

# THE ARCTIC NATIONAL WILDLIFE REFUGE

## Oil Development Damages Air, Water and Wildlife

**T**oxic spills and air pollution from permanent, year-round operations are destroying Alaska's fragile North Slope.

Once part of the largest intact wilderness area in the United States, Alaska's North Slope now hosts one of the world's largest industrial complexes, spanning some 1,000 square miles of once-pristine Arctic tundra. Prudhoe Bay and 26 other oil-fields include the following:

- 28 oil production plants, gas processing facilities, and seawater treatment and power plants
- 38 gravel mines
- 223 production and exploratory gravel drill pads
- 500 miles of roads
- 1,800 miles of pipelines
- 4,800 exploration and production wells

All of this activity is taking place in an exceptionally fragile region. Because of the very short summer growing season, extreme cold at other times of the year, and nutrient-poor soils and permafrost, vegetation grows very slowly in the North Slope. Any physical disturbance—bulldozer tracks, seismic oil exploration, spills of oil and other toxic substances—can scar the land for decades. The National Academy of Sciences concluded it is unlikely that the most disturbed habitat will

ever be restored and the damage to more than 9,000 acres by oilfield roads and gravel pads is likely to remain for centuries.

A close look at how four decades of this sprawling oil development has destroyed Prudhoe Bay dispels the myth that drilling can take place in the nearby Arctic National Wildlife Refuge coastal plain without permanently damaging the landscape and the wildlife that depends on it.

### A toxic spill every day

Each year, the oil industry spills tens of thousands of gallons of crude oil and other hazardous materials on the North Slope. In fact, every day there is on average at least one spill either in the oil fields ►



*Industrialization of Alaska's North Slope has significantly polluted the air, water and wilderness in America's arctic. Developing the Arctic National Wildlife Refuge will similarly destroy its wilderness character and threaten the wildlife that depends on it.*

or at the Trans-Alaska Pipeline. From 1996 to 2004, there were some 4,530 spills of more than 1.9 million gallons of diesel fuel, oil, acid, biocide, ethylene glycol, drilling fluid and other materials. In the Arctic, the environmental damage from oil spills is more severe and lasts longer than in more temperate climates. Diesel fuel, for instance—the most frequently spilled substance on the North Slope—is acutely toxic to plants. Even after decades have passed, tundra vegetation has been unable to recover from diesel spills.

### **Oil operations pollute the air with tons of emissions**

Each year, oil operations on Alaska's North Slope emit more than 70,000 tons of nitrogen oxides, which contribute to smog and acid rain. (That's three times more than Washington, D.C.'s annual NO<sub>x</sub> emissions, according to the Environmental Protection Agency.) Plumes of pollution from Prudhoe Bay have been detected in Barrow, Alaska, nearly 200 miles away. And pollutants from drilling operations, natural gas facilities and incinerators also have been detected in snow in the Prudhoe Bay area.

Although the overall impact of these air pollutants on Arctic ecosystems remains largely unknown, some Arctic species are known to be especially sensitive to air pollutants at levels below national air quality standards. North Slope oil facilities also release greenhouse gases, which are a major contributor to global climate change. Each year, they emit 7 million to 40 million metric tons of carbon dioxide and 24,000 to 114,000 metric



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tons of methane. Emissions climb even higher as North Slope oil is transported by tanker, refined, and eventually burned in engines or power plants.

### **Hazardous waste contaminates water and wetlands**

For years, old reserve pits holding millions of gallons of drilling and other wastes pocked the North Slope. The pits typically contained a variety of toxic metals, as well as petroleum hydrocarbons and other harmful substances. Thanks partly to litigation by the Natural Resources Defense Council, handling methods for the waste in these reserve pits have improved.

While the oil industry has closed many of the pits, more than 100 remain to be cleaned. And, despite advances in disposal methods—in which most drilling wastes are ground up and re-injected into wells—problems remain. In 2000, for instance, British Petroleum (BP) was ordered to pay \$22 million in civil and

criminal fines and establish a new environmental management program because its contractors had illegally disposed of hazardous wastes containing benzene and other toxic chemicals. These crimes only came to light because a whistle-blower reported them to the EPA.

The Alaska Department of Environmental Conservation still lists more than 100 contaminated sites associated with oil industry operations on the North Slope. These sites contain a variety of toxic materials, including acids, lead, pesticides, solvents, diesel fuel, caustics, corrosives and petroleum hydrocarbons. Leakage from some sites has contaminated the surrounding tundra wetlands and waterways, which likely will be ruined for decades.

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