



THE WILDLIFE SOCIETY

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POSITION STATEMENT OF THE ALASKA CHAPTER OF THE WILDLIFE SOCIETY ON OIL AND GAS DEVELOPMENT IN THE ARCTIC NATIONAL WILDLIFE REFUGE

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The Arctic National Wildlife Range was established in 1960 to preserve unique wildlife, wilderness, and recreational values. In the Alaska National Interest Lands Conservation Act of 1980 (ANILCA), Congress enlarged the Range to 19.6 million acres, renamed it the Arctic National Wildlife Refuge, and designated 8 million acres of mountains, foothills, and coastal plain as Wilderness. ANILCA established the following purposes for the Arctic Refuge:

1. To conserve fish and wildlife populations and habitats in their natural diversity including, but not limited to, the Porcupine Caribou Herd, polar bears, grizzly bears, muskoxen, Dall sheep, wolves, wolverines, snow geese, peregrine falcons and other migratory birds, Dolly Varden, trout, grayling, whitefish, and burbot.
2. To fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats.
3. To provide, in a manner consistent with the purposes set forth in subparagraphs i and ii, the opportunity for continued subsistence uses by local residents.
4. To ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph i, water quality and necessary water quantity within the Refuge.

Section 1002 of ANILCA required the Secretary of the Interior to assess the petroleum and wildlife values of a 1.5-million-acre portion of the Arctic Refuge coastal plain often referred to as the 1002 Area. Section 1003 of ANILCA reserved the decision of whether to allow oil and gas leasing and production or development leading to production within that area to Congress. The necessary assessments of the 1002 Area are complete and indicate it may contain substantial amounts of oil and gas, and that it is of vital importance to many wildlife species.

Bills have been filed in Congress to open the 1002 Area to oil and gas leasing, but other bills have been filed to designate the entire area as Wilderness, which would be closed to leasing. Proponents of leasing cite economic potential and enhancement of domestic energy production that new oil and gas development may provide. Opposition to exploration and development stems from concerns about the effects of development on wildlife, subsistence, integrity of the Arctic Refuge as Wilderness, and long-term national energy policy, i.e. a focus on developing domestic fossil-fuel resources versus reducing demand for fossil-fuel products through

conservation and development of alternative energy sources. This paper deals only with the issue of potential effects on wildlife.

At the request of Congress, the National Research Council (NRC) of the National Academy of Sciences evaluated the cumulative environmental effects of oil and gas activities on Alaska's North Slope and published a report in 2003. The NRC stated that "The effects of North Slope industrial development on the physical and biotic environments and on the human societies that live there have accumulated, despite considerable efforts by the petroleum industry and regulatory agencies to minimize them...Continued expansion is certain to exacerbate some existing effects and to generate new ones..."

The expected effects of proposed oil and gas development on wildlife and the ecosystem integrity of the Arctic Refuge would be dependent on the timing, extent, location, intensity, and regulatory oversight of petroleum exploration, development, and production activities. Information on exact development scenarios is lacking. However, experience with oil development elsewhere on the North Slope suggests that development in the 1002 Area will not only affect wildlife in the Arctic Refuge and surrounding areas, but will foster additional development adjacent to the Refuge. With current knowledge of the wildlife resources and their uses of habitat in the Arctic Refuge, and considering available information on the effects of current and ongoing petroleum development in Alaska's North Slope oil fields, the primary biological concerns of the Alaska Chapter of The Wildlife Society regarding oil and gas development in the Arctic Refuge include:

1. Potential displacement of caribou from preferred calving areas and summer ranges, with concomitant reductions in calf survival. In most years, the Porcupine Caribou herd of approximately 123,000 animals (as of 2001) calves and seeks relief from insect harassment on the Coastal Plain of the Arctic Refuge, including the entire 1002 Area. In late summer, the entire Porcupine Caribou Herd migrates throughout the Refuge, and winters in Yukon Territory and northeastern Alaska, including South Slope portions of the Refuge. In 1987, the United States signed an International Agreement with Canada to preserve and protect the Porcupine Caribou Herd and its habitat. The Coastal Plain of the Arctic Refuge has been designated by the International Porcupine Caribou Board as the herd's most sensitive habitat.

In addition, during recent years the western portion of the 1002 Area has been heavily used for summer insect relief by caribou from the Central Arctic herd, and >40% of this herd uses the foothills south and west of the 1002 Area as winter range. This herd comprises approximately 32,000 animals (as of the most recent census in 2002), and much of the herd's summer range to the west of the Refuge has been subject to human disturbance associated with the existing oil fields. The effects of development of the Refuge coastal plain in combination with areas further west are likely to be more pronounced than were effects of previous development.

2. Potential effects on muskoxen, which were extirpated from Alaska and subsequently reintroduced to the Arctic Refuge in 1969. The muskox population expanded rapidly following reintroduction, but has declined since the late 1990s due to low calf recruitment, decreased adult survival, and shifts in distribution. Less than 50 muskoxen currently inhabit the Coastal Plain of the Refuge year round, the majority of which

depend on riparian and adjacent upland habitats within the Coastal Plain. Although the causes of the decline in the Refuge population are largely unknown, emigration, disease, malnutrition, and predation by grizzly bears have been implicated. Muskoxen are adapted to exploit relatively low-quality forage, in part by minimizing energy expenditure during winter. The extent to which oil industry activities, such as winter seismic exploration and development of roads and airfields, might displace muskoxen from preferred habitats has not been determined. However, any human activity that increases energy expenditure by muskoxen is likely to reduce survival. The species' past history of extirpation and recent declines in population size suggest that muskoxen may be especially vulnerable to cumulative effects of disturbance.

3. Potential effects on polar bears that use the 1002 Area for maternal dens during winter and resting along the coast and barrier islands in the summer and fall. Although in 2008 the polar bear was listed as "Threatened" under the Endangered Species Act, the policy of the Department of Interior is that current mitigation efforts under the Marine Mammal Protection Act's incidental take provision meet the requirement of the Endangered Species Act. Disturbance created by human activities in winter, such as seismic exploration, movement of heavy equipment, and construction of ice roads and pads can cause pregnant female bears to abandon their dens, potentially resulting in death of newborn cubs. The 1002 Area accounts for almost 1/3 of the Beaufort Sea polar bear dens discovered on land, and due to its hilly terrain the Coastal Plain in the Refuge has a higher concentration of denning habitat than other areas of the North Slope. Dens on land are particularly important because dens on the sea ice are more likely to be destroyed by changes in the ice pack or snow cover during winter and are likely to become even more vulnerable as the climate warms and the ice becomes thinner. Recent studies suggest that as sea ice thickness and quantity has declined, the proportion of polar bears denning on land has increased. Maternal polar bears denning on land are more exposed to human disturbance.

In addition, more bears have been spending summer and fall on land or along the barrier islands, waiting for ice to re-form. During this time, there is greater potential for human/bear conflicts and bears would be more susceptible to fuel and other contaminant spills from increased ship traffic supporting development in the 1002 Area and adjacent areas.

4. Potential effects on grizzly bears, wolves, wolverines, and foxes. Animals that scavenge for part of their food requirements can be attracted to anthropogenic food sources accompanying industrial activities in the 1002 Area. Scavengers have increased in the existing oilfields due to improperly managed garbage and other foods, which has resulted in secondary effects due to increased predation on nesting bird populations in the area. Grizzly bears and foxes have become conditioned to obtaining human food and have had to be removed from the population due to conflicts with humans in the oilfields and elsewhere.

In addition, grizzly bears, like polar bears, are subject to effects of winter den disturbance because they also den during the off-road construction and transportation season.

5. The effects of disturbance on snow geese of the Western Canadian Arctic Population during fall staging. This population of approximately 500,000 snow geese nests in Canada but in late summer obtains energy for fall migrations by feeding in the foothills and on the Coastal Plain of the Arctic Refuge, and adjacent Yukon and Northwest Territories. During this period they are particularly sensitive to disturbance from aircraft and other human activities.
6. Alterations of near-shore marine and brackish-water habitats due to construction of nearshore facilities. Solid-fill causeways, offshore drill pads and other petroleum-related facilities can affect nearshore habitats that are particularly productive and provide important habitat for migratory birds. Multiple structures associated with development in nearshore areas can also increase the potential for bird collisions because large flocks of seabirds migrate along nearshore and offshore areas where they can be especially prone to collisions with facilities, especially during periods of poor visibility.
7. Releases of pollutants into wetlands, waterways, and the atmosphere from camps, oil spills, and other sources.
8. The potential for increased human access leading to increased disturbance of wildlife and localized overharvest of fish and wildlife.
9. The unknown, long-term, and cumulative effects of development on ecosystem processes critical to long-term viability and integrity of the arctic environment. These include mechanisms such as predation, scavenging, and nutrient cycling that are sensitive to single- or multi-species perturbations and may have wide-ranging effects on many components of ecosystem productivity and stability.

Based on studies in existing areas of oil development on the North Slope, The Alaska Chapter of The Wildlife Society believes that oil and gas production on the Arctic National Wildlife Refuge would inevitably result in reductions in quality and quantity of wildlife habitat and probable declines in some wildlife populations. Habitat fragmentation is of special concern for species requiring large areas such as caribou, grizzly and polar bears, muskoxen, and staging snow geese.

Current oil development on the North Slope has disrupted movements of the Central Arctic Caribou Herd and displaced pregnant caribou cows from traditional, high-quality calving areas to areas of poorer habitat quality. Even oil fields that incorporate design features to allow caribou to move more freely have been shown to displace caribou or restrict their movements. The Central Arctic Caribou Herd has increased since oil development began, indicating that alternative habitat was present in undeveloped areas. However, calves born in the newly-occupied areas were smaller than those from undisturbed areas where caribou were not displaced, and smaller calves are less likely to survive the winter. Favorable weather during the 1980s and most of the 1990s also contributed to this herd's increase, although the herd declined during a 3-year period of adverse weather in the early 1990's. During that period, cows that spent more time in or near oil fields gained less weight and had fewer calves than cows that did not use developed areas. As resource development has proceeded in existing oil fields, the

cumulative area encompassed by infrastructure has increased, resulting in fragmentation of habitats.

The wildlife resources and environment of the 1002 Area differ from currently developed areas on the North Slope in a way that makes it difficult to mitigate the adverse effects of oil development. The coastal plain of the Arctic Refuge is much narrower than it is at the existing North Slope oil fields, and there is little snow-free habitat on the 1002 Area that is unoccupied by the Porcupine Caribou Herd during calving. In the event of petroleum development in the 1002 Area, caribou would have limited alternative calving areas. Depending on the density and distribution of oil field infrastructure that would be constructed, caribou that calve in the vicinity of the new oil fields might find their post-calving movements impaired. This is more likely to occur in the 1002 Area of the Arctic Refuge compared to existing oil fields farther west, because caribou from the Porcupine Herd often aggregate in large groups of greater than 10,000 animals, substantially larger than groups that occur in the Central Arctic Herd. Research in the existing oil fields has shown that larger groups of caribou (a few tens to a few hundreds) were reluctant to cross roads and pipelines and often approached these features several times before crossing. Smaller groups (usually a dozen or fewer) tended to cross more directly. In addition to impaired movement within current calving areas, displacement of caribou from traditional calving areas may place cows into areas of poorer forage and more predators. Any decrease in productivity of the Porcupine Caribou Herd would be of particular concern because the herd has historically grown more slowly than other herds, even during favorable weather. Special efforts to maintain productivity of Porcupine Caribou are warranted because the herd declined from a high of 178,000 in 1989 to 123,000 in 2001. All these factors indicate that the Porcupine Herd may be particularly vulnerable to disturbance and displacement. The likelihood of cumulative effects on caribou in the Arctic Refuge coastal plain was also recognized in the NRC report: “Although the accumulated effects of industrial development to date have not resulted in large or long-term declines in the overall size of the Central Arctic Herd, the spread of industrial activity into other areas that caribou use during calving and in summer, especially to the east where the coastal plain is narrower than elsewhere, would likely result in reductions in reproductive success, unless the degree to which it disturbs caribou could be reduced.”

The 1002 Area of the Arctic Refuge, unlike existing areas of oil development on the North Slope, supports a relatively large number of maternal polar bear dens in winter, a substantial population of migratory snow geese in late summer, and a small population of muskoxen. The effects of oil development on these populations are largely unknown, and techniques to mitigate adverse impacts may not exist, or may be impractical for some activities associated with development. For example, disturbance of staging snow geese can be mitigated if appropriate controls on aircraft and ground activity are in place, but these may be impractical for the large and not necessarily predictable areas used by staging snow geese. Muskoxen may be more vulnerable to disturbance on their winter habitat because their survival strategy is to subsist on low quality forage while minimizing energy expenditure. Calving muskox may be especially vulnerable because their calves are born up to 6 weeks before forage plants begin growth and they must subsist on stored energy. Winter exploration, construction, or transportation activities that increase disturbance or displace muskox from winter habitats could adversely affect calving success. In some cases, mitigation relies on techniques that have not been thoroughly tested. For example, although techniques such as airborne Forward

Looking Infrared imaging have been used to identify polar bear dens, none of these is feasible for the large scale seismic exploration that is likely to occur, nor have all techniques been tested under a variety of environmental conditions. In other cases, mitigation may be available in principle but not in practice. For example, despite improvements in the existing oilfields over the past decade, total compliance with garbage management requirements has not been achieved, and improperly contained garbage continues to attract scavengers.

Based on limited knowledge and understanding of the cumulative effects of oil and gas exploration and development on Alaska's North Slope, and the inability to accurately predict the timing or extent of potential development scenarios, it is difficult to quantitatively predict the long-term, cumulative effects on the wildlife and ecosystem processes of the Arctic Refuge's 1002 Area. Thus, it is unlikely that a mitigation plan could be developed with any degree of certainty. We believe it is prudent to more fully understand these effects before risking development of other, more sensitive areas. The NRC report identified a list of gaps in current knowledge regarding effects of oil development on wildlife. Principal among these was the need to prepare a comprehensive plan for development on the North Slope, which is necessary for an adequate assessment of potential environmental effects and for comparing costs vs. benefits of development.

Studies of wildlife and vegetation on the 1002 Area of the Arctic Refuge during past decades have provided considerable information on structure and function of an arctic tundra ecosystem that has been relatively undisturbed by human activities. Few arctic areas have baseline data as extensive as the Arctic Refuge 1002 Area. There is considerable scientific and cultural value in maintaining undisturbed arctic regions where effects of long-term global changes can be identified and distinguished from localized human influence. As development expands into frontier areas elsewhere on the North Slope, continued research on the 1002 Area in the absence of oil and gas production may be especially important as a scientific benchmark, because rates of warming in the Alaskan arctic are generally higher than in other regions.

The Alaska Chapter of The Wildlife Society believes that the 1002 Area of the Arctic National Wildlife Refuge is an area critical to the abundance and diversity of wildlife in the entire Refuge, as well as some populations of both national and international importance. Furthermore, this area possesses significant cultural, aesthetic, recreational, and scientific values in its present state. Industrial activities that are expected to occur as a result of petroleum exploration and development are likely to have significant negative effects on these values. Our concerns are: (1) adverse effects of petroleum development on some wildlife species at existing oil fields on the North Slope have not been avoided, (2) the unique aspects of wildlife resources and the environment of the 1002 Area are such that mitigation of the impacts of oil development may not be possible, (3) the long-term, cumulative effects on wildlife resources are unknown, and (4) there is substantial scientific merit in maintaining part of Alaska's Arctic Coastal Plain in an undeveloped state for long-term studies of the effects of climate change in the Arctic on wildlife resources and ecosystem processes. The Chapter urges Congress to provide adequate, long-term protection for the Arctic Refuge to meet these concerns.