LIVING OCEANS SOCIETY

Healthy Oceans. Healthy Communities.

Tankers Filled With Trouble

Coming to Our Coast?

PHOTO: U.S. MARAD

PHOTO: Rolf Hickler

PHOTO: Dale Sanders

PHOTO: © J.G. Brouwer

What's at stake?

Fueling climate change

As the world's supply of oil decreases, the U.S. is looking to Canada, in particular northern Alberta's tar sands, as a key source of reliable, secure energy. Expansion of tar sands production depends on building pipelines that would carry oil and condensate between Kitimat and the tar sands. Tankers would be required to ship the oil out of Kitimat and transport the condensate into Kitimat. Living Oceans Society is opposed to putting our coastal waters at risk and to increasing our dependency on fossil fuels. However, several proposed mega-projects to transport oil and gas through northern B.C. are in various stages of application and planning.

Proposed projects

Encana terminal

Encana is currently importing condensate by tanker to Kitimat and transporting it by train to Alberta. Condensate is a highly flammable hydrocarbon used to thin the tar-like oil extracted from the tar sands. It is classified as a dangerous good by the federal government and is so toxic that it kills marine life on contact.

Enbridge

Enbridge plans to build two parallel pipelines running between Kitimat and the tar sands, importing 150,000 barrels of condensate per day and exporting 400,000 barrels of oil per day. Proposed date for this project is 2012 – 2014.

Kinder Morgan

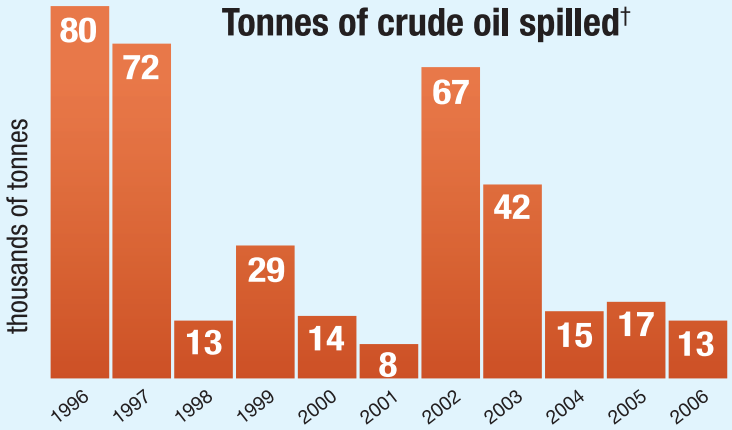
Kinder Morgan is planning to run a pipeline from the tar sands to Kitimat, where crude oil would then be loaded onto tankers for export. This project would require up to 14 tankers per month to load the oil at Kitimat.

Pembina Pipeline Corporation

Pembina Pipeline Corporation is planning to construct a 665 km condensate pipeline running from Kitimat to Summit Lake, B.C., near Prince George. The pipeline would transport 100,000 barrels of condensate per day to the tar sands.

Oiling our Ocean

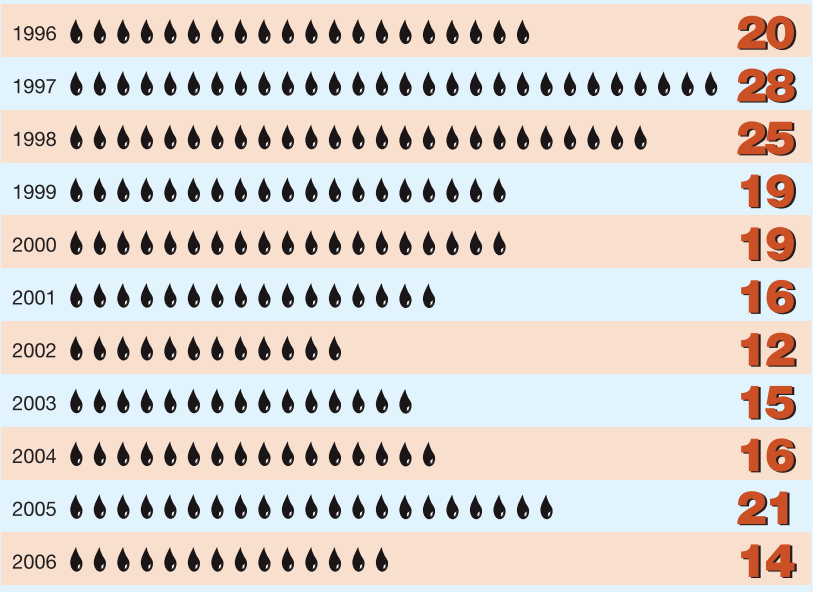
Over the past eleven years tankers have spilled 370,000 tonnes of oil into the world's oceans.



370,000 tonnes = 431 million litres = 2.7 million barrels

Large spills†

Number of recorded annual tanker spills 7 tonnes and greater
(7 tonnes = 51 barrels = 8,155 litres)



†Source: International Tanker Owners Pollution Federation (ITOPF) website. http://www.itopf.com/stats.html Accessed Sept. 20 2007

History of the tanker moratorium

1972
The Canadian government introduces a moratorium banning oil tankers from the North and Central Coast of B.C.

1977
Kitimat and Prince Rupert considered as potential oil tanker ports. Hearings held in coastal communities and scientific analysis conducted by Transport Canada conclude that oil spills would be inevitable and that the effects of such spills on the ecology and socio-economic stability of coastal communities could be serious.

1989
The *Exxon Valdez* oil tanker hits Bligh Reef while carrying over 200 million litres of oil. Approximately 41 million litres spill, the equivalent of 257,000 barrels. The amount of spilled oil is roughly equivalent to 125 Olympic-sized swimming pools. Public concern about the spill leads to the moratorium remaining in place.

What's at stake?

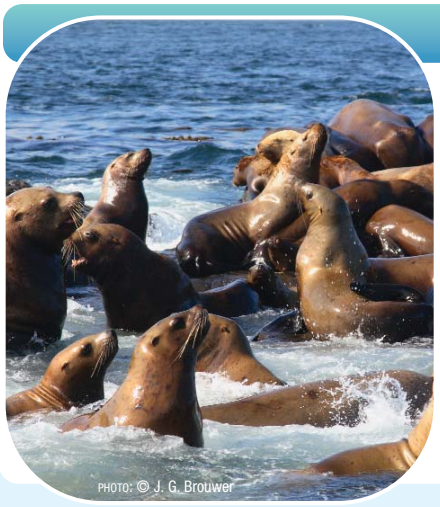


PHOTO: © J. G. Brouwer

British Columbia's coastal waters are a global treasure and a cradle of life for the northwest Pacific Ocean. Transporting millions of barrels of crude oil and condensate through B.C.'s fragile marine ecosystems poses significant risks to wildlife and threatens the livelihood of many people who make their living through tourism, sport and commercial fisheries.

Orcas, humpbacks, grey whales and Pacific white sided dolphins are some of the marine mammals that would be at risk from a tanker spill. In spring and fall, over 23,000 grey whales migrate along the coast between Mexico and their summer feeding grounds in the Bering Sea.

Wild salmon and many other fish species that migrate through and live in coastal waters could also be at risk if there were an oil spill. Many species of birds frequent the coast, and are vulnerable to the perils of hypothermia from contact with even a small amount of spilled oil.

"When" not "If"

It is not a question of if a spill will happen, but when and how big.

If these projects proceed, over 300 tankers would travel thought coastal waters each year—a disaster waiting to happen. The likelihood of an accident escalates with each additional vessel and every increase in the amount of oil transported. Based on the amount of oil the Enbridge project would be transporting and world wide oil tanker spill statistics, a spill of 1,000 barrels or greater is predicted to occur once every four years. A spill of 10,000 barrels or greater could be expected to occur once every nine years.

Clean Up—Impossible?

Even with modern technology, the ability to clean up a marine oil spill is very limited. A clean up is considered a success by industry if only 15 percent of the oil is recovered. Once oil hits a beach it is impossible to clean up.


PHOTO: David Howitt

Other potential impacts

In addition to the catastrophic effect of an oil spill, tankers also threaten the health of the environment by:

- Increasing the release of greenhouse gases and air pollution through the exhaust from tanker diesel engines.
- Increasing the mortality of seabirds contaminated by oil released in bilge water.
- Introducing alien species through the discharge of ballast water.

Appropriate action

Living Oceans Society is asking the federal government to:

one

Enforce the moratorium on oil tanker traffic on B.C.'s coast.

two

Strengthen the moratorium on oil tanker traffic by banning them permanently from the B.C. coast.

three

Invest in renewable energy solutions and begin the transition away from fossil fuels.

You can ...

Write to the Prime Minister of Canada and the Premier of British Columbia. Tell them to enforce the moratorium on oil tanker traffic and to ban oil tankers from the B.C. coast forever.

NOTE

Links to many of the references are on our web site at www.livingoceans.org

1990

Federal government report on tanker safety in Canadian waters determines that 100 small, 10 moderate and one major spill would occur every year. Environment Canada concludes that a catastrophic spill is predicted once every 15 years.

2003

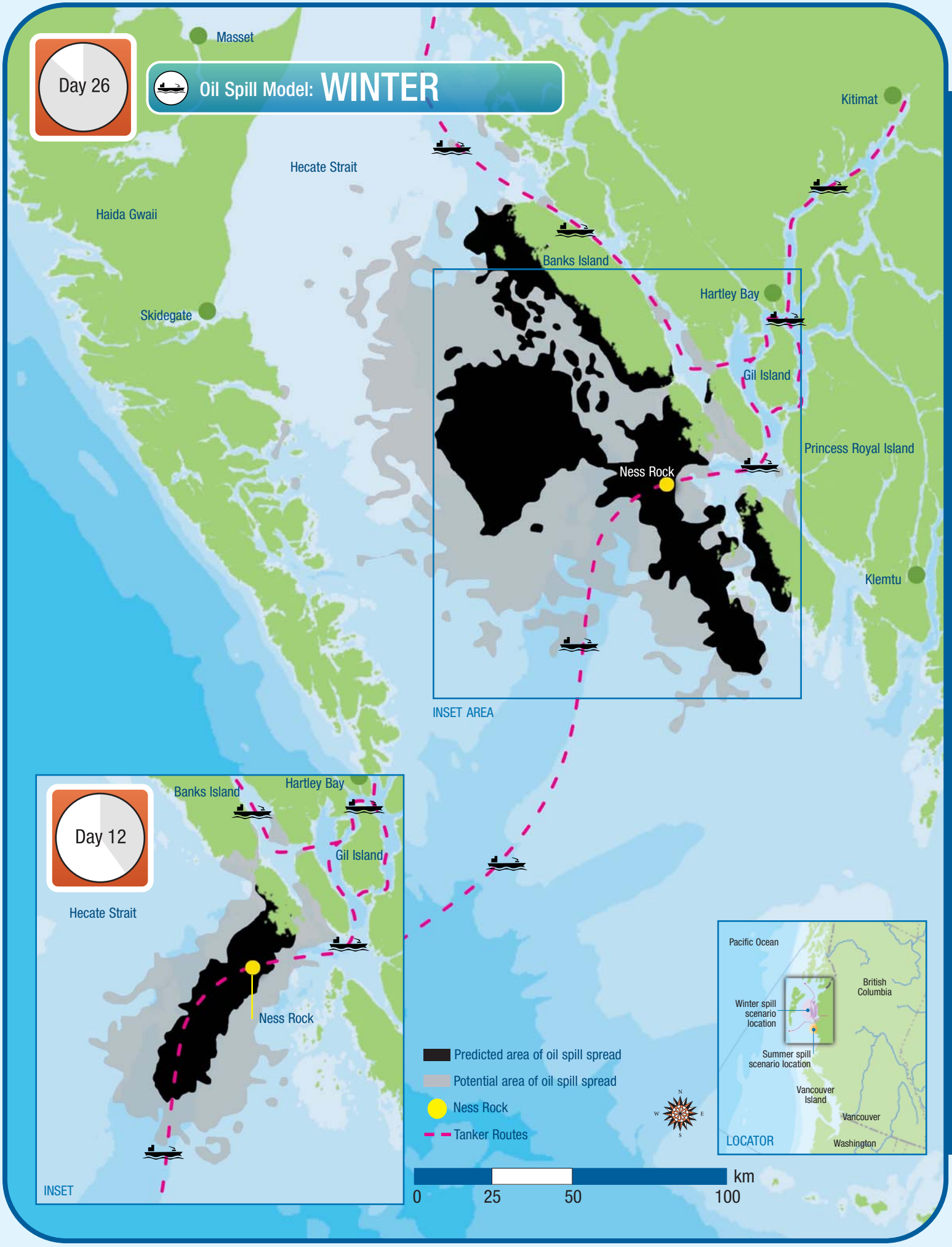
At this time a federally commissioned panel of scientists conclude that the moratorium should stay in place.

2006

Federal government allows the violation of the long-standing moratorium on tankers by permitting tankers carrying condensate (a toxic petrochemical used to thin the tar-like oil extracted from the tar sands) to travel through coastal waters to Kitimat, B.C.

2007

Today the fate of the moratorium rests in the hands of Canadians. Our federal and provincial governments need to hear that voters support the moratorium and want it strengthened. To let them know your concerns, go to www.oilfreecoast.org/action


Day 26
Oil Spill Model: WINTER
Masset
Kitimat
Hecate Strait
Haida Gwaii
Banks Island
Skidegate
Hartley Bay
Gil Island
Princess Royal Island
Ness Rock
Klemtu
INSET AREA
Day 12
Banks Island
Hartley Bay
Gil Island
Hecate Strait
Ness Rock
INSET
Predicted area of oil spill spread
Potential area of oil spill spread
Ness Rock
Tanker Routes
N
W
E
S
km
0
25
50
100
Pacific Ocean
British Columbia
Winter spill scenario location
Summer spill scenario location
Vancouver Island
Vancouver
Washington
LOCATOR

Oil spill models

These two maps illustrate how crude oil could spread in coastal waters if spills occurred in winter and summer. These maps are an artistic representation based on predictions generated using oil spill modeling software created by the U.S. National Oceanic & Atmospheric Administration. Triton Consultants Ltd. were contracted by Living Oceans Society to apply the software to the oceanographic conditions of the North and Central Coast of B.C. More oil spill scenarios and information can be found on our website at www.livingoceans.org

Winter

This map illustrates a spill in January where high storm waves push a tanker onto Ness Rock. The hull ruptures and approximately 257,000 barrels (41 million litres) of crude oil – one-fifth of the ship's cargo – leak into the ocean over the next 10 days.

For one month the oil is moved around Hecate Strait by the ocean currents, wind and tides, almost hitting the shores of South Moresby Island in Haida Gwaii, before moving north to cover the beaches of Banks Island.

Winter Conditions

Cleaning up a major tanker spill is a challenge in the best weather, but during the winter in Hecate Strait, it would be nearly impossible. This is because intense winter storms sweep across Hecate Strait every two or three days. The average wind speed for Hecate Strait in January is 39 km/h with gusts recorded at 191 km/hr. This weather would disperse and emulsify the oil, making it challenging, if not impossible, to contain and clean up a spill.

PHOTO Marty Weinstein

First Nations have depended on the bounty of the land and sea since time immemorial. Ancient clam middens and terraces around coastal B.C. are evidence of the importance of shellfish to generations of First Nations. After the Exxon Valdez oil spill, 10 native communities in Alaska lost their traditional food sources resulting in devastating consequences for the social and economic vitality of their communities.

Salmon are the foundation of life on the coast, linking ecosystems in the ocean and in coastal forests. North Coast waters are migration corridors for millions of wild salmon migrating to and from rivers in B.C., Washington, and Oregon. Approximately 650 major wild salmon spawning streams are found along the Central and North Coast.

PHOTO © J.G. Brouwer


PHOTO: Rolf Hickler

Orcas, humpbacks and grey whales are main attractions of B.C.'s thriving whale watching industry and a key part of the coastal ecosystem. One pod of orcas caught in the Exxon Valdez oil spill swam to clear water, but 11 members (about half the pod) died later, likely of starvation, because the spill killed their prey. Another pod has not reproduced since the spill and is expected to become extinct.

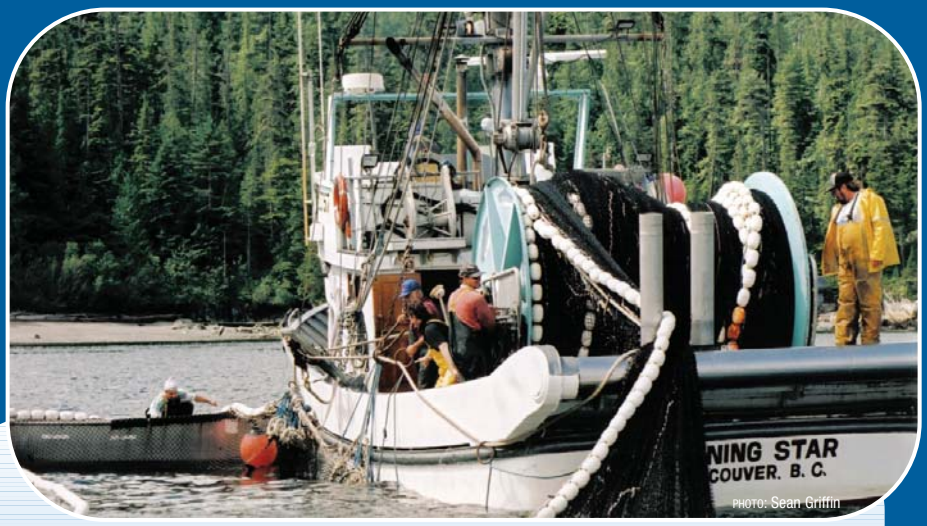


PHOTO: Sean Griffin

Half of the fish caught in B.C. migrate through or originate in the waters between Vancouver Island and Hecate Strait. Commercial fishermen catch over $100 million worth of fish annually on the North Coast, and over 2,500 North Coast residents work in the commercial fishery.


PHOTO: Exxon Valdez Oil Spill Trustee Council

A dime-sized drop of oil in a bird's feathers can cause it to die from hypothermia. Loons, grebes, and sea ducks are especially vulnerable to oil because they spend much of their time floating on the ocean surface. They live in the intertidal and shallow subtidal zones where spilled oil is likely to concentrate. The Prestige oil tanker spill which occurred off the coast of Spain in 2002 killed an estimated 200,000 birds from 71 different species.

Summer

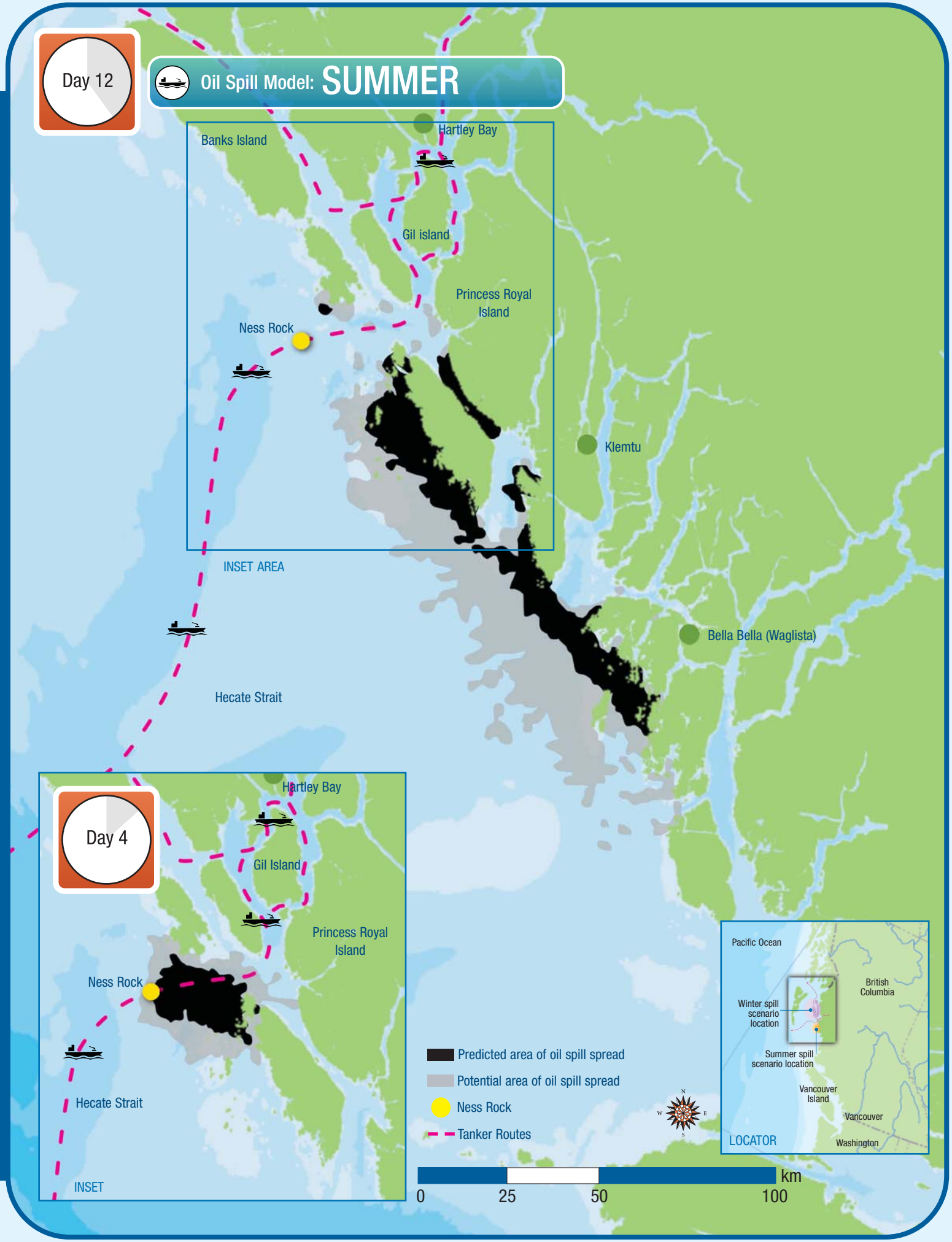
This map illustrates what could happen if an accident occurred in July at Ness Rock, a navigational hazard identified by Transport Canada. Over the next 10 days, 257,000 barrels (41 million litres) of crude oil leak into Hecate Strait and are swept south through the most intricate and channelled stretch of B.C.'s coast.

Two areas identified as possible candidates for protection under the National Marine Conservation Areas Act, and some of the most spectacular coast of B.C., are covered with crude oil. By Day 12 the oil slick has landed in the traditional territories of the Kitasoo and Heiltsuk First Nations.

If modern technology were able to clean up a spill, a successful clean up operation would most likely occur in the summer because the weather is less stormy than in the winter. Nonetheless, clean up crews and equipment responding to a spill would have to be flown or shipped into the area as there are few access roads on the North Central Coast.

Oil and water

How oil spreads when it hits the water is dependent on winds, currents, tides and what kind of oil it is. Different oils spread, evaporate, disperse and emulsify at different rates. Emulsification (the mixture of oil with the water) causes oil to increase in volume by 10 times and increase in thickness by 1,000 times. This usually begins by the second day, although in rough waters it can happen even more quickly. Once emulsification begins, booms and skimmers (clean up gear) are basically ineffective.


Day 12
Oil Spill Model: SUMMER
Banks Island
Hartley Bay
Gil island
Princess Royal Island
Ness Rock
Klemtu
INSET AREA
Bella Bella (Waglista)
Hecate Strait
Day 4
Hartley Bay
Gil Island
Princess Royal Island
Ness Rock
Hecate Strait
INSET
Pacific Ocean
British Columbia
Winter spill scenario location
Summer spill scenario location
Vancouver Island
Vancouver
Washington
LOCATOR
Predicted area of oil spill spread
Potential area of oil spill spread
Ness Rock
Tanker Routes
N
W
E
S
km
0
25
50
100

What can YOU do?

one

Write the Prime Minister of Canada and the Premier of B.C.

Office of the Prime Minister
80 Wellington Street
Ottawa, ON K1A 0A2

EMAIL: pm@pm.gc.ca

Premier of British Columbia
Box 9041
Station PROV GOVT
Victoria, BC V8W 9E1

EMAIL: premier@gov.bc.ca

two

Go to our action site at: www.livingoceans.org

three

Sign an online petition at: www.notankers.ca

See a spill unfold... visit www.livingoceans.org

Living Oceans has conducted a scientific analysis of several scenarios of spills on the coast, including a potential spill at an oil rig. The threat of an offshore oil and gas industry continues as the B.C. provincial government is pressuring the federal government, First Nations and the public to allow coastal drilling. Visit our website to see an animated interactive map that illustrates what an oil rig spill could do to our coast.

www.livingoceans.org

Send a fish to school!

Donate to the Oceans Fund on our web site, or mail your contribution to the address below.

www.livingoceans.org

About Living Oceans Society

Living Oceans Society is a non-profit research and public education organization. We are committed to conserving marine biological diversity to ensure healthy oceans and healthy coastal communities.

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Healthy Oceans. Healthy Communities.

Printed on paper made with 100% PCW recycled fiber content using non-polluting wind-generated energy. Certified SmartWood for FSC standards. Green Seal certified. Acid free. Using this stock, we saved: 17.86 trees; 51.56 lbs of water-borne waste; 7,585 gallons of wastewater; 839 lbs of solid waste; 1,652 lbs of greenhouse gases; 12,648,000 BTUs of energy; 859 lbs of air emissions; 2,043 cubic feet of natural gas. That's the equivalent to driving 930 miles in an average car or planting 58 trees.

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For a full list of References and further reading material go: www.livingoceans.org