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Review

## The Specter Haunting Alaska

By **Peter Canby**

BOOKS AND REPORTS DISCUSSED IN THIS ARTICLE

*The End of Oil: On the Edge of a Perilous New World*

by Paul Roberts

Mariner, 399 pp., \$14.00 (paper)

*Where Mountains Are Nameless: Passion and Politics in the Arctic National Wildlife Refuge*

by Jonathan Waterman

Norton, 280 pp., \$24.95

*Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope*

by the National Research Council

National Academies Press, 304 pp., \$69.00

*Impacts of a Warming Arctic*

by the Arctic Climate Impact Assessment

Cambridge University Press, 139 pp., \$29.99 (paper)

*Arctic National Wildlife Refuge, Alaska: Coastal Plain Resource Assessment*

Department of the Interior, April 1987

*Arctic National Wildlife Refuge, 1002 Area, Petroleum Assessment, 1998, Including Economic Analysis*

United States Geological Survey, USGS Fact Sheet FS-028-01, April 2001

*National Energy Policy: Report of the National Energy Policy Development Group, May 2001*

Superintendent of Documents, US Government Printing Office

*Economics of Undiscovered Oil in the Federal Lands of the National Petroleum Reserve, Alaska*

by Emil D. Attanasi

United States Geological Survey, Open-File Report 03-044, 2003

## 1.

By most definitions, the word "Arctic" refers to the region near the North Pole. Only one section of it lies within the United States: the part of Alaska north of the Brooks mountain range known as the North Slope (see the map above). The North Slope is huge—89,000 square miles, slightly larger than the state of Minnesota—but in many ways it's a world apart, even from the rest of Alaska. The Brooks Range effectively forms Alaska's tree line—the latitude beyond which trees do not grow—and its rivers drain northward down onto a vast tundra plain dominated by a cotton grass that is the favorite food of the millions of caribou that migrate to the region during the summer months.

Underneath the tundra is the "active layer," a coat of peaty, semi-decomposed organic matter that passes for soil. Less than a foot below lies a thick layer of permanently frozen earth—permafrost—that in places is half a mile deep. This permafrost is a relic of the last ice age when the sea level was three hundred feet lower than it is now. The North Slope was then a part of Beringia, the wide land bridge that connected North America and Siberia. Even today, the raging spring rivers of the North Slope expose ice-age mammoth tusks long buried in gravel banks. During the last ice age, the region was more part of Asia than it was part of North America.

One of the curiosities of the North Slope is that even though it receives only between five and eight inches of rain a year (similar to some deserts in the Southwest), the underlying permafrost can't be penetrated by water and the surface remains constantly saturated. When I visited the North Slope in June with William Weber, director of the North American Program for the Wildlife Conservation Society, and Steve Zack, an ornithologist and director of the conservation society's Northwest office, the ice had just broken up, and Zack continually (and only half jokingly) referred to the pervasive marshes, bogs, and thaw ponds as "Pleistocene water." We were at the headwaters of the Nigu River, in a valley on the north-facing slopes of the Brooks Range that an outfitter later told us was the most remote part of all Alaska. In the twenty-four-hour sunlight, the snow pack around us was melting off the mountainsides, and water was pouring from the tundra. The caribou herds were returning from their forest wintering grounds closely trailed by predatory wolves and grizzlies. The earth around us was aflame with stands of fireweed, wild lupines, and miniature rhododendrons.

The Nigu flows eventually into the Colville, the North Slope's largest river

and one that flows in turn through what is known as the National Petroleum Reserve—Alaska. At twenty-three and a half million acres, the NPR-A (as it's known) is the largest tract of undisturbed public land in the United States and, despite its unprepossessing name, it was the NPR-A we had come to visit.

The National Petroleum Reserve was established during the early 1920s when the Harding administration was converting the ships of the United States Navy from coal to oil. Nineteenth-century Yankee whalers had observed oil pools on the tundra surface and, in 1924, the entire tract was set aside as Naval Petroleum Reserve Number 4 against the possibility of future oil shortages. Shortly thereafter, major deposits of oil were discovered in Oklahoma and Texas and the reserve was forgotten and left in its primeval state.

Several thousand Inupiat Eskimos live along the shores of the Beaufort Sea on the region's north coast. The Inupiat point out that for thousands of years they have used the petroleum reserve as a hunting ground—but the reserve is nevertheless about as wild a place as you're likely to find in the United States. It's both larger than the 19 million acres of its federally administered cousin, the Arctic National Wildlife Refuge—which lies further east, where the North Slope abuts the Canadian border—and some would argue more valuable ecologically. Its wide coastal plain supports several huge caribou herds—including the half-million caribou of the Western Arctic herd—and its coastal complex of tundra wetlands, lakes, and ponds is widely acknowledged to be one of the most important for shorebirds and waterfowl in the Arctic.

This is particularly true of the Teshekpuk Lake area, where many thousands of birds, including spectacled eiders, yellow-billed loons, snow geese, Pacific black brant, and tundra swans, all nest and in some cases take advantage of the area's remoteness to molt. Birds from six continents migrate thousands of miles to the Teshekpuk area to breed and raise their young amid the seasonal plenty of the Arctic summer. Dunlins come from Asia; red-necked phalaropes from Chile; arctic terns from Antarctica; and bar-tailed godwits from New Zealand. "That's what's so exciting about the Arctic," Zack explained to me. "Choose a region of the world and I can find an arctic-breeding bird that lives there."

**U**ntil 1968, most of the North Slope—like the National Petroleum Reserve—was more or less wild. But petroleum geologists had long been aware that underneath large sections of the North Slope was an ancient,

submerged seabed whose algae and plankton had been cooked over the millennia into the kind of formation considered likely to be oil-bearing. Of particular interest was the so-called Barrow Arch, a belt of submerged composite rock which serves as a trap for accumulations of oil underneath. The arch runs more or less parallel to the coast of the Beaufort Sea, starting in the west near the ancient Inupiat Eskimo city of Barrow, and running east to a point where—a hundred-plus miles short of the Canadian Yukon—the rock dives deeper underground and disappears just shy of what is now the Arctic National Wildlife Refuge.

This refuge was initially created in Alaska in 1960 during the waning months of the Eisenhower administration with the intent of preserving a part of the Alaska wilderness that was of great ecological value. In the wildlife refuge, the coastal tundra plain narrows and the nine-thousand-foot peaks of the Brooks Range seem to rise almost out of the sea. Grizzly and polar bears, wolves, and caribou all abound, and the refuge was turned over to the Fish and Wildlife Service, with the intent of protecting its animal life. Its boundaries were laid out by a distinguished company that included not just the two famous naturalists Olaus and Mardy Murie, but also Supreme Court Justice William O. Douglas and George Schaller, then a young graduate student already affiliated with the Wildlife Conservation Society.

The wildlife refuge is a stunningly beautiful place, and many of its admirers have attributed to it quasi-religious qualities. Olaus Murie, according to Jonathan Waterman's book *Where Mountains Are Nameless: Passion and Politics in the Arctic National Wildlife Refuge*, repeatedly emphasized its "precious intangible values" and how the experience of wilderness which it afforded should be "a democratic guarantee." Schaller, according to Waterman, argued that the silence of the landscape "dispelled the unease that accompanied city life."

But there was another reason for the location of the wildlife refuge: the oil industry considered it safely beyond the end of the Barrow Arch and therefore unlikely to sit on any oil. Alaska had become a state only the year before—on January 3, 1959—and the refuge was laid out during the early stages of an intense period of negotiation over land rights between the federal government and Alaskan representatives. An early participant in this process was Ted Stevens, now a six-term senator second in seniority only to Robert Byrd. Stevens was largely responsible for a swap by which the refuge would be preserved and the oil companies would be able to develop a geologically promising section of the Barrow Arch, known as Prudhoe Bay, in the middle of the North Slope coastline.

In 1968, a partnership of Atlantic Richfield and Humble Oil struck oil on land near Prudhoe Bay—not just a small amount of oil, but what eventually proved to be the largest oil field ever discovered in the US. The timing proved fortuitous for the oil industry. In 1973, by the time the issue came to a head, the nation was facing the first OPEC oil embargo. American dependence on "foreign oil" became a burning political issue and Prudhoe Bay oil seemed to be the patriotic, America-first solution. This was not the view of environmentalists, who were strongly opposed to the eight-hundred-mile pipeline that the oil companies proposed to carry the Prudhoe Bay oil to the port of Valdez in southern Alaska. When the legislation came before the Senate, Vice President Spiro Agnew had to step in to break a tie vote. Drilling for oil had begun.

In the years since, the oil from Prudhoe Bay and its associated fields has become a major force in modern Alaskan life. With oil revenues derived from Prudhoe Bay, the state has managed to live what seems, on the surface, a free-market, small-government dream. It has kept state taxes low and set up a permanent fund that disperses annual dividends that have risen as high as \$2,000 per citizen (although they've since dropped to around \$900). But out of sight of most Alaskans, the damage to the North Slope has been enormous. Prudhoe Bay, which started in 1968 as a single oil field, has since sprawled to cover a thousand square miles in the center of the North Slope—an area almost the size of Rhode Island—and has come to be widely referred to as "the largest industrial development in the world." In 2003, the National Research Council published *Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope*, a congressionally commissioned report compiled by eighteen prominent Arctic experts. It concluded that the oil fields had

substantially affected many of the wildland qualities of the region. The associated roads, pads, pipelines, seismic vehicle tracks, transmission lines, air, ground, and vessel traffic, drilling activities, landfill, housing, processing facilities, and other industrial infrastructure have reduced opportunities for solitude; displaced animals; altered ecological processes; compromised scenic values; and resulted in noise and air emissions.

Among other developments at Prudhoe Bay, the report listed almost six hundred miles of roads, sixteen airstrips, two hundred miles of transmission lines, twenty offshore gravel islands connected to the shore by causeways, twenty-four open-pit gravel mines, five hundred miles of pipeline and more

than a hundred drilling "pads," or sites, and almost a hundred more exploratory pads. The study also noted innumerable small oil spills and the annual emission of 70,000 metric tons of nitrogen oxides. The committee quoted native hunters who complained of sores and lesions on fish, moose, and caribou. They said that caribou meat had a different taste now, that respiratory diseases had increased in their villages, and that seal skins had become thinner—almost to the point of being translucent.

Between 1977 and 1987, the Prudhoe Bay wells grew to provide two million barrels a day—approximately 20 percent of US production. But what has been little commented on outside the industry is that in recent years Prudhoe Bay's yield has begun to trail off and is now half of what it once was. This, in turn, has set off a scramble for new sources of North Slope oil and led the industry to look both east toward the Arctic National Wildlife Refuge and west toward the National Petroleum Reserve. It so happens that in an era of great scarcity, these two pieces of federal land are generally considered the best prospects for onshore oil anywhere in the United States. The pressure to lease them to energy companies has been tremendous and, in the aftermath of Hurricane Katrina, has only increased. But so too has the resistance of environmentalists—especially in the case of the wildlife refuge.

## 2.

The effort to protect the refuge has a long history in Alaska. Richard Fineberg, a Fairbanks oil analyst, explained to me that at around the same time as the Prudhoe Bay discoveries, oil geologists became aware of another potential oil-bearing rock formation that extended under the refuge's coastal plain. "It was," as Fineberg put it, "a dagger pointed at the heart of ANWR." In 1980, during the Carter administration, the wildlife refuge almost doubled in size. But Congress recognized the possibility of oil beneath the wildlife refuge's coastal plain, and thus Section 1002 of the legislation that created the expanded reserve left open half of its coastal plain—1.5 million acres—to be evaluated for its oil deposits and subsequently disposed of by Congress. The Interior Department was given responsibility for making the evaluation.

In 1987, the Interior Department filed its report, which considered five options for dealing with what had become known as the "1002 Area" of the plain. These options ranged from designating it a wilderness to opening it entirely to oil and gas development. The last choice, the report warned, would mean that "the wilderness value of the coastal plain would be eliminated." The report went on to spell out the ways in which full development would damage not just the area's wildlife—including wolves,

musk oxen, and polar bears—but also "accelerate the rate of change in Native culture" and "reduce subsistence hunting opportunities." Ronald Reagan's secretary of the interior, Donald Hodel, nevertheless chose full development, arguing that it "best met the nation's goals and responsibilities."

In any case, the dispute was rendered moot by the disaster of March 24, 1989, when the *Exxon Valdez*, a tanker carrying 53 million gallons of Prudhoe Bay oil, breached on a reef and spilled 11 million gallons of crude not far from Valdez, the southern terminal of the Prudhoe Bay pipeline, where it had taken on its oil cargo. The spill took a fearsome toll on Alaska's wildlife and led to the withdrawal of legislation to open the wildlife refuge to drilling. As Waterman writes, it tarred thirteen hundred miles of coastline and killed millions of mature fish and billions of juveniles. Half a million birds died, including 250 bald eagles—so did, among many other creatures, almost three thousand sea otters, three hundred seals, and twenty-two orcas.

The recent, renewed campaign to drill in the wildlife refuge draws on a 1998 United States Geological Survey study which gave a mean value estimate of 10.4 billion "technically recoverable" barrels of oil in the expanded reserve region. Vice President Cheney's May 2001 National Energy Policy report—the best guide we have to the administration's energy policy—refers to oil in the wildlife refuge as "the single most promising prospect in the United States." It claims that at peak production the refuge "could produce as much as 1.3 million barrels a day and account for more than twenty percent of all US oil production." Cheney's assessment ends with the famous assertion that, given recent technological improvements that have

dramatically reduced the industry's impact on the tundra...estimates indicate that no more than two-thousand acres will be disturbed if the 1002 Area of ANWR is developed...an area less than one-fifth the size of Washington D.C.'s Dulles International Airport.

**T**he administration's proposal to drill in the wildlife refuge is currently buried in a revenue provision of the budget bill, where by law it cannot be filibustered. It has provoked intense opposition. Critics point out that the claim that the oil development of the 1002 Area will affect only two thousand acres is based on the disingenuous argument that only the actual posts and building pads on which the drilling structures are erected would count as a disturbance, not the roads or pipelines or other facilities that would be built above the tundra. They argue, moreover, that Cheney's assurance that not

more than two thousand acres would be disturbed is predicated on the notion that whatever oil might lie beneath the Arctic National Wildlife Refuge is concentrated in a single small area. In fact, the Geological Survey specifically predicts that the oil in the wildlife refuge is "expected to occur as several accumulations rather than a single large accumulation." Extracting this oil would therefore require an extension of the web of roads and pipelines that already cover the one thousand square miles of the adjacent lands of Prudhoe Bay.

Cheney's figures about the oil in the refuge are also misleading. The Energy Information Administration, the statistical agency of the Department of Energy, estimates that, at its peak, the production there could amount to 940,000 barrels a day, not 1.3 million. Even if leasing of drilling rights in the refuge's oil fields were to begin right away, moreover, the peak of production Cheney refers to wouldn't be reached until 2025. At that point, the percentage of US oil consumption that the wildlife refuge might provide is perhaps a more relevant consideration than the percentage of production. The United States currently imports close to 60 percent of its oil. By 2025, that figure is expected to rise to 70 percent. At that point the refuge's oil wells would be contributing just 4 percent of US consumption. This is not an insignificant amount but it also suggests that if the wildlife refuge is our leading onshore oil prospect, we'd be well advised to start looking for some other solution to our energy needs.

Some argue, moreover, that the administration's intense emphasis on drilling in the refuge may be a deliberate deception. For many environmentalists, the refuge is an ideal, pure wilderness. In his book, Jonathan Waterman refers to the wildlife refuge as a "Garden" and "our last natural paradise." Those who question the administration's motives have speculated that the controversy over drilling in the refuge has been manipulated as a distraction from more significant but less emotional issues such as the pressing need to raise the fuel-consumption standards for vehicles. It may also divert attention from the administration's efforts to undermine the moratorium on drilling in federal coastal waters. (The leases for much of the Alaska state lands in the Beaufort Sea off the North Slope were recently awarded to Shell.)

In a much-read *New York Times* article last February, Jeff Gerth argued that the oil companies themselves might not be all that much interested in drilling in the refuge. Only one test drill has ever been made, and that was the so-called KIC Well, driven in the early 1980s by a partnership between a

Native American corporation and Chevron, Texaco, and BP. The results have been a tightly held secret ever since, but several oil companies have recently pulled out of an industry lobbying organization promoting drilling in the refuge. An executive from one of the KIC Well partners, speaking anonymously to Gerth, told him that if the results had become more promising, the company would have been more involved in the political effort to open the refuge.

Nationally, the controversy over whether to lease the Arctic National Wildlife Refuge has been extremely high-pitched, but among environmentalists the fate of the National Petroleum Reserve has been almost as deep a concern. It is, after all, a larger piece of land and all of it, not part of it, may soon be opened to leasing. A 2003 report from the Geological Survey gave a mean figure estimate for the petroleum reserve of 9.5 billion barrels of "technically recoverable" oil. Although this translated in most analysts' minds into a few billion barrels of likely oil, it was still an amount only slightly smaller than the amount of the estimate for the refuge. As the *Christian Science Monitor* recently noted, it made the National Petroleum Reserve, "after ANWR, the biggest source of oil on federal lands anywhere in the United States."

Both the wildlife refuge and the National Petroleum Reserve now belong to the Interior Department, but unlike the refuge, which is managed by the Fish and Wildlife Service, the petroleum reserve was transferred in 1977—during the Ford administration—to the Bureau of Land Management, a division of the Interior Department that is primarily concerned with the exploitation of gas and oil, as well as mining, logging, and grazing rights. The intent of the Ford administration was for the bureau to hold it against the possibility of some future oil shortage. Environmentalists, including Representatives John Anderson and Stuart Udall, had argued that the reserve should be given to the Fish and Wildlife Service, in which case it would have been named the Teshekpuk-Utotok Wildlife Reserve; but the Bureau of Land Management prevailed and the environmentalists could only extract the concession that, whatever the future disposition of the petroleum reserve, "maximum protection" would be granted to a number of "special areas" of outstanding ecological importance. These included the Colville River (because its bluffs support one of the highest concentrations of nesting raptors on earth) and the Teshekpuk Lake tundra-marsh complex. Teshekpuk is not only one of the most important migratory bird regions in the Arctic, but also the calving ground of the Teshekpuk Lake caribou herd.

The 2003 Geological Survey report showed, however, that the best prospects for oil were concentrated at the point where the Barrow Arch ran under Teshekpuk Lake. Just what "maximum protection" the special areas

would receive had never been spelled out. In 1999, Bruce Babbitt, Bill Clinton's secretary of the interior, brokered a deal whereby 87 percent of the northeast section of the National Petroleum Reserve would be opened for leasing while the balance—some 800,000 acres of the most ecologically delicate areas (mostly around Teshekpuk)—were set aside as a wildlife preserve. The solution was not to everyone's liking but, as John Schoen, the Audubon Society's chief scientist in Alaska, put it to me, "We felt the science behind the Babbitt plan was very strong."

The Babbitt plan resulted in a number of leases with oil companies being signed in 1999 but in January of 2005, the Bush administration announced a new plan that eliminated the conservation area around Teshekpuk Lake altogether. I asked Robert Schneider, the Bureau of Land Management district manager responsible for the North Slope, why his agency had scrapped the Babbitt plan. The administration, he told me, had ordered that all decisions that affected oil and gas leasing must be reconsidered. "We're in a time of energy crisis and the President's energy policy is to encourage energy development. This is an area that has potential."

The future of the National Petroleum Reserve is currently tied up in lawsuits, but the prospect of the entire twenty-three and a half million acres being leased to oil companies is deeply troubling to environmentalists. The authors of *Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope* write that "if commercial discoveries extend to the vicinity of Barrow, the pipeline system would extend more than 250 miles from east to west, with spur lines twenty to fifty miles long trending north–south from the trunk lines." If the 1002 section of the wildlife refuge were also developed, a similar web of pipelines would extend a further one hundred miles east—thereby covering 350 miles of the North Slope coast, and turning what had not long before been a wilderness into something resembling a frozen version of northern New Jersey.

### 3.

The issue of what to drill on the North Slope has in many ways only distracted attention from the larger energy crisis. According to Paul Roberts's *The End of Oil*, the amount of new oil being discovered in the United States has been in decline since 1960 and American oil production as a whole peaked in 1970. As Roberts puts it, "Although we will not run out of oil tomorrow, we are nearing the end of what might be called the easy oil." Not even the Bush administration disagrees with this bleak assessment. The Cheney report, for its part, notes that the United States produces 39 percent less oil today than it did in 1970.

But that's about as far as the agreement between the administration and its critics goes. Environmentalists argue that declining oil production shows that both conservation and new sources of energy are now more needed than ever. Following the Katrina disaster, the administration has been mentioning both of these; but it still sees the decline as a reason to increase, at all costs, the supply of oil. The drive to lease the wildlife refuge and the parts of the petroleum reserve to oil companies can be seen as a reflection of what one exasperated environmentalist described to me as a general administration policy to "drill it all."

Such an approach would do very little to solve the energy problem. The United States has only 3 percent of the world's proven oil reserves yet uses 25 percent of its oil. If the US continues its present rate of consumption it will quickly run through its present reserves as well as any new domestic sources which might be discovered. In any case, the new discoveries tend to be in expensive and high-risk places such as the North Slope or the Gulf of Mexico.

The present energy crisis, moreover, results from a sharp rise in consumption that has outrun a tightening supply. Most of the oil in the United States is used for fueling the cars and trucks that have been almost entirely responsible for the growth in demand over the last few decades. The percentage of US oil used in cars and trucks has risen from 52 percent in 1974, just after the first OPEC embargo, to 66 percent last year. As Jad Mouawad and Matthew Wald recently put it in *The New York Times*, "The fundamental problem...is that Americans depend almost exclusively on relatively large and heavy private vehicles." Places such as the wildlife refuge and Teshekpuk Lake are being sacrificed to subsidize our unrestrained addiction to automobiles.

The addiction to automobiles adversely affects the North Slope in other ways as well. As Jonathan Waterman notes, each gallon of gasoline burned in a car or a truck releases five pounds of carbon dioxide into the atmosphere. Carbon dioxide is the principal cause of global warming and the Arctic has experienced warming more than any other part of the globe. *Impacts of a Warming Arctic*, a study of warming temperatures conducted jointly by eight Arctic nations, observes that Arctic temperatures have risen at twice the rate of the rest of the globe. As Elizabeth Kolbert noted recently in *The New Yorker*,<sup>[\*]</sup> average temperatures in some parts of Alaska have risen six degrees since the early 1980s and there is concern on the North Slope that the underlying 100,000-year-old permafrost could thaw. If the permafrost disappears, the tundra will no longer be impermeable. *Impacts of*

a *Warming Arctic* points out that the region's surface water could drain away and large sections of the North Slope could become desert.

#### 4.

Bill Weber, Steve Zack, and I spent several days traveling down the swollen Nigu River before reaching the Colville, where leasing may also soon begin. We were on a stretch of the river which flows west to east and carves a series of steep bluffs into the last ridge above the coastal plain. As we traveled, we encountered some of the early migrants of the Western Arctic caribou herd with this year's newborn calves. We also began to see grizzly bears, 75 percent of whose diet in the spring consists of caribou calves.

Soon we encountered the Colville's famous population of raptor birds. On the icy outcrops of its high bluffs, huge, ramshackle nests balanced precariously, the rocks below streaked with guano. As we floated by, peregrine and gyrfalcons screamed in alarm while rough-legged hawks and golden eagles wheeled above. Zack told us that the peregrines preyed on shorebirds and waterfowl, that the gyrfalcons specialized in ptarmigans—arctic grouse—while rough-legged hawks primarily ate lemmings and voles. The eagles hunted ground squirrels, arctic marmots, and occasionally even small caribou.

Our plan was to proceed by floatplane from the Colville to Teshekpuk Lake, where we would resupply a group of biologists engaged in a Wildlife Conservation Society study of shorebirds, including sandpipers, curlews, and dunlins. Conservationists consider Teshekpuk a biological "hot spot," uniquely productive of bird life. The authors of *Cumulative Environmental Effects of Oil and Gas Activities* see Teshekpuk as exemplifying what they call "source-sink population dynamics," a theory holding that while the wildlife population may appear to be evenly distributed across a large area, there are within that area places of high-quality habitat (the "source") that effectively supply the excess population that disperses across the larger area (the "sink"). If the source area is damaged, the result can be "an unexpected decline of species even though the total habitat loss might be modest." The authors of the report believe that Teshekpuk is just such a source area and fear that if it is developed there could be dangerous consequences for all the species that migrate there.

**W**hat makes the Teshekpuk region so productive for so many birds is—as is the case with the Colville raptors—a unique combination of

circumstances: the rich supply of plankton in its marshes and ponds in the Arctic summer; the intense insect life that allows adult birds to regain the strength needed for their post-breeding migrations and young birds to grow; and, finally, the region's remoteness from predators. Teshekpuk, Zack pointed out, is one of the most remote places on earth and its very remoteness is critical to how it works. It has sources of food for its migratory populations only during the two months of the Arctic summer, while the predators that might prey on the migratory birds "need twelve months of food in order to survive." Zack's concern—along with that of other ornithologists—is that oil development will create nesting and perching sites for glaucous gulls and ravens, and dens for arctic foxes, all of which will prey on Teshekpuk's birds. These creatures are garbage feeders who will find refuse around the oil camps; and they will readily adapt to feeding on eggs.

In the end, we were unsuccessful in getting to Teshekpuk. The thaw ponds on which the pilot of our floatplane hoped to land were still partially frozen and the pilot feared we might hit the ice. From the air, however, we were able look down on the strange world of the Arctic plain—on its Pleistocene water, its sedge meadows, and its tundra. It is not a landscape for everybody. After a late-winter trip to the Arctic National Wildlife Refuge, Gail Norton, the secretary of the interior, referred to it as a "flat white nothingness"—a comment suggesting the danger the region faces. But as Zack put it to me, the argument of environmentalists concerning the petroleum reserve is "not about precluding oil development. It's about striking some real balance between oil development and conservation." Bruce Babbitt's allocation of land between drilling and conservation was accepted by many environmentalists. But such sensible solutions are not what the Bush administration and the oil companies have in mind. The "flat white nothingness" may soon be darkened by oil rigs.

—October 20, 2005

## Notes

[<sup>1</sup>] See "The Climate of Man—I; Annals of Science," *The New Yorker*, April 25, 2005.

## Letters

March 9, 2006: Donald Craig Mitchell, '[The Specter Haunting Alaska](#)': An Exchange

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