

Marine Vessels

Vessel traffic in PNCIMA includes a wide range of ship types in commercial, fishing and recreational fleets. The Canadian Coast Guard's (CCG) Marine Communications and Traffic Services (MCTS) program monitors and regulates the movement of large vessels such as freighters, tankers cruise ships, fishing vessels and some large yachts through congested waterways. With the exception of the Prince Rupert and Kitimat port facilities, most large vessel traffic in PNCIMA consists of vessels transiting the area while en route to or from ports in Vancouver, Seattle, Alaska and Asia.¹

Vessel Traffic Density

A study of ship movements on the BC coast was conducted using MCTS data from 2003 and 2005 to 2008 to determine seasonal trends by ship type. Mean daily vessel movements were summarized using two different grids: one of ten by ten km cells for offshore waters and another of three by three km cells for inshore waters. This was necessary to show differences in data quality for different parts of the BC coast, specifically differences in accuracy (e.g. of the radar) and in the frequency with which vessel positions were recorded. More detailed and accurate information could be obtained from vessels monitored inshore (from 200 to 1,000 m between recorded vessel locations), compared to vessels monitored offshore (from two to ten km between recorded vessel locations). Yearly estimates were extracted by multiplying mean daily estimates by 365 days. Vessel traffic data in most fjords is not available because vessels are not usually tracked in those locations.²

The study indicated that the majority of vessel traffic on the BC coast is in the south, through the Juan de Fuca Strait and the Strait of Georgia. There is, however, significant vessel traffic through PNCIMA, particularly in Johnstone Strait, Inside

Passage and Hecate Strait. On average, there were more than 1,000 vessel equivalents³ annually travelling the Inside Passage between 2003 and 2008. There are also frequent ship movements in the approaches to Prince Rupert, with a mean of 400 vessel movements per year.⁴

Most vessel traffic in PNCIMA is in Johnstone Strait, Inside Passage and Hecate Strait

Within PNCIMA, towboats and tugboats account for 40 percent of all traffic, followed by carrier vessels at 26 percent. Passenger-related traffic (cruise ships and ferries) account for 18 percent, fishing vessels larger than 24 m and not actively fishing account for 15 percent, and oil tankers account for one percent of all traffic.

There are also many additional smaller vessels, such as pleasure craft, that are not accounted for in the map as they are not required to routinely report to MCTS except in distress situations.⁴ Many

tugs on the BC coast are less than 20 m in length, and many of those run without a tow. These tugs are not required to report to MCTS, so the accompanying map likely underrepresents tug traffic.⁵ Fishing vessels smaller than 24 m are also not accounted for in the map.

When MCTS data were processed, efforts were made to remove duplicate entries and data suggesting unusual numbers of ship movements; however, no further analyses were carried out to eliminate or fix anomalous vessel paths. Therefore, grid cells of the lowest value class (cells representing one to 50 vessels in the accompanying map) should be interpreted with caution.

Material presented is drawn from the following literature reviews, which include primary references:
 1 MacConnachie, S., Hillier, J. and Butterfield, S. 2007. Marine use analysis for the Pacific North Coast Integrated Management Area. Can. Tech. Rep. Fish. Aquat. Sci 2677: viii + 188p.
 2 Serra-Sogas, N. 2010. Modelling risk of chronic oil pollution from vessel operations in Canada's west coast (Masters thesis). Department of Geography, University of Victoria, Victoria, BC.
 3 An individual vessel may travel the route on more than one occasion.
 4 O'Hara, P. Canadian Wildlife Service, Environment Canada, unpublished data.
 5 British Columbia Marine Conservation Analysis Project Team. 2011. Marine atlas of Pacific Canada: a product of the British Columbia Marine Conservation Analysis. Available from www.bcmca.ca (Accessed March 2011).



Bulk carriers. Photos: Coral Cargill

