



Backgrounder

B.C. Oil Spill Animation

Healthy Oceans. Healthy Communities.

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**Interactive animated oil spill scenarios on the B.C. coast can be seen at:
www.livingoceans.org/spillfreecoast**

Background

Living Oceans Society is committed to the long term health of the ocean and coastal communities on the Pacific coast of Canada. Several mega-projects have recently been proposed to build pipelines through northern British Columbia to move oil and petro-chemical products between the Alberta tar sands and B.C.'s North Coast ports. These projects will require many tankers to import and export hydrocarbons for shipment to and from the United States, Asia and South America.

In order to assess the potential impact of oil spills from the proposed oil tanker traffic and/or oil drilling and exploration along the North Coast, Living Oceans commissioned the development of a computer generated oil spill model based on sound scientific methods and the latest oceanographic data available.

Technical Expertise

Triton Consultants Ltd. (www.triton.ca), a maritime civil engineering firm, prepared data on ocean currents, tides and winds off of B.C.'s North Coast and provided technical expertise to generate the oil spill animation. The data was applied to the General NOAA Oil Modeling Environment (GNOME), a program developed by the U.S. National Oceanic & Atmospheric Administration (NOAA). The GNOME software processed the data into a model that plots the trajectory and subsequent movements of oil spills.

The outputs from the GNOME program were subsequently converted into a set of interactive animated maps by Biro Creative (www.birocreative.com) using flash media to portray various oil spill scenarios in particular locations.

Oil Spill Scenarios

The locations of the oil spills used in the scenarios were selected based on known hazards on proposed tanker routes, or plausible sites for an oil drilling platform on the coast. The interactive animations illustrate the movement of oil spills at four locations in different seasonal conditions over time:

- Ness Rock – a potential navigational hazard identified by Transport Canada on the proposed tanker route
- Grenville Rock – a potential navigational hazard identified by Transport Canada on the proposed tanker route
- Fin Island – on the proposed tanker route between Caamano Sound and Douglas Channel and identified by local residents as a high risk area for navigation
- Sockeye B10 – site of a test oil well drilled in Hecate Strait in 1968.

The **Ness Rock** winter and summer scenarios are based on the *Exxon Valdez* spill of 1989 where 257,000 barrels (41 million litres) of crude oil leaked into Alaska's Prince

William Sound. The winter scenario is based on historic wind data from samples taken during January at the Nanakwa Shoal and the South Moresby wind stations. For the summer scenario, wind data was from July samples from the South Moresby wind station. The *Exxon Valdez* oil spill is used as one example, even though it is far from the largest tanker spill (35th largest), as it happened on the north Pacific coast and is one of the best studied oil tanker spills in history.

The **Grenville Rock** winter scenario represents an oil spill of similar size to the *Exxon Valdez* spill of 257,000 barrels (41 million litres) and is modeled on conditions from January wind data from North Hecate wind station. The summer scenario models a spill of 5,179 barrels (823,515 litres, 700 tonnes) of crude oil based on wind data from the North Hecate Strait wind station in July. Tanker spills this size and larger have occurred 50 times globally over the past 11 years.

The **Fin Island** scenarios portray spills of 10,000 barrels (1,590,000 litres). Historical wind information comes from January and July data recorded at the Nanakwa Shoal wind station. Based on the number of tankers required for just one of the proposed mega-projects a spill this size is predicted to occur once every nine years.

The **Sockeye B10** scenarios demonstrate spills of 1,069 barrels (158,987 litres), similar to a spill that occurred at the Terra Nova rig in the waters off of Newfoundland in 2004. The Terra Nova rig was over 200 km offshore whereas Sockeye B10 is about 30 km from the eastern shore of Haida Gwaii. Historical wind data from the months of July and January from the South Moresby wind station were used in modeling these scenarios.

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