



THE
PEW
ENVIRONMENT GROUP



U.S. ARCTIC PROGRAM OCEANS NORTH

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In 2010, the Pew Environment Group commissioned *Oil Spill Prevention and Response in the U.S. Arctic Ocean*, a comprehensive study of the challenges and potential consequences of oil and gas exploration and production in the U.S. Arctic Ocean. The study examined what might happen if a catastrophic spill occurred in the Arctic.

KEY FINDINGS

- The U.S. government and the industry have underestimated the risks of a catastrophic blowout.
- Technology to sufficiently clean up oil in broken ice is unproved, and technologies that do work are limited by darkness, fog, hurricane-strength winds, sea ice, and other environmental factors.
- The oil and gas industry's spill-response plans fail to realistically account for the harsh climate, including long periods during which conditions would render response impossible.
- The industry's spill-response plans fail to account for the remoteness of possible drilling locations in the Beaufort and Chukchi seas off Alaska's northern coast. No roads link the Chukchi's coast to the rest of Alaska. The nearest major port (Dutch Harbor, in the Aleutian Islands) is 1,300 nautical miles from Point Barrow, where the Beaufort and Chukchi seas meet. The nearest U.S. Coast Guard Air Station is 950 air miles away in Kodiak, Alaska.



Bowhead whale

PHOTO: KATE STAFFORD

ENVIRONMENTAL FACTORS AND RESPONSE GAPS

(Estimated Percentage of Time When Operating Limits Are Impaired or Exceeded in U.S. Arctic)

WINTER (January-March)	SPRING (April-June)	SUMMER (July-September)	FALL (October-December)
Ice Condition: Solid (100%)	Ice Condition: Solid (80%), Broken Ice (20%)	Ice Condition: Broken Ice (60%) Open Water (40%)	Ice Condition: Open Water (20%), Broken Ice (60%), Solid (20%)
Approximate Daylight Hours: 4.5	Approximate Daylight Hours: 19	Approximate Daylight Hours: 21	Approximate Daylight Hours: 5.5
Average Number of Days Peak Gust >30 mph: 20 (22%)	Average Number of Days Peak Gust >30 mph: 12 (1%)	Average Number of Days Peak Gust >30 mph: 19 (21%)	Average Number of Days Peak Gust >30 mph: 30 (34%)
Average Number of Days of Fog: 51 (57%)	Average Number of Days of Fog: 53 (58%)	Average Number of Days of Fog: 44 (49%)	Average Number of Days of Fog: 51 (57%)
Average External Minimum Temperature: -49F	Average External Minimum Temperature: -9F	Average External Minimum Temperature: 20F	Average External Minimum Temperature: -32F

COMPARISON OF DISTANCES IN ALASKA AND THE LOWER 48 STATES



- The industry's spill-response plans make unrealistic assumptions that 95 percent of spilled oil would be contained or recovered. Under much more moderate conditions in the Gulf of Mexico, only 17 percent of the 2010 Deepwater Horizon spill was recovered through subsea containment and only 3 percent by mechanical skimming.
- Although considerable research has been conducted in the Chukchi and Beaufort seas, significant science gaps remain, and little baseline science exists for measuring the effects of an oil spill on Arctic ecosystems.

ABOUT THE REPORT'S AUTHORS

Nuka Research & Planning Group LLC and Pearson Consulting are consulting firms with internationally recognized expertise in oil spill prevention and response.

ABOUT THE PEW ENVIRONMENT GROUP

The Pew Environment Group is the conservation arm of The Pew Charitable Trusts, a nongovernmental organization that works globally to establish pragmatic, science-based policies that protect our oceans, preserve our wildlands, and promote clean energy. www.PewEnvironment.org



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