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ANWR-

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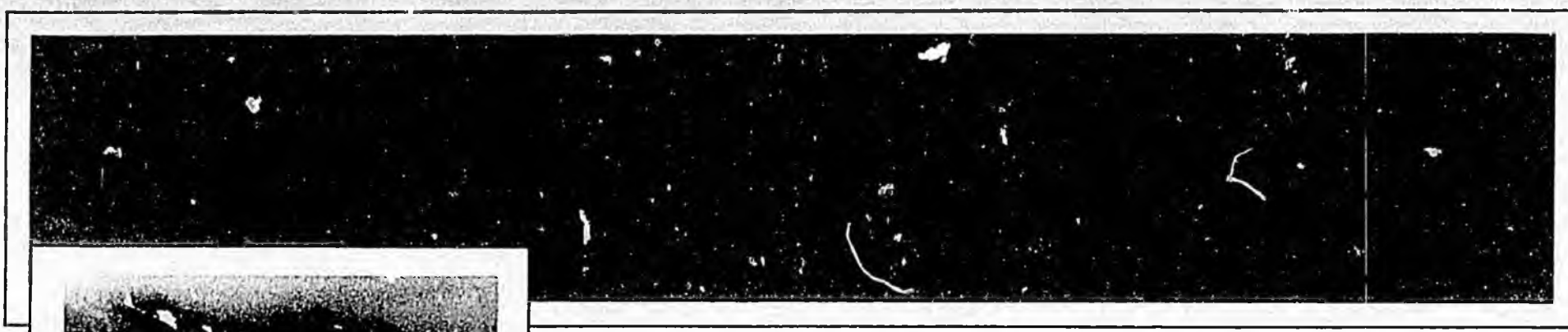

The **Juneau Report** is published by Standard Alaska Production Company (SAPC) Government Affairs Department to provide an overview of issues and legislation as they relate to the petroleum industry. Opinions of authors expressed here do not necessarily reflect the opinions of the company. The **Juneau Report** is edited by Jim Palmer. Inquiries should be directed to him or Bob Straub, SAPC Government Affairs, 564-5403 or 564-5537.

In This Issue:

Arctic National Wildlife Refuge (ANWR):

Congress will consider opening coastal plain for exploration

With domestic production falling sharply, nation will need major new oil discoveries

By Tim Bradner

Editor's Note: *This issue of Juneau Report is devoted entirely to the Arctic National Wildlife Refuge (ANWR) and the question of opening a small part of the refuge to oil exploration. It is an issue of major importance to the nation, the State of Alaska and the petroleum industry.*

Sometime in 1987, Congress will begin consideration of the opening of 1.5 million acres in the northernmost section of the 19-million-acre Arctic National Wildlife Refuge (ANWR) to oil and gas exploration. The Department of the Interior, in a formal report to be submitted to Congress this spring, will recommend allowing exploration in the coastal plain of ANWR, a stretch of gently rolling tundra extending from the foothills of the Brooks Range north to the Arctic Ocean. It will involve about 8% of the Arctic refuge area, which is itself about half the size of the State of Washington.

This will set off another major Alaska environmental controversy in the nation's capital, as environmental groups fight to keep the refuge closed. It will be a battle reminiscent of fights over the Alaska National Interest Lands Legislation (ANILCA) in 1980, when conservation groups

If oil is eventually found in the coastal plain, actual production facilities will take up a very small area. As examples, the Prudhoe Bay unit area involves 242,000 acres of leased acreage. The Kuparuk River unit, which many geologists believe to be more typical of what might be found in ANWR, covers about 150,000 acres of leases. *But in both these huge oilfields, including the smaller Milne Point field, only 8,000 acres are actually occupied by production pads, roads, pipelines or other facilities according to 1983 State Fish and Game surveys.*

By the time any discoveries in the coastal plain are developed, technological progress within the industry will allow development to take place taking even less space, through new "directional drilling" techniques and smaller, more compact field production facilities.

This is demonstrated in the new Milne Point, Endicott and Lisburne fields near Prudhoe Bay, where industry's experience in Prudhoe Bay and Kuparuk has resulted in the design of smaller production modules.

Congress Ordered Assessment

When Congress passed the Alaska National Interest

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This will set off another major Alaska environmental controversy in the nation's capital, as environmental groups fight to keep the refuge closed. It will be a battle reminiscent of fights over the Alaska National Interest Lands Legislation (ANILCA) in 1980, when conservation groups tried to extend wilderness designation to two-thirds of Alaska's land area, and the effort by conservationists in the early 1970s to stop construction of the trans-Alaska pipeline, which now supplies one fifth of the nation's oil.

In geologists' opinion, ANWR's coastal plain has the best potential of any frontier region in the U.S. for major new oil discoveries — some, possibly, of the magnitude of Prudhoe Bay. By the turn of the century — 13 years from now — U.S. domestic oil reserves will be seriously depleted and imports of foreign oil sharply increased, with serious consequences for U.S. energy security, the nations' economy and the balance of trade. New domestic oil discoveries can reduce those effects. But so far, exploration in other U.S. frontier areas has been disappointing. ANWR may be the nation's best hope for large new oil finds, the kind needed to make substantial contributions to domestic reserves.

Exploration in Refuges: Nothing New

Oil exploration and production in national wildlife refuges is nothing new, and federal law now allows these activities in many refuges.

If oil is eventually found in the coastal plain, actual production facilities will take up a very small area. As examples, the Prudhoe Bay unit area involves 242,000 acres of leased acreage. The Kuparuk River unit, which many geologists believe to be more typical of what might be found in ANWR, covers about 150,000 acres of leases. *But in both these huge oilfields, including the smaller Milne Point field, only 8,000 acres are actually occupied by production pads, roads, pipelines or other facilities according to 1983 State Fish and Game surveys.*

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Congress Ordered Assessment

When Congress passed the Alaska National Interest Conservation Lands Act of 1980, it recognized the coastal plain's strategic importance. ANILCA formally established the Arctic refuge (it had been a wildlife range before, a federal administrative land unit) and also designated half the refuge as a wilderness area, the most restrictive of federal land classifications.

Congress then ordered the Department of the Interior, in Section 1002(h) of ANILCA, to assess the petroleum potential of the coastal plain and to make a formal recommendation to Congress in the fall of 1986. Extensive assessments of the area's petroleum potential and wildlife have been carried out, but environmental litigation has delayed submission of the final report to Congress. Conservation groups sued, claiming Interior's report should require a formal Environmental Impact Statement, a lengthy procedure that would delay the report. In late November, Interior released a draft of the report and its recommendations, which were to open the coastal plain to exploration. Public hearings are scheduled, and unless the environmental lawsuits result in more delay, a final report and recommendations will go to Congress sometime this spring.

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A look at the statistics

ANWR oil is vital to U.S. energy security

It was 1973, the eve of OPEC's first oil embargo. Congress faced an important national policy choice over northern Alaska and the nation's energy security.

The decision was made: Congress approved legislation cutting through a complex web of environmental litigation that had blocked construction of the trans-Alaska pipeline for four years.

It was prophetic: Four years later a new oil shortage loomed when oil production was cut in Iran's 1978 revolution. But by then the Alaska pipeline was finished and the Prudhoe Bay field was in production. The United States — and the world generally, analysts now agree — escaped any actual disruption of oil supplies.

Oil prices were affected, to be sure. But that occurred because panic-stricken oil buyers, fearing shortages in Japan and Europe, bid up prices. *But the shortfall never really appeared, mainly due to new U. S. production in northern Alaska.*

In 1986 Congress faces another decision, similar in some ways, yet different in others, to that in 1973: Opening the coastal plain of the Arctic National Wildlife Refuge (ANWR) is an important environmental decision affecting Alaska, just as was approving the pipeline in 1973.

It is also an important energy-security decision with broad ramifications for the nation's economy. But this seems less evident today, amid a worldwide oil glut, than it was in 1973.

Most thoughtful observers, with ample data and statistics readily at hand, see beyond today's temporary oil surplus and low prices to the emergence of more shortages and a new OPEC, this time dominated by Persian Gulf producers, some clearly hostile to the U.S. It may come sooner than we think.

If Congress allows exploration in ANWR, new production could be coming out of Alaska by the year 2000, just about the time oil shortages may be reappearing. It would dampen the shortfall, just as did Prudhoe Bay during Iran's revolution in 1978.

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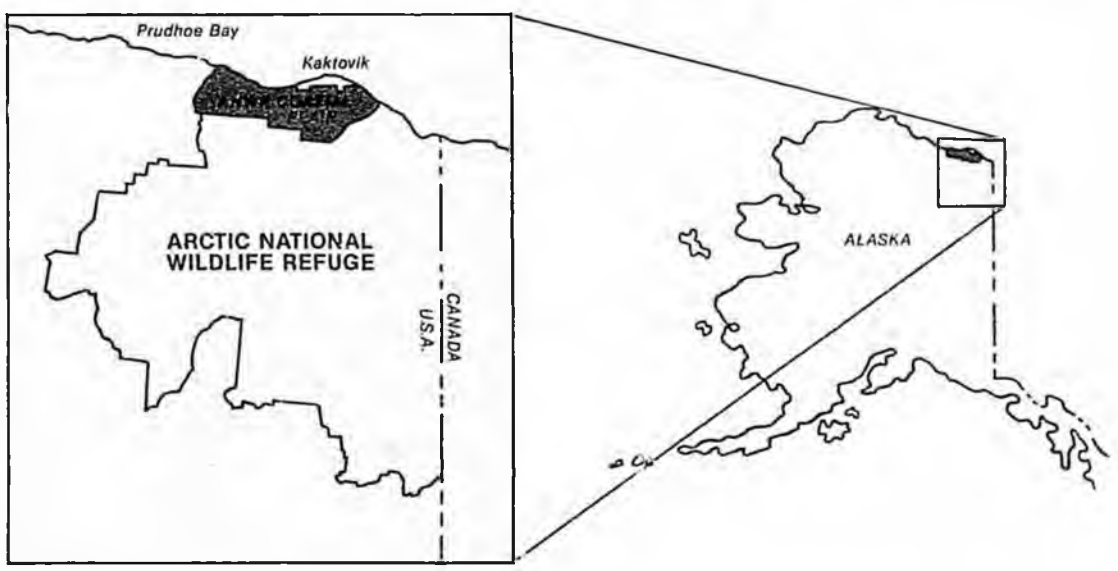
Area proposed for oil and gas exploration



The coastal plain of ANWR, shown in dark brown, comprises 1.5 million acres . . . about eight percent of the total area.

Commentary

ANWR's oil is needed to carry us into the 21st century

By George N. Nelson
President, Standard Alaska Production Company

The Coastal Plain of the Arctic National Wildlife Refuge is of critical importance to the State of Alaska and to the oil companies doing business here. But the ANWR Coastal Plain is also very important to the residents of the other 49 states, who depend on Alaska North Slope crude for 20 percent of domestic crude supplies.

The fact is that existing North Slope oilfields — Prudhoe Bay — Kuparuk — Milne Point — Lisburne — and Endicott — will be producing at a combined rate of only about 600,000 barrels a day by the year 2000. That is a little more than a quarter of current North Slope production levels.

At the same point in time, just 14 years down the road, production from currently developed U.S. oilfields will drop from almost 9 million barrels a day to less than 4 million barrels a day, as oil producing fields become depleted. Unless we find new oil reserves, and a lot of them, we will have no alternative but to increase crude oil imports.

Realistically speaking, we will have no choice. Only an extreme optimist would expect to explore and find 5 million barrels a day of new production in the next 13 years — especially at today's crude prices. But we may be able to control the extent of those increases in imports.

The best way to do that is to look first where you have the best chance of finding large deposits of oil.

One such project, and one which is every bit as exciting as Prudhoe Bay itself, is the Coastal Plain of the Arctic National Wildlife Refuge.

The Arctic National Wildlife refuge, or ANWR, as it is called, is located on the eastern end of Alaska's North Slope. The State of Alaska, the Federal Government, and the oil industry agree that the Coastal Plain of ANWR is the best opportunity on the entire North American Continent for finding a super giant or giant oilfield.

The hopes of finding a large oilfield on the Coastal Plain at this point are based solely on the results of geological and geophysical data. ANWR is sandwiched between the world class oilfields of the Prudhoe Bay area, and the recent large discoveries in the Mackenzie Delta area in the Canadian Beaufort Sea. There are oil stained rock outcroppings visible on the surface in the Coastal Plain, and we have done some important seismic work there.

There is every reason to explore this area, and no reason to delay this work, especially in light of the 10 to 15 years it will take to bring any discovery into production. But none of this will occur unless Congress is persuaded to open the Coastal Plain for leasing.

You would think this would not be a difficult decision as the Coastal Plain represents less than 8 percent of the refuge, and 44 percent of the refuge is ***already*** permanently locked away in wilderness status. But ANWR, the badly needed economic activity on Alaska's North Slope, and the oil we will need to carry us into the 21st century, are being held hostage.

Special interest groups are already hard at work lobbying Congressmen from all 50 states, to deny access to that 8 percent of the refuge. This despite our excellent environmental record in the North Slope oil fields which we have already developed.

Standard Alaskans Speak Out

Differing views on issues important to our state

EDITOR'S NOTE: *For this special issue on the Arctic National Wildlife Refuge (ANWR) we addressed our question exclusively to Standard Alaska employees in the environmental, engineering, and construction disciplines. The question:* ***As professionals who have been involved in petroleum development on the North Slope for more than 10 years, can you tell us why you believe the oil industry can develop the Arctic National Wildlife Refuge without adverse effects to the environment?***

Sharon Hillman

Sharon Hillman
Senior Environmental Engineer

The Arctic National Wildlife Refuge is an intriguing and beautiful extension of the arctic coastal plain. My work has covered the entire arctic coast and has focused on pollution control, including oil and chemical spill response, solid and hazardous waste management, and assuring company compliance with regulatory requirements. Federal and Alaska State regulations require that we be very careful operators, especially in the arctic environment. Our success can be observed in our clean operations. In the longstanding Prudhoe Bay Field, the new Endicott Development and the numerous onshore and offshore exploration operations, there have been no major oil or chemical spills, nor has there been an oil blowout offshore. The industry has developed one of the most active oil spill response cooperative groups to assist with spill contingency work and to maintain a large and specialized spill response equipment inventory. This cooperative group has developed arctic response tools such as the *Alaska Beaufort Sea Coastal Resources Manual* showing biological and social resources, shoreline types, and logistical response considerations for the entire coastline from Barrow to the Canadian border. Our spill response capability, considered one of the foremost in the world, is directly applicable to the ANWR area, and our active research and development activities continue to provide improvements.

All of these planning and field tools are important to our ability to work in harmony with ANWR's arctic environment. Equally important are the individual facility supervisors and project managers in our field locations. The attitudes and priorities of our field people to protect the environment and prevent problems are paramount. These attitudes and work ethics are the real reasons we have clean operations. SAPC supports the philosophy that it is good business to work in harmony with the Alaskan environment. Our operations show it.

Mark A. Fraker
Environmental Scientist

Mark A. Fraker

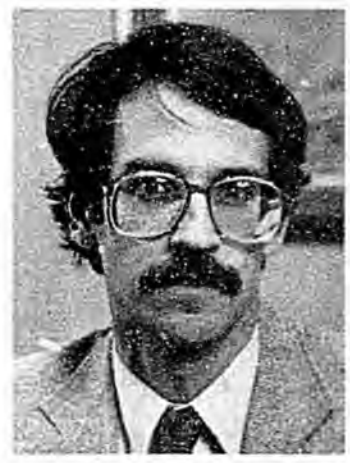
We all know about the success story at Prudhoe Bay — a growing caribou population, birds nesting in the oilfield, and a good record of care for the physical enviroment. I would like to approach the question from a couple of other perspectives.

First, the plants and animals of the North Slope are tough organisms that are at home in the Arctic. Many people have the impression that animals like the caribou and snow geese are on the brink of disaster and that any disturbance will push them past their limits. This is a natural thing for us tropical animals to think, because we are not adapted either physiologically or culturally to the Arctic. The organisms that have evolved in the Arctic for millions of years have developed special adaptations that permit them to live there, just as comfortably as tropical animals, like monkeys and parrots, live in the tropics.

Second, the Arctic environment is not a particularly fragile place. The plants and animals that live there have formed ecosystems that are just as resilient and persistent as those found in more temperate regions. The reputation that Arctic areas have for fragility and sensitivity seems to be based entirely on the fact that disturbance to the surface layer of the tundra can remove the insulation that keeps the permafrost from melting. If this type of damage occurs, there can be unsightly erosion. However, the lessons about how and why to protect the insulative layer of vegetative mat were learned years ago and proper precautions are now taken as a matter of routine. Agencies ensure that these measures are employed.

There is no doubt that the oil industry has the skills and sensitivity to explore and develop the Arctic National Wildlife Refuge in a way that will enable caribou, muskoxen, and other wildlife to coexist and even prosper alongside petroleum development, just as they have near Prudhoe Bay.

Dan B. Huxley
Manager, Development Planning



Dan B. Huxley

I look at Prudhoe Bay and TAPS as the key indicators of industry performance to date, and they clearly show that impacts, in terms of wildlife population trends, have been minimal. The environmental setting on the ANWR coast is quite similar, a surprise to many visitors who expect something along the lines of Yosemite. In reality, the place is an arctic desert covered with ice and snow and largely uninhabitable nine months of the year.

From an engineer's perspective, we've come a long way since the early 1970s in understanding how best to build and operate arctic facilities. Looking at the more recent developments at Kuparuk, Milne Point, Lisburne, and now Endicott, you can see continued improvements in arctic design based on our increased understanding of the environment. For example, facilities are now being shared among units, pipelines and roads are being consolidated in corridors, and drill pads are made more compact through reduced well spacing. At ANWR, there's no doubt that we'll see further improvements.

Deb Slaybaugh

Deb Slaybaugh
Environmental Scientist

The scientific record speaks for itself. The caribou population that uses the Prudhoe Bay area is increasing between 15-18% annually, even though there is more development within its range than for any North American caribou herd. Birds continue to use the Prudhoe Bay oil field, which has been in existence for over 10 years. A visitor to Prudhoe during the summer usually is not disappointed in terms of wildlife viewing opportunities. This is in marked contrast to those who would have you believe that oil field development and wildlife use are mutually exclusive.

The Alaska Oil and Gas Association (AOGA) has funded LGL Alaska Research Associates to conduct a systematic study of bird use in the Prudhoe Bay oilfield, the more developed with the less developed areas witnin the field. Preliminary results show that oil development has not significantly modified the bird use of the area.

There are other site-specific research projects we have sponsored such as the banding and neck-collaring of the Howe Island Snow Geese (Endicott Project), the effects of industrial activity on nesting eiders at Thetis Island (Mukluk Project), and bird use of the area adjacent to the West Dock road (Prudhoe Bay Waterflood Project), these efforts do not document significant impacts to birds. Our history and its accompanying scientific record produce the confidence I have in knowing that the much-needed oil reserves in ANWR can be developed with little or no impact to the biological resources of the refuge.

Caribou in ANWR: The key issue

Caribou adapt well to oil elsewhere on North Slope: Is the Porcupine Herd Different?

Are caribou in the Porcupine Herd in northeast Alaska really different from caribou in the Central Arctic Herd just to the west? Or, for that matter, the Nelchina Herd in Interior Alaska?

Some biologists think so. Others say no.

This is the crux of one controversial question that faces Congress as it considers whether to open the coastal plain of the Arctic National Wildlife Refuge (ANWR) in northeast Alaska to oil and gas exploration.

Environmental groups and some state and federal game officials argue that oil development in coastal parts of the refuge could harm the Porcupine Herd, which numbers 180,000 animals and migrates yearly to the North Slope from wintering grounds south of the Brooks Range. To protect this herd, exploration should be barred from the coastal plain, they argue.

Others disagree: Fifteen years of experience with the Alaskan Central Arctic and Nelchina caribou herds, whose ranges are bisected by present oilfields and pipelines, show that drilling can have a negligible effect, if any at all.

Not only are those animals suffering no apparent ill effects, but herd populations are booming, contrary to dire predictions by environmental groups who tried to stop pipeline construction in the early 1970s. The Central Arctic Herd, which now numbers about 18,000, has more than quadrupled in size since oil activity began. The Nelchina Herd, which must migrate directly across the trans-Alaska pipeline in Interior Alaska, has also enjoyed a healthy population gain, during the years of pipeline construction and continuing afterward.

Is The Porcupine Herd Different?

Opponents to ANWR exploration have a reply to this: What's different is that the Porcupine Herd is much larger and that its animals are not as accustomed to human activity as the Central Arctic and Nelchina herds. Also, the coastal plain of the refuge, where exploration would take place, is the main calving ground for the Porcupine Herd. Calving is the most sensitive time for female caribou, and disturbances in summer could prove very disruptive, they argue.

But the Central Arctic Herd now uses parts of the Kuparuk oilfield for calving. With the Central Arctic population rapidly growing, there seems no serious adverse effect created by the presence of oil production installations in the calving areas.

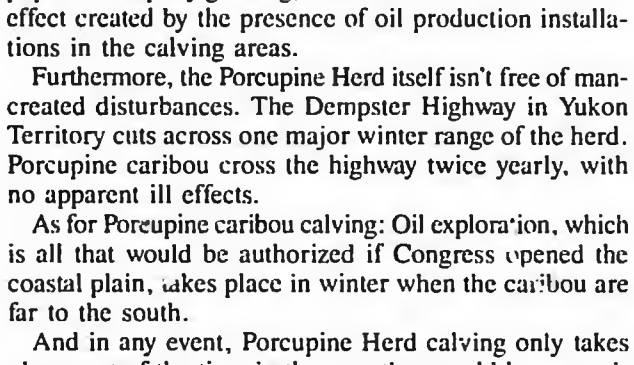
Furthermore, the Porcupine Herd itself isn't free of man-created disturbances. The Dempster Highway in Yukon Territory cuts across one major winter range of the herd. Porcupine caribou cross the highway twice yearly, with no apparent ill effects.

As for Porcupine caribou calving: Oil exploration, which is all that would be authorized if Congress opened the coastal plain, takes place in winter when the caribou are far to the south.

And in any event, Porcupine Herd calving only takes place part of the time in the area that would be opened. The animals calve across a wide area of uplands along the northern side of the Brooks Range. The region extends from the western boundary of ANWR some 200 miles east, to the Western Mackenzie Bay area in Canada's Yukon Territory, an area exceeding 6,500 square miles. Actual calving areas vary from place to place across this huge region, depending on seasonal weather and snow conditions.

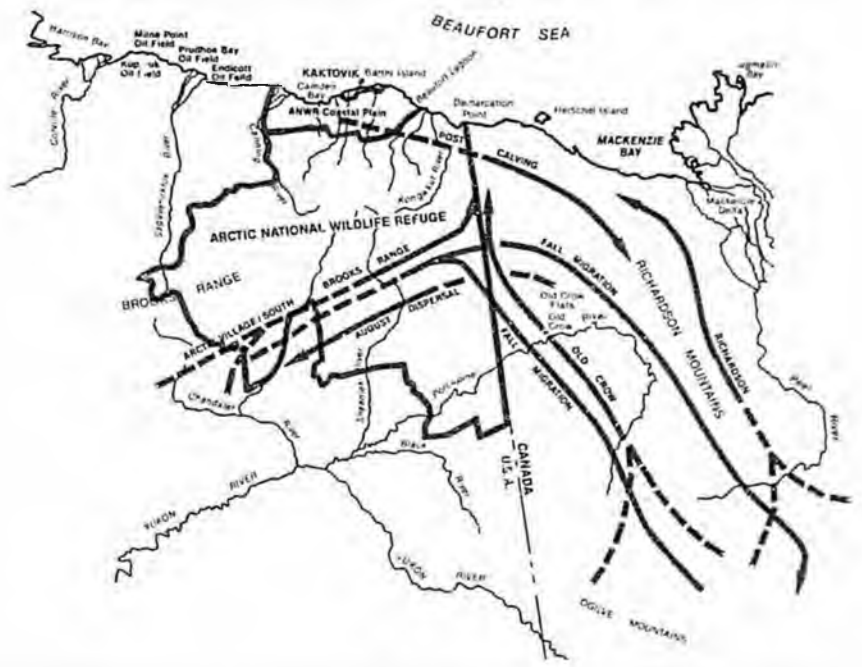
Fish and Wildlife investigators have identified a 2.1 million-acre area of coastal plain along the northwestern coast of Canada's Yukon Territory and northeastern Alaska as potential calving area. Less than half of this calving area, 934,000 acres, is in the area of coastal plain that would be opened.

Studies show that from 1972 through 1985, Porcupine caribou used parts of the Alaskan coastal plain in only nine of the 14 years. In 1982, for example, practically the entire herd calved east of the U.S.-Canada border, in Yukon Territory. In 1985, by contrast, over 80% of the cows did use areas in the Section 1002h study area. There's no evidence to show they would be excluded from an area if an oilfield were developed there. But even if they were, there would seem to be plenty of alternative acreage available.



Although caribou use gravel ramps over pipelines at Prudhoe, studies have shown the ramps are not necessary.

Porcupine herd migration routes



The Porcupine caribou herd spends winters south of Alaska's Brooks Range, in the Old Crow flats in northern Yukon Territory, Canada, and in the southern foothills of the Brooks Range in northeastern Alaska. In early March, the caribou begin moving north. They follow three main routes: an eastern route through the Richardson Mountains in Yukon Territory to the Arctic Coastal Plain of the Yukon, a more westerly route across the Porcupine River and over the British Mountains and through the Firth River valley to the coast, and a third, westerly route up through northeastern Alaska to join the eastern group from Old Crow. Caribou segregate themselves into groups to migrate at different times: Pregnant females, barren cows and some yearlings migrate first; bulls and remaining juveniles follow later. Calving takes place in May and early June in the foothills and coastal plain between the Hulahula River in Alaska and the Babbage River in Canada, in locations that vary from year to year with snow cover. The 1002h area covers approximately 20 percent of the Porcupine Herd calving area.

Further west, Central Arctic Herd calving occurs in both concentrated and broadly dispersed areas between the Canning and Colville Rivers, an area that also contains the Prudhoe Bay and Kuparuk River oilfields. While animals have not used the Prudhoe field area for calving (there is no evidence that they ever have, government and industry biologists now agree), they do use parts of the Kuparuk field. To get to calving areas in Kuparuk, pregnant cows and cows with young calves have to cross the Kuparuk oilfield road system. Recent monitoring studies with one radio-collared cow, transmitting via satellite, showed that the cow and calf crossed oilfield roads and production pads several times during the summer, with no apparent effect.

"It simply doesn't make sense to argue that the Central Arctic herd is "different" from the Porcupine herd because one has supposedly habituated to oilfield structures while the other hasn't encountered them yet," says Debra Slaybaugh, Senior Environmental Scientist for Standard Alaska Production Company.

"Both herds consist of the same species and genetically are probably virtually identical. If the Central Arctic herd is able to maintain productivity and increase in size with oilfield structures located within a small portion of its range, there is no known reason why the Porcupine Herd should not also continue to increase with oilfield structures located within a far smaller portion of its range."

Industry Has Learned

There was concern in the early 1970s within government agencies and industry that North Slope oilfields, the trans-Alaska pipeline and the Dalton Highway (which follows a route generally parallel to the pipeline) might split and disrupt the Central Arctic Herd.

Caribou studies conducted at the time allowed design elements to be incorporated into the pipeline and oilfield gathering lines. These included buried and elevated pipeline sections for the animals to use as crossings. But only experience would tell how these increases would work.

While the crossings have helped, biologists were surprised at how adaptable the animals turned out to be, compared to what was thought 15 years ago. For example, in Interior Alaska the Nelchina Herd migrates east and west in their annual migration right across the trans-Alaska pipeline, which follows a north-south route. Because the pipeline is built above ground through this area, this provided a good test of the ability of caribou to cross a major structure, like a pipeline, during migration.

Studies by Renewable Resources Consulting Services, Ltd., a biological research group, found that the special caribou crossings built by the companies were actually used by less than a third of the animals. Over two-thirds chose to cross the above-ground pipeline at other places.

On the North Slope, small groups of caribou moving through the oilfields in summer have shown both that they can navigate both roads and field gathering lines. Although caribou do use gravel ramps over pipelines in the North Slope oilfields, the ramps are not necessary. Where ramps are not present, caribou pass beneath the elevated pipelines, so long as the lines are at least five feet above the ground.

Biologists have also found that roads or pipelines by themselves are not serious barriers to movement, but in *combinations*, particularly with moving traffic, can at times create problems. One solution has been to separate roads from pipelines for short distances, in key locations.

"Caribou become accustomed to things that aren't a threat to their survival," says Slaybaugh. "They would have to, or they would spend their lives reacting to different kinds of non-threatening stimuli."

An extreme example of caribou adaptability is the Delta Herd in Interior Alaska, which calves on a military bombing range, an area frequently subjected to bombing, strafing and low level aircraft flights. The herd has also experienced severe habitat alteration by wildfires, which covered large parts of their core calving areas. Despite these disturbances, the herd has increased at an annual rate of 19-22% and its now at its largest population level in history.

What are the real issues?

Here are several questions biologists are debating . . .

- **CARIBOU AND PEOPLE:** Even if individual caribou show local reactions to human industrial activity, (like road traffic) does that really matter if the overall herd remains healthy and stable in population? Most biologists now agree that Central Arctic caribou have demonstrated an adaptation to oilfield and pipeline activity. Yet, some argue the Porcupine Herd is still "unique."

- **WHAT REALLY AFFECTS CARIBOU:** Some biologists feel that habitat alteration or denial, arguably threatened by oil exploration, could threaten caribou. Others disagree, arguing that predator pressures, mainly wolves, are far more important than habitat.

- **"BIOENERGETICS," A NEW BELIEF:** Recently, some biologists have come to believe that Arctic caribou are threatened if they have to spend time and energy circumventing drill pads or short distances of pipeline. Others disagree: Walking around natural obstructions is a part of everyday life for North Slope caribou. Man-made obstacles, puny by comparison to natures', pose no real threat.

- **DO WE KNOW ENOUGH?** We'll probably never really know enough about caribou, but biologists agree it would be useful to have more site-specific assessments of impact. This comes, however, after initial exploration shows where oil deposits actually are and where they aren't. Available research funds can then be concentrated on the more important areas, disregarding parts of the coastal plain where exploration drilling shows little oil potential.

What *really* affects caribou populations?

Despite extensive studies, biologists in disagreement

How well caribou and oil can co-exist in the Arctic centers on two contrary theories. That is whether it is *the amount of habitat available* or *predator pressures (including hunting)* that is the more important influence on survival of the herds.

Environmental groups and some biologists base their objections to oil exploration in the coastal plain of the Arctic National Wildlife Refuge (ANWR) on the notion that loss of some habitat will threaten survival of the Porcupine Herd. In other words, oil facilities on the tundra will deny caribou access to traditional rangeland.

The contrary theory, which has now attracted a considerable following, is that habitat is not in short supply, and that predators, primarily wolves, exert the main influence on growth and overall status of caribou populations. There is ample range and food supply available in the north to support Porcupine caribou populations two or even three times the size of the present herd, many biologists think.

". . . caribou populations in Interior and northern Alaska have been experiencing vigorous growth . . ."

In fact, there has never been a case of a caribou herd, with access to space and mobility, starving due to lack of range, except in artificial situations such as occurred when caribou were transplanted to St. Matthew Island in the Bering Sea, overgrazed their range and starved. Under normal circumstances, caribou populations never get too large for their environment.

Caribou in northern Alaska, in the Porcupine, Central Arctic and Western Arctic herds, typically have less than two individual animals for each square mile of the area over which they range. In caribou herds elsewhere, population densities may be many times greater. Biologists have computed that the caribou density in the Alaskan arctic would have to increase by more than 10-fold for food depletion to be a problem.

Even if access to habitat were a problem, the actual loss of terrain to caribou grazing caused by oil development will be very small. For example, the actual habitat "loss" created by the Prudhoe Bay and Kuparuk oilfields is less than 8,000 acres, according to Alaska Department of Fish and Game studies, in an available North Slope coastal plain that encompasses thousands of square miles.

But if the predation theory is correct, and it is supported by several field studies, then this major argument against oil activity in ANWR's coastal plain lacks scientific foundation.

Booming Growth in Caribou

The biggest embarrassment for opponents of oil development is that caribou populations in Interior and Northern Alaska, which should have been impacted by oil activity, have instead been experiencing vigorous growth. In fact, the Central Arctic Herd on the North Slope, which uses areas occupied by the Prudhoe Bay, Kuparuk and Milne Point oilfields, has more than quadrupled ir size since oil activity began in the early 1970s.

Biologists have done field studies which do show cases of localized avoidance behavior by caribou, in that animals sometimes move away from vehicle traffic on oilfield roads, or react to low-flying aircraft.

"But some observers assume these affects harm the animals, a judgement not supported by evidence," says Mark Fraker, Senior Environmental Scientist for Standard Alaska Production Company.

"What is worse is that some people 'extrapolate' these individual observations to whole populations, arguing that entire herds will be endangered because individual animals show reactions to road traffic. This doesn't make sense when the herds are growing fast and are obviously healthy in the presence of oilfield activity."

In any event, Fraker said, there is now general agreement among government and industry biologists that caribou do eventually adapt to human presence and industrial activity.

What *really does* effect caribou herds are predation and hunting, the studies are showing. Wolves, which prey on caribou, have been under control in Alaska since the early 1970s. This explains why caribou numbers have been increasing so fast. Compared to this, any effect of oil activity is minor.

Caribou studies are extensive

Editor's Note: *The list of caribou studies below represents a small portion of the research conducted in northern Alaska and Canada.*

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The Protection of Open Space

Biologist Tom Bergerud of the University of Victoria, a respected Canadian caribou biologist, maintains that what caribou really need for calving is open space, in which predators like wolves or bears can be spotted at some distance, and bare ground that is free of snow, which provides camouflage for newborn calves.

This may explain why caribou seem to prefer certain locales for calving over other areas. Perhaps snow melts earlier in the preferred areas than elsewhere. This would also explain why caribou cows calve in different areas from year to year, motivated by a late spring and snow melt.

In terms of overall impact on populations, the available research seems to overwhelmingly back the predator theory.

Bergerud says that caribou can adapt to economic development in the Arctic if they have space for mobility to cope with predators.

Bergerud has reviewed the supposed adverse impacts on caribou caused by human activity, construction of roads, pipelines or rail lines, on eight caribou herds, seven in North America and one in Norway. In each case he found that a variety of factors, including population changes, range use, predator and hunting pressures, offered more convincing explanations for changes in behavior than the presumed cause, the road, railroad or pipeline. Predators, mainly wolves, were by far the major influences.

In contrast, there is no case where a caribou herd population has declined because of some industrial activity. In the case of a poorly designed gas pipeline in the Soviet Union, which excluded a large number of animals from the area, no overall population level impact was recorded, Richard T. Shideler of Alaska's Department of Fish and Game has written.

Bergerud, on the other hand, was able to document severe effects of predation on herds.

Eight Herds: "Case Histories"

Bergerud examined data from the Porcupine, Central Arctic, Nelchina and Fortymile herds in Alaska, several herds in British Columbia, the Kaminuriak Herd in Manitoba and herds in Newfoundland and Norway. All had been cited in literature and in testimony before government panels as examples of various disturbances to animals by industrial activity.

These offered a variety of test situations: In some, there was heavy, unregulated hunting. In others, hunting was banned. Some had control programs for wolves and other predators, and others did not. All had their ranges crossed by highways, roads, railroads or pipelines.

One documented impact in several of the case studies was an increase in calf survival due to wolf control. The second documented impact was an increase in mortality due to improved access for hunters from road or railroads.

"We believe that some biologists, in their concern for disturbances at the individual level, may have overlooked the major population regulation factors of hunting and predation," Bergerud writes. "When herds have stopped crossing transportation corridors, it has generally been because numbers have declined and ranges contracted. The evidence shows such contractions to be independent of the presence of transportation corridors."

Predators, Not Habitat

Meanwhile, other studies undertaken by Bergerud have reinforced the notion that predation, mainly by wolves, is the major influence on caribou populations, and that other mortality factors, like starvation and disease, are not important for caribou populations that are in open terrain and free to disperse.

With five herds in Alaska and Canada, wolf-control programs were instituted. Before wolves were controlled, calf survival rates were about five percent, Bergerud found, a rate at which the herd would be stable or in slight decline. After wolf-control, but not complete removal, calf-survival rates jumped, some to over 20%, a rate that will result in rapid population growth.

In the open plains of the Alaskan and Canadian Arctic, wolves have been actively hunted in recent years and wolf densities are now below 6.5 animals per thousand square kilometers, Bergerud writes. This is a level that will result in low predation and rising caribou populations. This is, in fact, happening.

Woodland caribou, further south, face a different situation. In forest, caribou have less space to escape predators. Human hunting pressure on wolves is also less, as wolves have more natural cover to escape. As a consequence, wolf densities are higher, calf survival lower, and therefore, populations of caribou are on the decline.

The "Habitat" Theory

Where did the "habitat" theory get started? Why does it have a following, in spite of an apparent lack of scientific support?

Some observers think it springs from an unconscious, distinctly human bias in our view of the Arctic. Humans are creatures of the temperate and tropical zones. We view the Arctic as harsh and forbidding. We find it difficult to accept the notion, deep inside ourselves, that the Arctic can be bountiful to a species adapted to it, as caribou are.

The notion persists, despite ample evidence to the contrary, that caribou are somehow on the edge of extinction in a forbidding, barren environment, and that the smallest disturbances are a threat to the species. We are constantly surprised when field research demonstrates the vitality, strength and durability of these animals that have adapted so well to their environment.

In fact, caribou populations throughout northern North America continue to grow rapidly, and are now beginning to approach historical levels.

Geologists concur

ANWR's geologic potential promising

Geologists regard the coastal plain of the Arctic National Wildlife Refuge as the most promising area for major new discoveries of oil and gas in the United States.

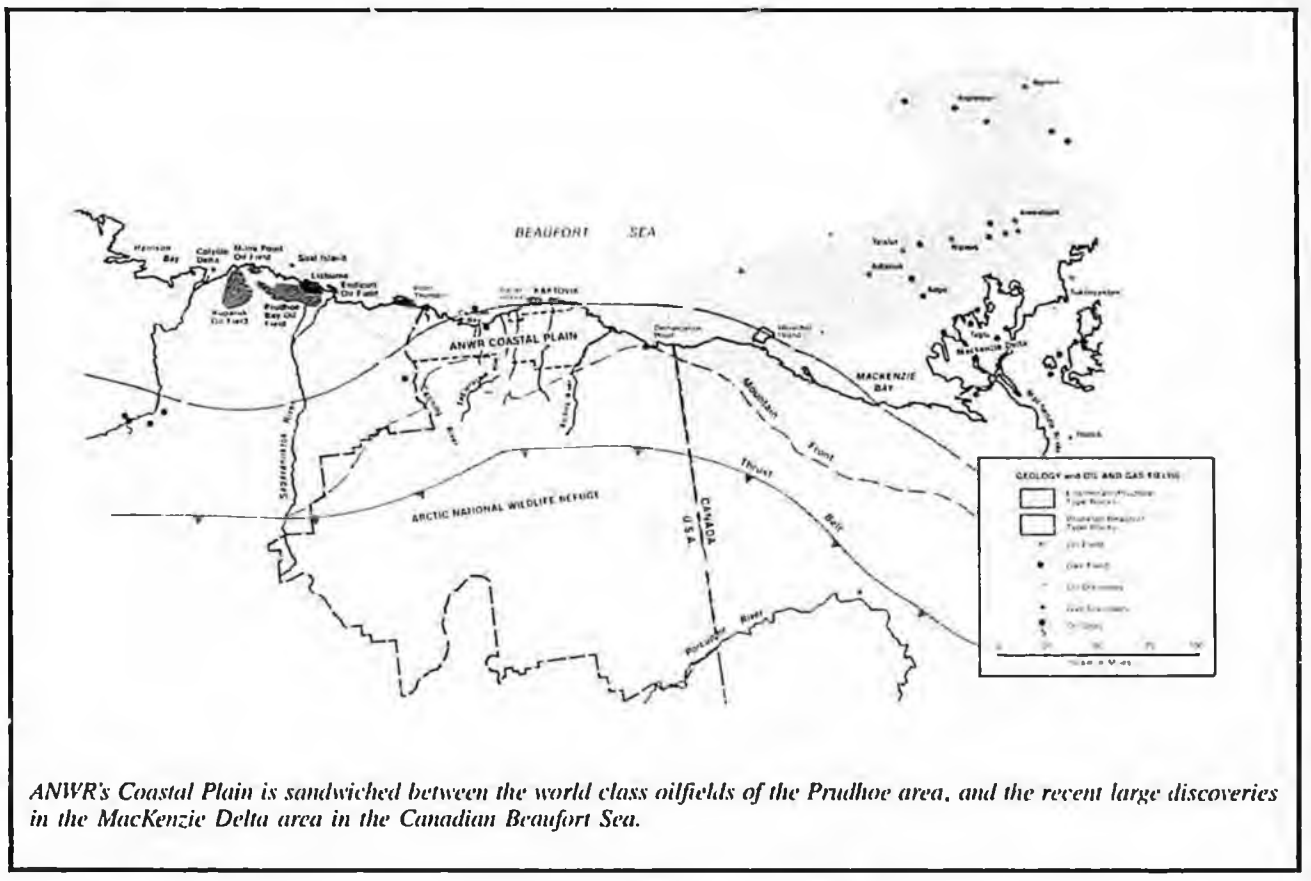
All of the geologic ingredients are there: Source rocks to generate oil and gas, thick sequences of reservoir rocks that allow petroleum to accumulate, large geologic structures to act as "traps" for oil and gas, and the fact that large petroleum discoveries have been made nearby, in the same types of geologic strata.

The initial assessments of the area's potential, carried out as a part of the Interior Department's "Section 1002h" study, bear this out. Twenty-six major oil and gas prospects, including two that could rival Prudhoe Bay, have been identified by seismic mapping and geologic investigation.

"The area is clearly the most outstanding oil and gas frontier remaining in the United States, and could contribute substantially to our domestic energy supplies," Interior's report, still in draft, says.

It is all the more important because exploration in other U.S. frontier areas, where there were high hopes for new discoveries, have been disappointing. These include offshore Atlantic coast, the Gulf of Alaska, Bering Sea, Lower Cook Inlet and, so far at least, the Alaskan Beaufort Sea.

But only exploratory drilling can confirm ANWR's potential. Too often, geologists have been painfully surprised when surface geology and seismic profiling have indicated the presence of a possible huge oil formation, until the drill-stem came up dry. A recent example is Mukluk, the $150 million dry hole in the Beaufort Sea, northwest of Prudhoe.



ANWR's Coastal Plain is sandwiched between the world class oilfields of the Prudhoe area, and the recent large discoveries in the MacKenzie Delta area in the Canadian Beaufort Sea.

ANWR's Geology

The area involved in the "1002h" study lies along the foothills and coastal plain of the wildlife refuge; it is underlain by tens of thousands of feet of sedimentary rocks, the type needed for oil to accumulate. The nearby Brooks Range and its foothills indicates that the kind of geologic actions needed to form underground structures, or traps, for oil and gas, have indeed occurred.

Generally, there are two types of sedimentary rocks under ANWR's coastal plain: There is a relatively younger group of rocks which are also present at Point Thompson, just west of ANWR, where oil and gas discoveries have been made. They also extend east to the Canadian Beaufort Sea, where discoveries have also been made. Then there is a deeper set of older rocks, that are of a strata that extends to the west, where very large oil discoveries have been made at Prudhoe Bay, Kuparuk, Endicott, Lisburne, Seal Island and Mine Point. Both groups of rocks have great potential, but it is the older, deeper rocks that have the greater promise.

". . . There is a 95 percent chance of at least 4.8 billion barrels of in-place reserves . . ."

Seven different geological "plays," or regions of promising geology, were identified in the 1002h assessment, each with characteristics favorable for oil and gas. In-place resource potentials were calculated: There is a 95% chance of at least 4.8 billion barrels of in-place reserves, and a 5% chance of in-place reserves of 29.4 billion barrels.

But what is important is the amount of this resource that might be *recoverable*, since current oil-producing technology allows only a percentage of the oil actually "in place" in the rock to be extracted. Interior judged "recoverable resources" this way: A 95% chance of a discovery of 600,000 barrels of recoverable reserves, and a 5% chance of 9.2 billion barrels of recoverable resources.

What may be more meaningful are assessments of particular prospects. The two largest geologic formations investigated could contain recoverable oil in amounts similar to Prudhoe Bay; the next two largest prospects could be about half the size of Prudhoe, each with an amount of oil equal to the East Texas field; the next four prospects could contain recoverable oil in amounts equal to Kuparuk, about 1.5 million in size.

The eastern part of the coastal plain seems to have the most potential; it is here that 63% of estimated recoverable resources in the area could be found in four large structures, according to Interior's draft 1002h document.

The southern part of the 1002h study area seems also to have considerable potential, again mostly in a few very large geologic formations. Interior assigned this region 25% of the estimated recoverable reserves in five potential structures. But this area also has the greatest potential land-use conflicts; it is here that most of the caribou "core calving" is concentrated. The central part of the study area was given a lower ranking, with an estimated three percent of recoverable reserves in three geologic prospects.

The western area of the plain was given a very high ranking in terms of overall reserve potential, with about half of the overall estimated *in-place* resources in the study area. But here the sizes of potential structures were much smaller, some mapped only with great difficulty according to the report. So in terms of *recoverable reserves*, this area is assigned a probability of only 9% recoverable resources scattered through 14 potential oil formations.

Other North Slope Development

If commercial discoveries are made in ANWR's coastal plain, it also has important implications for *other* North Slope oil development: The infrastructure built to accommodate one or more oilfields on the coastal plain could also support exploration and development in state and federal offshore acreage just north of ANWR, which has favorable geology.

Also, several large oil and gas accumulations have been discovered east of Prudhoe, on state lands between that field and the boundary of ANWR. These are not economic today, but if a pipeline were built to serve larger discoveries on ANWR's coastal plain, some of these might become economic.

Finally, new oil discoveries in ANWR would lead to greater long-term utilization of the trans-Alaska pipeline, which would lower costs for *all* oil moved through the pipeline. By lowering costs, the economic life of those fields now producing on the North Slope, particularly Prudhoe and Kuparuk, will be extended some years into the future.

ANWR — An historical perspective *Continued from page 1*

Federal Policy Decisions — All Linked

Exploration in the Arctic National Wildlife Refuge in northern Alaska is only the latest in a series of major congressional policy decisions affecting federal lands in Alaska. They are all linked, directly and indirectly.

The Alaska Statehood Act in 1959 started the process of formally designating Alaska lands, which led indirectly to the Alaska Native Claims Settlement Act in 1971, a major land action that settled the long-standing legal question of aboriginal land claims that cleared land title in Alaska. This also cleared the way for the trans-Alaska pipeline, although a separate piece of legislation was ultimately needed to clear away environmental litigation and authorize the pipeline. But the Native Claims Settlement Act did set the stage for the Alaska National Interest Conservation Lands Act of 1980 (ANILCA).

ANILCA formally created the Arctic National Wildlife Refuge, but it also created 35 other national parks, forests and wildlife units in Alaska, involving a total of 103 million acres, with 32.4 million acres of this designated as wilderness. Conservation groups had pushed for far more wilderness. One proposal (Udall-Anderson) would have involved 67 million acres, about a third of Alaska, going into wilderness status.

An Historical Perspective

Conservation issues have been involved in federal land decisions since the turn of the century. As a territory, Congress wrote Alaska's laws and established land designations. Even then, conservationists saw the value of protecting large tracts of Alaska lands. Early on, coalfields on federal lands were barred from entry. Large land tracts like St. Lawrence Island and Nunivak Island were set aside as "reindeer" reservations. Other wildlife refuges were created. Tongass and Chugach National Forests, and McKinley National Park, were created. Just before Alaska statehood in 1959, the Arctic National Wildlife Range, then 8.9 million acres, was signed into existence by the Secretary of the Interior.

Passage of the Alaska Statehood Act in 1959, however, set the stage for major Alaska land decisions. Until then, most lands across Alaska's sprawling 586,000 square miles were "public domain" under federal public land laws. They were open to homesteading, mining claims and other forms of "entry." But because Alaska had a tiny, scattered population and an economy based mainly on defense installations in Anchorage and Fairbanks and fishing in coastal communities, most of Alaska was, in fact, wilderness.

Statehood was to change things. Not the wilderness character of Alaska (which exists even now), but the process of formally designating land jurisdictions. Congress gave Alaska a land grant of 103 million acres, about 28% of the state, to encourage economic development.

"ANILCA formally created the Arctic Wildlife Refuge . . ."

But this action aroused two other, "sleeping" issues: one was the undefined claim of aboriginal Native land rights that Congress had resolved to settle early in the century, but had never done so. As long as it was unresolved, it constituted a legal cloud on land title in Alaska. Then in 1966, a "land freeze" was imposed on Alaska, which was to halt transfer of federal lands for homesteading and to the state under its land selection program. This was also a major impediment to getting a right-of-way for the trans-Alaska pipeline across federal lands.

The second issue involved conservation and protection of Alaska lands, which was then under the old public domain land laws. National conservation groups saw the opportunity to set aside under new kinds of land systems from the millions of acres of undesignated federal lands in Alaska. They would comprise huge additions to the nation's national parks, wildlife refuges and forests.

The two issues were linked. Influential eastern and midwest congressional delegations, who had constituents with an interest in Alaska conservation issues, supported

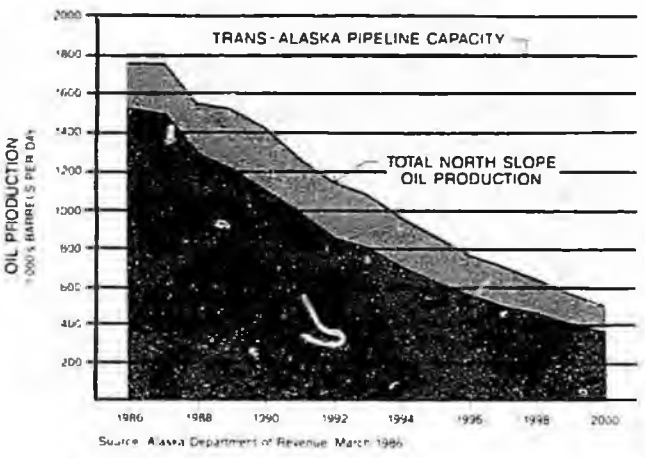
Continued on page 6

ANWR critical to U.S. energy security

Continued from page 1

In fact, ANWR itself might constitute 20-27% of the nation's oil reserves by 2000, according to Interior Department estimates.

PRUDHOE BAY AND OTHER NORTH SLOPE OIL PRODUCTION



Source: Alaska Department of Revenue, March 1986

By the year 2000, oil production from North Slope oil fields will drop to less than 600,000 barrels per day.

The Grim Statistics

It's not hard to see the coming shortage, and today's low oil prices will just accelerate it. In 1986, the U.S. is using about 16 million barrels of oil per day, and producing about 8.9 million barrels daily from domestic fields. One fifth of this comes from northern Alaska.

U.S. oil production, most of it in mature producing areas at or past their peak, is now declining. Even Alaska North Slope production will begin declining sometime in 1987 or 1988.

If oil prices remain at $15/barrel (in 1985 dollars), domestic crude oil production will fall from 8.9 million barrels/day to 6.2 million barrels/day in 1991, an American Petroleum Institute (API) survey of its member oil companies indicates. The drop could also be occurring faster than many think. API President Charles DiBona says U.S. domestic production has dropped 333,000 barrels/day so far this year, and without an *increase* of 70,000 barrels/day in Alaskan production, the production drop (from U.S. "lower 48" producing areas) would have been about 400,000 barrels/day. If low prices persist, domestic output could be below three million barrels/day by 2000, only 13 years from now, DiBona warns.

Other groups come to similar conclusions: The Independent Petroleum Association of America predicts domestic production will decline 2.3% in 1986, and three percent in 1987, while oil demand will increase by 2.6% yearly. Even somewhat higher prices may not help. The Energy Information Administration, a federal agency, estimates that at $17 oil in 1990 and $20 oil in 1995 (in 1985 dollars), somewhat higher real prices than those assumed in the API survey, U.S. production would decline from 8.9 million barrels/day to 7.2 million in 1990, to 5 million in 1995.

Low oil prices are accelerating that decline. Below a certain price many small fields and "stripper" wells become uneconomic. Today about 14% of U.S. production comes from stripper wells. Once they are shut in, it will be uneconomic to reopen many of them under almost any oil price scenario reasonably conceivable.

Demand is Increasing

Low prices also brings increased demand. U.S. gasoline consumption this year is running about three percent above the level during the comparable period of 1985, according to the API. Demand for all petroleum products was up an average of 2.5% for the first three quarters of 1986, but the alarming thing was the acceleration of demand during the year.

Demand for all petroleum products was up 1.5% in the first quarter, but climbed to 2.5% the second quarter *and to 3.9% in the third quarter.* DiBona told the Resources Development Council, an Alaska development group, in late November.

This suggests that if low oil prices persist, U.S. oil imports will grow substantially, from about 5 million barrels daily in this year to as much as 15 million barrels/day in 1995, API studies indicate.

New Exploration Falling

Another indication of the worsening U.S. domestic energy picture is in the nation's declining reserves/production ratio. Even in 1985, before the worst of oil price declines were felt, addition of new oil reserves had dropped by 30% compared to levels a year before. Additions of new natural gas reserves dropped also, by almost 27%.

> ***". . . about 27,000 small fields would have to be discovered to sustain current production."***

New drilling in 1985 replaced only 59% of oil production and 69% of gas production, according to a new study by Arthur Anderson & Co. The reserves/production ratio for 1986 is sure to be far worse.

The problem is that most U.S. oil producing areas are now mature, with many fields past their peak and in stages of gradual decline. There will be, undoubtedly, new oil discovered, both in extensions to existing fields and in new oilfields. But because most parts of the continental U.S. have been explored, the chances of finding *large* fields, where most of the nation's oil has come from, are increasingly remote.

Except in Alaska: Today Alaska is considered the last remaining region where large fields, with major additions to U.S. reserves, might still be discovered. Within Alaska, ANWR offers the best potential for these discoveries.

Why Large Fields Needed

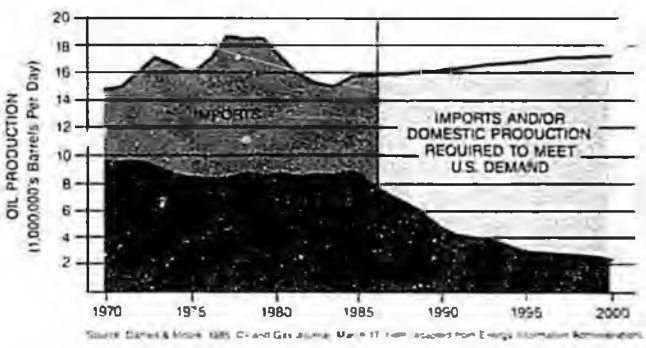
Of all the oil produced in the U.S. in 120 years, two thirds have come from large fields of 50 million barrels or more, a Congressional Research Service study finds. Yet, these large fields represented only *three percent* of all the oilfields discovered. The vast bulk of U.S. discoveries — 97%, in fact — were smaller fields. But all of these held only one-third of all the oil discovered in the last 120 years.

More important: in recent years it has become more difficult to find larger fields. Only five of these have been discovered since 1951, three in Alaska (McArthur River, 1986; Prudhoe Bay, 1968; Kuparuk, 1969). Except for Prudhoe Bay and Kuparuk, no oilfield with reserves over one billion barrels recoverable has been discovered since 1949. And of the previously discovered giant fields, all of them except Prudhoe and Kuparuk are 75% depleted. Even Prudhoe is now half depleted.

In looking at future production, Congressional Research Service found that even assuming improved oil prices, 76 new fields of 50 million barrels or more must be discovered in the next 15 years to avoid large declines in U.S. domestic production. If these large fields are not discovered, either because the resources area actually distributed among smaller fields of *access to lands where large fields have the best chance of being discovered is denied*, then about 27,000 small fields would have to be discovered to sustain current production. Such a rate of discoveries seems almost impossible, in both cases.

What *could* make a significant impact is if truly large fields similar to several discovered already in norther Alaska — Prudhoe Bay, Kuparuk, Endicott, Lisburne, Seal Island — could be located. ANWR represents that potential.

U.S. OIL SUPPLY AND DEMAND



Graph depicts expected fall of domestic crude oil production and increasing reliance on imports or other domestic production.

The OPEC "Gap"

OPEC now produces about 16-18 million barrels/day and has an estimated capacity for production in the 26-30 million barrels/day range. A 10 million barrel/day increase in U.S. requirements for imports, because of declining domestic production and increased demand, could itself absorb most or all of OPEC's excess capacity. Oil demand is also increasing in other countries, though not as fast as in the U.S.

In reality, long before OPEC's production capacity is actually consumed, there will again be upward pressure on oil prices. Past experience indicates that when 80% of OPEC's total capacity is used (or about 21 to 24 million barrels/day) prices will rise. We are already using about 60% of OPEC's capacity, so demand for OPEC oil need only rise by about 4.7 million barrels/day for this point to be reached. The U.S. *alone* could be absorbing that within three to five years.

ANWR — An historical perspective

Continued from page 5

the 1971 Native claims act partly because they saw the opportunity to use the act as a vehicle for resolving long-range federal land policy in Alaska.

Section 17(d)2 of the act required the Secretary of the Interior to withdraw 80 million acres of Alaska lands from public domain. The land was to be studied for designation as parks, refuges, national forests and wild and scenic rivers. These were the "d-2" lands. What is often forgotten is that an additional 60 million acres of lands were also withdrawn under Section 17(d)1 (and called, appropriately, the "d-1 lands) for an indefinite period of time. Parks, refuges, forests and wild and scenic rivers must be created by Congress, and so the Secretary's recommendations required by the 1971 claims act were to eventually result in ANILCA, in 1980.

The Land Exchanges

Alaska's statehood and Native claims settlement acts provided historical linkage, but also created another interesting issue to the question of opening ANWR's coastal plain to oil exploration. Alaska Native corporations created under the 1971 settlement act as well as the State of Alaska could, if the federal government desired, wind up with mineral estate "inholdings" within the coastal plain — if Congress decides to allow exploration. In fact, it has already happened with a 92,000-acre tract on the northern edge of the coastal plain.

This comes about through possible land exchanges between several Native corporations and the federal government, in addition to, possibly, the State of Alaska. In the case that has already occurred, Arctic Slope Regional Corporation (ASRC) (the Barrow-based corporation covering northern Alaska) in 1983 negotiated an exchange of lands that it owned, under the claims act, in the northern Brooks Range within the new Gates of the Arctic National Park, one of the new federal units created by ANILCA. Interior felt the exchange worthwhile. The national park system gained a 101,000-acre scenic addition, which included pristine Chandler Lake, in the Gates of the Arctic Park. In exchange, ASRC received 92,000 acres of mineral rights along the northern edge of ANWR.

Although mineral rights belong to ASRC, the tract is still a part of the refuge in terms of overall land management. Exploration in this area is allowed, and one well has been drilled. However, no development can proceed until Congress opens the rest of the coastal plain to exploration. Also, any exploration and development must be done under environmental stipulations imposed by the U.S. Fish and Wildlife Service.

Several of the Native corporations are now negotiating similar land exchanges with Interior, all contingent on congressional approval of exploration. If they are concluded, the Interior Department would gain valuable additions of Native-owned inholdings or lands adjacent to refuges and parks in other parts of Alaska. The acreages involved in these negotiations are unknown except to the parties involved, but they are likely to be much smaller than the ASRC land exchange.

The State of Alaska also has lands adjacent to federal refuges and parks that it is willing to exchange for mineral tracts within the coastal plain. Under existing federal law, Alaska would receive 90% of federal royalties from any oil production of ANWR. But since this percentage can be changed by Congress, State officials feel it would be better to actually own the mineral rights outright for a negotiated amount of acreage. The State has made an offer in this regard, but no actual negotiations are underway at this point.

Tim Bradner is the editor of the Alaska Economic Report, published in Anchorage.

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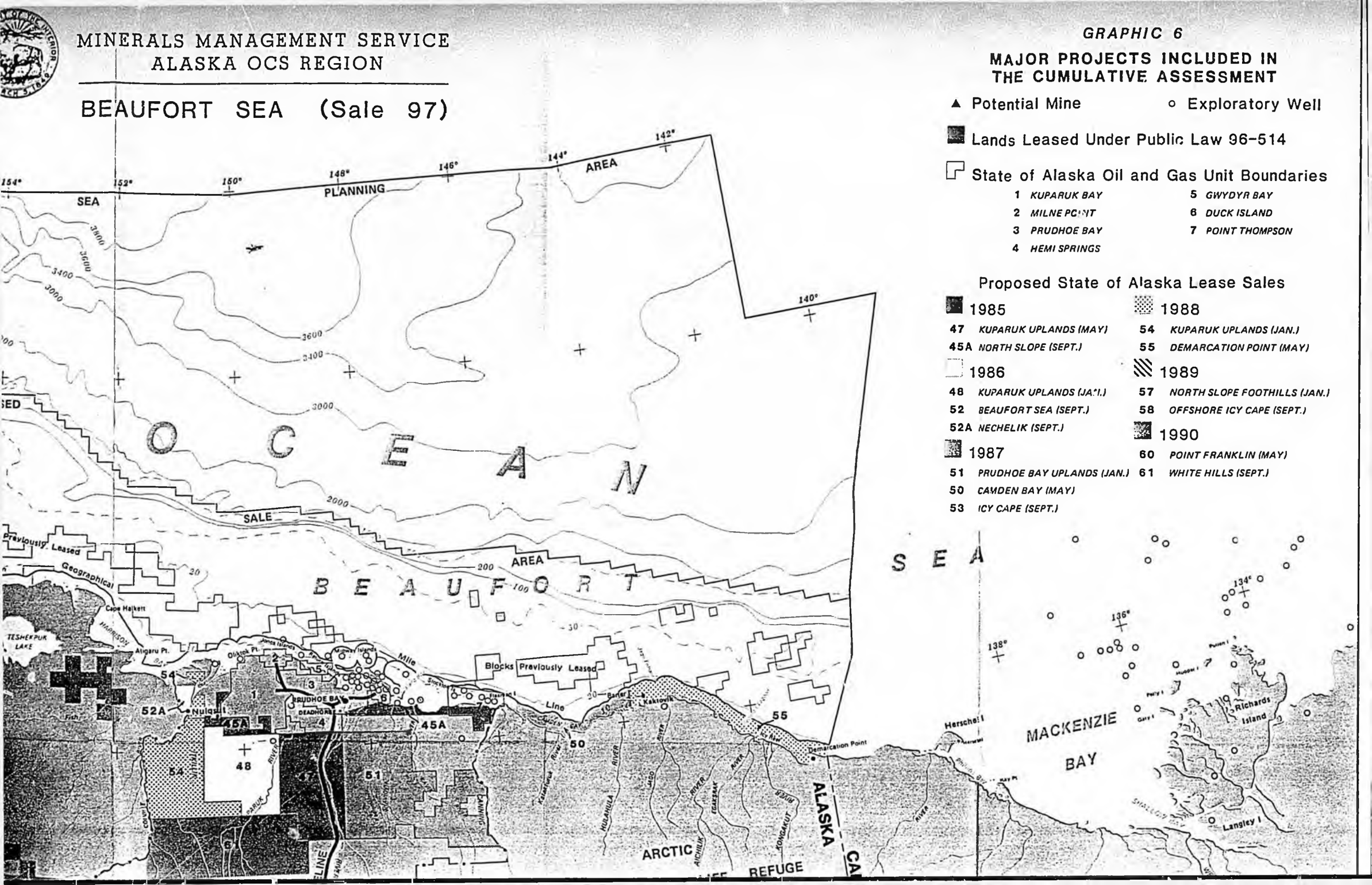
MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

BEAUFORT SEA (Sale 97)



GRAPHIC 6

MAJOR PROJECTS INCLUDED IN THE CUMULATIVE ASSESSMENT

▲ Potential Mine ○ Exploratory Well

Lands Leased Under Public Law 96-514

State of Alaska Oil and Gas Unit Boundaries

1 *KUPARUK BAY*
2 *MILNE POINT*
3 *PRUDHOE BAY*
4 *HEMI SPRINGS*
5 *GWYDYR BAY*
6 *DUCK ISLAND*
7 *POINT THOMPSON*

Proposed State of Alaska Lease Sales

1985
47 *KUPARUK UPLANDS (MAY)*
45A *NORTH SLOPE (SEPT.)*

1986
48 *KUPARUK UPLANDS (JAN.)*
52 *BEAUFORT SEA (SEPT.)*
52A *NECHELIK (SEPT.)*

1987
51 *PRUDHOE BAY UPLANDS (JAN.)*
50 *CAMDEN BAY (MAY)*
53 *ICY CAPE (SEPT.)*

1988
54 *KUPARUK UPLANDS (JAN.)*
55 *DEMARCATION POINT (MAY)*

1989
57 *NORTH SLOPE FOOTHILLS (JAN.)*
58 *OFFSHORE ICY CAPE (SEPT.)*

1990
60 *POINT FRANKLIN (MAY)*
61 *WHITE HILLS (SEPT.)*

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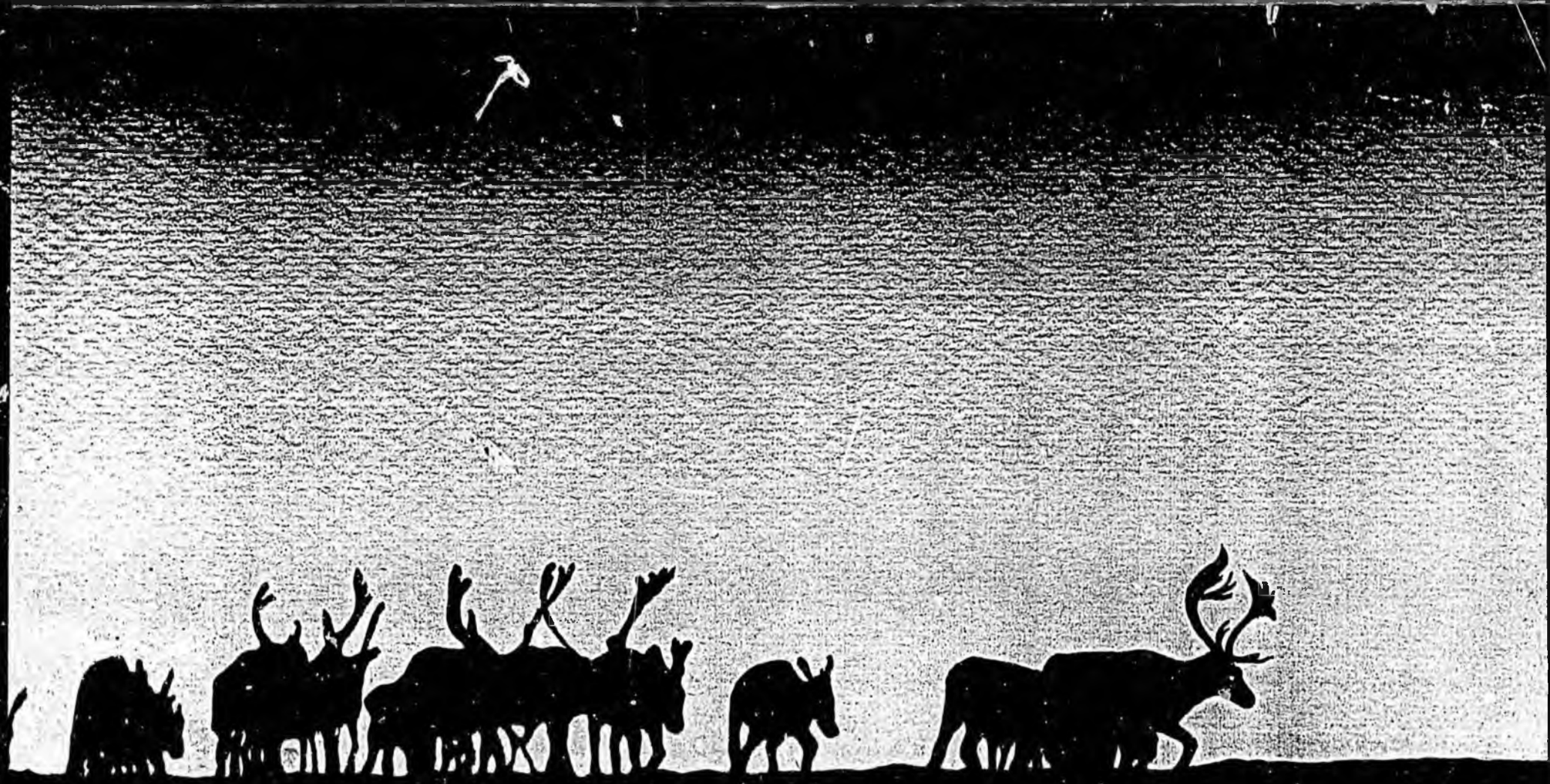

THE ARCTIC NATIONAL WILDLIFE REFUGE

Its People, Wildlife Resources, and Oil and Gas Potential

THE FOLLOWING PAGES WERE TREATED AS
A UNIT IN THE ORIGINAL FILE.

Enclosure

Notes for Commissioner Wunnicke
Anchorage Public Policy Forum
August 5, 1986

The State of Alaska's position regarding Oil and Gas Exploration and Development in the Arctic National Wildlife Refuge

As most of you have likely heard, Governor Sheffield recently announced that the State of Alaska supports oil and gas leasing in ANWR.

In the next ten minutes, I would like to briefly outline the state's position on this important issue, and review the major findings of the state which led us to the conclusion that the coastal plain should be made available to oil and gas exploration and development.

In February, Governor Sheffield directed state agencies to provide him with detailed information regarding the state's interests that will be affected by Congress's decision on whether or not to open up the coastal plain of ANWR for oil and gas development.

Based on this information, it became evident that it is in the state's best interest to support leasing in ANWR. Geological studies have indicated that the likelihood of discovering reserves of oil and gas is high, and if oil is discovered and produced, the economic benefits to Alaska could range in the billions of dollars.

The Governor also recognized that the habitat, wildlife, and subsistence values of the coastal plain are extremely high.

Based upon experience, however, he knew he could be reasonably confident that measures could be taken to minimize adverse impacts to these fish and wildlife populations and subsistence resources, and that the State of Alaska has the legal authority to ensure that adequate measures are taken to protect these important resources.

For your information, I think it would be worthwhile to briefly summarize the major geologic, economic, and environmental factors that were considered prior to reaching our decision.

RESOURCE POTENTIAL

The ANWR coastal plain has a very high potential for substantial oil and gas deposits, and has been cited by analysts and industry officials as having the highest oil and gas potential of any

unleased area on the North American continent. A USGS report that was completed in 1980 estimated that there may be .8 to 17.6 billion barrels of undiscovered oil in place. Estimates of undiscovered gas in place ranged from 1.4 to 28.1 trillion cubic feet. My department has completed a more recent analysis that supports earlier conclusions that the resource potential of the region is very high.

PROSPECTIVE ECONOMIC BENEFITS

As many of you know, the State of Alaska is entitled to 90 percent of all federal revenues from oil and gas leasing in ANWR, and it would be able to collect severance taxes from produced oil.

It is impossible to predict how many barrels of oil might be discovered and produced in ANWR if it is opened for oil and gas leasing, or what the price of oil will be in the 1990's. However, given available resource estimates it is not unreasonable to expect that a field, or several fields, the size of the Kuparuk River Field might be discovered. (approximately 1.5 billion barrels recoverable). If such a field is found and developed, the state's portion of federal revenues and state severance taxes would range from $1.5 to $3.3 billion, with the price of oil at $20 and $25 per barrel, respectively.

Although not likely, it also is possible that a field comparable to Prudhoe Bay in reserves may be found and produced (approximately 10 billion barrels recoverable), in which case $22 billion dollars in direct state revenues would be generated assuming the oil sells for $25 a barrel.

Thus, the state's share of federal revenues and income from severance taxes could range into the billions of dollars.

One caveat, however.

At oil prices less than $20 barrel, it may be economically feasible to develop only the very largest reserves.

While some members of Congress have suggested that there be a reduction in Alaska's 90 per cent share of federal revenues, we believe there are strong and compelling legal and policy arguments the state can make against such a reduction.

States other than Alaska receive only 50 percent of public domain land mineral revenues. However, an additional 40 percent of those revenues are paid into the Reclamation Fund established under the Reclamation Act of 1902. Those funds, in turn, are

used to fund reclamation projects in those states. However, Alaska is not covered by the Reclamation Act and receives no benefits under it. At the time of statehood, Congress considered it only fair that the additional 40 percent share of public domain land revenues be paid to Alaska in return for Alaska not being covered by the Reclamation Act of 1902.

Obviously, oil and gas activity in ANWR also would likely create employment opportunities for Alaskans in the oil and support service industry. The precise number of jobs that would be created is dependent on a large number of factors that cannot be predicted at this time. However, if we assume a field comparable to the Kuparuk River Field is found and produced, an average of 1,000 to 2,000 jobs in oil and gas and support service companies would be created over the twenty-five year life of the field. Also, it is likely that additional jobs would be created through the secondary and tertiary effects of the oil industry employment and expenditures.

In addition, the commercial viability and amount of state revenues generated from state-owned acreage north and west of ANWR will likely be significantly enhanced if ANWR is made available for oil and gas leasing. Due to the distance of ANWR and adjacent state-owned acreage from the Trans-Alaska Pipeline and the resulting high costs of transporting the oil, a very large discovery or several moderate-size discoveries would have to be made in the region to justify construction of a pipeline. Since the state owns only a small share of prospective acreage in the eastern Beaufort Sea and ANWR region, it is important to the state that ANWR be developed along with the infrastructure to transport oil from the region.

North Slope oil production is projected to begin declining in 1987, which will result in excess capacity in the TAPS line and additional reductions in state revenues. Assuming that ANWR is opened to oil and gas leasing, it will likely take at least ten years between a lease sale and when production could commence. During this period, the Department of Revenue projects that the price of oil will rise to $20/barrel. Thus, early leasing and exploration could supplement lower state revenues in the late-1990's.

ENVIRONMENTAL VALUES, POTENTIAL IMPACTS, AND MITIGATION MEASURES

On the other side of the equation, the state's analysis indicated that the coastal plain of the ANWR hosts a diversity and abundance of fish and wildlife unequalled elsewhere in arctic North America. Those resources and habitats include the Porcupine and Central Arctic caribou herds, muskox, major stream

systems, and coastal tundra habitats utilized by geese, swans, and other waterfowl.

The Porcupine caribou herd, numbering 170,000 animals, is the second largest herd in the United States and is an important subsistence resource for Alaskans and Canadians. In addition, the Central Arctic caribou herd range includes the coastal plain and foothills between the Canning and Colville River drainages.

The second largest herd of muskox in the United States resides in ANWR.

Tundra swans and snow geese represent two of the more important waterfowl species utilizing ANWR. The nesting density for tundra swans is equal to or higher in ANWR than for other areas on the North Slope. Up to half of the entire snow goose population of the United States and Canada may use ANWR in any given year.

Twelve species of fish are present in ten major streams within ANWR. Important habitat areas include the estuarine environment and natural spring areas located in the upper portion of some of the major river systems.

It was recognized that oil and gas development and transportation corridors can adversely affect fish and wildlife to varying degrees. These impacts are highly dependent the size and location of facilities required for development, the timing and severity of disturbance, and effectiveness of mitigating measures.

Possible mitigation measures to reduce impacts to animal populations could include area deferrals, seasonal use or activity restrictions, provisions for fish passage, and wildlife access requirements.

In addition, air and water quality in ANWR may be an issue of concern if new production facilities are developed, but these consequences could be mitigated in large part by consolidating facilities and by measures to contain and dispose of liquid and solid wastes.

Another impact considered was that of subsistence. Such activity in the Village of Kaktovik, and the current wilderness character, could be affected by oil and gas development.

THE STATE'S ROLE IN DECISIONS AFFECTING ANWR

After reviewing these impacts -- and the measures that can be taken to minimize them -- we explored whether the state has the legal authority to ensure that appropriate measures are

taken to protect the air, land, water, habitat and subsistence resources of ANWR.

Our conclusion was yes.

The commissioners of the Departments of Fish and Game, Natural Resources, and Environmental Conservation have responsibilities and the authority to protect or regulate activity in the refuge.

Also the Alaska Coastal Management Act requires that all activities within or directly affecting the coastal zone of ANWR be reviewed and approved by the state against the standards of the Alaska Coastal Management Program.

Lastly, the Fish and Wildlife Coordination Act specifies that the Secretary of the Interior shall ensure that the rules and regulations developed for the conservation, maintenance, and management of wildlife resources and their habitat are not inconsistent with the laws for the protection of fish and game of the state.

LAND EXCHANGE

On a related issue, as many of you know, the U.S. Fish and Wildlife Service has discussed with several Native corporations the possibility of a land exchange of ANWR lands. The State also has expressed interest in exchanging some of its lands for ANWR acreage. The USFWS has indicated that it is willing to discuss land exchange proposals that would help to consolidate refuge lands in ANWR or in other refuges, but that no proposed land exchange will occur unless authorized by Congress. Furthermore, a decision has been made that no ANWR land exchange proposal will be sent to Congress for approval prior to the submission to Congress of the Section 1002(h) report.

In the event of a land exchange between the US Fish and Wildlife Service and a Native Corporation, the state will strive to ensure that the benefits that could be received by the state if exploration in ANWR is authorized by congress are not jeopardized by the agreement.

The U.S. Department of the Interior has assured us we will be kept apprised of any proposed land exchange under consideration, and will be consulted before any final decision is made.

CONCLUSION

Once the 1002 report is issued, if its conclustions are as we expect, the state will be evaluating and advocating exploration and development approaches which will protect the other resource

values of the coastal plain while allowing exploration and development to proceed.

Governor Sheffield has concluded that oil and gas exploration and development in ANWR would be beneficial to the State of Alaska, and if carried out in an environomentally sensitive manner, can occur in the refuge without adversely affecting the wildlife populations for which the refuge was created and without adversely affecting the people of the area.

August 4, 1986
Memo: Grogan to Governor

State of Alaska Position on
Management of the Arctic National Wildlife Refuge

Background Information

During its consideration of the Alaska National Interest Lands Conservation Act (ANILCA), the U.S. Congress recognized that there is a high potential for discovering oil and gas deposits on the coastal plain of the Arctic National Wildlife Refuge (ANWR). Under provisions of the Alaska Statehood Act and other federal laws, any revenue generated from oil and gas development in ANWR must be shared by the federal government with the State of Alaska. Therefore, a decision by the Congress whether or not to open the refuge to oil and gas exploration could have important consequences both for the state's economic future and for the nation's energy needs.

Given the high oil and gas resource potential contained within the coastal plain of ANWR, the Congress, pursuant to Section 1001 of ANILCA, directed the Secretary of the Interior to: (1) assess ANWR for potential oil and gas resources and make recommendations concerning future use and management of those resources including an evaluation of alternative transportation routes needed for oil and gas development; (2) review the wilderness characteristics and make recommendations for wilderness designation of these lands; and (3) study and make recommendations for protection of the wildlife resources of ANWR.

Section 1002 of ANILCA requires that the Secretary, in consultation with the Governor, conduct a continuing inventory and study of the fish and wildlife of the coastal plain of ANWR and submit a final report, known as the 1002(h) report, to Congress. The 1002(h) report is required to be submitted to Congress on September 2, 1986, and will contain information on: (1) the geological potential of the area; (2) a description of fish and wildlife resources and their habitats; (3) an assessment of the potential effects of oil and gas development on fish and wildlife resources and their habitats; (4) a discussion of potential transportation and processing facilities; and (5) recommendations as to whether oil and gas leasing should occur in ANWR.

Although the Secretary has been preparing the 1002(h) report over the past several years, the document has not yet been made available for state and public review. The state has, however, provided to the Secretary its analysis of the probable oil and gas resources on ANWR, prepared pursuant to a 1985 Memorandum of Understanding (MOU). That MOU recognized that the U.S. and Alaska have important and distinct interests that will be affected by congressional decisions and that both interests will be best served by development of a comprehensive data base.

In order to be as informed and knowledgeable as possible in

anticipation of the 1002(h) report being submitted to Congress and in order to be prepared for the congressional debate that may begin as early as this fall, Governor Bill Sheffield directed state agencies to provide him with detailed information on several aspects of the state's interests which will be affected by Congress's decision on whether or not to open up the coastal plain of ANWR for oil and gas development. This information was developed taking into consideration that significant additional information will become available upon the release of the Secretary's 1002(h) report.

The state also supports and is prepared to develop an MOU with the U.S. Fish and Wildlife Service that would formalize our efforts under Section 1002 to evaluate and recommend specific mitigating measures to ensure protection to fish and wildlife resources and their habitat in the event of oil and gas development.

Policy Statements

- Based upon the information developed to date, most of which is confidential, the state believes that the coastal plain of ANWR holds great promise for oil and gas exploration which can provide significant benefits both to the state and to the nation. The state is entitled to 90 percent of the governmental share of royalties, bonuses, and rentals derived from any oil and gas produced in ANWR. If Congress opens the area to oil and gas development, it is essential that this benefit to the people of Alaska be maintained.

- The state does not support Representative Udall's bill (H.R. 4922) to designate the coastal plain of ANWR as wilderness. No wilderness proposals should be considered prior to the 1002(h) report to Congress. The state must ensure that important options are not foreclosed by hasty land classifications.

- The coastal plain of ANWR hosts a diversity and abundance of fish and wildlife unequalled elsewhere in arctic North America. These resources are extremely important to Alaskans, and management of ANWR must ensure that fish, wildlife, and their habitats are protected. Resources of primary concern in ANWR include the Porcupine and Central Arctic caribou herds, musk oxen, major stream systems and nearshore estuarine habitats critical to spawning and overwintering fish, and coastal tundra habitats utilized by geese, swans, and other waterfowl. The Porcupine caribou herd, numbering 170,000 animals, is the widest ranging herd in Alaska and is an important subsistence and recreational resource for Alaskans and Canadians.

° At the urging of the state, the U.S. Department of the Interior has assured us that the state will be kept apprised of any proposed land exchange under consideration and will be consulted before any final decision is made. The state will work to ensure that the benefits which could be received by the state if exploration in ANWR is authorized by Congress are not jeopardized by any land exchange agreements.

° Based on the information now available, the state does support the concept of leasing in ANWR. Once the 1002(h) report has been completed and made available for review, the state will conduct an extensive analysis of any proposals to allow leasing in ANWR. The purpose of the state's analysis will be to identify areas where petroleum leasing would have the least impact on fish, wildlife, and their habitats and to evaluate and advocate exploration approaches which, in appropriate areas and under proper environmental conditions, will protect the other resource values in or adjacent to the coastal plain while allowing exploration to proceed. The state recognizes that the potential development of ANWR is a major public policy issue and encourages maximum public participation, especially from Alaskans, during the congressional debate.

tg86070801rse

The Honorable Bill Sheffield
Governor
State of Alaska

August 4, 1986

tg86070801rse

465-3562

Robert L. Grogan, Director
Division of Governmental
Coordination
Office of the Governor

ANWR Information
Summary

As you have requested, the Division of Governmental Coordination has coordinated preparation of an analysis of factors relevant to a state position on oil and gas leasing in the Arctic National Wildlife Refuge (ANWR). This analysis has been reviewed and approved by the Departments of Environmental Conservation, Natural Resources, and Fish and Game.

Issues addressed include: 1) the resource potential of ANWR; 2) the potential direct and indirect economic benefits to Alaska of oil and gas leasing in ANWR; 3) the fish and wildlife habitat and subsistence values of the refuge; 4) mitigation measures available to protect resource and habitat values if oil and gas leasing is permitted; 5) mechanisms ensuring state participation in decisions regarding oil and gas activity in the refuge; 6) proposed land exchanges between the federal government, Native corporations, and the State of Alaska; and 7) the proposed Porcupine Caribou Treaty.

RESOURCE POTENTIAL

- The ANWR coastal plain has a very high potential for substantial oil and gas deposits, and has been cited by analysts and industry officials as having the highest oil and gas potential of any unleased area on the North American continent. A U.S. Geological Survey report that was completed in 1980 estimated that there are .8 to 17.6 billion barrels of undiscovered oil in place at the 95 percent and 5 percent probability levels, respectively. Estimates of undiscovered gas in place ranged from 1.4 to 28.1 trillion cubic feet. The Alaska Department of Natural Resources has completed a more recent analysis that supports earlier conclusions that the resource potential of the region is very high.

PROSPECTIVE ECONOMIC BENEFITS

° The potential economic benefits to Alaska and to the state treasury of a congressional decision to allow oil and gas leasing in ANWR could be substantial. The State of Alaska is entitled to 90 percent of all federal revenues from oil and gas leasing in ANWR and it would be able to collect severance taxes from the produced oil. In addition, oil and gas activity in the refuge would likely enhance the value of adjacent state-owned lands with oil and gas potential. These benefits could be increased if the restriction on the export of Alaska crude oil was removed. Removing the export ban could result in lower transportation costs, an increase in the well head value of the oil, and make marginal fields more economical to develop.

° The state's share of federal revenues and income from severance taxes could range into the billions of dollars. It is impossible to predict how many barrels of oil might be discovered and produced in ANWR if it is opened for oil and gas leasing, or what the price of oil will be in the 1990's. However, given available resource estimates it is not unreasonable to expect that a field, or several fields, the size of the Kuparuk River Field might be discovered (approximately 1.5 billion barrels recoverable). If such a field is found and developed, the state's portion of federal revenues and state severance taxes would range from $1.5 to $3.3 billion, with the price of oil at $20 and $25 per barrel, respectively. Although not likely, it also is possible that a field comparable to Prudhoe Bay in reserves may be found and produced (approximately 10 billion barrels recoverable), in which case $22 billion dollars in direct state revenues would be generated assuming the oil sells for $25 a barrel. At oil prices less than $20 barrel, however, it would be economically feasible to develop only the very largest reserves.

While some members of Congress have suggested a reduction in Alaska's share of federal revenues, there are strong and compelling legal and policy arguments the state can make against a reduction of the state's share. States other than Alaska receive only 50 percent of public domain land mineral revenues. However, an additional 40 percent of those revenues are paid into the Reclamation Fund established under the Reclamation Act of 1902. Those funds, in turn, are used to fund reclamation projects in those states. Alaska is not covered by the Reclamation Act and receives no benefits under it. Congress considered it only fair that the additional 40 percent share of public domain land revenues be paid to Alaska in return for Alaska not being covered by the Reclamation Act of 1902.

° The revenues accruing to the state from ANWR would likely increase employment opportunities and disposable incomes for Alaskans. The revenues generated by the State would likely be

used in large part to increase the principal of the Permanent Fund, pay salaries of state and local government employees, and fund capital improvement projects.

° In addition, oil and gas activity in ANWR would likely create employment opportunities for Alaskans in the oil and support service industry. The precise number of jobs that would be created is dependent on a large number of factors that cannot be predicted at this time. However, if we assume a field comparable to the Kuparuk River Field is found and produced, an average of 1,000 to 2,000 jobs in oil and gas and support service companies would be created over the 25-year life of the field. Also, it is likely that additional jobs would be created through the secondary and tertiary effects of the oil industry employment and expenditures.

° The commercial viability and amount of state revenues generated from state-owned acreage north and west of ANWR will likely be significantly enhanced if ANWR is made available for oil and gas leasing. Due to the distance of ANWR and adjacent state-owned acreage from the Trans-Alaska Pipeline and the resulting high costs of transporting the oil, a very large discovery or several moderate-size discoveries would have to be made in the region to justify construction of a pipeline. Since the state owns only a small share of prospective acreage in the eastern Beaufort Sea and ANWR region, it is important to the state that ANWR be developed along with the infrastructure to transport oil from the region.

Furthermore, the cost per barrel of transporting the oil to the Trans-Alaska Pipeline would be reduced if greater amounts of recoverable reserves were found and produced. This would result in lower pipeline tariffs, which would in turn increase the wellhead prices and state revenues. In addition, leasing and development of ANWR acreage will enhance the commercial value of known discoveries on adjacent state acreage such as the Point Thomson field near Flaxman Island.

° If a discovery is made on state-owned land north of ANWR, it will likely be necessary to have an onshore pipeline sited through ANWR. If Congress decides that pipelines cannot be sited in ANWR and a discovery is made on state-owned lands north of ANWR, it will be necessary to construct a buried offshore pipeline. Unless the discovery is sizable, it is likely that the added costs of constructing an offshore pipeline could preclude a pipeline from being built, and thus preclude development and production of the field.

° If large amounts of natural gas are discovered in ANWR, development of ANWR could increase the feasibility of a gas pipeline. The Japanese and Koreans are beginning to give favorable consideration to the possibility of using North Slope natural gas in the mid-1990's and beyond. During recent meetings, the Japanese and the Koreans indicated a possible need for an additional 7 million tons and 5.6 million tons of liquified natural gas, respectively, by the mid-1990's.

In January 1986, the Yukon-Pacific Corporation requested the Bureau of Land Management to resume processing of a May 1984 application to construct a large diameter gas pipeline from Prudhoe Bay to a liquified natural gas facility in Cook Inlet or Valdez. Congress previously authorized a similar request from the Northwest Alaska Pipeline Company, which has received a grant of right-of-way from BLM to construct a gas pipeline from Prudhoe Bay, through Alaska and Canada to the lower U.S.

° North Slope oil production is projected to begin declining in 1987, which will result in excess capacity in the TAPS line and additional reductions in state revenues. Assuming that ANWR is opened to oil and gas leasing, it will likely take at least ten years between a lease sale and when production could commence. During this period, the Department of Revenue projects that the price of oil will rise to $20/barrel. Thus, early leasing and exploration could supplement lower state revenues in the late-1990's. Also, generally speaking, it is preferable for the state to receive revenues sooner rather than later.

ENVIRONMENTAL VALUES, POTENTIAL IMPACTS, AND MITIGATION MEASURES

° The coastal plain of the ANWR hosts a diversity and abundance of fish, wildlife, and habitat unequalled elsewhere in arctic North America. Those resources and habitats of primary concern in the refuge include the Porcupine and Central Arctic caribou herds, muskox, major stream systems and nearshore estuarine habitats critical to spawning and overwintering fish, and coastal tundra habitats utilized by geese, swans, and other waterfowl.

The Porcupine caribou herd, numbering 170,000 animals, is the second largest herd in the U.S. and is an important subsistence resource for Alaskans and Canadians. The herd spends a portion of the summer in ANWR for calving and insect relief, often with the entire calving portion of the herd in the refuge. The Central Arctic caribou herd range includes the coastal plain and foothills between the Canning and Colville river drainages. In addition to insect relief habitat, one of two major calving areas for this herd is located just west of the Canning River.

The second largest herd of muskox in the U.S. resides in ANWR. Muskox use riparian habitats for most of the year. Winter and summer range, including calving habitat, are restricted to the major river systems (e.g., Sadlerochit, Okerokovik, and Tamayariak).

Tundra swans and snow geese represent two of the more important waterfowl species utilizing ANWR. The nesting density for tundra swans is equal to or higher in ANWR than for other areas on the North Slope. Snow geese utilize ANWR extensively during the fall to feed and gather food reserves for the flight south. Up to half of the entire snow goose population of the U.S. and Canada may use ANWR in any given year. They concentrate in all areas of the coastal plain of ANWR east of the Hulahula River and are extremely sensitive to disturbance. Nonsubsistence uses also occur and include both nonconsumptive (e.g., wildlife viewing by hikers and backpackers) and consumptive uses (e.g., moose and caribou hunting).

Twelve species of fish are present in ten major streams within ANWR. Important habitat areas include the estuarine environment (i.e., nearshore brackish water habitats) and natural spring areas located in the upper portion of some of the major river systems (e.g., Canning, Sadlerochit, Hulahula, Aichilik) which provide overwintering and spawning habitat.

° Oil and gas development and transportation corridors can adversely impact fish and wildlife to varying degrees as a result of human activity and the physical presence of structures associated with the development. Impacts can include disruption of feeding, reproduction, staging, movement, and other behavior essential to population survival. Impacts are highly dependent upon reservoir size, areal extent, facilities required for development, location of facilities, and the need for waterflooding, pumping facilities, gravel removal, etc. An additional causeway and dock facility may be required in order to bring modules and equipment onshore. If waterflooding is an integral part of development, then water withdrawals, a seawater treatment plant, and attendant discharges can be expected. Impacts of these aspects of development and production would be similar to those expected at Oliktok Point for Kuparuk and Westdock for Prudhoe Bay, if similar hydrologic and morphologic conditions prevail. Access roads and construction pads interrupt surface drainage patterns of the wetland tundra and may result in secondary loss of habitat other than that directly lost by placement of fill material. Fish habitat can be negatively affected if adequate drainage and fish passage, as well as clean water and stream substrates, are not available.

Monitoring studies from previous North Slope oil and gas development projects have shown that improperly engineered or constructed roads, pipeline corridors, and other linear facilities may affect wetlands by altering the natural waterflow regime. Such changes have been correlated with altered use of wetland habitat by birds in the Prudhoe Bay area.

° The extent of impact would depend on the timing and severity of disturbance, location of habitat loss, and effectiveness of required mitigating measures. Possible mitigation measures could include area deferrals, seasonal use or activity restrictions, provisions for fish passage and wildlife access requirements, protection of riparian zones, etc. A coordinated state review of these recommendations will take place once the 1002 report is released. Generally, impacts associated with exploration are more likely to be successfully mitigated than impacts associated with development activities.

° Air quality in ANWR may be an issue of concern if new production facilities are developed. Sulfur dioxide, total suspended particulate matter, carbon monoxide, and nitrogen oxides would be the principal air pollutants discharged into the air by oil and gas development. Concentrations of these four compounds would depend, in part, on the type and volume of fuel burned in the turbines, generators, and other internal combustion engines used in the refuge and on the amount of flaring that occurs in the region.

° The development and production phases constitute the phases of greatest concern from a water quality standpoint. With these phases come long-term, continuous, and generally low-level sources of waste materials over the 20- to 30-year life of a field. Waste materials produced during production include produced waters, drilling muds and cuttings, waste chemicals/additives, and potential oil and hazardous substance spills.

° Potential water quality impacts during exploration and production can be mitigated by consolidating facilities and material sites and by measures to contain and dispose of liquid and solid wastes. The question of the relative ability of a particular environment to accommodate discharged wastes is integral to any analysis of the effects of oil and gas development on water quality. The rate and volume of pollutant input is weighed against the assimilative capacity of the land or water and the specified identified uses of that particular receiving environment. If the assimilative capacity is inadequate, measures can be taken to ensure that the pollutant is contained or transported to a safe disposal site.

Based on such considerations and operating experience with other North Slope oil fields, a number of practices have proven to be successful in mitigating impacts of oil and gas operations. These include: 1) subsurface reinjection of produced water; 2) alternative disposal methods to reserve pit dewatering to the tundra; and 3) accurate assessment and management of all liquid and solid waste streams generated from new production facilities.

Solid waste and hazardous waste management in arctic environments have been key issues and have historically required extensive attention. New regulations recently proposed by the Department of Environmental Conservation provide guidance and allowable options to operators with regard to the disposal of muds and cuttings. New pit designs will require consideration of fluids management (i.e., leaching), closeout and capping, and prevention of water movement through the pit. Methods to minimize the areas impacted, such as reinjection of mud, are being seriously considered. The feasibility of reinjection of crushed cuttings is also being evaluated. Additionally, the inventory and disposal of drums of chemical wastes must be carefully monitored. Management requirements will typically include provisions for recycling and backhaul of scrap metal, vehicles, tires, drums, and batteries.

Development plans should consider consolidation of production and support facilities, optimize the layouts of roads and pipelines, and provide for a number of intensive use material sites. Site rehabilitation and restoration should also be considered in early planning and mitigation phases.

SUBSISTENCE CONSIDERATIONS

° <u>The proximity of the Village of Kaktovik to ANWR is such that oil and gas development will likely impact community subsistence activities</u>. Fish, wildlife, and marine resources of ANWR and adjacent habitats also provide a reliable economic base for the residents of Nuiqsut, Venetie, and Arctic Village. Fish and wildlife resources used for subsistence include bowhead whales, caribou, Dall sheep, waterfowl, grizzly bears, wolves, and fishes (i.e., primarily Arctic char, whitefish, burbot, and Arctic grayling). Other communities located in Canada and south of the Brooks Range in Alaska use, to some extent, caribou from the Porcupine caribou herd.

THE STATE'S ROLE IN DECISIONS AFFECTING ANWR

° Legal authority exists to ensure state participation in the development and review of mitigation measures and tract selection decisions developed to protect the air, land, water, habitat, and subsistence resources of ANWR. The commissioner of the Department of Fish and Game has the authority to specify and ensure protection of the various rivers, lakes, and streams or parts of them that are important for the spawning, rearing, or migration of anadromous fish as well as the responsibility to ensure that fish passage is maintained (Title 16). The Department of Environmental Conservation has broad regulatory authority in the areas of water quality control, water supply, air quality control, solid waste management, tanker and oil terminal facilities, oil spill prevention, hazardous substance control, and land and subsurface pollution prevention (Title 46). The Department of Natural Resources has management authority over any water appropriations for navigable or nonnavigable water in ANWR (AS 46.03).

The Alaska Coastal Management Act requires that all activities within or directly affecting the coastal zone of ANWR be reviewed and approved by the state against the standards of the Alaska Coastal Management Program (AS 46.40).

The Fish and Wildlife Coordination Act specifies that the Secretary of the Interior shall ensure that the rules and regulations developed for the conservation, maintenance, and management of wildlife resources and their habitat are not inconsistent with the laws for the protection of fish and game of the state in which such area (i.e., ANWR) is situated.

° To ensure that the state's concerns are incorporated into the decision-making process, a cooperative agreement would be valuable to specify the timing, process, and procedures by which the Secretary would work with the state to develop guidelines and protective measures for oil and gas activities. The state has maintained a good relationship with the U.S. Fish and Wildlife Service (USFWS), particularly with regard to other activities on refuges and other federal lands in the state. Although formal cooperative agreements have not been developed between the state and the USFWS for other areas, Department of Fish and Game and the Division of Governmental Coordination do have existing memoranda of agreements with the USFWS. When contacted, USFWS officials did not believe there would be any problem or reluctance on their part to enter into a cooperative agreement with the state if desired. The Divison of Governmental Coordination intends to pursue this approach with USFWS.

PROPOSED LAND EXCHANGES

° The USFWS has been discussing with several Native corporations the possibility of a land exchange of ANWR lands. The state also has expressed interest in exchanging some of its lands for ANWR acreage. The USFWS has identified lands owned or selected by Native corporations and the state within various national wildlife refuges in Alaska. The Native corporation inholdings have been ranked according to fish and wildlife values, amount of public use, potential threats to habitat, and the degree to which acquisition would facilitate refuge management. State lands have not been ranked as yet. The USFWS has indicated that it would be willing to discuss any land exchange proposal that would help to consolidate refuge lands in ANWR or other refuges. The USFWS has also stated that no proposed land exchange will occur unless authorized by Congress. Furthermore, a decision has been made that no proposal for any land exchange involving ANWR will be sent to Congress for approval prior to the submission to Congress of the report required by Section 1002(h) of Alaska National Interest Lands Conservation Act.

° Unless specifically provided for in a land trade agreement between the U.S. and third parties, the 90 percent revenue share of production would be lost. In the event of a land exchange, the state will ensure that the benefits, which could be received by the state if exploration in ANWR is authorized by Congress, are not jeopardized by any land exchange agreement.

PORCUPINE CARIBOU TREATY

° Formal negotiations with Canada are scheduled to begin later this summer regarding a treaty to protect the Porcupine caribou herd and its habitat. The U.S. participants view the agreement and the decision on whether to allow oil and gas exploration in ANWR as separate issues. Once the U.S. federal government formulates its position, formal negotiations will begin with Canada. It is not anticipated that the provisions being discussed would have a significant impact on the decision whether to allow oil and gas exploration in ANWR. In addition, the USFWS has the lead for both the ANWR exploration decision and the development of the U.S. negotiating position. Consequently, the two documents are likely to be compatible. The state position, which does not address oil and gas exploration in ANWR, was recently transmitted to the USFWS.

tg86070801rse

Jonathan Sperber
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November 11, 1986

Ms. Sharman Piper
c/o Rep. Sam Cotten
Town Square Professional Building
PO Box 296
Eagle River, AK 99577

Dear Sharman,

Enclosed is a more recent draft of materials that I have written regarding ANWR. I hope you find the information useful, but I would ask that the material not be distributed at this time.

Sincerely,

Jonathan Sperber

DRAFT

Confidential - LBA
J. Sperber 11/11/86

Chapter IV
ARCTIC NATIONAL WILDLIFE REFUGE

The Arctic National Wildlife Refuge (ANWR) was established in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA). Congress designated 8 million acres of the 19 million acre refuge as wilderness, but deferred for five years a decision as to whether the 1.5 million acre coastal plain should be opened to commercial oil and gas development or protected as wilderness.

A congressional vote on the land designation of the coastal plain will take place after Congress studies a report on the subject being drafted by the U.S. Department of the Interior. This report, required under Section 1002(h) of ANILCA, is not expected to be made available until early in 1987. In addition to recommending whether or not oil and gas leasing should occur in ANWR, the Sec. 1002(h) report will also contain information regarding the geological potential of the area, fish and wildlife resources and their habitats, an assessment of the potential effects of oil and gas development on these resources and habitats, and a discussion of potential transportation and processing facilities.

Controversy over proposed development along the coastal plain derives from the extremely diverse and abundant fish, wildlife, and habitat in the area. The wildlife refuge serves as a summer calving ground for the 170,000 caribou in the Porcupine caribou herd, as a major nesting site for tundra swans, snow geese, and other waterfowl, and as overwintering and spawning habitat for twelve fish species.

The State of Alaska formally supports oil and gas development in the refuge, while emphasizing the need for protecting environmental values. The state has therefore spoken in opposition to H.R. 4922, which was introduced in 1986 by Rep.

Udall, since the bill would designate the ANWR coastal plain as wilderness.[1] Independently of the state's actions, the Arctic Slope Regional Corporation has submitted a report to Congress requesting that the coastal plain be opened to oil and gas development.[2]

Policy aside, H.R. 4922 was introduced prematurely in that the Sec. 1002(h) report, which is intended to serve as the information base for congressional decision-making, has yet to be released. Other activities taking place in advance of the report are negotiations between the U.S. Fish and Wildlife Service and other parties to trade land within wildlife refuges elsewhere in Alaska for land on the ANWR coastal plain. Ten U.S. senators, in a letter written by the Senate Committee on Energy and Natural Resources, objected to such negotiations taking place at this time, stating that these actions may jeopardize the objectivity of the Sec. 1002(h) report when it is presented to Congress.[3]

A related problem has been the state administration's policy during the past three years to dismantle the resource inventorying function of the Division of Geological and Geophysical Surveys (DGGS). Although DGGS has conducted extensive analyses in ANWR under a memorandum of understanding with the U.S. Department of the Interior, the state's ability to further increase its geological and geophysical knowledge of the refuge will decrease severely as a result of budget reductions. The state may therefore find itself handicapped in its attempt to make informed decisions as to which lands should be retained in state ownership, sought for eventual state ownership, or offered in trade to the federal government or private interests.

Recoverable Reserves Potential

The Department of Natural Resources, the U.S. Geological Survey (USGS), and the petroleum industry concur that the

Arctic National Wildlife Refuge coastal plain may have the highest oil and gas potential of any unleased area in North America. The USGS estimated in 1980 that the coastal plain contains between 0.8 and 17.6 billion barrels of undiscovered oil in place, based on the respective probability levels of 95% and 5%. The USGS has also estimated that reserves of undiscovered gas in the area range from 1.4 to 28.1 trillion cubic feet at the same probability levels.[4] The Alaska Oil and Gas Association has estimated an average mean potential for the coastal plain of 6.9 billion barrels of oil.[5]

The probability of developing oil and gas in this area is enhanced by the proximity of the coastal plain to the infrastructure established for Prudhoe Bay and other North Slope fields, including roads, construction facilities, and the Trans-Alaska Pipeline. Development of the coastal plain would, in turn, improve the likelihood that reserves on adjacent state-owned lands, such as the known discoveries in the Point Thomson field near Flaxman Island, will eventually be developed.

From an economic standpoint, the recoverable reserves of the coastal plain would be increased by a projected price for oil of $20 per barrel by the late 1990s, which is the earliest time that oil would be produced from the area. The volume of economically recoverable reserves would also be increased if Congress were to allow the foreign export of Alaska North Slope oil. Lower transportation costs to foreign markets would increase the wellhead value of the oil, thereby increasing profit margins and improving the possibility that further development and production will take place.

Federal-State Revenue Sharing

The State of Alaska is entitled by federal law[6] to a 90% share of all royalties, bonuses, and rentals derived from oil and gas produced on federal land in the Arctic National

Wildlife Refuge. The state also has the authority to receive severance taxes from oil produced on this land. Estimates are that if an oilfield the size of Kuparuk (about 1.5 billion barrels recoverable) were to be developed in ANWR, revenues earned by the state through severance taxes and the state's share of federal revenues would range from $1.5 to $3.3 billion based on oil prices of $20 and $25 per barrel, respectively.[7]

The provisions of AS 37.13.010(a)(2) require that 50% of all bonuses and federal mineral revenue sharing payments received by the state from mineral leases in the refuge be placed in the Alaska permanent fund. In the event that oil and gas are produced on refuge lands that have been transferred by the federal government to private interests, however, direct financial benefits to the state will be limited to tax revenues and no money will accrue directly to the Alaska permanent fund.

Another consequence of transferring these lands to the private sector would be the inapplicability of a statutory local hire provision for work conducted on oil and gas lease lands. The Alaska chapter of the AFL-CIO passed a resolution in 1986 seeking the passage of a local hire requirement for state-owned oil and gas lease lands,[8] and the legislature failed by one vote to approve an amendment to S.B. 367 (ch. 33, SLA 66) that would have provided such a requirement.

The Mineral Leasing Act of 1920 provides that the State of Alaska shall receive a 90% share of all sales, bonuses, and royalties from public domain lands within the state's boundaries, and that other states shall receive a 50% share of the revenues from public domain lands within their respective boundaries.[9] The decision by Congress to provide Alaska with a higher revenue share is balanced by another provision of the act which stipulates that, for states other than Alaska, an additional 40% of the federal revenues shall be placed into a reclamation fund.[10] The fund, which was established under the

Reclamation Act of 1902, is to be used for irrigation projects for the reclamation of arid and semi-arid lands.[11] Congress also provided in Section 28 of the Alaska Statehood Act that the state shall receive 90% of the mineral revenues produced from public domain lands in Alaska.

A concern exists that certain members of Congress may wish to reduce Alaska's revenue share below the current 90% level. In 1983, for example, Congressman Breaux introduced an initiative that would have amended Sec. 28 of the Alaska Statehood Act by providing a 75% revenue share to the federal government for wetlands protection, a 25% revenue share to local government, and no revenues to the state government.[12] Unlike most federal laws, however, a statehood act represents a solemn compact between the people of a territory and the federal government. The state has therefore argued in the past that an amendment to the Alaska Statehood Act would be a violation of this compact.

Under a provision of the Reclamation Act, Alaska received a 50% share of mineral revenues from the 1982 sale of federal leases in the National Petroleum Reserve in Alaska (NPR-A). This share was established in a 1980 amendment to the Reclamation Act,[13] which had previously been amended in 1976 in order to redesignate the "Naval Petroleum Reserve Numbered 4, Alaska" as the "National Petroleum Reserve in Alaska."[14] Prior to the 1980 amendment, federal law prohibited Alaska from receiving any shared revenues from the reserve.

A related concern is that, even if the ANWR coastal plain were to be developed and the state's revenue share were to remain at 90%, the state might encounter difficulties in attempting to recover its full share of federal revenues. This situation occurred in regard to the Kenai National Moose Refuge, in which the state had to appeal to the U.S. Supreme Court in order to receive its 90% revenue share from oil and gas development in that area.[15]

CORRECTION

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HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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The potential revenue base at stake in ANWR warrants that Alaska's congressional delegation attempt to ensure that the state's revenue share from the refuge is not reduced below the current 90% level. The 1987 legislature has the opportunity to assist the congressional delegation in this regard by passing a resolution seeking to maintain the current revenue share. A reduction below this level would result in the state receiving a disproportionately small share of federal revenues form a revenue base that may prove to be extremely significant.

The legislature should also be aware that the Mineral Leasing Act, in language that is similar to but less restrictive than that contained in the Reclamation Act, provides a directive regarding the expenditure of the state's revenue share. The Mineral Leasing Act states that "[T]he legislature of the State may direct giving priority to those subdivisions of the State socially or economically impacted by development of minerals leased under this chapter, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service[;]"[16]

The Reclamation Act provides that the state's 50% share of oil and gas revenues received from NPR-A be used "for (a) planning, (b) construction, maintenance, and operation of essential public facilities, and (c) other necessary provisions of public service: Provided further, That in the allocation of such funds, the State shall give priority to use by subdivisions of the State most directly or severely impacted by development of oil and gas leased under this section."[17]

In March 1986, the Juneau Superior Court ruled that the state, in spending its revenue share from the 1982 NPR-A lease sale, had failed to follow the provisions of the Reclamation Act. In response to the ruling, the legislature passed H.B. 491 (ch. 53, SLA 1986) in order to make funds that had previously been received from the lease sale available to impacted communities. Under the provisions of H.B. 491, $24.3 million

was transferred from the Alaska permanent fund to the Department of Community and Regional Affairs (C&RA).

In addition to granting the commissioner of C&RA the authority to recommend how much money to appropriate to impacted communities, the legislature also granted the commissioner the power to appropriate thse funds. Soon after H.B. 491 was enacted, the commissioner of C&RA issued emergency regulations providing for the disbursement of these funds. The cause of the "emergency" was a decrease in available state municipal grants and state-local revenue sharing funds.

The directive provided in the Reclamation Act is mandatory, whereas the directive in the Mineral Leasing Act is discretionary. However, communities that have benefited under the language of the Reclamation Act may attempt to pressure either Congress or the state legislature in an attempt to receive the same share of local revenues from the development of ANWR as was received from the development of NPR-A.

Land Exchanges

Virtually all surface and subsurface lands within the Arctic National Wildlife Refuge are owned by the federal government. The state's landholdings along the coastal plain are limited to offshore waters in the Beaufort Sea that are within the state's three-mile territorial limit, and to lands that the state may claim under the Submerged Lands Act of 1953.[18] A major inholding within the refuge, however, is a 92,160 acre tract of land underlying the village of Kaktovik that is owned by the Arctic Slope Regional Corproation (ASRC).

ASRC gained title to the subsurface land through a 1983 land exchange with the U.S. Department of the Interior. In return, the National Park Service received approximately 100,000 acres of ASRC subsurface lands near Chandler Lake, which is within the boundaries of the Gates of the Arctic National Park. Although ASRC acquired the subsurface land in

ANWR through this exchange, the Native corporation could also have obtained the land through Section 1431(o) of ANILCA. This section permits a Native regional corporation to exchange subsurface lands in ANWR or NPR-A if such action is taken within 40 years of the enactment of ANILCA, and if the land sought is within 75 miles of lands previously selected by the village corporation. The village corporation in this case is the Kaktovik Inupiat Corporation.

The intention of the U.S. Fish and Wildlife Service (USFWS) has been to exchange land on the coastal plain with a high oil and gas potential for important habitat land within the boundaries of other wildlife refuges in Alaska. Although the Fish and Wildlife Service has insisted that no land exchanges will take place on the coastal plain unless Congress opens this area to commercial oil and gas development, the agency has been conducting preliminary negotiations with several Native corporations. One example of such negotiations is a draft land exchange that has been written and circulated by the Kodiak-based Native corporation, Koniag Inc.[19]

Several Native regional corporations have also joined forces with the oil industry in an effort to negotiate land exchanges with the federal government. The most visible of these corporations is Cook Inlet Region, Inc., which has previously received assistance from ARCO in effectuating land exchanges elsewhere in the state.[20] CIRI has also developed a consortium arrangement with its village corporations for the purpose of receiving lands on the ANWR coastal plain. At the same time, both ARCO and Exxon have been taking an active role in promoting the proposed 1991 ANCSA amendments.[21]

Related activities include the recent and on-going appraisals by the Bureau of Land Management of ANWR lands, and the appraisal by USFWS of Native corporations lands. These appraisals are expected to facilitate land exchanges between the federal government and the Native corporations, and it is

also expected that a tentative agreement will be reached between the U.S. Department of the Interior and the Native corporations prior to the coastal plain being opened to development. However, Interior has stated its intention to not exchange any lands in the refuge without congressional approval.

The state has received assurances from the Department of the Interior that the state will be kept apprised of the federal agency's activities regarding land exchange proposals with Native corporations, and Interior has also promised the state a decision-making role in this regard. Although it is in the state's best interest to monitor these activities, the governor's office has yet to receive copies of any of these land exchange proposals.

The State of Alaska has had little success in its negotiations with the Fish and Wildlife Service, and several state officials beliwever the agency is not seriously interested in dealing with the state. On the basis of state lands offered for consideration, however, USF... appears to also doubt the state's sincerity in seeking a land exchange. These problems emanate, in part, from the state's difficulty in ascertaining what alaska's eventual federal-state revenue share will be. This lack of certainty has influenced the state's position in regard to possible land exchanges, since the state's incentive to exchange lands with the federal government decreases as the degree of certainty that the state's revenue share will remain at 90% increases.

Of 12 million acres in 17 different areas considered for possible exchange by the state in February 1986,[22] the Fish and Wildlife Service expressed interest only in state inholdings within the Tetlin National Wildlife Refuge.[23] The federal agency also mentioned its interest in receiving state lands with in the Izembek Lagoon,[24] although such an exchange is unlikely due to the location of the land within a state critical habitat area established under AS 16.20.230.

Legislative approval would likely be required in any ANWR-related land exchange between the state and federal governments, since AS 38.50.020(a) requires legislative approval if lands involved in the proposed exchange are of unequal value, or if the proposed exchange includes state land having an appraised or estimated value of more than $5 million.

Endnotes

1. Office of Management and Buget, State of Alaska Position on Management of the Arctic National Wildlife Refuge, August 4, 1986, p. 2.
2. Oil and Gas Journal, "Alaskan Group Backs Drilling on Wildlife Refuge," August 4, 1986, p. 24.
3. Anchorage Daily News, "Senators Would Halt Arctic Swap," August 22, 1986.
4. Division of Governmental Coordination memorandum from Director Robert Grogan to Governor Bill Sheffield, August 4, 1986, p. 1.
5. Anchorage Daily News, "Battle Over Arctic Refuge Pits Oil Against Wildlife," August 3, 1986, p. C1.
6. Alaska Petroleum Revenues: The Influence of Federal Policy, University of Alaska, Institute of Social and Economic Research, October 1984, p. 138-151.
7. Division of Governmental Coordination memorandum from Director Robert Grogan to Governor Bill Sheffield, August 4, 1986, p. 2.
8. Resolution I, Alaska State AFL-CIO Convention, September 17-18, 1986.
9. 30 U.S.C. 191
10. 30 U.S.C. 191
11. 43 U.S.C. 391
12. Director of State/Federal Relations and Special Counsel to the Governor John Katz memorandum to Governor Bill Sheffield, Legislative Issues in the 99th Congress,

December 21, 1984, p. 7.

13. 42 U.S.C. 6508

14. 42 U.S.C. 6502

15. 451 U.S. 271

16. 30 U.S.C. 391

17. 42 U.S.C. 6508

18. 43 U.S.C. 1301

19. Anchorage Daily News, "Natives May Join to Seek Refuge Swap," September 17, 1986.

Prudhoe Bay Journal, "Around the State," July 24, 1986, p. 10.

20. Anchorage Daily News, "Natives May Join to Seek Refuge Swap," September 17, 1986.

21. AFN [Alaska Federation of Natives, Inc.] Newsletter, "1991 Amendments Move Forward," July 1986, p. 1.

22. Department of Natural Resources memorandum from Division of Land and Water Management Director Tom Hawkins to U.S. Fish and Wildlife Service Regional Director Robert Gilmore, February 5, 1986.

23. U.S. Fish and Wildlife Service memorandum from Regional Director Robert Gilmore to Division of Land and Water Management Director Tom Hawkins, March 12, 1986.

24. Testimony by Division of Land and Water Management Director Tom Hawkins to the House Special Committee on Oil and Gas, September 16, 1986.

MEMORANDUM State of Alaska

TO: Distribution

DATE: July 8, 1986

FILE NO: tg86070801rse

TELEPHONE NO: 465-3562

FROM: Robert L. Grogan, Director
Division of Governmental
Coordination
Office of Management and Budget

SUBJECT: ANWR Executive Summary

Attached for your information is the final version of the state's policy regarding management of the Arctic National Wildlife Refuge (ANWR).

Also attached is the latest version of the draft executive summary which is intended to provide the necessary background material to support the state's policy regarding management of the ANWR. We will be discussing the adequacy and accuracy of the material contained in the executive summary at the July 10 meeting of the resources cabinet.

Attachments

Distribution

Commissioner Wunnicke, DNR, Juneau
Commissioner Collinsworth, DFG, Juneau
Commissioner Ross, DEC, Juneau
John Katz, Office of the Governor, Washington, DC
Molly McCammon, Office of the Governor, Juneau
Vincent Wright, Revenue, Juneau

EXECUTIVE SUMMARY

DRAFT

As part of an overall analysis of potential oil and gas leasing in the Arctic National Wildlife Refuge (ANWR), the following is a summary of information regarding the resource potential of ANWR, the fish and wildlife values of the refuge, mechanisms available for state participation in ANWR leasing decisions, and mitigation available to protect resource values of the area if opened to exploration and possible development and production.

DEPARTMENT OF REVENUE

Analyze the potential direct and indirect financial benefits to the State of Alaska of oil and gas production, both in ANWR and on adjacent state-owned lands that could be affected by decisions on ANWR.

Although estimated reserves of ANWR and the financial impact to the state cannot be quantified with any degree of accuracy until an exploratory drilling program is completed, the following table provides an estimate of potential petroleum revenues to the state from ANWR under different world oil price scenarios:

Estimated State Petroleum Revenues from the ANWR
for Different World Oil Prices
(1986$)

World Price	Wellhead Price	Severance Tax	90% Royalties	Total
$15/bbl	$ 2.30/bbl	Production not economically feasible		
20	7.30	$35.42MM	$ 59.96MM	$ 95.38MM
25	12.30	59.68	56.12	160.88
30	17.30	83.94	142.07	226.01

Identify the potential financial impacts of early development versus later development if exploration and production are allowed.

The information presented in the table above is laid out in constant dollars. Therefore, the question of when development occurs (i.e., earlier versus later) has no bearing on the figures in the table. It should be noted that the economic feasibility of producing oil found in and adjacent to ANWR is very dependent on the price of oil. Oil prices will need to rise to at least $20 a barrel before it will be economically feasible to develop all but the very largest reserves. Current Department of Revenue forecasts project a world price of $20 a barrel (1986 dollars) in the late 1990's, which is when production would likely come on-line if leasing and exploration is allowed to commence in ANWR in the next several years. The late 1990's is also a time when it is projected that the Trans-Alaska Pipeline will have surplus capacity.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

P.O. BOX 7005
ANCHORAGE, ALASKA 99510-7005
PHONE: (907) 561-2020

October 29, 1986

Resolutions Committee
Interstate Oil Compact Commission
P. O. Box 53127
Oklahoma City, Oklahoma 73152

Dear Members of the Resolution Committee:

On behalf of the State of Alaska, I would like to request that the Resolutions Committee accept the attached resolution for consideration by the Interstate Compact Commission at the Commission's upcoming December meeting.

The resolution urges the United States Congress to allow environmentally responsible oil and gas development in the Arctic National Wildlife Refuge. The refuge is considered to have the highest oil and gas potential of any unexplored area on the North American continent, and the State of Alaska believes that opening the refuge to environmentally responsible oil and gas development would be in the state and national interest.

I appreciate your consideration of this matter. Please contact me if you would like any additional information.

Sincerely,

Esther C. Wunnicke

Esther C. Wunnicke
Commissioner

cc: Timothy Dowd, Interstate Oil Compact Commission
Molly McCammon, Special Assistant to the Governor
Chat Chatterton, Alaska Oil and Gas Conservation Commission
James Eason, Alaska Department of Natural Resources

Attachment

0445E

by State of Alaska

PROPOSED
Resolution of the Interstate Oil Compact Commission
regarding the
Arctic National Wildlife Refuge

WHEREAS, the U. S. Congress has reserved the right to permit further exploration for, and development and production of, oil and gas within the coastal plain of the Arctic National Wildlife Refuge, Alaska; and

WHEREAS, the oil industry, the State of Alaska, and the Department of the Interior consider the coastal plain to have the highest potential for discovery of very large oil and gas accumulations on the North American continent; and

WHEREAS, a decision to permit oil and gas exploration development and production on the coastal plain will increase the value and facilitate development of highly prospective state owned tidelands and federally owned OCS lands offshore of the Refuge; and

WHEREAS, facilities developed to transport petroleum resources discovered on the coastal plain to the Trans-Alaska Pipeline System (TAPS) may allow marginal discoveries located between the Refuge and TAPS to be developed and produced and may prolong the economic life of TAPS; and

WHEREAS, oil and gas exploration and development of the coastal plain and adjacent lands could result in major discoveries that could reduce our nation's future needs for imported oil, help balance our trade deficit, and significantly increase the national security; and

WHEREAS, the 1.5 million acre coastal plain comprises only eight percent of the 19 million acre Refuge, and development of any oil and gas reserves subsequently discovered will affect an even smaller percentage of the coastal plain; and

WHEREAS, the oil industry has shown at Prudhoe Bay, as well as at other locations along the Arctic coastal plain, that it can safely conduct oil and gas activity without adversely affecting the environment or wildlife populations;

NOW, THEREFORE, BE IT RESOLVED that the Interstate Oil Compact Commission urges the Congress of the United States to open the Arctic National Wildlife Refuge (ANWR) Coastal Plain to environmentally responsible oil and gas exploration, development and production.

BE IT FURTHER RESOLVED that the Interstate Oil Compact Commission recommends that each of the member states urge their Congressional delegations to support the opening of ANWR.

BE IT FURTHER RESOLVED that the Executive Director is hereby directed to furnish a duly certified copy of this resolution to the Secretary of Interior, the Chairman and ranking member of the Committee on Energy and Natural Resources of the Senate, and the Chairman and ranking member of the Committee on Interior and Insular Affairs of the House of Representatives, and the Governors of the Compacting States.

0437E

MEMORANDUM

State of Alaska

To:
Esther C. Wunnicke
Commissioner

Date: November 12, 1986

File no: 9105

From: Gary Gustafson, Chief
Land Management
Land and Water Management

Telephone no: 762-4346

Subject: ANWR Trade

THE ISSUE

You have asked for an update on the status of proposed land exchanges involving the Arctic National Wildlife Refuge (ANWR) as well as recommendations to outline those actions and finances necessary for the state to participate in exchanges. Accordingly, I have included a background and summary report of these exchange negotiations and recommend the immediate appointment of an ANWR Exchange Team to advance state interests.

The 1.5 million acre Coastal Plain of ANWR is considered highly prospective for oil and gas by knowledgeable observers. As a result, Section 1002(h) of the Alaska National Interest Lands Conservation Act (ANILCA) directed the Secretary of the Department of Interior (DOI) to prepare a report together with his recommendations "... with respect to whether further exploration for, and the development and production of, oil and gas within the Coastal Plain should be permitted ...."

In anticipation of the release of this report and a subsequent decision by Congress to open the Coastal Plain to oil and gas exploration and development, DOI has been engaged in land exchange negotiations with several Native corporations formed pursuant to the Alaska Native Claims Settlement Act (ANCSA). More particularly, the U.S. Fish and Wildlife Service (USFWS) proposes to trade oil and gas rights within ANWR's Coastal Plain for ANCSA village and regional corporation lands (surface and subsurface estate) within or adjacent to components of the national wildlife refuge system in Alaska.

Land exchange negotiations between the DOI and several ANCSA corporations have progressed to the point that values for the proposed trade lands have been established and the ANCSA corporations will soon be allowed to make oil and gas right tract selections in the Coastal Plain. Although there will likely be opportunity future trades, the ANCSA corporations (armed with

industry expertise) can be expected to acquire the most valuable prospective tracts in the first round of any exchanges. Given the advanced status of these negotiations, the state must ac quickly if it is to interject itself as a viable player in t initial ANWR land exchange efforts.

BACKGROUND REPORT

DOI Exchange Team

The ANILCA Section 1002(h) report referenced above was originally scheduled to be submitted by the Secretary of the DOI to Congress by September 2, 1986. However, environmentalist- spon red litigation, dealing with whether the report requires pu ic input and a revise' Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA), has delayed release of the report. The Secretary is expected to release the report on November 24, 1986. Once released, Congress will review the report and decide the future management regime to govern activities on ANWR's Coastal Plain.

At the same time the ANILCA Section 1002(h) report was being prepared, DOI began land trade negotiations with ANCSA corporations. Informal discussions occurred over two years ago and soon progressed to the point that many ANCSA lands were identified and appraised. Most of these discussions occurred in Washington, D.C. and involved Bill Horn, DOI Assistant Secretary for Parks and Refuges. In an effort to standardize negotiati among the interested corporations as well as to better define federal land management objectives, DOI has appointed an ANWR Land Exchange Team made up of the following five individuals:

Sharon Allender, USFWS Solicitor, Washington, D.C.
Jim Gillette, USFWS Realty Chief, Washington, D.C.
Ted Stephenson, BLM, Alaska Program Staff, Washington, D.C.
Paul Kirton, Solicitors Office, Washington, D.C.
John Doebel, USFWS, Asst. Secretary's Liaison, Anchorage

In addition, the USFWS Alaska State Office in Anchorage had been actively involved, particularly Bob Gilmore, State Director and John Rogers, Director Gilmore's Assistant. Mr. Doebel is responsible for keeping Assistant DOI Secretary Bill Horn abreast of all negotiations.

ANWR Oil and Gas Valuation

In 1980, prior to the acquisition of seismic and other geophysical data and other information on the Coastal Plain, the U.S. Geological Survey (USGS) estimated that there was a five percent probability that the Coastal Plain could contribute up to 17 billion barrels of crude oil and 34 trillion cubic feet of

natural gas. USGS also estimated there was a mean probability that the Coastal Plain could contain up to 4.85 billion barrels of crude oil and 12 trillion cubic feet of natural gas.

Under terms of ANILCA, geophysical surveys of the Coastal Plain had to be completed before December 2, 1985. Approximately 600 line miles of geophysical data were acquired during the winter of 1983-84, with another 580 lines miles run during the winter of 1984-85. These data and their subsequent analysis will form the basis of the ANILCA Section 1002(h) report to Congress.

According to oil industry, state and federal estimates, ANWR is considered to have potential oil and gas resources in excess of one-third of the current U.S. oil reserves and probably more than the initial reserves at Prudhoe Bay. Specific federal estimates should be included in the ANILCA 1002(h) report.

However, prior to th. completion and release of the 1002(h) report, the DOI has assigned preliminary values (based upon oil and gas potential) to lands within the Coastal Plain. For purposes of the proposed land trades, DOI has divided the Coastal Plain into tracts of 2,560 acres each. These tract sizes were derived by dividing each township (23,040 acres) in nine equal component parts. Each tract, therefore, consists of four sections (640 acres x 4 = 2,560 acres). This parcelization is similar to that used for federal oil and gas lease sales. Using the above described tract grid, DOI has numbered and assigned a prospective value to each 2,560 acre tract. Tiese values will be kept confidential until the proposed exchanges actually occur.

It appears to be DOI's intent to allow the corporation's to use the appraised value of their lands to select and acquire Coastal Plain oil and gas tracts. The method of acquisition would be similar to a Monte Carlo game, in that oil and gas tracts would be selected and acquired without prior knowledge of their estimated value. Thus, armed with oil company exploration knowledge, the corporation's are likely to select the most promising tracts.

The department's Division of Mining and Geology has also completed a report concerning the subsurface resources and prospective value of the ANWR Coastal Plain. This state report was completed some time ago and has remained confidential, pendi.ng release of the ANILCA Section 1002(h) report. The 1002(h) report was partially based upon information obtained from the state.

ANWR Land Status

Originally established in 1960 as the 8.9 million acre Arctic National Wildlife Range, ANWR now includes about 19 million acres. The Coastal Plain consists of 1.5 million acres (approximately eight percent of ANWR's total acreage). Managed by the USFWS, the Coastal Plain has only one in-holding, the large surface and subsurface estate owned by the Village of Kaktovik and the Arctic Slope Regional Corporation (ASRC) respectively.

Pursuant to Section 12(a) of ANCSA, the Kaktovik Inupiat Corporation on Barter Island in ANWR, selected 92,160 acres along the Beaufort Sea. However, a provision of ANCSA required ASRC, which normally would have acquired the subsurface estate under Kaktovik's surface estate, to select in-lieu subsurface acreage outside ANWR and NPRA. In August, 1983, ASRC exchanged about 100,000 acres of this in-lieu subsurface entitlement near Chandler Lake in the Gates of the Arctic National Park for 92,000 acres of subsurface rights in ANWR under the Kaktovik Inupiat Corporation land. The land trade preempted another process established by Section 1431(o) of ANILCA, whereby ASRC could have obtained these same lands at a later date, provided Congress opened the Coastal Plain to commercial oil and gas development within 40 years and ASRC selected land within 75 miles of Kaktovik's land. The attached map depicts the Kaktovik and ASRC ownership on the Coastal Plain.

Native Exchange Efforts

At the present time, there are four groups of Native interests involved in ANWR land exchange efforts. Koniag, the Kodiak-based village/regional corporation merger, has been involved in trade discussions with the USFWS for almost two years. Koniag owns several areas of land (e.g. Karluk River) of great interest to USFWS due to their location within the Kodiak National Wildlife Refuge. The Koniag ANWR Team is headed by Bill Timme, Art Kennedy and Bob Putz (former USFWS Alaska Director). A draft exchange agreement has been drafted and Koniag's lands were appraised last winter by a team of DOI appraisers. The initial exchange agreement has now been redrafted following recent meetings in Washington, D.C.

Another ANWR trade package has been assembled by DOYON, Ltd., based in Fairbanks. I have been unable to obtain much information concerning this proposal. Presumably, however, most or all of DOYON's land was also appraised last winter by the USFWS. The Akhiokaguyak Corporation, located on the south end of Kodiak Island (not part of Koniag), has also advanced a proposal to trade up to 100,000 acres to the USFWS.

The newest and largest ANWR trade package has been assembled by a Native corporation consortium headed by Cook Inlet Region, Inc. (CIRI) the Anchorage based regional corporation. Consisting of village corporation lands from the Bristol Bay, Calista and DOYON regional areas, as well as CIRI land holdings within the Kenai National Wildlife Refuge, this consortium has moved rapidly to present a very attractive trade package to the USFWS.

The CIRI ANWR Team is headed by three experienced land traders, Margie Sagerser, Mark Rindner and Michael C. T. Smith. Ms. Sagerser is a CIRI Board member and former CIRI vice-president for land management. Mark Rindner is a private attorney who has handled land use matters for CIRI. Michael C. T. Smith is a former DNR Deputy Commissioner and current land use consultant, often retained by CIRI. Ms. Sagerser and Mr. Smith were previously the principals in the 1976 Cook Inlet Land Trade.

Certainly in the case of the Koniag and CIRI, and probably that of DOYON, oil company money is a driving force and interest. Those companies rumored to be helping finance corporation trade efforts include ARCO, Texaco and Exxon.

It is evident that the corporations are well organized, financed and on the verge of consummating preliminary land exchange agreements with the USFWS. Thus far the corporations view the state as a possible competitor for key ANWR lands and have been reluctant to provide the state with much information. In addition, they undoubtedly fear the state might choose to oppose ANCSA trades in ANWR due to the loss of our 90 percent royalty share from federal leasing.

With the exception of some of the CIRI Team lands, the USFWS has appraised all ANCSA lands proposed for exchange. However, these federal appraisals must still be adjusted to account for public interest values. These adjustments are part of the on-going negotiations.

State Exchange Efforts

After learning of possible land trades between ANCSA corporations and the USFWS involving ANWR, you asked the department to initiate the trade discussions with the USFWS in late 1985. In February, 1986, Tom Hawkins, director of the department's Division of Land and Water Management, wrote Bob Gilmore, USFWS State Director to formally propose a state/federal land trade involving ANWR.

At that time, the department offered 12 million acres of state land holdings within or adjacent to national parks or refuges in Alaska as candidates for trade. Included were very important

habitat areas such as the Shearwater Peninsula and Marmot Island at Kodiak, the Black Hills caribou calving grounds on the Alaska Peninsula, trumpeter swan nesting area in the Copper River basin and state inholdings near McCarthy in the Wrangell-St. Elias National Park.

Mr. Gilmore responded in March, 1986, claiming that only the state lands within the Tetlin National Wildlife Refuge merited high priority for USFWS acquisition by trade. The remaining state lands were referenced as having only low to moderate USFWS acquisition interest.

In October of 1986 during a trip to Washington, D.C., you discussed the ANWR trade matter with Bill Horn, DOI's Assistant Secretary for Parks and Refuges. Mr. Horn apparently relayed that DOI was interested in a state/federal ANWR trade, and that state lands in national park units were acceptable trade candidate areas. This prompted the state to reassemble its ANWR trade package, expanding the list of candidate state lands to include numerous areas of interest to the NPS. Mr. Horn also continued to assure you and John Katz that DOI would keep the state informed of the progress of DOI/ANCSA Corporation trade efforts. Unfortunately, it is now evident that much has occurred without state consultation.

On the basis of the Washington, D.C. discussions, Director Hawkins once again wrote Mr. Gilmore of the USFWS to try and solidify a state land trade proposal. Included in this revised state trade proposal were in-holdings within national parks for which the NPS has a long-standing interest (e.g. McCarthy, Wolf townships, Kamishak, etc.). We have not yet received a response to this latest state trade proposal.

RECOMMENDATION

The advanced status of the DOI/ANCSA Corporation land exchange negotiations requires an immediate and accelerated response from the State of Alaska. Assuming the Coastal Plain of ANWR is opened to oil and gas development by Congress in the near future, the State may assume two postures in order to protect or enhance its interests.

First, the State must seek proforma to preserve its 90 percent royalty interest from federal oil and gas lease sales, pursuant to the Mineral Leasing Act. Although some may suggest our 90 percent royalty is an excessive state benefit in this time of federal budget austerity, the State should do everything within its means to avert the loss of revenue which might accrue to the state.

Second, and coincident to attempts to maintain the State's current federal lease royalty percentage, the State should immediately advance its own land trade proposal and join the ANCSA corporations at the starting gate of the ANWR selection race. This means the State has to quickly identify a trade package of state lands and proceed to have them appraised in time for submission of a trade proposal to the legislature. Because state land appraisals will likely be completed later than the normal legislative exchange submission deadline established by AS 38.50, the governor will have to submit the exchange at a later date, following a finding of exigent circumstances.

The following timeframe should be closely followed if the State is to be in position to join the ANCSA corporations in the initial ANWR tract selection process (estimated by March-April, 1987).

1. Brief Governor Bill Sheffield, Governor-elect Cowper and key legislators on the conceptual state exchange proposal and designate a state ANWR Exchange Team (November, 1986).

2. Finalize state land pool to be included in exchange (December 1, 1986).

3. Conduct fair market value appraisals of state lands proposed for exchange (February 15, 1987).

4. Submit proposed trade to Legislature for approval (February 20, 1987).

5. Enter into Preliminary or Conceptual Exchange Agreement with DOI (April, 1987).

The unique nature of this exchange will necessitate variances in the normal AS 38.50 process. These variances must be approved by the legislature as part of their final review of the proposal.

Obviously, there is a tremendous amount of work to be done between now and mid-March. The only way the State can hope to successfully assemble, market and deliver this exchange is to immediately identify and appoint a qualified multi-disciplinary ANWR Exchange Team and provide them with sufficient support (both administrative and financial) to complete the assignment. I have proposed below a rough outline of the personnel and funding necessary to accomplish the task. It is essential that Team members be the most experienced and capable staff members within their realm of expertise. Team members should be available for the project on a full-time basis for a three month period from November, 1986, to February, 1987, and at least part-time thereafter.

Personnel and Responsibilities

1. Governor's Office, Washington, D.C. - Congressional delegation liaison, coordination with DOI representatives in Washington, D.C., represent Governor's interests.

2. Staff member, Division of Mining and Geology - responsible for ANWR subsurface evaluation, coordination with government, industry interests related to resource information, legislative briefings.

3. Assistant Attorney General, Department of Law - preparation of legislation and exchange agreements, legal support, coordination with Solicitors Office.

4. Staff member, Division of Land and Water Management - responsible for assemblage of state exchange land, coordination of state agency involvement, appraisal process, legislative briefings, negotiations.

In addition, it is essential to involve other affected state agencies (e.g. ADF&G, DEC) regarding those issues within their responsibility or expertise.

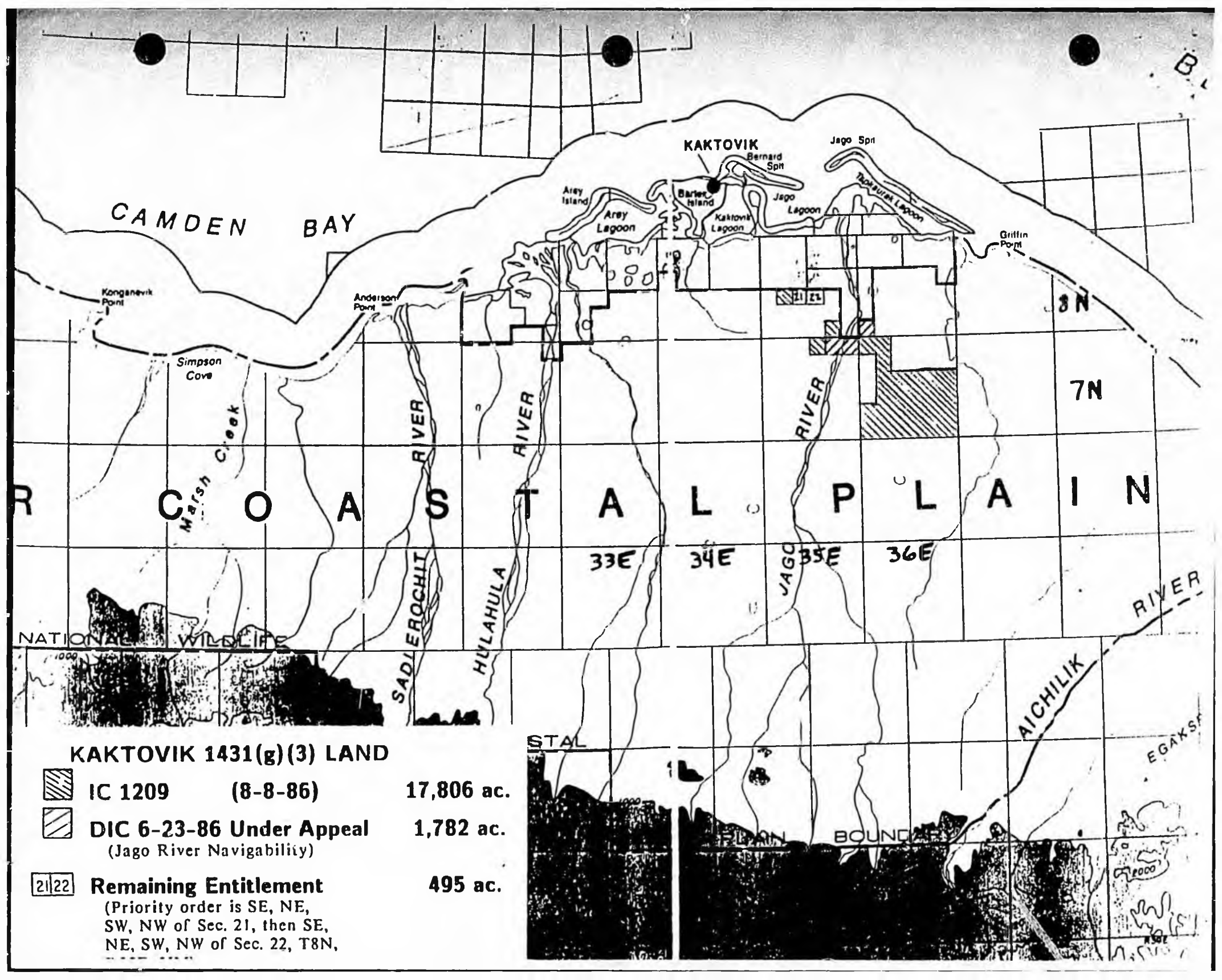
Financial

Primary costs are for appraisals and travel. Appraisals will likely be needed for substantial acreage of state land, and costs will be reduced if DNR uses in-house staff appraisers. Travel costs include several trips to Washington, D.C. for negotiations with DOI officials as well as several Juneau trips for legislative briefings.

Travel (2 team trips to Washington, D.C., 5 team trips to Juneau)	$15,000
Appraisal (charter flights, etc.)	$25,000
Other contractual (maps, aerial photos, printing, postage copy)	$9,800
Equipment (filing cabinet)	$200
Total Estimated Project Budget	$50,000

Finally, because the Secretary is expected to release the 1002(h) report on November 24, 1986, it would be advantageous to publicly announce the formation of a state ANWR Exchange Team no later than November 21, 1986.

GG/jlh
ATTACHMENT
cc: Jim Eason, DO&G
Laurel Murphy, DM&G
Rich Kornbrath, DM&G
John Katz, Gov. Office, Washington, D.C.
Bob Arnold, CO
Jim Barnett, CO
Ned Farquhar, CO
Tom Koester, AGO
Norm Cohen, ADF&G
Tom Hawkins, DLWM



KAKTOVIK 1431(g)(3) LAND

IC 1209	(8-8-86)	17,806 ac.
DIC 6-23-86 Under Appeal (Jago River Navigability)		1,782 ac.
21 22 Remaining Entitlement (Priority order is SE, NE, SW, NW of Sec. 21, then SE, NE, SW, NW of Sec. 22, T8N,		495 ac.

REPRESENTATIVE DON CLOCKSIN

Alaska House of Representatives

MAJORITY LEADER

1024 WEST SIXTH AVENUE
ANCHORAGE, ALASKA 99501
(907) 274-4031

WHILE IN JUNEAU:
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3704

MEMORANDUM

TO: Representative Sam Cotten
FROM: Representative Don Clocksin DC (wb)
DATE: October 23, 1986

RE: Briefing on ANWR issues by Commissioner Wunnicke

I have made an appointment with Commissioner Wunnicke for a full briefing on issues regarding the Arctic National Wildlife Refuge - including the specifics on possible land trades and subsurface rights, and impacts on Alaska's future revenues (see letters to and from the Commissioner, enclosed).

Our meeting is now scheduled for ~~Tuesday~~ Thurs, October ~~28~~ 30, ~~3:00~~ 9:00 pm in Commissioner Wunnicke's Anchorage office on the 12th floor of the Frontier Building.

I suggest you join us at this briefing, if your schedule permits.

Please let me know.

REPRESENTATIVE DON CLOCKSIN

Alaska House of Representatives

MAJORITY LEADER

1024 WEST SIXTH AVENUE
ANCHORAGE, ALASKA 99501
(907) 274-4031

WHILE IN JUNEAU:
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3704

Ms.Esther Wunnicke
Commissioner
Department of Natural Resources
Pouch M
Juneau, Alaska 99811

September 26, 1986

Dear Commissioner Wunnicke:

It has come to my attention that there are several complex issues involving the status of lands and petroleum reserves in the Arctic National Wildlife Refuge (ANWR). More particularly, I have been told that there are proposed trades of lands and subsurface rights involving the federal government, several Native corporations and the State of Alaska. I understand that much rides on the outcomes of these proposed trades, including the ability of the State of Alaska to have access to future revenue sources from the development of petroleum reserves in the ANWR.

I would very much appreciate a full briefing from appropriate people in your Department on these issues, including explanation of the particulars of the overall issues, the posture of the State with respect to them and the specifics of any and all trades of lands and subsurface rights being proposed by the federal government, the State of Alaska and every involved Native corporation. In addition, I am especially interested in knowing what impacts the outcomes of all proposed combinations of actions will have on the ability of the State of Alaska to have access to future revenues from petroleum development in the ANWR.

I appreciate your attention to this matter and look forward to hearing from you soon. Thanks very much.

Sincerely,

Representative Don Clocksin
House Majority Leader

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE COMMISSIONER

400 WILLOUGHBY AVE.
JUNEAU, ALASKA 99801
PHONE: (907) 465-2400

October 7, 1986

The Honorable Don Clocksin
House Majority Leader
Alaska House of Representatives
1024 West Sixth Avenue
Anchorage, AK 99501

Dear Representative Clocksin:

Thank you for writing to me about your interest in the land status and petroleum reserves of the Arctic National Wildlife Refuge (ANWR). I would be happy to meet with you to discuss ANWR issues as well as to bring you up-to-date on the status of proposed ANWR land trades.

I suggest that we meet on October 27 at 2:00 p.m. in my Anchorage office (12th Floor, Frontier Building). Land and Water Management Director Tom Hawkins will join us at this meeting and other staff will be available as necessary to provide appropriate information.

Please let me know if the October 27 meeting date is convenient. I have enclosed a copy of the state's position regarding oil and gas development in ANWR, as background information for our meeting.

Sincerely,

B.N. Arnold for

Esther C. Wunnicke
Commissioner

Enclosure

cc: Tom Hawkins
Jim Eason

10-J9LH

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF LAND AND WATER MANAGEMENT

555 CORDOVA STREET
POUCH 7-005
ANCHORAGE, ALASKA 99510-7005
PHONE: (907) 276-2653

February 5, 1986

Robert E. Gilmore, Regional Director
U.S. Fish and Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503

Dear Mr. Gilmore:

I appreciate the opportunity to meet with you to discuss state involvement in any land exchange involving the Arctic National Wildlife Refuge (ANWR). My purpose in arranging this meeting is twofold. Consistent with the governor's recent letter to you on this subject, I would like to learn more about the details of your on-going land exchange negotiations with several ANCSA regional corporations involving the coastal plain of ANWR. Secondly, I have consulted with state agencies to assemble a large pool of state land available for preliminary exchange consideration by your office (attachment).

As you may be aware, the state owns a substantial amount of habitat land surrounded by, or immediately adjacent to, components of the national refuge system (and other conservation system units). We have examined these areas and have identified almost 12 million acres of state land which we believe possess attributes worthy of exchange consideration by your office. You may conclude that acquisition and management of these lands by the Fish and Wildlife Service would further federal interests as well as serve to reduce unwieldy state/federal land ownership patterns.

The pool of state land presented for exchange consideration includes a wide variety of fish and wildlife habitat types in many geographic locations. Specifically included are such significant areas as the Copper River Basin trumpeter swan nesting areas, key brown bear and seabird habitat on the Shearwater Peninsula of Kodiak Island, calving grounds for the lower Alaska Peninsula caribou herd in the Black Hills, the Kisaralik River region between Togiak and Yukon Delta NWR's, state inholdings within the Tetlin NWR and Redoubt Bay on the west side of Cook Inlet (nesting and staging area for tule geese and trumpeter swans). Both the existing Bristol Bay Cooperative Management Plan and several of your draft refuge plans already recommend that much of this state land be acquired by the FWS through exchange.

State land exchanges must occur in accord with AS 38.50 and 11 AAC 67. These applicable statute and regulatory authorities provide authorization for the exchange of state land or interests, provided the exchange serves the public interest and there are thorough opportunities for public and agency involvement in the process. Specifically, the department must provide widespread public notice of a proposed exchange, hold public hearings, provide for public comment and prepare and distribute a report on the proposed exchange. In addition, if the proposed exchange is of unequal value, or includes state land having an appraised or estimated value greater than $5,000,000, legislative review is required. These requirements are specifically designed to safeguard the public interest.

I urge your careful review of this state pool of possible exchange land. The state is sincerely interested in participating in any discussion of land pattern adjustments which would benefit state and national interests. I await your timely response and remain prepared to meet or otherwise discuss this matter in greater detail. Please give me a call at 762-4355 should you have any questions.

Sincerely,

Tom Hawkins

Tom Hawkins
Director

Attachment

Attachment

State Lands Available for Exchange Consideration With USFWS
February 5, 1986

SOUTHCENTRAL ALASKA

Area 1 - Trumpeter Swan Nesting Area: In the Gulkana Basin approximately 500,000 acres of state land are available, including important trumpeter swan nesting and rearing areas. The Gulkana Unit has the highest density of nesting swans in the state and contains 27 percent of the world population.

Area 2 - Redoubt Bay: This area constitutes approximately 176,000 acres of state land on the west side of Cook Inlet. This area is used extensively by whitefronted geese (tule) for nesting and staging. The tule goose was listed as a subspecies of concern by the International Council for Bird Preservation. They also recommended to the U.S. Fish and Wildlife Service that the tule goose be listed as an endangered species. The area is also important for other waterfowl nesting, feeding and migration, moose calving, spring and fall bear feeding, and salmon spawning and rearing.

Area 3 - McCarthy: Surrounded by the Wrangell St. Elias National Park and Preserve are approximately 18,000 acres of state land in the heart of the park. These lands have development potential which could be precluded through federal acquisition.

SOUTHWEST ALASKA

KODIAK ARCHEPELAGO

Area 4 - Marmot Island: Marmot Island is located east of Afognak Island and is surrounded by Maritime National Wildlife Refuge (NWR). The island contains important Steller sea lion rookeries. The state owns the entire island which contains approximately 12,000 acres. The eastern shore of Marmot Island contains one of the largest Steller sea lion rookeries in Alaska and is critical habitat for this species. A 1982 survey reported approximately 8,000 individuals utilizing this area. Marmot Island also supports four seabird colonies totalling about 3,500 breeding birds. The largest percentage of these birds are black-legged kittiwakes.

Area 5 - Raspberry Island: Raspberry Island is located across Onion Bay from Kodiak NWR. The western half, or approximately 26,000 acres, of the island is under state ownership. Raspberry Island contains the only free roaming elk herd remaining on public land in the Kodiak Archepelago and the State of Alaska The valley between Driver Bay and Onion Bay is critical habitat for elk and is used year round. Raspberry Island also supports populations of Sitka black-tailed deer and brown bear. The abundant wet meadows in Driver Bay contain sedges and grasses that provide critical brown bear spring feeding areas.

Area 6 - Shearwater Peninsula: The State of Alaska owns approximately 123,000 acres on the Shearwater Peninsula located adjacent to the eastern border of the Kodiak NWR. This portion of Kodiak Island was originally

contained within the odiak NWR. The Shearwater Peninsula provides excellent brown bear habitat and contains key spring feeding areas and numerous streams that are heavily fished by brown bears. Several coastal areas are used as haul-out sites by harbor seals and Gull Point is a documented northern sea lion haulout area. The Peninsula also contains three large seabird colonies consisting of approximately 4,000 birds, comprised primarily of red-faced cormorants, black-legged kittiwakes, and tufted puffins.

Area 7 - Tugidak Island: Tugidak Island is located about 15 miles south of Kodiak NWR and is surrounded by the Maritime NWR. The state has full ownership of this island, which contains approximately 55,000 acres. It is extremely valuable habitat for harbor seals and a variety of birds including waterfowl, raptors, and shorebirds. Tugidak Island is the most important single breeding ground for harbor seals in Alaska. It has the largest known population of harbor seals in the world, estimated to be between 15,000 to 20,000 animals with concentrations of hauled-out seals reaching 14,000. In past years, this population has produced in excess of 5,500 pups annually.

BRISTOL BAY REGION

Area 8 - Kisaralik River: This area consists of approximately 278,600 acres immediately adjacent to the Yukon Delta and Togiak National Wildlife Refuges. The upper reaches of the Kisaralik River system, which is one of the major salmon producing rivers in the Kuskokwim region, flow through this area. Brown bear, caribou, and moose are also found throughout the Kisaralik River vicinity. This river has high recreational potential and, in 1984, the National Park Service was studying the Kisaralik River for possible inclusion in the National Wild and Scenic River System.

Area 9 - Nushagak/Iliamna Area: Approximately 6,996,400 acres are included in this area. A substantial proportion of this acreage is immediately adjacent to the Lake Clark and Katmai National Parks and Preserves. Additionally, about 13,844 acres are surrounded by the Lake Clark National Park and Preserve. This area encompasses highly valuable habitat for a variety of species such as salmon, caribou, moose, and brown bear. For example, a large portion of the salmon resources harvested by commercial, recreational, and subsistence users in the Bristol Bay region originate in the Iliamna Lake and drainage system. Other rivers, such as the Nushagak River, also support large salmon runs utilized intensively by recreationists. Large game species are abundant in the area, and some of the acreage encompasses habitat critical to these speciesm including caribou calving grounds, moose calving and winter concentration areas, and brown bear concentrations along salmon streams.

Area 10 - Alaska Peninsula: This area is comprised of several large tracts of state land between the Naknek River and Hereendeen Bay. This area contains approximately 2,869,800 acres, which are contiguous to the Becharof National Wildlife Refuge, the Alaska Peninsula Wildlife Refuge, Katmai National Park, and Aniakchak National Monument and encompasses much of the productive coastal plain of the Alaska Peninsula. Brown bear populations in this area are among the largest in the state, and the coastal plain provides critical fall and spring feeding areas for this species. This area also contains portions of several of the most important

sport fishing streams. The area contains extensive wetlands and some very important waterfowl habitat. The state lands adjacent to the Cinder River state Critical Habitat Area have been recently identified by the U.S. Fish and Wildlife Service (USFWS) as providing essential habitat for cackling Canada geese. The area also contains substantial state inholdings within the Alaska Peninsula Wildlife Refuge at Mother Goose Lake, as well as other locations on the peninsula.

Area 11 - Black Hills: This area consists of approximately 460,800 acres contiguous to the Izembek National Wildlife Refuge. The Black Hills contain the major calving area for the lower Alaska Peninsula caribou herd, as well as the drainages of several important salmon streams including the Caribou and Sapsuch rivers. This area contains extensive wetlands, and is adjacent to the Port Moller State Critical Habitat Area, which contains critical habitat for many species of waterfowl. The Black Hills area also supports a large brown bear population. The Bristol Bay Area Plan recommends this area for consideration for an exchange or cooperative agreement with the USFWS.

Area 12 - Kamishak: This area consists of approximately 76,000 acres of state land between the McNeil River State Game Sanctuary and Katmai National Park and Preserve. The area includes important brown bear, moose and seabird habitat, including much of the range used by brown bears frequenting the adjacent McNeil River area.

NORTHERN ALASKA

Area 13 - Kokrine Hills/Melozitna River: This land, composed mostly of patented state lands with a surrounding ring of selected lands, lies north of the Yukon River between the Nowitna NWR (to the south) and the Koyukuk NWR (to the west). The "Melozi" is a valuable wildlife production area, supporting good populations of moose and grizzlies. Black bears occur on the lower river near the canyon. A small population of caribou use the Kokrines Hills. The river is an important summer chum spawning stream, and both grayling and Dolly Varden occur commonly in the lower river. At least two peregrine falcon eyrie sites occur along the river (active in 1980). The upper Melozi meanders through substantial wetlands, which are used by waterfowl and furbearers.

Area 14 - Lower John/Alatna Rivers: This mixed block of patented and selected state lands lies between the Kanuti NWR (to the south) and Gates of the Arctic National Park (to the north and west). Wildlife values include moose, caribou, and Dall sheep. Lake trout is an important fish species in lakes and both king and chum salmon use the Alatna River. Chum salmon also spawn in the lower John River. This would expand the values of Kanuti NWR substantially.

Area 15 - Tetlin NWR Consolidation: Several townships of state patented or selected lands lie within the Tetlin NWR south of the Alaska Highway. Consolidating these areas into the refuge would eliminate unwieldy land ownership patterns.

Area 16 - Wolf Townships: This area, composed of approximately 62,000 acres, is surrounded on three sides by Denali National Park and Preserve. It is an important wintering area for moose and would provide additional