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Threats to America's Arctic

America's Arctic, located entirely in Alaska, is one of the most beautiful and forbidding places on earth. Home to indigenous peoples who subsist by hunting and fishing, the Arctic also supports some of the world's last intact marine ecosystems. Important species—including polar bears, walruses and ice seals, along with bowhead, beluga and gray whales—live here. Diverse fish and invertebrate populations also thrive in Arctic waters, and the region hosts some of the largest seabird populations in the world. The Arctic also helps to ventilate the planet: its cold air and water circulate atmospheric and ocean currents that regulate temperatures worldwide.

But this vital area faces unparalleled challenges from climate change, seasonal sea ice loss, ocean acidification and encroaching industrial activities such as oil and gas development and commercial shipping and fishing.

Ground Zero in a Warming World

Temperatures in the Arctic are rising almost twice as fast as on the rest of the planet, causing water temperatures to climb and the area of seasonal sea ice to shrink. Even the most dire predictions of a few years ago greatly underestimated the speed at which seasonal sea ice has disappeared from the Arctic. In 2007, seasonal minimum sea ice coverage in the Arctic was 39 percent lower than the long-term average from 1979-2000. The 2008 minimum ice pack was somewhat greater in extent, but it was so thin that it likely established a record low for ice volume. Scientists now predict the Arctic could be seasonally ice-free by 2030. The retreat of seasonal sea ice has made hunting and travel more difficult and dangerous for Arctic peoples. Loss of seasonal sea ice also removes vital habitat for ice-dependent species such as polar bears, walruses and ice seals.



Ocean Acidification Poses A Particular Threat

Scientists predict that the Arctic Ocean will be one of the first regions to feel the effects of increased ocean acidification. As atmospheric carbon dioxide dissolves in seawater, it forms carbonic acid. The increased acidity of ocean surface waters makes it more difficult for shellfish and other marine organisms to create shells and other hard parts from calcium carbonate. The rapid increase in acidity could outstrip the adaptive capabilities of many species, resulting in mass extinctions that would fundamentally transform Arctic Ocean ecosystems.

Oil and Gas Activities

Climate change and seasonal sea ice loss increase the potential for dramatic expansion of oil and gas exploration and development in Arctic waters. Historically, little oil and gas activity has occurred in U.S. Arctic waters. Since 2001, however, the area open to leasing off Alaska's coast has increased eightfold—from about 9 million acres to more than 73 million acres. Oil and gas activities pose a particular threat in the Arctic Ocean because of its isolation and harsh environment. No technology or infrastructure exists to effectively clean up an oil spill in icy Arctic waters, especially in winter when hazardous conditions could delay a response for weeks. A large spill in the Arctic is likely to linger in the ecosystem for decades with devastating consequences to Arctic peoples and the ecosystems on which they depend. Twenty years after extensive cleanup of the Exxon Valdez oil spill, residue remains in many areas of Prince William Sound. In addition to the threat posed by a catastrophic oil spill, oil and gas development, including seismic testing, exploratory drilling and vessel traffic, produce significant noise pollution. Some of these sound frequencies adversely affect whales and other marine animals, and ultimately the people who depend on them.

Commercial Shipping

Like oil and gas activities, the growth of commercial shipping in the Arctic will increase noise, air and water pollution. Dangerous sea conditions in the Arctic increase the likelihood of a catastrophic shipping accident, while the region's isolation slows the arrival of rescue crews and equipment. Greater emissions of nitrogen oxides and carbon monoxide could increase atmospheric ozone levels in the Arctic, decreasing air quality and visibility. Higher black carbon emissions could reduce sea ice reflectivity and accelerate its decline. Increased shipping traffic in the Arctic could also introduce invasive species from the discharge of ship ballast water or other sources. Additionally, the bottlenecks in shipping routes, such as the Bering Strait, are critical migration corridors for many birds and marine mammals, including the endangered bowhead whale. Expanded commercial shipping in the Arctic will increase the likelihood of animal disturbances and ship strikes.

Sensible Solutions

Given the vital contribution the Arctic makes to regulating climate worldwide and the risks posed by global warming, science and prudence should guide decisions about industrial activities in the Arctic.

To that end, we urge the Obama Administration to:

- Require the scientific research necessary to make informed decisions.
- Develop and implement a comprehensive plan for the Arctic Ocean to ensure industrial activities will not harm the health of marine ecosystems or the subsistence of indigenous peoples.
- Defer offshore industrial activities in the Arctic until such a plan is in place.

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