WWF

FACTSHEET

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Arctic

What would an oil spill in the Beaufort Sea look like?

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How far would it spread? How would it impact the environment and species? How would it affect people?

ABOUT TWO-THIRDS OF THE WORLD'S 150,000 BELUGA WHALES SUMMER IN CANADIAN WATERS.

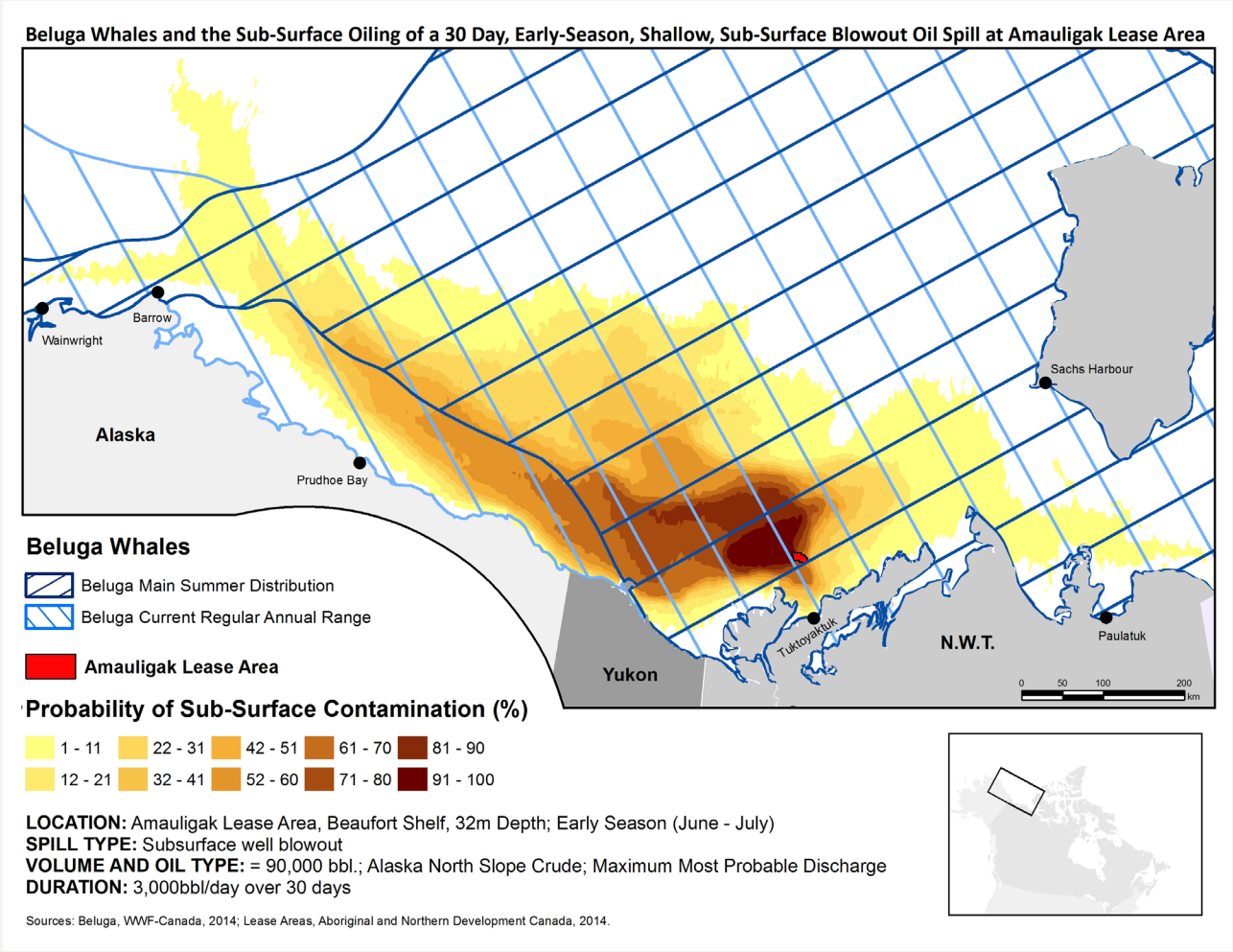
As the Arctic warms and sea ice retreats, oil and gas exploration and shipping activity is underway in Canada's Beaufort Sea, with all the benefits and risks this development entails. To better understand these risks, WWF has taken a milestone step in answering these big questions by leading research to map possible oil spills in the Beaufort Sea. This study modelled a range of spills of different sources (i.e. oil and gas, shipping, pipelines) and volumes, at different times of year, resulting in a total of 22 spill scenarios mapped.

Here, we share some of the key findings to help advance discussions about development in the Canadian Arctic, informing northern residents and decisions-makers at about the potential impacts of spills so they can make choices to reduce these risks.

Drilling for Oil in Beluga Whales' Summer Home

FULL RESEARCH RESULTS ARE AVAILABLE AT arcticspills.wwf.ca

The Beaufort Sea is home to an incredibly rich diversity of species, like the tens of thousands of beluga whales that migrate there annually to feed and breed. The Beaufort Sea is one of the belugas primary Arctic summering areas, and plays a critical role in their ability to thrive long-term. Today, as it has for thousands of years, the bounty of the Beaufort Sea supports the livelihoods and culture of the Inuvialuit, Inupiat, and Gwich'in peoples in Canada and Alaska.



As Arctic sea ice declines, interest in development grows – especially oil and gas exploration and shipping – raising some critical questions about balancing risks and benefits for the people of the Beaufort Sea, as well as across Canada and the global Arctic. To help answer those questions, WWF has commissioned world-class scientific research modelling how different types of oil spills would spread in the Beaufort Sea, and how the spills would overlap with significant areas for Arctic species, pristine ecosystems, and the local communities that depend on them.

Creating Critical Information for Decision Making

A clear understanding of how oil spills would behave in the Beaufort Sea is essential for informed planning and development decisions. The results of this research are intended to: help Northerners and Canadians fully understand the scale and nature of the risks of oil spills; inform critical ocean management and planning; and support oil spill response planning decisions should these development projects proceed.

WWF is making this important information available to all Canadians at *arcticspills.wwf.ca*, and presenting the results directly to key northern communities and decision-makers.

This research is particularly critical as development proposals are reviewed. Currently, Imperial Oil, in partnership with ExxonMobil Canada and BP, is considering exploration in the Ajurak and Pokak license areas – the deepest waters drilling has ever been attempted in the Canadian Arctic, and some of the most remote. These areas are at the edge of the continental shelf, an area that is particularly rich in biodiversity and critical for a number of Arctic species, including beluga whales.

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Key Research Conclusions

Oil and ice don't mix: Oil is difficult to contain, especially in icy conditions. Spilled oil surfaces rapidly and is easily trapped in sea ice, making it difficult to contain or clean up and spreading oil to areas far from the spill site. In particular, spilled oil may travel considerable distances to the west and north of the spill site when trapped and drifting within sea ice, affecting habitat for a wide range of marine species. As a result of this spread of oil, coastal oiling could be international issue – there may be a relatively high chance that oil spilled in Canadian waters could reach U.S. shorelines and affect communities there, as well as those in Canada.

When clean isn't clean: spill response measures come with their own risks. Use of chemical dispersants at deep water blowout sites may create 'toxic plumes' of chemical residue to concentrate along the Beaufort shelf, an area that is home to a diverse range of species and essential to the health and productivity of Beaufort Sea ecosystem.

SPILLED OIL SURFACES RAPIDLY AND IS EASILY TRAPPED IN SEA ICE.

Leading the Way with Cutting-Edge Research

In 2012, WWF commissioned RPS Applied Science Associates, Inc. (RPS ASA), a world leader in modelling the transport, fate, and biological effects of oil and chemical pollutants in marine environments, to evaluate different types of oil spills originating in the Beaufort Sea. RPS ASA used cutting-edge computer modelling software (Spill Impact Modelling Application) to estimate the trajectory and fate of future potential oil spills associated with increased ship traffic and offshore petroleum exploration and development in the Beaufort Sea.

Four types of oil spills were analyzed in the study:

- a **shipping spill** in the eastern region of the Beaufort Sea in the Amundsen Gulf, gateway to the Northwest passage
- various **trans-boundary spill** types, from either oil tankers or pipelines, through the waters crossing the Alaska/Canada border
- a **shallow water blowout** from an oil well close to shore on the Beaufort shelf, an area potentially subject to exploratory drilling
- a **deep water blowout** from an oil well on the Beaufort shelf break, an area potentially subject to exploratory drilling

Various scenarios were analyzed for each of the four types of oil spills resulting in a total of 22 scenarios of unique oil spills.

WWF's experts compared these oil spill maps with those marking important areas for wildlife, ecosystems and communities, and found a significant level of overlap. This indicates that these oil spills could interact significantly with important and sensitive areas and species, affecting the environment and people of the Beaufort Sea.

WWF in the Arctic

WWF has been working in the Arctic for over 40 years, supporting key research, providing on-the-ground support for wildlife conservation initiatives, and collaborating with local communities.

WWF is working to ensure that key Arctic habitats are conserved for important wildlife species and the people who depend on them. In the Beaufort Sea, WWF-Canada is working with local communities to ensure that ecologically significant areas are conserved - to protect key wildlife and habitats, and respect cultural values. In some cases, this will involve determining which areas are too sensitive or important to support some types of development, such as oil and gas development.

To help Arctic ecosystems stay in balance, WWF-Canada is planning for an Arctic future that conserves wildlife while respecting the practices and traditions of local communities, and promoting the responsible development of Arctic resources. We do this through scientific research, by working with communities, industry, Indigenous groups and government, by empowering young people to speak out for the Arctic, and by furthering national and international efforts to reduce greenhouse gas emissions and slow rapid climate change.

LEARN MORE ABOUT WWF's WORK IN THE BEAUFORT SEA AT wwf.ca/beaufortsea

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Why we are here.
We are creating solutions to the most serious conservation challenges facing our planet, helping people and nature thrive.

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