

WILDLIFE AND OIL DEVELOPMENT AT TESHEKPUK LAKE



 Audubon ALASKA

*A Special Report by the National Audubon
Society's Alaska State Office on Wildlife and
Oil Development at Teshekpuk Lake,
National Petroleum Reserve-Alaska*

Originally established in 1923 by President Warren Harding as a source of oil for the U.S. Navy, the 23.5-million-acre National Petroleum Reserve-Alaska ("Reserve") is the nation's largest single block of public land. In 1976, Congress transferred management authority from the Navy to the Department of the Interior and required "maximum protection" of fish, wildlife and other surface values during petroleum exploration in the Reserve. In 1980, Congress authorized leasing and development, but again directed the Secretary of the Interior to minimize ecological disturbance throughout the Reserve.

Indeed, the Reserve has superb surface resources, including two caribou herds, world-class densities of raptors, millions of migratory birds, tens of thousands of molting geese, large concentrations of beluga whales and other marine mammals, vast wilderness landscapes, wild rivers, and rich geological, scientific, archaeological and paleontological sites.

This booklet focuses on the area around Teshekpuk Lake—one of the most important wetland complexes in the entire circumpolar Arctic. Critical wildlife habitats in this wetland complex are now at risk from oil development proposed by the federal government.



Mixed flock of eiders Photo by Gary Braasch
Inset: Northern pintail Photo by David Menke

A History of Protection

Congress and three Secretaries of the Interior—serving under three different Presidents—have recognized the importance of wildlife habitats around Teshekpuk Lake.

First was Secretary of the Interior Cecil Andrus. Prompted by Congress in 1976, Andrus created the 1,734,000-acre Teshekpuk Lake Special Area in 1977. Second was Secretary of the Interior James Watt. In 1983, under his leadership, the Bureau of Land Management ("BLM") initiated an oil and gas leasing program in the Reserve, but an area of more than 200,000 acres north of Teshekpuk Lake was closed to leasing. Although inadequate in size, this area was closed because of its high density of molting brant (a marine goose).

Third, in 1998, under the leadership of Secretary of the Interior Bruce Babbitt, BLM designated the 857,859-acre Teshekpuk Lake Surface Protection Area. Of this area, 588,998 acres were closed to oil and gas leasing in order to protect caribou, geese and other resources.

Under Secretary Babbitt, 87 percent of the 4,600,000-acre Northeast Planning Area was opened for leasing. To date, 1,300,000 acres have been leased; none of those leases are north or east of the lake.

Ecological Resources and Impacts of Oil Development

After nearly two years gathering information on ecological and commercial resources in the western Arctic, Audubon scientists reached the following conclusions:

- Teshekpuk Lake and the many nearby lakes and wetlands comprise one of the most important wetland complexes in the circumpolar Arctic;
- Tens of thousands of geese gather at Teshekpuk Lake to molt, making it one of the most important goose-molting habitats in the Arctic;
- Disturbance associated with routine human activities in an industrial oilfield could displace molting geese and reduce their populations;
- Oilfields attract predators, which then prey on nesting birds and their eggs and young;

- Most concentrated calving activity for the 45,000-animal Teshekpuk Lake Caribou Herd occurs south, east and northeast of the lake;
- After calving, much of the caribou herd moves to coastal habitats east, north and northwest of Teshekpuk Lake, seeking relief from swarms of biting insects;
- The Teshekpuk Lake herd is growing and is the most important herd for subsistence harvests by Alaska Natives living on the North Slope;
- It may not be possible to sustain the current level of subsistence harvests if industrial-scale oil development encroaches on calving and insect-relief habitats.
- The interactive, cumulative effects of climate warming and industrial oil development could have major consequences for Teshekpuk Lake wildlife.

There is no permanent protection for any wildlife habitat on the Arctic Coastal Plain, and there are proposals to open even the coastal plain within the Arctic National Wildlife Refuge. Teshekpuk Lake is ecologically unique and one of the most critical wildlife habitats in the Arctic. It provides habitat for molting geese from three nations, nesting birds from six continents, and caribou on which several North Slope communities depend for subsistence. If this wetland wilderness is degraded by industrial-scale oil development, the likely impacts on wildlife will be felt in Alaska from Barrow to Hooper Bay and Izembek Lagoon, in the Lower 48 states, and in Mexico, Canada and Siberia.



Brant

Photo by Nikolai Konyukhov

Molting Geese Are Highly Vulnerable

Geese prefer remote, secure sites for their annual molt, during which they replace old, worn feathers. During this time, energy demands are high and geese are flightless. The area north and east of Teshekpuk Lake provides the conditions required by molting geese, and it is no accident they gather there by the tens of thousands. In fact, the Teshekpuk Lake area is among the most important goose molting habitats in the circumpolar Arctic:

- As many as 37,000 brant—up to 30 percent of all Pacific brant—gather each summer to molt north and east of Teshekpuk Lake. These brant come from elsewhere on the North Slope, the Yukon-Kuskokwim Delta to the south, the western Canadian high Arctic, and Siberia. The brant is an Audubon WatchList species.
- Numbers of greater white-fronted geese molting at Teshekpuk Lake are increasing and range as high as

35,000. These geese are part of the mid-continental population, wintering in gulf coastal states and Mexico; and

- Thousands of Canada and snow geese also gather to molt in the safety of this unique wetland complex.

Geese are gregarious creatures, highly vulnerable to disturbance during their molt. Human presence in molting areas and aircraft overflights are particularly disturbing. Many studies have shown that geese react more negatively to human presence in the post-breeding season than at other times. Behavioral responses to disturbance add stress to the already-taxing energetic requirements of molting and staging geese. Reductions in available feeding time or excessive energy expenditures can result from human disturbance. The ultimate effects may be to lower success of migration, completion of feather growth, and overall survival.

Teshekpuk Lake is located on a large, remote coastal peninsula, with many large lakes on which geese escape from natural predators and with rich food resources in the abundant drained-lake basins. The fine grasses and sedges grazed by the geese are vulnerable to encroachment by woody vegetation

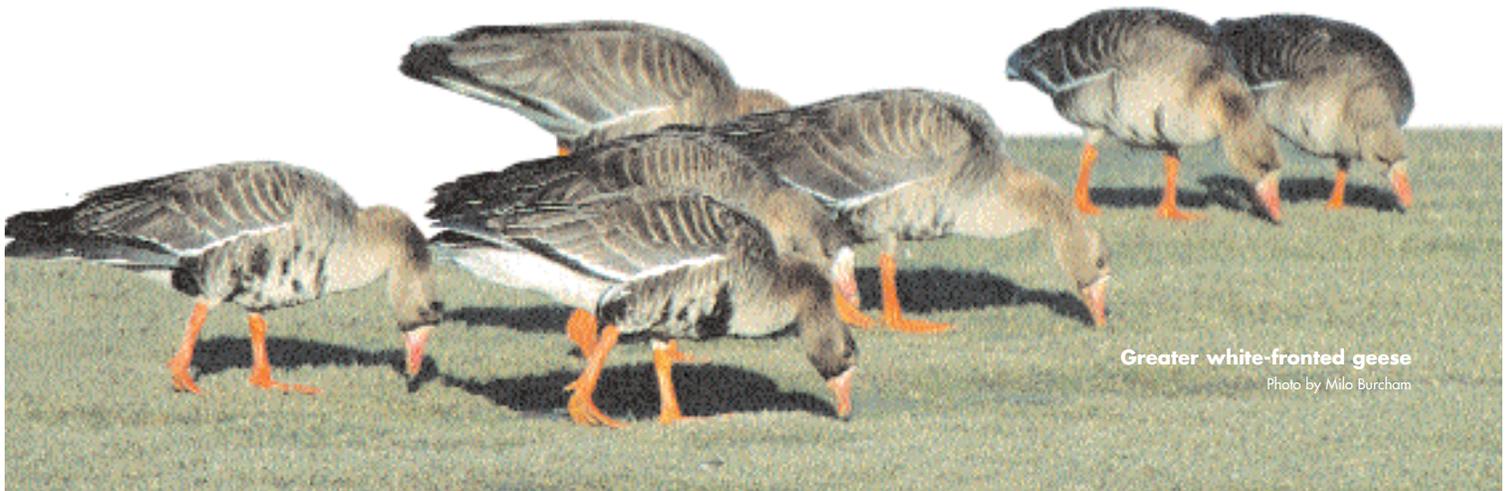
I saw a larger party of geese legging it upstream... They were extremely wild—much wilder than when they are full-winged. They saw me at over half a mile, and started running at once...

Peter Scott (1949)
Perry River (Canada) Expedition

Photo by Mike North



Flocks of molting geese respond to disturbance by gathering on deep water.



Greater white-fronted geese
Photo by Milo Burcham

Primary Goose Molting Areas



U.S. Fish & Wildlife Service

due to climate warming. If this habitat is reduced or degraded by industrial infrastructure, human activity and overflights, the cumulative effects of climate warming and oilfield impacts would likely force many geese to use other, less optimal areas, with negative consequences for goose populations.

These effects would be felt in the Yukon-Kuskokwim Delta, where subsistence hunters harvest brant, and as far away as Mexico, where most Pacific brant overwinter. Nearly 70 percent of all banded brant recaptured at Teshekpuk Lake during their molt originated at nesting colonies on the Yukon-Kuskokwim Delta.

Caribou Are Critical Subsistence Resources

In addition to molting geese, the Teshekpuk Lake Surface Protection Area was established to protect caribou, particularly during calving and insect-relief seasons. The Teshekpuk Lake Caribou Herd now numbers about 45,000 animals and is the most important herd for subsistence users on the North Slope, particularly from Atqasuk, Barrow, Nuiqsut and Wainwright.

The Teshekpuk Lake herd generally lives on the Arctic Coastal Plain year-round. In May, most of the herd converges on their annual calving grounds, primarily south, east and northeast of the lake, but also to the north. Caribou seek

With hunters from seven villages taking animals from the Teshekpuk Lake Caribou Herd, it remains the most important herd on the North Slope from a subsistence standpoint.

***George Ahmaogak, Mayor (2003)
North Slope Borough
NPR-A Scoping Comments***

Concentrated Caribou Calving Area



Alaska Dept. Fish & Game

Primary Caribou Insect Relief Area



ADFG and No. Slope Borough Wildlife Dept.

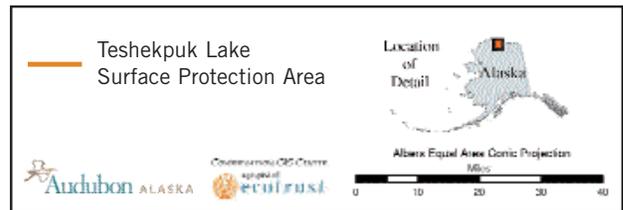


Photo by Gary Braasch



Caribou are often funneled through narrow corridors around Teshekpuk Lake and in between smaller lakes and the coast.

calving grounds with few predators, low levels of disturbance, and abundant, high-quality forage. Oil development moving west of the Colville River Delta is now beginning to encroach on this important calving ground.

Following calving in June, most Teshekpuk Lake caribou seek relief from insects on unvegetated or elevated sites within a few miles of the Beaufort Sea coast, primarily between Dease Inlet and the mouth of the Kogru River. The most important insect-relief habitat is on the coast north and east of Teshekpuk Lake. The herd disperses widely starting in August.

Current numbers of Teshekpuk Lake caribou are relatively high and have increased over the last decade, and the herd is in balance with Native subsistence harvests. Wildlife managers are concerned about cumulative effects from potential impacts of oil development and climate change on caribou that could lead to population declines and reduced subsistence harvests.

Based on the experience with the Central Arctic Caribou Herd in the Prudhoe Bay and Kuparuk oilfields, most caribou biologists predict that pregnant cows and cows with newborn calves will avoid areas of oilfield infrastructure. If caribou are displaced from their traditional calving grounds to lower quality habitats, the herd would likely decline.

During calving in June, and in July, when the the herd moves continuously to avoid biting insects, the herd is often funneled through narrow corridors around Teshekpuk Lake and between smaller lakes and the coast. Oilfield infrastructure could restrict caribou movements in the areas between insect relief and foraging habitats, thus reducing nutritional intake. Displacement and disturbance of caribou could result in reduced recruitment and higher rates of mortality, likely reducing the size of the herd and subsistence harvests.

Arctic fox are effective predators on bird eggs and young.



Audubon file photo



Photo by P.G. Mickelson

Spectacled eider ducklings.

Oilfields Attract Predators

Human garbage and oilfield structures attract predators and result in artificially high densities of gulls, common ravens, foxes and bears. All of these predators, in turn, prey on nesting birds and especially on their eggs and young.

According to the National Research Council, increased predation on bird nests is the most apparent effect of development on birds nesting in oilfields. According to the oil industry's own studies, predation has been a significant impact of oil development on Pacific loons, brant, snow geese and common eiders. A major field study now underway is looking more closely at impacts of oilfield predation on shorebirds nesting on the North Slope.

The Teshekpuk Lake area, especially to the north and east, is very remote and presently free of the influences of industrial-scale oil development. This area provides prime nesting habitat for many waterfowl, shorebirds and loons, including rare yellow-billed loons (an Audubon *WatchList* species), which would be vulnerable to increased predation by gulls, ravens and foxes. Experience in the central Arctic oilfields suggests that the apparent stability of some bird populations nesting in oilfields is due to immigration, which means that these areas are population "sinks" for birds. In the long run, fragmenting and degrading some of the most important bird-nesting habitat in the Arctic can only be detrimental to bird populations.

According to BLM's 23 June 2003 *Federal Register* notice inviting scoping comments on a revised oil and gas leasing plan in the northeastern Reserve, "BLM has conducted various scientific studies on the biological resources of the area in cooperation with the North Slope Borough, the State of Alaska and other federal agencies. Information gained since the completion of the NE plan has led BLM to conclude that it is appropriate to consider amending it." Audubon's review of the scientific literature and consultations with experts does not bear out this conclusion.

CONSIDER THE OPINIONS OF OTHER EXPERTS

From the National Research Council's 2003 report on the "Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope":

- Because of higher predator densities, increased predation on nests is the most apparent effect of oil development on birds that nest in the oil fields. (p. 122)
- If development moves into the Teshekpuk Lake area of the National Petroleum Reserve-Alaska, molting waterfowl could be adversely affected, especially brant. (p. 123)
- ...if inland lease tracts in the northeastern portion of the National Petroleum Reserve-Alaska are developed, effects on midsummer distribution, habitat use, and productivity of [Teshekpuk Lake caribou] are possible. (p. 115)
- Expanded loss of preferred habitats, which could accompany the spread of industrial activity across the National Petroleum Reserve-Alaska... and climate change that increases insect harassment, are likely to depress energy and nutrient status and, therefore, summer weight gain of lactating [caribou] females. (p. 116)

From The Wildlife Society's Alaska Chapter October 2003 scoping comments to BLM on revised leasing plans for the northeastern Reserve:

- The Bureau of Land Management should retain the Teshekpuk Lake Surface Protection Area... as established in the 1998 Record of Decision.
- The Alaska Chapter... is unaware of scientific information published since the 1998... Record of Decision that clearly demonstrates that molting geese in the Teshekpuk Lake Surface Protection Area will not be negatively impacted by oil development...

- The Alaska Chapter... is unaware of scientific information published since the 1998... Record of Decision that clearly demonstrates that oil development in the Teshekpuk Lake Area will not result in the displacement of the Teshekpuk Lake Caribou Herd from traditional calving grounds...

From a January 1998 Pacific Flyway Council letter to Secretary of the Interior Bruce Babbitt on proposed oil and gas leasing in the northeastern Reserve:

- Eventual development of oil and gas fields and associated structures and disturbance in or near this area could have significant, long-term impacts on unique habitats used by geese, and the condition and survival of molt-stressed brant.
- The sensitive goose molting area should not be offered for leasing; it should not be open to construction of roads, pipelines, or other facilities; and seasonal human activity should be restricted, as necessary, to preserve the security of molting geese from disturbance and stress.
- The Pacific Flyway Council also recommends that the Teshekpuk Lake Special Area be given permanent protection from future development...

Yellow-billed loon
Photo by P. Tomkovich



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Rough-legged hawk Audubon file photo

Cover-main image: Teshekpuk Lake Photo by Gary Braasch

Cover-left inset: Brant Photo by Steven C. Kaufman

Cover-middle inset: Cottongrass Northern Center file photo

Cover-right inset: Caribou Photo by Ken Whitten

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Brant

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