

Commercial Fisheries – Prawn

description

The commercial prawn by trap fishery occurs throughout the British Columbia coast. Since 1979, Fisheries and Oceans Canada (DFO) has monitored the commercial prawn fishery by using a biological reference point known as the spawner index. This index is used to ensure protection for the female spawning stock at the time of egg hatch, and the index value varies in different areas on the coast. The fishery becomes closed in an area when the number of spawners approaches a predefined index value. As individual coastal areas close during the season, fleet mobility increases and vessel effort becomes concentrated in the remaining open areas. A coast wide closure decision is made when most of the remaining coastal areas show signs of being fished to the target index.

The commercial prawn season starts in early May and ends in late June. The annual prawn catch has been generally increasing since 1980, and in 2003 and 2004 exceeded 2,402 tonnes and 2,000 tonnes, respectively. Currently, all inshore areas are now considered to be fully subscribed.

A prawn and shrimp by trap, category “W” or communal commercial category “FW” licence is required to commercially harvest prawn and shrimp by trap gear. Category “W” licence eligibilities are limited entry and vessel based, with licence length restrictions. Category “FW” eligibilities are also limited entry but are party based; a First Nations group is the licence eligibility holder and the eligibility must be designated annually to a commercially registered fishing vessel that meets length restrictions.

There are over 87 species of shrimp present in BC waters, three of which are commercially harvested in the prawn trap fishery. Spot prawn (*Pandalus platyceros*) are the target species with small directed fisheries for humpback shrimp (*Pandalus hypsinotus*) and coonstripe (or dock) shrimp (*Pandalus danae*). Prawns, the largest of the seven shrimp species commercially harvested by any gear type in Canada’s Pacific waters, are short-lived and subject to highly variable recruitment. Prawns live to four years of age and are found from the intertidal zone to depths of 487 metres (Mormorunni, 2001). They are potandrous hermaphrodites, spending the early part of their lives as males and the remainder as females.

Prawns in the commercial fishery are caught in traps deployed on long-lines on rocky bottoms, at depths of 40 to 100 metres. Of the various trap designs, approximately 99% of commercial prawn fishermen use web or soft mesh traps. A single licence may fish a maximum of 300 traps on six ground lines. When two trap limits are combined and fished from a single vessel, a maximum of 500 traps on 10 ground lines are permitted. The maximum allowable length of ground line between each buoy line is two skates or 1,100 metres. Most prawns are either landed as whole frozen-at-sea (FAS) product, or are landed live or fresh and then converted to whole frozen product in shore-side processing plants.

The total estimated catch (pounds) for the shrimp and prawn by trap fishery was assembled by DFO into 4 kilometre x 4 kilometre grid cells directly from the Shellfish Stock Assessment harvest log database located at the Pacific Biological Station (PBS) and includes the 2001-2004 fishing seasons. 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 prawn and shrimp by trap fishery were compiled based on the Integrated Fisheries Management Plan (IFMP) for Prawn and Shrimp dated May 1, 2008 – April 30, 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: REBEKAH PESICKA

data sources

- Fishery data: Fisheries and Oceans Canada, Shellfish 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: 2001-2004
- 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.

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 97.78% 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 verses 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 for more information.

references

- BC Marine Conservation Analysis. *Workshop Report on Commercial Fisheries Data Review*. March 2010. 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
- Mormorunni, C.L. *The Spot Prawn Fishery A Status Report*. A project of the Asia Pacific Environmental Exchange. December 2001. www.eartheconomics.org/FileLibrary/file/Reports/Puget%20Sound%20and%20Watersheds/Spot_Prawn_Status_Report.pdf
- 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

BCMCA Atlas

Commercial Fisheries
Prawn 2001 - 2004

Legend

Pounds of Prawn Caught

- 25 - 25,000 (92.87%)
- 25,001 - 50,000 (5.15%)
- 50,001 - 75,000 (1.46%)
- 75,001 - 100,000 (0.42%)
- 100,001 - 125,000 (0.09%)

Year-round Prawn Trap Closures

Notes:
- The number in brackets in the legend above is the percent of polygons that fell into the given category.
- This map represents 97.8% of the data from this fishery that meet confidentiality requirements (minimum 3 vessels reporting).
- Prawn trap closures obtained from the May 1, 2008-Apr. 30, 2009 Integrated Fisheries Management Plan and from 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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