

**United States House of Representatives, Committee on Natural Resources,
Subcommittee on Energy and Mineral Resources -- Oversight Hearing**

**"Domestic Oil and Natural Gas: Alaskan Resources, Access and
Infrastructure"**

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**Submitted on behalf of Alaska Wilderness League, Defenders of Wildlife, Eyak
Preservation Council, Northern Alaska Environmental Center, and The Wilderness Society**

Thank you for the opportunity to submit testimony to the Subcommittee on Energy and Mineral Resources on the topic of today's hearing. I am an environmental lawyer from Anchorage, Alaska, and I work with the Alaska Wilderness League, other conservation groups, and Alaska Native interests on public land, wildlife and marine conservation, and oil and gas issues in America's Arctic.

This testimony covers a broad spectrum of issues associated with the production of oil and gas from state and federal lands in Alaska and waters offshore of Alaska. First, the testimony addresses the continuing problems with oil spills from existing industry on the North Slope, and explains why, given the current regulatory environment, these spills are unlikely anytime soon to decrease in frequency. The testimony also calls into question fundamental assumptions about how the amount of oil moving through the Trans Alaska Pipeline (TAPS) influences the continued viability of that pipeline, and also points out known facts about sources of oil for TAPS that reveal that no crisis situation exists with respect to oil throughput and TAPS, and that do not require legislative attention to access.

Additionally, the testimony addresses how decisions about oil exploration and production from public lands in the Arctic Outer Continental Shelf and on land must be made with scientific integrity, with strong standards to protect the environment, and with a recognition that some places, such as the Arctic National Wildlife Refuge, are simply too special to drill.

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I. Alaska's Spill Problems and Why Improvement is Unlikely in the Near-Term

Both onshore and offshore, oil and gas wells and their associated pipelines have a troubling spill record and a highly inadequate oversight framework which needs to be addressed by Congress and the Obama Administration. Just last month, the Administration and BP agreed to a proposed civil settlement for 2006 pipeline spills of \$25 million plus a set of required safety measures on BP's federally-unregulated North Slope pipelines.² Under the requirements of the settlement, and assuming it remains the same, BP's federally-unregulated oil field pipelines, i.e., three-phase flowlines (gas, crude, produced water mixture), produced water lines, and well lines, will in the future be subject to integrity management requirements largely similar to those that must be met by transmission pipelines in 49 CFR 195. While this settlement certainly is a welcome step for BP's lines and an important precedent, Congress in its pipeline safety act reauthorization and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) need to move forward expeditiously on requiring such measures for lines operated by other companies in Alaska and the Lower 48.

BP's March 2006 spill of over 200,000 gallons was the largest crude oil spill to occur in the North Slope oil fields and it brought national attention to the chronic problem of such spills. A related pipeline spill in August 2006 resulted in the shutdown of BP's production in Prudhoe Bay and brought to light major concerns about systemic neglect of key infrastructure. Lack of adequate preventive maintenance was not a new issue, however, as corrosion problems in Prudhoe Bay's and other oil field pipelines have been raised previously by regulators and others, including as early as 1999 by the Alaska Department of Environmental Conservation.³

As additional evidence of the problems with upstream infrastructure, the State of Alaska completed a report in November 2010 which reviewed a set of over 6,000 North Slope spills from 1995-2009.⁴ This report showed that there were 44 loss-of-integrity spills/year⁵ with 4.8 spills greater than 1,000 gallons/year.⁶ Of the 640 spills included in the report, a significant proportion, 39%, were from federally-unregulated pipelines.⁷

² Proposed settlement posted at http://media.adn.com/smedia/2011/05/03/10/29-1%20consent%20decree.112830.source.prod_affiliate.7.pdf (downloaded May 8, 2011).

³ Charter for the Development of the Alaskan North Slope, December 2, 1999, (BP ARCO Merger Agreement), <http://www.dec.state.ak.us/spar/ipp/docs/Charter%20Agreement.pdf>.

⁴ *North Slope Spills Analysis: Final Report on North Slope Spills Analysis and Expert Panel Recommendations on Mitigation Measures*, Nuka Research & Planning Group, LLC for the Alaska Department of Environmental Conservation, November 2010, 244 pp., <http://www.dec.state.ak.us/spar/ipp/ara/documents/101123NSSAReporTvSCREEN.pdf>.

⁵ *Id.*, p. 21.

⁶ *Id.*, p. 23.

⁷ Certain types of spills were not included. See p. 14 of the *North Slope Spills Analysis* report.

In 2009, The Wilderness Society (TWS) issued a report on North Slope spills entitled *Broken Promises*.⁸ *Broken Promises* should be used in conjunction with the state's spill report. The TWS report shows a spill frequency on the North Slope of 450 spills/year during 1996-2008, with the difference being that the state included only "production-related" spills in its analysis and excluded North Slope toxic chemical (e.g., antifreeze) and refined product (e.g., diesel) spills - many of which are related to oil development - as well as spills indirectly related to oil production infrastructure, such as those from drilling or workover operations and from vehicles.

Both the state's and TWS' analyses show that there are significant and frequent spills from North Slope oil infrastructure. Why is this true? It's a combination of the lack of will by the state to enforce its own regulations and the lack of needed federal requirements and associated enforcement regarding onshore oil and gas field pipelines.

Turning to offshore operations, since the BP *Deepwater Horizon* tragedy it is now well-known that the Minerals Management Service and its successor agency, BOEMRE, need to upgrade regulatory standards and enforcement capabilities for offshore drilling. While BOEMRE has recently issued several new drilling safety regulations and is in the process of developing new policies regarding the environmental analyses required for offshore drilling, the reports issued since the BP spill show that many more changes are needed to provide a reasonable assurance that problems from offshore operations will be minimized. It would be irresponsible to proceed with offshore drilling in the Arctic without remedying key problems including: the limited nature of BOEMRE enforcement, the need for real-time electronic monitoring of offshore operations by regulators, the insufficiency of key regulations (e.g., covering blowout preventers), and the problematic implementation of Outer Continental Shelf Lands Act Exploration Plan, National Environmental Policy Act and oil spill response requirements. Additionally, Congress needs to upgrade federal legislation in areas widely considered problematic including the current low liability cap of \$75 million, the inadequate financial responsibility requirements, and the lack of whistleblower protection for the offshore drilling industry.

Notably, BOEMRE recently released a technical memo showing that a hypothetical blowout in the Chukchi Sea lease sale 193 area could result in a spill of 58-90 million gallons,⁹ meaning that there could be a spill of approximately the same scale as that from the BP *Deepwater Horizon* in the Arctic where cleanup would be extraordinarily more difficult. This information sends a strong message that the legislative and regulatory failures which in part led to the BP upstream spill - as discussed in the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling report¹⁰ - need to be remedied.

⁸ *Broken Promises: The Reality of Oil Development in America's Arctic (2nd Edition)*, The Wilderness Society, 2009.

⁹ Memorandum on Estimate for Very Large Discharge (VLD) of Oil from an Exploration Well in the Chukchi Sea OCS Planning Area, NW Alaska, March 4, 2011.

¹⁰ *DeepWater: The Gulf Oil Disaster and the Future of Offshore Drilling, Report to the President*, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, January 2011, see <http://www.oilspillcommission.gov/final-report>.

Some in Congress favor increased drilling anywhere and everywhere regardless of the safety and environmental impacts. Industry generally opposes increased federal regulation – see, for example, the American Petroleum Institute/Association of Oil Pipe Lines’ opposition to federal regulation of oil and gas field pipelines including non-regulated gathering lines.¹¹ For these reasons, it will be a long time before the country will see appropriate oversight of onshore and offshore pipelines. In a region like Arctic Alaska, that lack of appropriate oversight can and will have devastating environmental consequences.

II. TAPS Throughput

As originally designed, the Trans Alaska Pipeline was capable of re-starting successfully after a 21-day shutdown at -40oF.¹² With fewer pump stations to reheat the oil in transit, the cooling of TAPS oil was identified as a problem shortly after the first round of pump station closures due to reduced throughput in 1996-97. The Joint Pipeline Office required Alyeska to develop and test a plan for restarting the pipeline after extended shutdown periods during cold temperatures.¹³ In 1998, pipeline company officials acknowledged that “[w]hen Pump Stations 8 & 10 were shut down, since they were essential parts of the original Cold Restart Procedure, a new procedure was required.”¹⁴ In the decade following the first round of pump station closures, time and again schedules were set for developing a viable Cold Restart plan; Alyeska routinely failed to meet its deadlines. Meanwhile, without the heat from the closed interior pump stations, the oil temperature on the pipeline was dropping. As independent

¹¹ “The Applicability of Current PHMSA Exemptions Are Appropriate... We find no evidence suggesting that these exemptions pose a significant risk to pipeline safety...” American Petroleum Institute, Association of Oil Pipe Lines February 18, 2011 letter to the Pipeline and Hazardous Materials Safety Administration on the Advance Notice of Proposed Rulemaking, —Pipeline Safety: Safety of On-Shore Hazardous Liquid Pipelines, Docket No. PHMSA-2010-0229, p. 4. Note that the “no evidence” standard includes the following statement on page 7 that “over the 2005-2009 period, unregulated gathering represented 64% of the releases from onshore pipelines reported to the Pipeline Performance Tracking System, but just 14% of the barrels spilled,” and the data in the Alaska Department of Environmental Conservation’s *North Slope Spills Analysis, as addressed above*, is completely ignored. API is not the only industry group opposing such regulation. See e.g., Letter from Independent Petroleum Association of America to PHMSA (Feb. 18, 2011) available at: <http://www.regulations.gov/#!documentDetail;D=PHMSA-2010-0229-0024.1>; Letter from Louisiana Mid-Continent Oil and Gas Association to PHMSA (Feb. 17, 2011) available at: <http://www.regulations.gov/#!documentDetail;D=PHMSA-2010-0229-0010.1>; Letter from Oklahoma Independent Petroleum Association to PHMSA (Feb. 18, 2010) available at: <http://www.regulations.gov/#!documentDetail;D=PHMSA-2010-0229-0018.1>

¹² Alyeska Pipeline Service Co., *Design Basis Update* (DB-180, Ed. 3, Rev. 2), Dec. 31, 2000, p. 2-81.

¹³ Robert Krenzlok, T&DR, “Cold Restart: TAPS Design Basis Compliance,” Sept. 2, 1997 (Joint Pipeline Office Document #19970911-19). (Memorandum to Jerry Brossia [federal Authorized Officer, Bureau of Land Management] and Bill Britt [State Pipeline Coordinator], states in part: “Significant Issues: The Cold Restart Procedure is scheduled to be issued August 1998,” p. 1.)

¹⁴ Letter from Emery. L Monthei (Maintenance Reliability Mgr., Alyeska Pipeline Service Company) to Joint Pipeline Office, “Subject: Cold Restart Procedure,” Aug. 13, 1998 (JPO Document # 19980821-8).

researcher Richard Fineberg has detailed, this history calls into question fundamental assumptions about the TAPS throughput issue.¹⁵

Regardless, there are several different ways of ensuring that TAPS continues to operate, including technical upgrades to the pipeline such as heaters,¹⁶ and increases in conventional oil production (including heavy oil). Despite in-state and DC-based rhetoric, drilling on federal lands or waters is not necessary to ensure that TAPS remains viable for decades to come.¹⁷

Oil industry's plans to operate TAPS for many decades to come were highlighted recently in the Alaska legislature by State Senate President Gary Stevens (R) and Senate Resource Committee Co-Chair Joe Paskvan (D). The Senate President advised his colleagues in a speech from the floor April 11 that a 171-page state court decision in 2010 presented a variety of evidence indicating that TAPS is likely to continue operation well into the fifth decade of this century. TAPS, the judge decided, is a necessary conduit for continued North Slope oil production that is likely without any contribution from state shale oil, the Arctic Refuge, NPRA or the Outer Continental Shelf.¹⁸

On May 3, Sen. Paskvan stated:

*Based on the available evidence, Mr. President, I am confident saying that TAPS will continue to operate for decades. There are billions of barrels of conventional crude remaining in Alaska's Central North Slope.*¹⁹

Over 5 billion barrels in conventional oil reserves remain on Alaska's North Slope according to the Alaska Department of Natural Resources.²⁰ Additionally, viscous and heavy oil

¹⁵ See Richard A. Fineberg, Establishing a Rational Foundation For Review, Formulation and Implementation Of Alaska's Oil and Gas Fiscal Policy at 25-27 (April 7, 2011), available at : http://www.finebergresearch.com/pdf/Fineberg_HB110_Report_110410.pdf

¹⁶ Which could, according to TAPS owners, ensure TAPS viability using current proven reserves through 2042 (BP Pipelines (Alaska) Inc., et al. v. State of Alaska, et al., Case No. 3AN-06-8446 CI, Superior Court for the State of Alaska, October 26, 2010 p. 129).

¹⁷ With the exception of balanced and responsibly-regulated and overseen development in the NPRA, as discussed below.

¹⁸ See: "Stevens on oil-tax cut: We need to be careful about using an issue like this to frighten people," Anchorage Daily News, April 11, 2011 (unofficial transcript of the senator's speech), <http://community.adn.com/?q=adn/node/156571#>.

¹⁹ A Math Problem and Alaska's Production Tax System, Senator Joe Paskvan, Alaska Legislature, Senate Floor Session, Special Orders, May 3, 2011. Also listen at http://gavelalaska.org/media/?media_id=SFLS110503A&type=audio.

²⁰ 2009 Annual Report Updated, Alaska Department of Natural Resources, May 2010, p.8, see http://www.dog.dnr.state.ak.us/oil/products/publications/annual/2009_annual_report/updated_2009_annual_report/Annual%20Report%202009%20Updated%205-18-10.pdf.

resources of 30 billion barrels, largely in strata above the existing Prudhoe Bay oil fields, have begun to be produced.²¹ At West Sak, viscous oil has been produced for the past few years.

Today the oil industry holds roughly 2.8 million acres in active State of Alaska leases on the North Slope. Millions of acres of existing leases on state lands have not yet been developed. Each year, the state holds area-wide lease sales covering 11 million acres between the Canning and Colville Rivers on the North Slope.

In considering future prospects, it should be noted that underlying lands close to TAPS infrastructure are three shale oil formations which industry references as having high potential for unconventional oil production. The geology in this area is similar to North Dakota's prolific Bakken Shale and the South Texas Eagle Ford Shale. Great Bear Petroleum LLC recently leased over 500,000 acres of state land near TAPS south and southwest of Prudhoe Bay to pursue shale oil fracking. According to Great Bear this technique to produce oil from shale rock could result in substantial volumes of additional oil entering TAPS from state (as opposed to federal) lands.²² Shale oil production needs to be well-regulated by both the federal and state governments to protect the Arctic's waters and wildlife habitat – lack of adequate state regulation always is a concern in a state seeking to attract oil producers.

III. Public Land Decisionmaking in America's Arctic

In contrast to the piecemeal approach taken to date, a rational approach to the Arctic would: 1) ensure that we do the homework necessary to inform agency decisions about both the Arctic environment and risks to it from oil and gas activities; 2) apply standards to any oil and gas activity that does occur to ensure reasonable standards are in place to protect the environment; and 3) acknowledge that some places are simply too special, unique or at risk to drill, and should receive the strongest protections possible. So that this approach can best be understood, I address here how the current situation in America's Arctic measures up to it, addressing America's Arctic Ocean, the National Petroleum Reserve Alaska, and the Arctic National Wildlife Refuge.

A. America's Arctic Ocean

Permitting of offshore oil and gas drilling in the Arctic Ocean should be made with great care and scrutiny in light of the region's difficult operating conditions, inability to effectively clean up spilled oil in the region's remote and often stormy and ice-covered seas, the extraordinary biological richness of the Arctic Ocean, much of which is not yet understood, and out of sensitivity to the Alaska Native Inupiat subsistence communities of the region that rely on the ocean for their nutritional and cultural well-being. To date, oil and gas planning decisions in the region have been rushed and inadequate, and industry has insisted on taking shortcuts that threaten the region's people, air, water, and wildlife. In turn, this has forced local communities

²¹ *BP puts test horizontal well into operation in the Ugnu at Milne Point*, Petroleum News, May 1, 2011, see <http://www.petroleumnews.com/pnads/40812990.shtml>.

²² *Great Bear Raises Eyebrows*, Petroleum News, March 6, 2011, see <http://www.petroleumnews.com/pntruncate/312301231.shtml>.

and conservation groups to ask the courts to step in and force agencies to reconsider their decisions in compliance with environmental laws.

1. The Values of America's Arctic Ocean

America's Arctic Ocean has sustained human communities for thousands of years. The Inupiat people have lived in the region and depended upon intact Arctic ecosystems to provide resources—such as fish, whales, walrus, seals, and seabirds—to support subsistence since time immemorial. These communities continue to practice subsistence traditions, harvesting a significant amount of food from the ocean and land. These practices are essential to Inupiat people's identity and culture. For many residents of the Arctic, then, there is a direct connection between the continued health of the Arctic Ocean and the health of their food supply and culture. The Arctic Ocean is critical even for those who live in lower latitudes; it exerts a powerful influence over the earth's climate and acts as an air conditioner for the planet.

The Arctic Ocean is also home to some of the world's most iconic wildlife species. To the north, the Chukchi and Beaufort seas support marine mammals such as bowhead, gray, and beluga whales; Pacific walrus; spotted, bearded, ribbon, and ringed seals; and polar bears. Migratory species from around the globe—including gray, humpback, minke, and killer whales, and millions of seabirds, shorebirds, and waterfowl—take advantage of the burst of summer productivity in the Arctic for breeding, feeding, and rearing of their young. To the south, the Aleutian Islands ecosystem is one of the most vibrant, dynamic ocean environments in the world. With over 450 species of fish, tens of millions of seabirds hailing from every continent and representing more than 50 species, 25 species of marine mammals, and coral gardens that rival the tropics, this rich and unique sea world is an international treasure. Between the Aleutian Islands and the Chukchi Sea lies the Bering Sea and Bristol Bay, home to some of the greatest salmon runs in the world.

2. The State of Science in America's Arctic Ocean

Despite the cultural and biological significance of the Chukchi and Beaufort seas, there is a profound lack of basic scientific knowledge about the sea and the wildlife that inhabit it. Scientists lack basic scientific information about the abundance, distribution, migration, and role of almost all marine species in Arctic marine ecosystems. For example, data on the bowhead whale population structure, the fall migration through the Chukchi Sea, the amount of feeding in the Chukchi Sea in autumn, the summer use of the northern Chukchi Sea, and the general location in the lead system during spring migration are limited. Beluga whale feeding areas, late summer distribution, and fall migration patterns are poorly understood. Information on the distribution, abundance, age structure, population trends, and use of habitat is not available for fish populations in the Chukchi Sea. The current status of many marine and coastal bird species that use the Arctic Ocean is unknown or poorly understood.

As a result, scientists have a limited understanding of marine ecosystem structure and functioning in the Arctic. Even where basic information about the Arctic marine ecosystem exists, much of it is old or limited in scope. Studies designed to provide comprehensive information and understanding of the health, biodiversity, and functioning of Arctic marine

ecosystems and the potential impacts of industrial activities were conducted 30 years ago pursuant to the Outer Continental Shelf Environmental Assessment Program. Much of the information is outdated for the rapidly changing Arctic, which greatly limits its usefulness in current decisionmaking.

While there is insufficient available scientific information about the Arctic Ocean to support ecologically sustainable development at this time, Arctic peoples have a wealth of local and traditional knowledge. However, mechanisms are generally lacking to make local and traditional knowledge accessible to agency managers or to integrate it effectively into the decision-making processes that affect Arctic ecosystems.

Compounding the lack of comprehensive, current data about the Arctic Ocean ecosystem, water temperatures and sea ice cover, which play important roles in Arctic marine ecology, are changing at a startling pace. Climate change is warming the Arctic nearly twice as fast as the rest of the world. In September 2007, the Arctic sea-ice extent hit a new record minimum that was 23 percent lower than the previous record low in 2005, 39 percent lower than the long term average from 1979-2000, and 50 percent below sea-ice conditions of the 1950s-1970s.²³ The sea-ice extent in the winter is also declining, as is the age and thickness of the ice that remains, while the length of the sea ice melt season is increasing.²⁴ The ice is melting far faster than projected by scientific models, with 2007 ice extent falling far below what any of the models projected for that year.²⁵ In fact, the extent of Arctic sea ice loss in 2007 exceeded average scientific projections for 2050.²⁶

Climate-related change, such as loss of sea ice cover, has profound effects on Arctic peoples, opportunities for the subsistence way of life, and Arctic marine ecosystems. Reduced ice cover makes fishing, hunting, and travel more difficult and unpredictable for Arctic peoples. Loss of sea ice also will have dramatic effects on many Arctic species. It almost certainly will result in a fundamental restructuring of the Arctic marine food web and may shift the flow of productivity from primarily benthic and ice-associated food webs to pelagic food webs. The reduction of sea ice also eliminates habitat for ice-dependent species such as walrus and polar bears. Loss of sea ice cover, the potential for seasonally ice-free conditions across the Arctic, and other climate-related changes are—and will continue to be—major stressors for many species in the Arctic. These changes may lead to local loss or extinction of species that cannot adapt to the rapidly changing conditions.

The Arctic is also projected to be one of the first regions to be affected significantly by increased ocean acidification. Roughly one-third of the carbon dioxide that is added to the atmosphere from the combustion of fossil fuels will dissolve into seawater. There, it reacts to form carbonic acid, which increases the acidity of the water. This reaction is accelerated in cooler, less saline waters such as those of the Arctic Ocean. The Arctic's ice cover has acted as a

²³ See 73 Fed. Reg. 28220-21 (May 15, 2008).

²⁴ *Id.* at 28222-23.

²⁵ *Id.* at 28233 (Figure 7).

²⁶ *Id.* (2007 ice extent below model ensemble mean for 2050).

barrier to carbon dioxide absorption and has slowed acidification of the polar sea. But as sea ice disappears, the surface waters of the Arctic Ocean will likely absorb carbon dioxide from the atmosphere at higher rates. Acidification will fundamentally shift the biogeochemical cycling of the Arctic Ocean. Among the most immediate impacts will be to shellfish and other marine organisms that create their shells and other hard parts from calcium carbonate. Increasing acidity will also change the growth rates of photosynthetic phytoplankton, the toxicity of marine toxins, the availability of ammonia for uptake by marine plants, and the efficiency of respiration in fish and other marine organisms. Changes brought about by ocean acidification could outstrip the adaptive capacity of many Arctic marine species.

3. Oil and Gas Activities in America's Arctic Ocean

Oil and gas activities are a relatively new phenomenon in America's Arctic Ocean. The first federal lease sale was held in this region just over thirty years ago, and even once the first sales were held, activities proceeded very slowly. Over the past decade, however, even in the face of rapid climate change and gaps in basic scientific baseline data that prevent informed management decisions, the pace of oil and gas activities in the Arctic Ocean has increased dramatically.

These oil and gas activities are large-scale industrial undertakings involving drill ships, seismic surveying vessels that shoot very loud air guns into the water every several seconds over large areas to map subsurface geology, ice-breakers, supply vessels, helicopters, and airplanes. This activity introduces noise pollution into the water, disturbing marine mammals and other species that depend on sound to navigate, communicate, and locate food. It introduces pollution into the air and into the ocean. Drilling for oil also, of course, introduces the risk of oil spills into the ocean, where ice, storms, darkness, and the Arctic's remoteness would make clean-up nearly impossible. Ironically, the increased interest in drilling for oil in the Arctic Ocean, with its accompanying risks, is partly related to easier access as sea-ice extent shrinks due to climate change.

The current expansion of oil and gas activities in the Arctic began in the 2002-2007 Outer Continental Shelf Oil and Gas Leasing Program, which scheduled three sales in the Beaufort Sea. The 2007-2012 Outer Continental Shelf Oil and Gas Leasing Program dramatically expanded the areas open to oil and gas leasing in the North Aleutian Basin, Chukchi Sea, and Beaufort Sea from approximately 9.4 million acres to 78 million acres. Pursuant to those plans, the Minerals Management Service (MMS) (renamed the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) following the 2010 *Deepwater Horizon* oil spill) held three separate lease sales in the Beaufort Sea that put more than 943,000 acres under lease to oil companies. In 2008, MMS held Lease Sale 193 in the Chukchi Sea and leased over 2.7 million acres to oil and gas companies. It was the first such sale in the Chukchi Sea since 1991, and prior to the sale there were no active leases or wells in the sea. Numerous oil companies, including Shell, ConocoPhillips, and Statoil, have indicated that they will seek permits to conduct exploration drilling in the Arctic Ocean beginning as early as 2012.

Oil and gas expansion in the Chukchi and Beaufort seas has been rushed and uncoordinated. Many agencies have management responsibilities in the Arctic, including the

Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Fish and Wildlife Service (FWS), the U.S. Coast Guard, and BOEMRE. Yet these agencies have not coordinated their analysis and permitting of oil and gas projects in recent years, complicating assessment and mitigation of the impacts of these activities. As a result of agencies' failure to coordinate, use adequate science, or seek community input when reaching decisions about offshore drilling in the Arctic Ocean, local communities and others in many instances have been forced to seek redress in the courts to ensure their voices are heard and to enforce compliance with the law.

For example, in 2007 and 2008, the Ninth Circuit Court of Appeals enjoined drilling in the Beaufort Sea pursuant to lawsuits filed by local government, Alaska Native, and conservation entities that identified flaws in MMS's analysis and disclosure under the National Environmental Policy Act (NEPA).²⁷ In 2009, the District of Columbia Circuit Court of Appeals vacated the 2007-2012 Outer Continental Shelf Leasing Program, finding that the Program's environmental sensitivity rankings were "irrational" and violated the Outer Continental Shelf Lands Act.²⁸ In 2010, the Alaska District Court remanded the environmental impact statement and enjoined drilling on leases issued pursuant to Chukchi Sea Lease Sale 193 after determining that MMS violated NEPA by failing to adequately address literally hundreds of instances of missing data about the sea and to analyze the effects of natural gas development.²⁹

Shell's attempts to drill exploration wells in the Arctic Ocean illustrate well how shortcuts lead to bad agency decisions. Beginning in 2006, Shell Oil sought to obtain approval to drill in the Beaufort Sea, directly in the fall migration path of the endangered bowhead whale. Shell proposed to use two drill ships operating simultaneously, each accompanied by icebreakers and numerous other support vessels, to drill up to twelve exploration wells over three years. Despite the scale of the industrial undertaking, Shell sought to avoid preparation of an environmental impact statement or even a public comment process for the project. MMS then approved the exploration plan on the basis of an abbreviated environmental assessment, and, as described above, the Ninth Circuit stayed the drilling.

In 2007, Shell also insisted on disaggregating emissions from its multiple drill sites to avoid having to apply technology controls to its ships under the Clean Air Act's Prevention of Significant Deterioration (PSD) program. When the Region 10 office of EPA issued minor source permits for Shell's proposed drilling, the Environmental Appeals Board (EAB), an

²⁷ See *Alaska Wilderness League v. Kempthorne*, Nos. 07-71457, 07-71989, 07-72183 (9th Cir. July 19, 2007) (suspending exploration drilling program); *Alaska Wilderness League v. Kempthorne*, Nos. 07-71457, 07-71989, 07-72183 (9th Cir. Aug. 15, 2007) (order granting a stay of drilling pending adjudication of the case); *Alaska Wilderness League v. Kempthorne*, 548 F.3d 815 (9th Cir. 2008) (determining MMS failed to examine fully the potential impacts from drilling noise and disturbance on endangered bowhead whales and subsistence activities in violation of NEPA), *vacated and withdrawn*, 559 F.3d 916 (9th Cir. 2009), *dismissed as moot*, 571 F.3d 859 (9th Cir. 2009).

²⁸ *Ctr. for Biological Diversity v. U.S. Dept. of Interior*, 563 F.3d 466, 472 (D.C. Cir. 2009).

²⁹ *Native Vill. of Point Hope v. Salazar*, 730 F. Supp. 2d 1009 (D. Alaska 2010).

administrative body within the EPA set up to review the Agency's decisions, remanded the permits for failing to meet the requirements of the Clean Air Act.³⁰

In 2008, Shell again tried to obtain minor source permits, but eventually withdrew the permits before the EAB could review them. For its plans to drill in 2010, which proposed operations in both the Chukchi and Beaufort seas and were in many ways larger in scale than its 2007 plan, Shell again sought approval from MMS without preparation of an environmental impact statement. And, although it applied to EPA for major source permits under the Clean Air Act, it still sought shortcuts, trying, for example, to postpone the time at which its drill ship became subject to regulation. EPA Region 10 issued two PSD permits to Shell in the spring of 2010, but the EAB determined that these permits violated the Clean Air Act and remanded them, finding "clearly erroneous" EPA's analysis of whether the Inupiat communities along the Arctic coast would experience disproportionately adverse health effects from drilling emissions and determining that EPA did not provide a "cogent, reasoned explanation of its" adoption of Shell's approach to determining when the drill ship become a stationary source subject to regulation.³¹

Shell continues to try to take shortcuts that skirt the law. In January of this year, after EPA Region 10 had been ordered to reconsider the air permits it issued to Shell, Shell pressed the EPA in filings with the EAB to exempt its operations from newly applicable health standards, such as the new nitrogen oxide (NO₂) ambient air quality standards, when it re-issues revised permits. In March of this year, Shell announced plans to use two drill ships to simultaneously drill up to ten wells over multiple years in the Chukchi and Beaufort seas starting in 2012. In May, the company submitted exploration plans to BOEMRE for the drilling.³²

If approved, Shell's proposed operations would be the biggest single exploration drilling campaign the American Arctic Ocean has ever seen. Shell has applied to EPA for only a minor source permit for the drill ship it proposes to use in the Beaufort Sea, which would avoid the application of pollution control technology to the aging ship.³³ Shell has also applied for permissions to discharge pollution directly into the ocean, including toxic drilling muds, under an EPA general permit for the Arctic Ocean that will expire this summer, over a year before Shell plans to even start drilling, rather than applying for an individual discharge permit.³⁴

In its oil spill response plans for the Chukchi and Beaufort seas, Shell provides unsupported and unrealistic expectations regarding the company's ability to clean up an oil spill more than one thousand miles from the nearest Coast Guard station, with the constant threat of

³⁰ *In re Shell Offshore Inc., Kulluk Drilling Unit and Frontier Discoverer Drilling Unit*, OCS Appeal Nos. 07-01 and 07-02 (EAB, Sept. 14, 2007).

³¹ *In re Shell Gulf of Mexico, Inc. & Shell Offshore, Inc.*, OCS Appeal Nos. 10-01 through 10-04 at 3, 8 (EAB, Dec. 30, 2010).

³² The exploration plans are available at BOEMRE's website: <http://www.alaska.boemre.gov/>.

³³ The application is available at EPA's website: <http://yosemite.epa.gov/r10/airpage.nsf/Permits/kullukap/>.

³⁴ The applications, called Notices of Intent, are available at EPA's website: <http://yosemite.epa.gov/r10/water.nsf/npdes+permits/arctic-gp>.

sea ice, subzero temperatures, and darkness up to 20 hours a day. The following examples illustrate how little Shell has dedicated to meaningful spill response capability in the Arctic. At the height of the *Deepwater Horizon* spill response, more than 6,500 response vessels worked on the cleanup efforts.³⁵ In the Beaufort Sea, Shell wants to have only one oil storage tanker, which could be 240 nautical miles away, and which constitutes 90 percent of Shell's storage capacity;³⁶ Shell has no back-up storage plan if this tanker breaks down or is damaged.

To demonstrate it can clean up a "worst case" oil spill in bad weather, Shell relies on a blowout in the summer on August 1st, but Shell wants approval to drill through October and acknowledges a relief well might not be completed until December.³⁷ In another example, Shell assumes the company will recover 90 percent of the oil spilled in the open water.³⁸ Yet, according to BOEMRE: "On average, spill-response efforts result in recovery of approximately 10-20% of the oil released to the ocean environment."³⁹ In the *Exxon Valdez* disaster, for example, the recovery rate was closer to 8 percent.⁴⁰ Even in the Gulf of Mexico, the mechanical recovery efforts during the *Deepwater Horizon* response only accounted 3 percent of the total amount of oil released.⁴¹ These are only a few examples of the empty assurances and shortcuts Shell has included in its Arctic spill response plans and, despite public criticism, Shell's recently submitted revised spill plans simply perpetuate the same myths regarding spill response in the Arctic.

A recent spill in Norway on February 17th demonstrated the particular difficulties experienced when cleaning up an oil spill in icy conditions, and pulls the curtain back on Shell's claims that it has "perfected" oil spill response in Arctic waters as demonstrated by the Norway experience.⁴² The 'Godafoss,' a container ship, ran aground in the Hvaler archipelago and near

³⁵ Pew Environment Group, *Oil Spill Prevention and Response in the U.S. Arctic Ocean: Unexamined Risks, Unacceptable Consequences* 64 (2010) (Pew Report), available at http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/PEW-1010_ARTIC_Report.pdf.

³⁶ Revised Beaufort Spill Plan at A-12 – A-13. Shell has offered another one in the Chukchi Sea, but it would take almost three weeks to arrive on-site.

³⁷ See, e.g., Beaufort Revised Exploration Plan at 2-5 – 2-6; Revised Beaufort Spill Plan at 1-68.

³⁸ Revised Beaufort Spill Plan at 1-33.

³⁹ Minerals Management Service, Alaska Outer Continental Shelf, Beaufort Sea Planning Area, Oil and Gas Lease Sales 186, 195, and 202, Final Environmental Impact Statement IV-17 (Feb. 2003) (Multi-Sale EIS), available at http://alaska.boemre.gov/ref/EIS%20EA/2003_001.pdf.

⁴⁰ D.A., Wolfe, , M.J. Hameedi, J.A. Galt, G. Watabayashi, J. Short, C. O'Clair, S. Rice, J. Michel, J.R. Payne, J. Braddock, S. Hanna, and D. Sale, *The Fate of the Oil Spilled from the Exxon Valdez*, 28 Env. Sci. & Tech. 13, 561A, 563A, 567A (even total recovery or disposal constituted only 14%) (1994).

⁴¹ Jane Lubchenco, et al., *Deepwater Horizon Oil Budget: What Happened to the Oil?* (Aug. 4, 2010) Figure 1, available at http://www.noaanews.noaa.gov/stories2010/PDFs/OilBudget_description_%2083final.pdf.

⁴² Shell has stated: "Industry has studied and perfected techniques for recovering oil in Arctic conditions. Field trials in Norway bear this out" Curtis Smith - Shell Alaska - Anchorage Daily News LTE - September 9, 2009.

the Ytre Hvaler National Park, Norway's only marine preservation area.⁴³ Despite calm seas, the Norwegian Coastal Administration cited ice, fog and sub-zero temperatures as complicating the oil cleanup: "Very much of the oil we now see is thin, thin layer that settles in the ice edge. It is oil that is not possible to take action," said a representative of NCA (Norwegian Coastal Administration).⁴⁴ Norwegian Coast Guard Captain Pal Bustgaard said that "this is an oil catastrophe. The oil slick continues to widen out. And it is frightening that this happens in the middle of a national park."⁴⁵ The Norwegian Coast Guard also stated that "[t]here is relatively little experience in oil spill response operations in ice in Norwegian waters."⁴⁶

Further undercutting Shell's credibility is the fact that Norway's Petroleum Safety Authority (PSA) recently cited Shell for inadequacies in multiple areas of its offshore operations in Norwegian waters. According to Ole-Johan Faret, a PSA spokesman, Shell was under investigation following an oil well maintenance error in December 2010 at the Draugen field, about 60 miles offshore and 100 miles northwest of Trondheim, the country's third largest city. The incident had "major accident potential" where a Shell error during maintenance caused a rig to have only one barrier against an oil spill from the well,⁴⁷ Shell's failures include "management, risk assessment, well barriers, well barrier sketches, well control, and daily reporting of drilling and well activities."⁴⁸ "The barrier situation was not taken seriously," Faret said. "This is not an acceptable approach." Faret further noted that Shell seemed to be following a "quick-fix philosophy."⁴⁹ PSA ordered Shell to respond to its report.⁵⁰ Shell's formal response is due any day, and its initial reaction was to say that "[w]e will comply with the order from the Petroleum Safety Authority Norway," and that Shell will use the review's results "to avoid similar incidents in future."⁵¹

⁴³ <http://www.euronews.net/2011/02/18/norway-s-only-marine-reserve-hit-by-oil-spill/>

⁴⁴ <http://www.tu.no/miljo/article280133.ece> (Google translator)

⁴⁵ <http://www.newsinenglish.no/2011/02/19/ship-grounding-sets-off-oil-spill/>

⁴⁶ <http://www.kystverket.no/default.aspx?did=10194892> (Google translator). Norway is still dealing with the consequences of this spill. See <http://www.kystverket.no/?did=10210977> (original, without translation).

⁴⁷ <http://www.ptil.no/news/notification-of-order-to-shell-following-well-incident-on-draugen-article7776-79.html>

⁴⁸ <http://www.ptil.no/news/notification-of-order-to-shell-following-well-incident-on-draugen-article7776-79.html>

⁴⁹ Conversation between Emilie Surrusco, Communications Director at Alaska Wilderness League and Ole-Johan Faret, Norway Petroleum Safety Authority spokesperson on Tuesday, May 31, 2011.

⁵⁰ <http://www.ptil.no/news/order-to-shell-following-well-incident-on-draugen-article7873-79.html>

⁵¹ http://www.washingtonpost.com/business/norway-criticizes-shell-for-safety-lapses-on-rig-says-2010-incident-could-have-caused-spill/2011/05/23/AF6mPm9G_story.html

The fact is – Shell simply is not ready for exploration activities in the Arctic Ocean. The poor decisions described above can largely be ascribed to Shell’s and others’ consistent attempts to take shortcuts and to limit the analysis of and public participation in permitting decisions. Agencies should not yield to industry pressure to skirt environmental laws in permitting offshore oil drilling. Permitting oil and gas activities to go forward without full compliance with existing environmental and health laws and without an adequate understanding of the Arctic Ocean ecosystem is risky and potentially devastating. Offshore oil exploration is dirty and large. It poses significant threats to the health of the Arctic Ocean.

The most obvious and dramatic of these threats, as the world recently witnessed in the *Deepwater Horizon* tragedy, is a large oil spill in Arctic waters. A significant oil spill in Arctic waters could have crippling effects on the ecosystem, wildlife, and people in the Arctic. Spilled oil could kill or severely injure marine mammals including whales, seals, polar bears, walrus, seabirds, and fish, and could destroy now pristine waters and shorelines. It could render subsistence resources unusable for multiple years. All of these impacts likely would have a dramatic, negative effect on the people who depend on these animals and places. Further, there is no proven technology to clean up a spill in the remote, icy conditions of the Arctic Ocean, and a spill at the wrong time could gush for months under the winter sea-ice before attempts could be made to stop it.

Oil and gas activities also cause a substantial amount of noise in the Arctic marine environment, where marine mammals and fish rely heavily on sound to communicate and to locate food. In addition to bringing noisy icebreakers, drill rigs, and other vessels to the Arctic, oil and gas exploration involves shooting seismic guns to the ocean floor. These seismic surveys are used by the oil and gas industry to generate a picture of the offshore subsurface geology. The sounds they make are literally deafening. A single seismic air-gun blast is many times louder than a rocket launching and is comparable to a volcano erupting beneath the ocean. However, unlike a rocket launch or a volcanic eruption, these guns do not blast just once. They sound repeatedly over vast expanses of the Arctic Ocean for days, weeks, and even months at a time, and can be heard underwater from hundreds of miles away. The noise from seismic surveys can disrupt important behaviors such as feeding, breathing, communication and social bonding of marine mammals within several miles of an active survey. In addition to the direct threats from oil spills, noise, and air pollution, oil and gas activities bring industrialization to a place where all facets of life traditionally have focused on a relationship with the land and sea. This industrialization continues to dramatically affect Arctic people.

4. A Path Forward in America’s Arctic Ocean

Gaps in basic information about the Arctic Ocean severely hamper attempts to analyze and disclose the potential impacts of oil and gas activities in the region, let alone manage and mitigate them. These gaps should be filled before the region is opened to oil and gas drilling. Gaps in spill response technology and preparedness must also be addressed before drilling is permitted.

The National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling recently issued a report that highlights the work that must be done before Arctic Ocean drilling is

permitted. In its report, the Commission expressed “serious concerns about Arctic oil-spill response, containment, and search and rescue.”⁵² The Commission Report explained: “The remoteness and weather of the Arctic frontier create special challenges in the event of an oil spill.”⁵³ It specifically cautioned that “[s]uccessful oil-spill response methods from the Gulf of Mexico, or anywhere else, cannot simply be transferred to the Arctic.”⁵⁴ For example, the Commission explained “[s]pill trajectory and weather models based on Arctic conditions must [] be developed.”⁵⁵ Additionally, the Commission expressed concerns that “[c]urrent federal emergency response capabilities in the region are very limited.”⁵⁶ The Report noted that “[t]he Coast Guard does not have sufficient ice-class vessels capable of responding to a spill under Arctic conditions: two of its three polar icebreakers have exceeded their service lives and are non-operational” and that “[w]ithout a presence in the Arctic, it would be very difficult for the Coast Guard to conduct any emergency search and rescue operations.”⁵⁷ These and other concerns echo the problems identified by communities, conservation groups, and others in recent years.

In light of these concerns, the Commission made three recommendations for action *before* the government “makes a fully informed determination that drilling in a particular area is appropriate.”⁵⁸ First, the government should ensure that the spill response plans proposed by industry are adequate for each stage of development and that the underlying financial and technical capabilities have been satisfactorily *demonstrated* in the Arctic.⁵⁹ Second, the Coast Guard and the oil companies operating in the Arctic “should carefully delineate their respective responsibilities in the event of an accident, including search and rescue, and then . . . build and deploy the necessary capabilities.”⁶⁰ Third, Congress should provide “the resources to establish Coast Guard capabilities in the Arctic, based on the Coast Guard’s review of current and projected gaps in its capacity.”⁶¹

⁵² National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling Report to the President at 304* (January 2011), *available at* <http://www.oilspillcommission.gov/final-report>.

⁵³ *Id.* at 303. It is noteworthy that key Arctic satellites, which could provide real-time trajectory information in the Arctic, are not receiving adequate funding this year, and the sufficiency of satellite resources and access to this data needs to be evaluated.

⁵⁴ *Id.*

⁵⁵ *Id.* at 304.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ Spill Commission Report at 304.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

The Commission also reiterated concerns identified by scientists, communities, and courts about gaps in scientific information in the Arctic Ocean and agencies' abilities to make informed management decisions in the Arctic: "Scientific understanding of environmental conditions in sensitive environments ... in areas proposed for more drilling, such as the Arctic, is inadequate. The same is true of the human and natural impacts of oil spills."⁶² In light of these concerns, the Commission recommends "an immediate, comprehensive federal research effort to provide a foundation of scientific information on the Arctic (with periodic review by the National Academy of Sciences), and annual stock assessments for marine mammals, fish, and birds that use the Beaufort and Chukchi Seas."⁶³ Recognizing that these basic science gaps are important for management decisions, the Commission recommends that missing scientific information should be gathered through research "with specific timeframes in mind in order to inform the decision-making process."⁶⁴

This advice—to identify key research needed to inform specific decisions and carry it out on a defined timeline to influence those decisions—should define the process used by the United States in pending critical decisions, including the Chukchi lease sale 193 decision, the upcoming five year offshore oil and gas planning decision for 2012-2017, decisions about Shell's current drilling proposals, and decisions about potential future proposals, including those by ConocoPhillips and Statoil for the Chukchi Sea.

B. National Petroleum Reserve Alaska

Established by President Harding in 1923, the National Petroleum Reserve Alaska (NPRA) was initially intended to help meet the Navy's needs as it converted from coal to oil. In 1976, Congress enacted the Naval Petroleum Reserves Production Act (NRPPA) and transferred management of the NPRA from the Navy to DOI, expressly requiring protection of exceptional surface values. NRPPA requires that the Secretary determine whether and/or where to lease lands in the Reserve for oil and gas development while also requiring "maximum protection" in areas with "significant subsistence, recreational, fish and wildlife, or historical or scenic value."⁶⁵ NRPPA "encourages oil and gas development in NPR-A while requiring protection of important

⁶² *Id.* at vii; *see also id.* at 301 ("Environmental and biological conditions are at least as well understood along the Atlantic coast as in the Gulf—and there are also important facilities, such as Coast Guard installations in place; in contrast, equivalently detailed geological and environmental information does not exist for the Arctic exploration areas of greatest interest for energy exploration—and industry and support infrastructures are least developed, or absent, there.").

⁶³ *Id.* at 303.

⁶⁴ *Id.* The Commission also notes that there need not be a "*de facto* moratorium" on all activity in the Arctic until definitive information is gathered to fill all existing and acknowledged gaps. *Id.* This observation is fully consistent with the recommendation that information necessary to inform key decisions be identified and gathered before decisions are made. In the leasing context in particular, the Commission recommends that a "more robust and formal interagency consultation process is needed—with the goal of identifying precise areas that should be excluded from lease sales because of their high ecological importance or sensitivity." *Id.* at 262.

⁶⁵ 42 USC § 6504.

surface values.”⁶⁶ Energy development is accordingly an important reason for the initial establishment of the NPRA but energy development is *not* a mandate to the detriment of other public interest priorities.⁶⁷

1. Values of the Reserve

The NPRA has a remarkable diversity of ecosystems that remain intact at the landscape scale that are also essential to supporting a wide range of subsistence harvest activities. The NPRA and the immediately adjoining Arctic waters sustain exceptional natural ecological processes, resources and values. These include: fish resources, marine mammals (seals, whales, walrus, polar bears), migratory birds, large mammals (caribou, moose, wolverine, wolf, grizzly bear and other furbearers); threatened and endangered species; rare Arctic ecosystem types (e.g., sand dunes); designated Important Bird Areas; wilderness values; archeological, anthropological, and paleontological resources.

The NPRA includes four existing designated Special Areas: Teshekpuk Lake, Utukok Uplands, Kasegaluk Lagoon and the Colville River, as well as other connected habitats including the Arctic Foothills and DeLong Mountains reaching to the continental divide. Values in these designated areas include: the calving grounds and insect relief areas for two of Alaska’s largest caribou herds; vitally important nesting, molting and staging habitat for migratory waterfowl, seabirds and shorebirds; essential habitat for various marine mammal species including polar bear, walrus, spotted seal, and beluga whale; internationally recognized raptor nesting concentrations; exceptional predator populations including grizzly bears, wolves and wolverine; and extraordinary Arctic wilderness and wild river values.

2. Oil and Gas in the Reserve

BLM has conducted ten oil and gas lease sales in the NPRA since 1982 and leased a total of more than 6.7 million acres and dozens of exploration wells have been drilled. In October 2010, the United States Geological Survey (USGS) updated its analysis of the hydrocarbon potential of the NPRA. Based on the well data, USGS greatly revised downward the estimate of technically recoverable oil in the Reserve.

The USGS analysis of drilling and seismic data found an unanticipated and abrupt transition from oil to gas approximately 15–20 miles west of the Alpine oil field along with poor reservoir quality in key formations.

Recent activities in NPRA, including extensive 3–D seismic surveys, six Federal lease sales totaling more than \$250 million in bonus bids, and completion of more than 30

⁶⁶ 1998 NE NPRA Final IAP/EIS, Vol 1: Introduction - Purpose and Need, p. I-1.

⁶⁷ The NPRPA statutory language stating that “any exploration” in areas designated as containing “significant subsistence, recreational, fish and wildlife, or historical or scenic value” shall receive “maximum protection” of surface values anticipates that there will be some areas in the Reserve that are too important to compromise by allowing development. (42 USC § 6504).

exploration wells on Federal and Native lands, indicate in key formations more gas than oil and poorer reservoir quality than anticipated.⁶⁸

The updated USGS estimate of 896 MMBO (mean estimate) for the NPRA is less than ten percent of the prior 2002 estimated quantity of oil. The USGS estimated undiscovered natural gas resources of 52.8 TCF (mean estimate). This was also revised downward but remains at roughly ninety percent of the natural gas estimated in the prior 2002 assessment.

Most recently, USGS further refined its analysis to estimate how much of the estimated undiscovered hydrocarbon resource in the NPRA can be *economically* recovered (i.e., commercially developed at a range of market prices).⁶⁹ Limited oil potential combined with the lack of a North Slope pipeline to transport natural gas has been identified as a significant barrier to commercialization. The USGS analysis anticipates a 10-year to 20-year delay between expenditures for discovery of gas accumulations and their production that would rely upon construction of a new gas pipeline.

At a market price in the conterminous United States of \$8 per thousand cubic feet (MCF) and with the assumption of a 10-year delay, the economic non-associated gas resources at the 95th-fractile, mean, and 5th-fractile estimates are predicted to be 4.5 TCF, 17.5 TCF, and 39.4 TCF, respectively. In the case of a 20-year delay, the economic gas resources at the 95th-fractile, mean, and 5th-fractile estimates are predicted to be 0.9 TCF, 7.3 TCF, and 24.5 TCF, respectively. These findings highlight the importance of access to a gas pipeline.

Because of limited oil potential and high costs, future oil development in the NPRA is anticipated to be a by-product of gas exploration; exploration for gas accumulations will drive the discoveries of oil.⁷⁰ At a price of \$90 per barrel (\$10.00 per MCF gas price) and an estimated 895 MMBO of technically recoverable oil, USGS projects economically recoverable reserves of 502 MMBO under the scenario with a 10-year delay for gas pipeline capacity and 358 MMBO with a 20-year-delay assumption. With a superabundance of relatively cheap natural gas, the prospects for construction of a natural gas pipeline from the North Slope are dim.

Findings presented in the USGS analysis of the NPRA's oil potential are reinforced by industry actions. In the past several years, following exploration activity, many leaseholdings have been abandoned in the Reserve. A large portion of previously leased tracts have either been relinquished to the government or allowed to expire. The most recent NPRA lease sale offered 1.8 million acres but received bids on only a few individual tracts in the vicinity of already unitized areas.

⁶⁸ 2010 Updated Assessment of Undiscovered Oil and Gas Resources of the National Petroleum Reserve in Alaska (NPRA), United States Geological Survey (October 2010).

⁶⁹ Economic Analysis of the 2010 U.S. Geological Survey Assessment of Undiscovered Oil and Gas in the National Petroleum Reserve in Alaska, United States Geological Survey (May 2011).

⁷⁰ Id. at 25.

Finally, the total estimated economically recoverable oil in the NPRA is insignificant. Putting the oil potential of the Reserve into the larger national context, the United States consumes 19.5 MMBO of liquid fuels per day or approximately 587 MMBO per month.⁷¹ Accordingly, the entire USGS projected economically recoverable reserves of 502 MMBO (mean estimate assuming only a 10 year delay in gas pipeline access) would account for less than one month of consumption for the United States.

3. Colville Delta-5

While the NPRA has limited prospects as a significant oil province, there is interest in development of “satellite” oil fields in close proximity to the existing Alpine oil field located within the Colville River Delta. This includes a proposal by Conoco-Phillips Alaska Inc. (CPAI) to build a permanent all-weather surface road from the Colville River Delta along with a bridge and suspended pipe over the Nigliq Channel to access a new CD-5 production drilling pad. The Nigliq (Inupiaq for goose) is a large channel in the Colville River Delta defining the westernmost edge of the delta and the eastern boundary of the NPRA. The proposed road and bridge project would be the first permanent road and infrastructure developed within the NPRA and is being done in the status quo manner for North Slope oil development.

The Colville River drains nearly one-third of the North Slope and the United States Fish and Wildlife Service (USFWS) has identified the Colville delta as the largest and most productive river delta in northern Alaska. . The EPA has identified the Colville delta as an Aquatic Resource of National Importance. The high-quality habitats in the Colville River Delta have long been recognized for their exceptional biological value. The Colville River Delta is within the range of three species listed as threatened under the Endangered Species Act (spectacled eider, Steller’s eider, and polar bear), is an area used by another Endangered Species Act candidate species (Yellow-billed loon), provides important habitat for hundreds of thousands of migratory shorebirds and the delta has been designated an Important Bird Area (IBA) of continental significance. The Colville delta contains approximately 70 percent of the fish overwintering habitat on the North Slope. Spotted seal and beluga whale are known to seasonally occur in the Nigliq channel

The importance of maintaining the biological integrity of the Colville delta was a key consideration during the original Alpine project permitting process. This included a specific provision that future development in the delta adhere to a roadless design unless either a more environmentally preferred alternative was developed or roadless development was determined to be infeasible (Special Condition 10).⁷² To this day, in fact, Conoco-Phillips touts the Alpine oil field development as roadless on its website:

⁷¹ *Annual Energy Outlook 2011*, Energy Information Administration
(<http://www.eia.gov/forecasts/aeo/excel/fig93.data.xls>).

⁷² Letter from M. Combes/EPA to Col. K. Wilson/USACE (June 9, 2009).

Directional drilling, zero-waste discharge, *roadless development* and other innovations minimize the Alpine development's environmental footprint on the Arctic.⁷³

The CD-5 project, as proposed by CPAI, stands in sharp contrast to the commitment to develop Alpine as a roadless facility and the administrative record reflects a long history of opposition to this project proposal by both the EPA and the US Fish and Wildlife Service.

After detailed review, the Army Corps of Engineers concluded that the CPAI project proposal was not the "least environmentally damaging alternative" (or LEDPA) as required by the Clean Water Act. In its permit decision, the US Army Corps of Engineers (Feb 2010) concluded that the CPAI project proposal was not the "least environmentally damaging alternative" (or LEDPA) as required by the Clean Water Act. The Corps determined that there are other, less damaging project alternatives that would accomplish the purpose of accessing the CD-5 site to produce oil. These alternatives include a roadless alternative with a pipeline under the Nigliq channel using horizontal directional drilling (HDD). HDD is not a novel technology and is used elsewhere on the North Slope, including for the Alpine pipeline connecting to the rest of the North Slope infrastructure and the Trans Alaska Pipeline.

Of particular note are concerns about the impact a road would have on the Colville River Delta surface flow hydrology that is critical to the long-term health and productivity of the Colville River Delta. Construction of a road would disrupt this surface flow which is vital to the long-term maintenance and health of the delta's habitat. The proposed bridge and suspended pipeline present the risk of a catastrophic spill. The Nigliq channel can carry significant discharge volumes (most of the flow) when an ice jam occurs in the main channel during break-up. If even a relatively minor leak in the pipeline should occur concomitant with a seasonal flood event the potential for a catastrophic spill exists. While an HDD alternative is not without risk, proper design, maintenance and monitoring can reduce the risk of leaks and under-channel pipe would not be subject to catastrophic failure. Another concern about the CPAI proposal is that it would facilitate the staging of future development of the NPRA from within the Colville River Delta. This further industrialization of the delta is a significant and long anticipated concern of itself (i.e., further laydown pad, facility construction, loss of habitat, disruptive operations, traffic, etc.) and a primary reason for the inclusion of the roadless development stipulation for future development.

There is no question that oil and gas development on Alaska's North Slope will continue far into the future. The essential issue, however, is not *whether* oil and gas development will take place in the NPR-A, but rather *where* and *how* it will occur. When the Alpine project was first developed there were many representations -- reflected to this day on Conoco-Philips' website -- about it being a roadless development. The CD-5 proposal now being advanced contradicts that commitment.

⁷³ http://www.conocophillips.com/EN/about/worldwide_ops/country/north_america/pages/alaska.aspx (emphasis added).

As stated by the EPA in correspondence to the Corps, dated June 9, 2009, regarding the CD-5 proposal:

As you are aware, EPA is not opposed to continued exploration and development of oil and gas resources in the NPR-A. EPA is firm in our understanding that this can occur in a reasonable manner through the construction of alternatives that are the least environmentally damaging. During EPA's evaluation of the applicant's previous proposal EPA found a road-less alternative to be the least environmentally damaging practicable alternative (LEDPA). ... EPA believes there are practicable alternatives that do not involve a bridge and road crossing of the Nigliq Channel and CRD that have less adverse effect on the aquatic environment. ... [A]n alternative that includes use of the existing airstrip in Nuiqsut, development of a "Nuiqsut hub" for logistical operations with road access to CD-5 drill site via the proposed Kuukpik spur road, and HDD of the pipeline under the Nigliq Channel warrants a detailed analysis."⁷⁴

Consistent with the Clean Water Act, the Corps determined that there are other practicable alternatives that would have less adverse impact on the aquatic ecosystem and still meet the overall project purpose.⁷⁵

It should again be stressed that the principal issue is not whether there should be future development in the NPR-A, but how that development is undertaken. The history of oil development on the North Slope has been one of incremental industrial sprawl. The Clean Water Act requires that the least environmentally damaging practicable alternative be developed. The ultimate decision on how the CD-5 project proceeds will provide an important measure of whether the promise for responsible development promise is kept.

C. Arctic National Wildlife Refuge

Some places, such as the Arctic National Wildlife Refuge ("Arctic Refuge"), are simply too special to drill. Drilling technologies and acreage limitations do not change this conclusion, and any attempts to allow drilling in the Arctic Refuge— no matter how limited they purport to be — would result in impacts to the very values that the Arctic Refuge was initially established to protect: "its unique wildlife, wilderness, and recreational values."⁷⁶ As addressed below, claims that oil and gas exploration and production from the Arctic Refuge can be accomplished in an environmentally protective manner are simply not credible.

1. The Values of the Arctic Refuge

It is in the area that is now the Arctic National Wildlife Refuge that the tallest peaks of the Brooks Range exist; rising from the Arctic Ocean across a 15 to 40 mile wide coastal plain to 9,000 feet. Snow melt that flows north down these mountains through the spring and summer

⁷⁴ Letter from M. Combes/EPA to Col. K. Wilson/USACE (June 9, 2009)

⁷⁵ "U.S. Army Corps of Engineers denies permit application for CD-5 drill pad", U.S. Army Corps of Engineers – Alaska District Public Affairs Office, Press Release No. 10-02 (February 5, 2010)

⁷⁶ Public Land Order 2214, *Establishing the Arctic National Wildlife Range* (Dec. 6, 1960).

feeds rivers that move from the mountains, across the coastal plain, to the Arctic Ocean's Beaufort Sea.⁷⁷ The coastal plain itself is tundra, with communities of mosses, lichens, dwarf shrubs, berry plants and wildflowers.

The values of the Arctic Refuge and its coastal plain led to the special designation of the Arctic National Wildlife Refuge. They include wilderness, wildlife and human attributes.

U.S. Supreme Court Justice William O. Douglas was not only a celebrated jurist, but also a naturalist. He wrote what was to become a seminal book on the area of northeastern Alaska that was to become the Arctic Refuge, including within it the following passage:

The Arctic has a strange stillness that no other wilderness knows. It has loneliness too – a feeling of isolation and remoteness born of vast spaces, the rolling tundra, and the barren domes of limestone mountains. This is a loneliness that is joyous and exhilarating. All the noises of civilization have been left behind; now the music of the wilderness can be heard. The Arctic shows beauty in this barrenness and in the shadows cast by clouds over empty land. The beauty is in part the glory of seeing moose, caribou and wolves living in natural habitat, untouched by civilization. It is the thrill of seeing birds come thousands of miles to nest and raise their young.

The Arctic has a call that is compelling. The distant mountains make one want to go on and on over the next ridge and over the one beyond. The call is that of a wilderness known only to a few. This is not a place to possess like the plateaus of Wyoming or the valleys of Arizona; it is one to behold with wonderment. It is a domain for any restless soul who yearns to discover the startling beauties of creation in a place of quiet and solitude where life exists without molestation by man.⁷⁸

The Interior Department translated eloquent thoughts such as these into formal findings:

The coastal plain in its present state has outstanding wilderness qualities: scenic vistas, varied wildlife, excellent opportunities for solitude, recreational challenges, and scientific and historic values.⁷⁹

The Interior Department has also found that nearly the entire coastal plain area meets the wilderness criteria under the 1964 Wilderness Act.⁸⁰

The Arctic Refuge hosts a huge range of wildlife species, including 36 species of fish, 36 species of land mammals, nine species of marine mammals, and over 160 different species of

⁷⁷ See U.S. Fish and Wildlife Service, Arctic National Wildlife Refuge, <http://www.fws.gov/refuges/profiles/index.cfm?id=75600> (visited December 3, 2007); <http://arctic.fws.gov/> (visited December 3, 2007).

⁷⁸ William O Douglas, *My Wilderness* (Comstock Publishing, 1989) 9-10.

⁷⁹ U.S. Department of the Interior, Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment, Report and Recommendation to Congress and Final Legislative Environmental Impact Statement at 46 (1987) (FLEIS). This 1987 report came about due to Section 1002 of ANILCA, which mandated that the Interior Department conduct a “comprehensive and continuing inventory and assessment of the fish and wildlife resources of the coastal plain of the Arctic National Wildlife Refuge.” 16 U.S.C. 3142(a).

⁸⁰ FLEIS at 46.

birds.⁸¹ Perhaps the most celebrated coastal plain wildlife are the caribou of the Porcupine Herd. The Porcupine Caribou Herd is named for the Porcupine River, which the herd crosses on its annual migration from wintering grounds in the United States and Canada south of the Brooks Range to its summer grounds on the coastal plain of the Arctic Refuge 400 miles away.⁸² Some individual caribou travel as much as 3,000 miles in making this round-trip migration, thus making the largest migration of any land mammal in the world.

The Porcupine Caribou Herd moves to the coastal plain for calving and post-calving habitat. Giving birth to tens of thousands of calves in a two week period – most within a few days – the herd uses the coastal plain for its nutritious protein-rich plants, and as insect-relief habitat.⁸³ During calving on the coastal plain, "[a]dult females are at the lowest ebb of their physical condition" and "no alternative habitats are apparently available."⁸⁴ Mid-summer Porcupine Herd congregations on the coastal plain can total tens of thousands of individual animals.⁸⁵

Millions of birds from throughout the world also come to the coastal plain of the Arctic Refuge in the summer. Here they nest, rest, feed, or raise their young. Some of the remarkable bird species of the coastal plain are the golden plover, which migrates to the coastal plain from Hawaii, the Arctic tern which, coming to the arctic from Antarctica, has the longest migration in the animal world, and literally dozens of waterfowl.⁸⁶

During the short but intense summer, wildlife is ever-present on the coastal plain, yet it is not devoid of wildlife in other seasons. For example, muskoxen spend time year-round on the coastal plain.⁸⁷ Muskoxen, once extinct in America's Arctic, were re-introduced in the Arctic Refuge in 1969. Renowned for their prehistoric look and long, soft, fur called quivut, muskoxen also have a dramatic defense technique against predation; they form a tight circle with their sharp horns facing outward.

⁸¹ FWS, Arctic Refuge, Wildlife, <http://arctic.fws.gov/wildlife.htm> (visited December 3, 2007).

⁸² State of Alaska Department of Fish and Game, <http://www.adfg.alaska.gov/index.cfm?adfg=caribou.main>; <http://www.taiga.net/top/caribou.html> (visited December 12, 2007); United States Geological Survey, <http://alaska.usgs.gov/BSR-2002/pdf/usgs-brd-bsr-2002-0001-sec03.pdf> (including map of range of Porcupine Caribou Herd) (visited December 12, 2007).

⁸³ USGS, <http://alaska.usgs.gov/BSR-2002/pdf/usgs-brd-bsr-2002-0001-sec03.pdf> (visited December 12, 2007). In years when the Porcupine herd did not make it to the coastal plain to calve (prevented, for example, by high water river crossings or deep snows), they subsist on less nutritious plants. See id.; see also <http://arctic.fws.gov/caribou.htm> (visited December 12, 2007).

⁸⁴ International Porcupine Caribou Management Board, Sensitive Habitats Of The Porcupine Caribou Herd 14 (January 1993) [hereinafter Sensitive Habitats].

⁸⁵ FWS, Arctic Refuge, Caribou, <http://arctic.fws.gov/caribou.htm> (visited December 3, 2007).

⁸⁶ FWS, Arctic Refuge, birds, <http://arctic.fws.gov/birdlist.htm> (visited December 3, 2007); Audubon, From the Arctic to your backyard, http://www.protectthearctic.com/history_migrate.html (visited December 3, 2007); Encyclopedia Britannica Online, golden plover, <http://www.britannica.com/eb/topic-237742/golden-plover> (visited December 3, 2007); About.com, Arctic Tern, <http://birding.about.com/library/weekly/aa020700a.htm> (visited December 3, 2007).

⁸⁷ FWS, Arctic Refuge, Musk Ox, <http://arctic.fws.gov/muskox.htm> (visited December 3, 2007).

Historically, the “Arctic Refuge is the only national conservation area where polar bears regularly den and [it is] the most consistently used polar bear land denning area in Alaska.”⁸⁸ As such, the coastal strip of the Arctic Refuge is the most important land denning area for polar bears in Alaska.⁸⁹ And polar bears are also increasingly using the Refuge’s coast in seasons other than winter. One recent survey found as many as 200 polar bears on land from Point Barrow to the Canadian border to the east, most within the Arctic Refuge, during the ice-free season.⁹⁰

As the Interior Department states, the “Arctic National Wildlife Refuge supports the greatest variety of plant and animal life of any Park or Refuge in the circumpolar arctic”⁹¹ and the coastal plain of the Arctic Refuge is the “most biologically productive part of the Arctic Refuge for wildlife and is the center for wildlife activity.”⁹² The plentiful wildlife on the coastal plain has led some to call it “America’s Serengeti.”⁹³

Though primarily marine mammal hunters, the Inupiat people of the Arctic – especially those in Kaktovik which is on the northern border of the Refuge -- also use resources from the Arctic Refuge, including caribou and other mammals and birds.⁹⁴ Living in villages along the migratory path of the Porcupine caribou herd, the Gwich’in people of northeastern Alaska and northwestern Canada rely physically, culturally and spiritually on the Porcupine herd:

⁸⁸ FWS, Arctic Refuge, Bears, <http://arctic.fws.gov/bears.htm> (visited December 3, 2007); Amstrup, S.C. 2002. Movements and population dynamics of polar bears. Pages 65-70 in D.C. Douglas, P.E. Reynolds, and E.B. Rhode, editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001; see also FWS, Arctic Refuge, Polar Bear Denning (maps of denning sites), <http://arctic.fws.gov/pbdenning.htm> (visited December 12, 2007).

⁸⁹ U.S. Fish and Wildlife Service, A Preliminary Review of the Arctic National Wildlife Refuge, Alaska Coastal Plain Resource Assessment: Report and Recommendation to the Congress of the United States and Final Legislative Environmental Impact Statement at 7 (1995) [hereinafter FWS 1995 Report].

⁹⁰ Jim Carlton, *Is Global Warming Killing the Polar Bears?*, Wall Street Journal (December 14, 2005), <http://www.stopglobalwarming.org/news/is-global-warming-killing-the-polar-bears/> (visited December 14, 2007).

⁹¹ FWS, Arctic Refuge, Wildlife And Habitats, <http://www.fws.gov/refuges/profiles/WildHabitat.cfm?ID=75600> (visited December 3, 2007).

⁹² U.S. Department of the Interior, Arctic National Wildlife Refuge, Alaska, Coastal Plain Resource Assessment, Report and Recommendation to Congress and Final Legislative Environmental Impact Statement (1987) (FLEIS) at 46.

⁹³ See e.g., <http://training.fws.gov/NCTCWeb/eJournal/StoryDetail.aspx?StoryId=332>

⁹⁴ NAS Report; Committee On Resources, U.S. House Of Representatives, H.R. 39, Arctic Coastal Plain Domestic Energy Security Act Of 2003; And H.R. 770, Morris K. Udall Arctic Wilderness Act, Legislative Field Hearing, Kaktovik, Alaska, Serial No. 108-13, 108th Congress, 1st Sess. (April 5, 2003) (testimony of Robert Thompson), <http://bulk.resource.org/gpo.gov/hearings/108h/86329.pdf> (visited December 12, 2007).

For thousands of years, the Gwich'in have relied on the caribou as their primary food source, and despite the inroads of modern civilization, that remains true today. The caribou are also deeply intertwined with Gwich'in culture—as Gwich'in leader Sarah James has said, “The Gwich'in are caribou people Our whole way of life as a people is tied to the Porcupine caribou. It is in our language, and our songs and stories.”⁹⁵

Because of their deep reliance on the Porcupine herd, the Gwich'in consider the coastal plain the “Sacred Place Where Life Begins.”⁹⁶

The Arctic Refuge, encompassing as it does both arctic and sub-arctic ecosystems, also offers an unparalleled opportunity for scientific research. This is an especially critical role, as oil and gas activities in other parts of America's Arctic impact that habitat, and as global warming causes changes throughout the arctic. As the experts state, without an environmental baseline, it is difficult to gauge the effects on the Arctic of various human or environmentally-caused changes.⁹⁷

2. Oil and Gas and the Arctic Refuge

Regardless of any restrictions on production technology or occupied-surface acreage, oil production is necessarily preceded by exploration. Exploration would involve intrusive, damaging and risky surface seismic and drilling activities across the Arctic Refuge's Coastal Plain, directly impacting surface values and subsistence resources and threatening severe and long-lasting damage to wildlife species and the Arctic Refuge ecosystem.

Seismic activities are conducted using convoys of bulldozers and “thumper trucks” that travel over extensive areas of the tundra, and exploratory oil drilling uses large drill rigs, convoys and aircraft. Newer 3-D seismic surveys on the North Slope deploy more vehicles than older 2-D seismic surveys, including heavy vehicles used for “cat-train” camp hauling, and make a tighter grid profile than 2-D seismic surveys.⁹⁸ Not only are these activities intrusive, but surface

⁹⁵ Gwich'in Steering Committee, et al., *A Moral Choice for the United States; The Human Rights Implications for the Gwich'in of Drilling in the Arctic National Wildlife Refuge* at iii (2005), <http://www.gwichinsteeringcommittee.org/GSChumanrightsreport.pdf> (visited December 11, 2007); see also Arctic National Wildlife Refuge, Alaska: Hearings Before the Committee on Energy & Natural Resources of the United States Senate, 100th Cong. at 313 (1987) (Tanana Chiefs Conference, Inc., Resolution No. 87-65) (noting that Arctic Village, Venetie, and Old Crow “are extremely dependent upon the population and distribution of the Porcupine Caribou herd as a matter of economics, nutrition, and cultural heritage[.]”).

⁹⁶ Id. at 18.

⁹⁷ NAS Report; Arctic Council Report, *Impacts on Porcupine caribou herd graph* (Graphset 3 at 4); U.S. Geological Survey, *Arctic Refuge Coastal Plain, Terrestrial Wildlife Research Summaries*, USGS/BRD/BSR-2002-0001 at 11-15 (Reston, Virginia: 2002) (hereinafter 2002 USGS Report); International Porcupine Caribou Management Board, *Sensitive Habitats of the Porcupine Caribou Herd* at 14 (January 1993) (hereinafter “Sensitive Habitats”).

⁹⁸ See U.S. Fish and Wildlife Service, *Potential impacts of proposed oil and gas development on the Arctic Refuge's coastal plain: Historical overview and issues of concern* (Jan. 17, 2001), available at: <http://arctic.fws.gov/issues1.htm>; Janet C. Jorgenson, J.M. Ver Hoef, and M.T. Jorgenson, *Long-term recovery patterns of arctic tundra after winter seismic exploration*, *Ecological Applications*, 20(1) at 218, 219 (2010).

exploration activities — which are employed year after year throughout the life of the oil field — can cause severe and long lasting damage to wilderness and the Arctic Refuge ecosystem.⁹⁹

Moreover, even if exploration activities are only conducted in the winter, the activities still pose many threats. The Coastal Plain is the most important land denning area for U.S. populations of polar bears, which are now listed as a threatened species under the Endangered Species Act (“ESA”),¹⁰⁰ and much of the Coastal Plain was recently designated as Critical Habitat under the ESA for this northern bruin.¹⁰¹ Winter exploration activities can disturb polar bears from their maternity dens, as was witnessed at the Alpine oil field in March of 2006¹⁰² and this spring at the Nikaitchuq field,¹⁰³ which may expose cubs to increased abandonment and mortality.¹⁰⁴ These exploration activities can also frighten other year-round Coastal Plain residents such as sensitive muskoxen.

Thus, any effort to authorize oil production in the Arctic Refuge necessarily authorizes intrusive and damaging surface seismic and drilling exploration activities within the Coastal Plain, causing direct and cumulative impacts to the exceptional wilderness, wildlife and subsistence resources that the Arctic Refuge was established to protect.¹⁰⁵

Production of oil and gas on or immediately adjacent to the land and nearly 100 miles of coastal borders of the Coastal Plain would cause significant air and water pollution, and inevitably result in oil spills. Impacts of production could thus extend into key wildlife and subsistence areas across the Arctic Refuge. As aptly noted by the National Research Council (“NRC”), “[t]he effects of industrial activities are not limited to the footprint of a structure or to its immediate vicinity; a variety of influences can extend some distance from the actual footprint.”¹⁰⁶

⁹⁹ See Janet C. Jorgenson, *Long-term recovery patterns of arctic tundra after winter seismic exploration*, Ecological Applications, at 219-20 (discussing the still evident impacts from exploration activities that occurred in the Arctic Refuge the mid 1980’s).

¹⁰⁰ 73 Fed. Reg. 28,212 (May 15, 2008).

¹⁰¹ 75 Fed. Reg. 76,086 (Dec. 8, 2010).

¹⁰² Department of the Interior, Office of the Solicitor, Alaska Region, Notice of Violation issued to Conoco Phillips Alaska, Inc. (July 31, 2007).

¹⁰³ See Jackie Bartz, *Denning Polar Bears Wake Up to New Oil Drilling Station*, KTUU-TV, Channel 2 News (April 11, 2011).

¹⁰⁴ See Rachel D’Oro, *Polar Bear Cub Rescued at Alaska Oil Field*, Fairbanks Daily News-Miner (April 29, 2011).

¹⁰⁵ See P.L. 96-487, ANILCA, § 303(2)(B).

¹⁰⁶ NRC Report at 9.

Significant infrastructure is necessary to support oil and gas development and production activities — including busy airports, permanent gravel roads, and pipelines — and these facilities will be located throughout the Coastal Plain. As also observed by the NRC:

[t]he common practice of describing the effects of particular projects in terms of the area directly disturbed by roads, pad, pipelines, and other facilities ignores the spreading character of oil development on the North Slope and the consequences of this to wildland values. All of these effects result in the erosion of wildland values over an area far exceeding the area directly affected.^[107]

Moreover, once oil is discovered, efforts to recover it continue year-round. Year-long vehicle traffic, production plant noise, helicopter and airplane traffic, air and water pollution, and other activities create inevitable conflicts with wildlife in every month and season. Thus, the entire Coastal Plain would be adversely impacted year round by oil production and the impacts would be felt far beyond the rig footprint; neither drilling technology nor acreage limitations would lessen the extent and reach of these impacts.

Further, any bill that allows leasing and oil production on the Coastal Plain of the Arctic Refuge could potentially open over 92,000 acres of subsurface land within the Coastal Plain of Arctic Refuge to which Arctic Slope Regional Corporation (“ASRC”) obtained the subsurface rights.¹⁰⁸ While these lands are currently — and have always been — closed to oil and gas leasing and development, in the event that Congress authorizes the leasing of, or the production of oil from, the Arctic Refuge, these lands will be opened. ASRC acquired the rights to the subsurface estate in a controversial Watt-era land exchange, pursuant to which it traded its surface rights in Gates of the Arctic National Park for subsurface rights to 92,160 acres under the Arctic Refuge. This land trade occurred behind closed doors and flew in the face of the Alaska Native Claims Settlement Act’s (“ANCSA”) intent to prohibit subsurface selection within National Wildlife Refuges.¹⁰⁹ In 1989, the General Accounting Office found, after the fact, that this land exchange was not in the interest of the United States. The terms of this transfer specifically prohibited leasing and development of these lands for oil and gas unless the Federal government authorizes leasing or development in the Coastal Plain, on these lands, or both.¹¹⁰

Consequently, opening up the Coastal Plain to oil and gas leasing and development also allows leasing and development of nearly 100,000 acres of ASRC lands within the Coastal

¹⁰⁷ NRC Report at 148.

¹⁰⁸ For more information about ASRC lands with the Arctic Refuge, see Pamela Baldwin, CRS Memorandum re: Arctic Slope Regional Corporation Lands and Interests within the Arctic National Wildlife Refuge (April 22, 2002).

¹⁰⁹ See Pamela Baldwin, *Legal Issues Related to Proposed Drilling for Oil and Gas in the Arctic National Wildlife Refuge (ANWR)*, CRS Report RL31115 at 15 (May 4, 2005).

¹¹⁰ Agreement between Arctic Slope Regional Corporation and the United States of America (Aug. 9, 1983), Appendix 2: Land Use Stipulations ASRC Lands, Kaktovik, Alaska at 6.

Plain.¹¹¹ This would allow for vast industrial complexes along and within the borders of the Arctic Refuge, including production sites, airports, permanent gravel roads, and pipelines, and cause significant impacts to the wilderness, wildlife and subsistence resources within the Arctic Refuge.

Simply put, opening the Arctic Refuge to oil leasing, exploration and production, whatever the technological or environmental promises, unacceptably threatens the exceptional values of the Arctic Refuge. As history has shown time and time again, oil drilling necessarily involves a trade-off between environmental values and industrialization;¹¹² you simply cannot have a pristine environment and oil drilling at the same time. Rather, Congress should provide the Coastal Plain of the Arctic Refuge with the Wilderness protections it so richly deserves.

IV. Conclusion

America's Arctic contains unique, intact, complex and still mysterious ecosystems. Introducing oil and gas activities to some parts of that region, such as the Arctic Refuge, is simply inappropriate. The decisions whether such activities should occur in other parts of America's Arctic cannot and need not be made in a climate of fear or crisis. Rather, they should be made based on sound science, with sensitivity to the close relationship of local communities to these areas. Where such activity is allowed, strong regulation must be in place to protect the environment and the subsistence resources of local communities, including regulations that ensure that proven technology exists to prevent and respond to oil spills.

Thank you for the opportunity to submit comments for the official record of this hearing.

¹¹¹ Chevron Texaco and BP currently hold lease agreements for these lands. See Arctic Slope Regional Corporation, Oil, <http://www.asrc.com/Lands/Pages/Oil.aspx> (last visited May 11, 2011).

¹¹² See National Research Council, *Cumulative Environmental Effects Of Oil and Gas Activities on Alaska's North Slope*, National Academies Press, Washington, D.C. at 10-11, 159 (March 2003) (hereinafter "NRC Report") (noting that there is an "essential trade off" between pristine environments and committing an area to oil drilling).