

Tankers

Tanker vessel traffic includes carriers of liquid hydrocarbons such as liquid gas, petroleum products and vegetable oils, which differ from bulk carriers designated to transport unpackaged cargo such as grains, coal, cement and iron ore.

Tanker Exclusion Zone

In 1988 the Canadian Coast Guard (CCG), the US Coast Guard and the American Institute of Merchant Shipping (now the Chamber of Shipping of America) adopted a voluntary Tanker Exclusion Zone off Canada's west coast.¹ The zone's purpose is to keep laden tankers west of the zone boundary in an effort to protect the environment and shoreline in the event of a tanker becoming disabled while in transit.² The Tanker Exclusion Zone was delineated because it would take less than 24 hours for a disabled tanker in that area to drift ashore in unfavourable weather conditions prior to the arrival of a tug.¹

Tanker Vessel Traffic Density (Winter)

In the 1970s, the Trans Alaska Pipeline System that runs from Prudhoe Bay to Valdez, Alaska was completed. Since that time, tankers varying in size from 50,000 to 250,000 dead weight tonnes have been transporting crude oil from Valdez to west coast ports in the lower 48 US states. On average, one loaded tanker enters the Juan de Fuca Strait every day and another tanker, with ballast, leaves the strait for Alaska.¹

A study of ship movements on the BC coast was conducted using the CCG's Marine Communication and Traffic Services 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). Seasonal estimates of vessel movements were calculated by multiplying mean daily estimates by 182.5 days (six months). Vessel traffic data in most fjords is not available because vessels are not usually tracked in those locations.³

The Tanker Exclusion Zone results in most tanker traffic transiting outside of PNCIMA. The current exceptions are tankers bound for Prince Rupert or Kitimat as destination ports that use an established route across and through the north of Hecate Strait. Between October and March, the average tanker traffic within PNCIMA was highest in Douglas Channel en route to Kitimat.³

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 five vessels in the accompanying map) should be interpreted with caution.

1 Ganessa, R., Conley, K. and Smiley, B. 2003. Bowie Seamount Pilot Marine Protected Area: an ecosystem overview. Can. Tech. Rep. Fish. Aquat. Sci. 2461: xi + 85 p.
 2 J. Aulakh, Environment Canada. Personal communication, April 2011.
 3 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.

Tankers travel through Hecate Strait and Douglas Channel to Prince Rupert and Kitimat



Texas oil tanker. Photo: © Wolcott Henry 2005/Marine Photobank

