WILDLIFE AND OFFSHORE DRILLING

The 2010 Gulf of Mexico Disaster: Implications for the Arctic

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Alaska's Beaufort and Chukchi seas teem with an incredible array of wildlife, and are home to imperiled creatures such as polar bears, bowhead whales and spectacled eiders. Despite the importance and fragility of this region, Shell Oil Company plans to drill five offshore wells during the summer of 2011 when a suspension of their drilling permits expires. If a spill occurs in Arctic waters, it could be far more difficult to clean up than even the BP Deepwater Horizon disaster in the Gulf of Mexico.

FIGHTING A SPILL IN THE ARCTIC

When the Deepwater Horizon exploded in the Gulf of Mexico on April 20, 2010, the Coast Guard was on the scene within hours. Within a week after the rig sank, thousands of people, hundreds of response vessels and hundreds of miles of boom were available and on site. Even with this massive mobilization of people and equipment, it could take months to stop the flow of oil, and attempts to clean up the spill will likely take years. In the Arctic, responding to a spill would be orders of magnitude more difficult than in the Gulf because of its remoteness and weather. And the government's own analysis of potential oil drilling in the Chukchi Sea estimated a 33 percent to 51 percent chance for a large spill occurring during the life of the leases sold in 2008.

Infrastructure

The Chukchi Sea, off the northwest coast of Alaska, is one of the most remote and fragile places on Earth. A major spill would require Shell to bring in trained personnel, boats, boom, skimmers, and aircraft from all over the country. But a spill response could prove difficult or impossible for a number of reasons:

- The nearest Coast Guard station is in Kodiak, more than 1,000 miles away.
- The nearest village to the Chukchi Sea drilling sites, Wainwright (population 428), has only one small boat ramp and no hotels to accommodate the influx of personnel.

- The nearest airports that can handle the large C-130 cargo planes needed to fly equipment to Alaska are in Barrow (100 miles away) and Point Hope (150 miles away). The flight time from any of the major U.S. oil spill equipment caches to Barrow could be 12 hours or more with good weather.
- Equipment or people arriving on cargo planes will need to be transported to a spill site by barge or helicopter, and such transport can be delayed or blocked by often-extreme weather conditions.

Weather

Conditions in the Arctic are extreme, making the hope of a timely or adequate response to an oil spill unrealistic. The ocean is completely iced over for much of the year. In the summer, week-long storms and 20-foot seas with gale-force winds and thick fog are common. In addition to endangering the lives of cleanup crews, these conditions are likely to render response technology useless—oil booms can't be deployed or won't work in stormy seas; skimmer boats and equipment are similarly unusable. As we have seen in the Gulf of Mexico, it can take weeks or months for backup rigs to arrive on site and drill relief wells. In the Arctic, the area around the spill may partially or completely freeze over before a relief well can be drilled. If that happened, oil would continue leaking into the ocean until the following summer.

Temperatures in the Arctic Ocean are often far below freezing, posing major problems for spill cleanup operations. Burning of oil even in calm seas becomes almost impossible as water below the surface-oil cannot be heated sufficiently to start the burn. Oil dispersant chemicals—problematic even in warmer climates—are known to be even less effective in cold temperatures. In addition, oil takes longer to evaporate or breakdown in the cold.

Sea ice presents another major obstacle to oil spill cleanup. Once oil gets under sea ice, it cannot be tracked or cleaned and it will take considerably longer to weather and decompose because it is not exposed to air or sunlight.

Shallow waters

Shell has argued that their planned drilling in the Arctic will occur under very different circumstances than the Deepwater Horizon because the water depth is less than 200 feet. However, there is nothing inherently safe about drilling in shallow water. According to Minerals Management Service (MMS) data there were 5,671 wells drilled in outer continental shelf waters between 1992 and 2006 and 39 produced blowouts, or one blowout per every 387 wells drilled. Forty-nine percent of these blowouts occurred in waters less than 200 feet in depth—the same depth that Shell would drill in the Arctic. Moreover, catastrophic oil spills have happened in shallow waters, including a 2009 blowout off the coast of Australia that spilled for 10 weeks.

The Beaufort and Chukchi Seas: *Remote and Fragile*

INADEQUATE ENVIRONMENTAL REVIEW

Various experts have made clear that the Arctic warrants special consideration when it comes to offshore drilling, both because of what we know and, equally important, what we don't know.

In her 2009 comments to the MMS regarding proposed future oil drilling in the Arctic, Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere, stated clearly

Shell Oil Company plans to drill five offshore wells in the Arctic Ocean in 2011. The government estimates a 33 percent to 51 percent chance for a large oil spill occurring here. If a spill happens, the nearest Coast Guard station is in Kodiak, more than 1,000 miles away. Even if spill responders and equipment could reach the area, the extreme weather could make cleanup work difficult or impossible.

Despite extreme conditions in the Arctic, a wealth of mammals, birds and other creatures live here. Among the most famous residents are polar bears (left), who spend much of their time at sea on ice floes. Many Pacific walruses (above) also inhabit the area, feeding on shellfish in shallow waters. All of these wild animals would be harmed by an oil spill.

POLAR BEAR © RALPH LEE HOPKINS/NATIONAL GEOGRAPHIC STOCK ; WALRUSES © MATTHIAS BREITER/MINDEN PICTURES

that no leasing should occur in the Arctic "until additional information is gathered and additional research is conducted and evaluated" regarding oil spill risk, adequate response and preparedness, and possible impacts to Alaska communities. Lubchenco also noted concerns about potential impacts to living marine resources and their habitats resulting from future lease sales exploration, and development of the Arctic Ocean. Notably, these impacts include both the risk of a spill to the fragile Arctic ecosystem, "[t]he cumulative effects of installing associated infrastructure in these relatively pristine environments," as well as noise associated with oil and gas leasing and exploration. Thus, under even the best of circumstances, if no spill ever occurs, oil and gas would be harmful to the Arctic environment and the people and wild creatures that call it home.

In addition, a 2010 Government Accountability Office (GAO) report found that the Alaska office of MMS suffered from fundamental flaws that undermined the credibility of documents that are supposed to ensure that drilling can proceed safely. For example, MMS scientists alleged that their findings were suppressed and the GAO found that the office lacked the necessary guidelines to conduct sufficient environmental analyses. The poor judgment of the Alaska MMS office was further highlighted when staff had a celebratory cake emblazoned with the phrase, "Drill, baby, drill" at an office gathering shortly after the BP Deepwater Horizon disaster began. Existing environmental analyses must be reconsidered in light of this information to ensure the integrity of government decision-making.

WILDLIFE IN THE ARCTIC

The rich variety of life found in the Beaufort and Chukchi seas is fed by blooms of marine algae that grow at the ice edge and in the shallow coastal waters. These algae nourish small animals known as zooplankton, which in turn feed larger marine invertebrates and several species of small, oily fish—particularly capelin, herring and cod—that sustain large numbers of mammals and birds. All of these creatures are at risk should an oil spill occur in Arctic waters.

Marine mammals

Nearly one-tenth of the world's polar bears live in the Chukchi Sea lease area. The bears spend much of their time hundreds of miles from land, ranging great distances in search of seals. Polar bears are highly dependent on multi-year sea ice, for although they are excellent swimmers, they have difficulty catching seals in the water. Loss of sea ice due to climate change is a serious threat to the polar bear.

Three seal species live in the icy waters of the Chukchi Sea where they feed on small fish, crabs, squid and mollusks. Ringed seals are the smallest and most abundant of the ice seals, and found throughout the ice-covered waters of the Arctic. Bearded seals forage in shallow waters near land and near drifting ice with lots of openings. Both species are an important food source for polar bears. The third species, ribbon seals, is rarely found on or near land, instead staying on or near retreating ice floes.

The Pacific walrus population ranges as far north as Barrow, Alaska. These animals feed in the relatively shallow

waters of the continental shelf, dragging their tusks along the ocean floor to stir up sediment, then rooting with the sensitive bristles of their "mustache" to find mussels, clams and other invertebrates.

Several whales including endangered bowheads, are also found in the Chukchi and Beaufort Seas. The Arctic waters are important calving and migratory grounds for these majestic creatures. In addition to the threat of oil, the noise from offshore drilling can significantly impact these marine giants.

Seabirds and shorebirds

One of the largest Arctic seabird colonies in the United States is in Cape Lisburne, part of the Alaska Maritime National Wildlife Refuge. During the short breeding season, this colony is home to half a million black-legged kittiwakes, common murres and thick-billed murres. Pelagic cormorants, glaucous gulls, black guillemots, and horned and tufted puffins also nest here. All of these species forage for fish, squid and krill in the Chukchi Sea, where they are joined by northern fulmar and short-tailed shearwaters—ocean birds that are rarely seen from land.

Countless shorebirds—plovers, sandpipers, phalaropes, turnstones, dowitchers and dunlins—migrate from South America and the lower 48 states to breed in the Arctic and feed in the coastal marshes, beaches and mudflats in the region, where they are vulnerable to spilled oil that reaches the shore. Several kinds of waterfowl–ducks, geese, swans, brants and eiders—nest on the coastal plain as well. Most of Alaska's threatened spectacled eiders gather each autumn in Ledyard Bay for their annual molt, when the birds shed old feathers and grow new ones. During that one-to-two month period, they are mostly unable to fly, which makes them particularly vulnerable to oil spills.

IMPACTS OF OIL

Exposure to petroleum damages the eyes, mouth, skin and lungs of marine mammals and reduces the insulating effect of feathers on birds. Wild animals can also suffer from kidney failure after ingesting oil in attempts to clean themselves. Those animals that manage to survive will still be at risk from accumulating pollutants and metals in their bodies from the fish they eat. They may also suffer from starvation as the food chain they rely on for survival is disrupted. In addition, polar bears—already under stress from climate change—are also vulnerable to oil spills. Coated in oil, a polar bear's fur loses its ability to insulate against freezing temperatures, making these mighty Arctic hunters more vulnerable to their harsh environment.

WHAT CITIZENS CAN DO

- Urge the Obama administration to permanently cancel the leases sold in Chukchi Sea and Shell's exploration plans for the Beaufort Sea and urge the administration and Congress to enact a permanent moratorium on offshore drilling in the Arctic.
- Urge your elected officials to pass comprehensive climate change legislation that addresses the impacts of global warming on Arctic wildlife and its habitat.

WHAT POLICY MAKERS CAN DO

- Prevent future drilling lease sales in the Arctic to limit future spill risks.
- Study the wildlife resources of the Arctic so we have a better understanding of the animals that live there and their habitat.
- Enact comprehensive energy and climate change policies to transition away from harmful oil and fossil fuels.

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