40 species of rockfish (*Sebastes spp.*) and thornyheads (*Sebastolobus spp.*) in BC, 26 species are caught in this fishery.

The rockfish fishery is diverse, utilizing various vessel and gear types. Under the “ZN” licence, fishing for rockfish is permitted by hook and line gear only, which includes longlines, troll, handlines and rod and reel (jigging). A majority of the catch comes from longline gear. Longline fishing is accomplished by setting a long ground-line containing hundreds of baited hooks along the ocean floor. Longline gear is fished directly on the bottom and is held in position by anchors attached to one or both ends of the mainline. Following a suitable “soak” time, the line is then hauled back onto the vessel, the fish are removed from the hooks and gear rebaited and reset. Small vessels typically use handline gear (rods and reels) where rockfish species are harvested and held live onboard in re-circulating seawater tanks or flooded fish holds.

The total estimated catch (kilograms) for the rockfish (ZN) fishery was assembled by Fisheries and Oceans Canada (DFO) into 4 kilometre x 4 kilometre grid cells directly from the Groundfish Stock Assessment harvest log database and includes the 1993-2004 fishing seasons for all “ZN” catch except halibut. Information provided by DFO was modified to meet confidentiality requirements.

The data are displayed using equal interval categories, meaning that the data are divided into 5 equally spaced classes where each class may contain a different number of grid cells. The percent of grid cells that fall in a given category is shown in the legend.

Permanent, year-round closures for the rockfish fishery were compiled based on the Amended Integrated Fisheries Management Plan (IFMP) for Groundfish dated March 8, 2008 – February 20, 2009 and 2008 Fisheries Notices (up to Oct. 2, 2008). Areas identified as closures may also include areas not licensed for this fishery. (Please read caveats of use for more information on closures.)



PHOTO: FISHERIES AND OCEANS CANADA

### data sources

- Fishery data: Fisheries and Oceans Canada, Groundfish Stock Assessment Harvest Log Database, Pacific Biological Station
- Year-round commercial fishing closures: Living Oceans Society (see Robb *et al.*, 2010)

### data resolution

- 4 kilometre by 4 kilometre grid cells

### date compiled

- Fishery data: 1993-2004
- Year-round commercial fishing closures: 2008

### reviewers

- Commercial fishing industry representatives (who may or may not be experts for this specific fishery), assembled with the support of the commercial fisheries representatives on the BC Marine Conservation Analysis (BCMCA) Human Use Data Working Group.
- Fisheries and Oceans Canada data providers.

### reviewer comments

- Generally reviewers wanted to see catch for longer time periods and closures that matched the time periods shown for the fishery.
- Groundfish integration in 2006 resulted in a fundamental shift for specific fisheries such as dogfish, lingcod and rockfish. The move to IVQs and creation of Rockfish Conservation Areas also created fundamental shifts in people’s behaviour. These management actions likely had a significant impact on fishing patterns. It is important to note that the data shown on the map are pre-IVQ, pre-groundfish integration, and pre-RCA closures. They are unlikely to represent current catch or catch locations.
- Rockfish are caught now in areas that they were not before; areas that show high catch in this dataset are no longer relevant. For example the 100 fathom edge of Queen Charlotte Sound /Morseby Gulley are relatively new areas.
- The high percentage of restricted data means this map poorly reflects the extent of the fishery. It would be valuable to show a presence or absence of use where areas do not meet the confidentiality requirements.

### caveats of use

- In the case of discrepancies, catch information from DFO takes precedence over commercial fisheries information portrayed by BCMCA.
- This map should be interpreted as showing only where fishing has taken place; it does not represent economic valuations or biological trends. Neither should it be inferred that species are more abundant where fished and less abundant in areas closed to commercial harvest.
- Data displayed should not be assumed to match current or future conditions due to ongoing changes in the environment and management.
- Data on this fishery have been screened to meet confidentiality requirements. The count of commercial fishing vessels for each spatial unit the data are provided in must be greater than 2 for information to be made public. This screen was set for each year before data were binned across years. This map represents 63.09% of the data from this fishery that met confidentiality requirements.
- The effort expended to capture targeted species differs among fisheries. Therefore it is difficult to compare weight caught for a low volume fishery versus a high volume fishery.
- Closures illustrated are permanent, year-round closures. Seasonal, temporary and voluntary closures were not included, all of which may impact catch. Areas identified as closures may also include areas not licensed for this fishery.
- Due to a lack of available spatial data regarding fisheries closures, the time period for closures does not match the time period for catch illustrated on the map. Many of the closures were implemented after the period for which catch is shown. As a result, the map may show harvesting in the closed areas, while in reality they did not overlap in time. Because the closure data are compiled in irregular polygons, closures may overlap the square grid cells delineating areas of commercial harvesting. Harvesting does not occur consistently throughout each grid cell and may not have occurred within the closure.
- 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

- BC Marine Conservation Analysis. *Workshop Report on Commercial Fisheries Data Review*. March 2010. [www.bcmca.ca/document-library](http://www.bcmca.ca/document-library)
- Fisheries and Oceans Canada. *Annual Integrated Fisheries Management Plans*. [www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/MPlans.htm?&lang=en](http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/MPlans.htm?&lang=en)
- Robb C.K., K.M. Bodtger, K. Wright and J. Lash. “Commercial fisheries closures in marine protected areas on Canada’s Pacific coast: The exception, not the rule.” *Marine Policy* (2010), doi:10.1016/j.marpol.2010.10.010
- The 2008 Amended IFMP for groundfish can be accessed here: [http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/plans08/2008\\_Groundfish\\_IFMP\\_Complete\\_Amendment\\_12.pdf](http://www-ops2.pac.dfo-mpo.gc.ca/xnet/content/MPLANS/plans08/2008_Groundfish_IFMP_Complete_Amendment_12.pdf)

**BCMCA Atlas**  
**Commercial Fisheries**  
**Rockfish Hook and Line (ZN)**  
**1993 - 2004**

**Legend**

**Kilograms of Rockfish Caught by Hook and Line (ZN)**

- 75 - 80,000 (99.24%)
- 80,001 - 160,000 (0.47%)
- 160,001 - 240,000 (0.12%)
- 240,001 - 320,000 (0%)
- 320,001 - 400,000 (0.18%)
- Year-round Rockfish Hook and Line (ZN) Closures

**Notes:**

- The number in brackets in the legend above is the percent of polygons that fell into the given category.
- This map represents 63.1% of the data from this fishery that meet confidentiality requirements (minimum 3 vessels reporting).
- Closures obtained from the Mar. 8, 2008-Feb. 20, 2009 Integrated Fisheries Management Plan and from the 2008 Fisheries Notices to Oct. 2, 2008.

**Data Sources:**  
 Fisheries and Oceans Canada,  
 Living Oceans Society

**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

0 25 50 75 100 125 150

Kilometres

0 25 50 75

Nautical Miles

1:4,250,000 \*

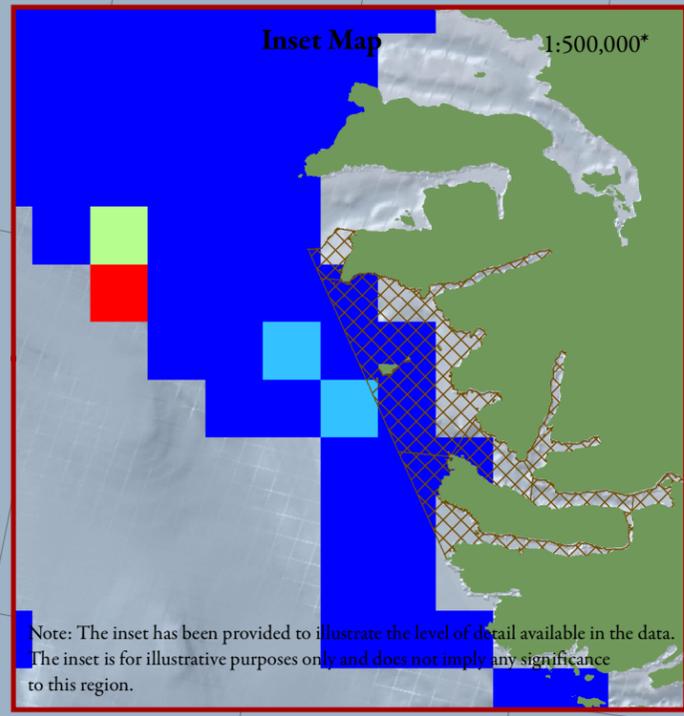
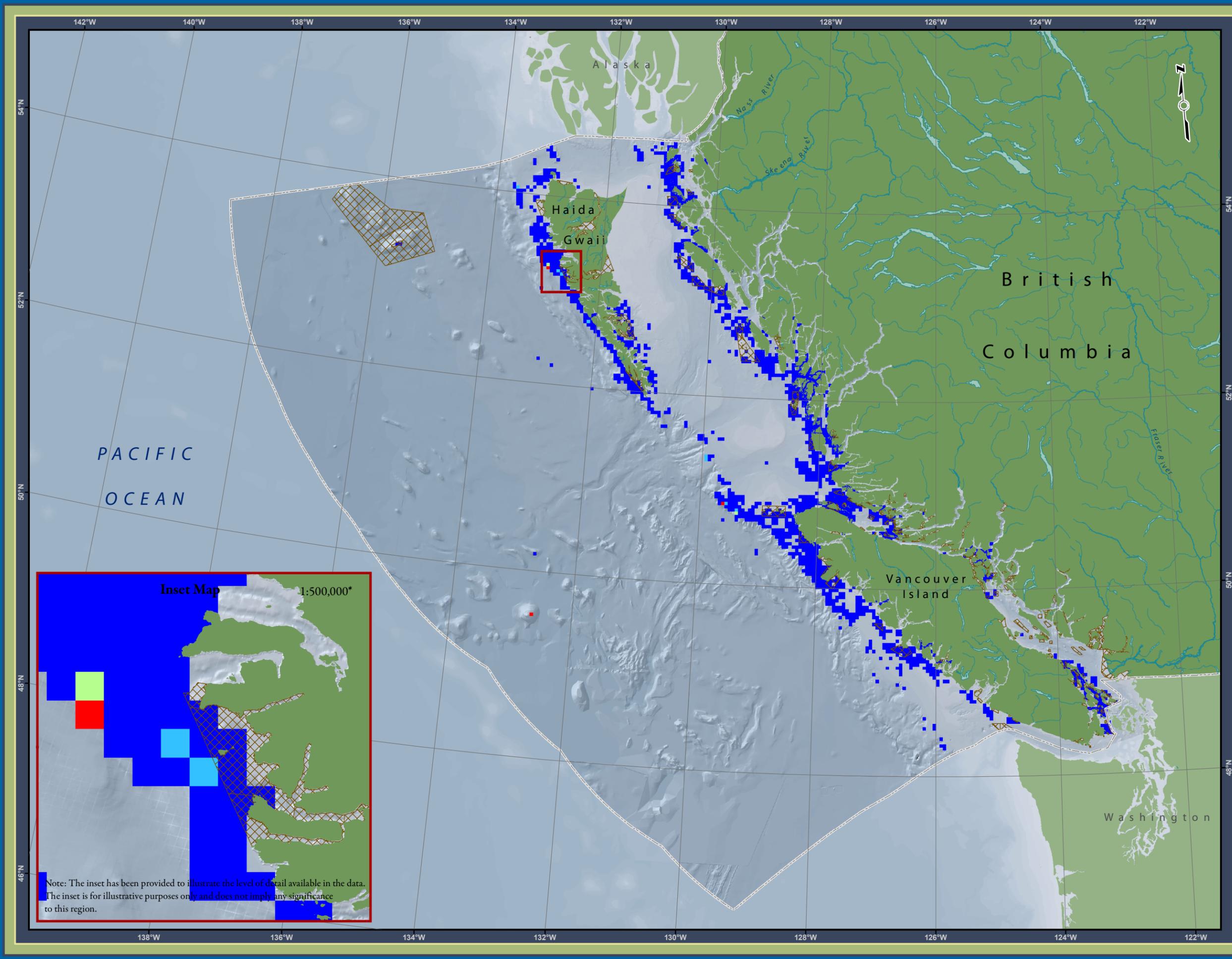
\* Written scales are approximate and are based on a 11 x 17 inch paper size.

Prepared for:



Map template by Caslys Consulting Ltd.

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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.