

ALASKA LEGISLATURE COMMITTEE FILES 1987-1988 8672

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ANWR LAND USE

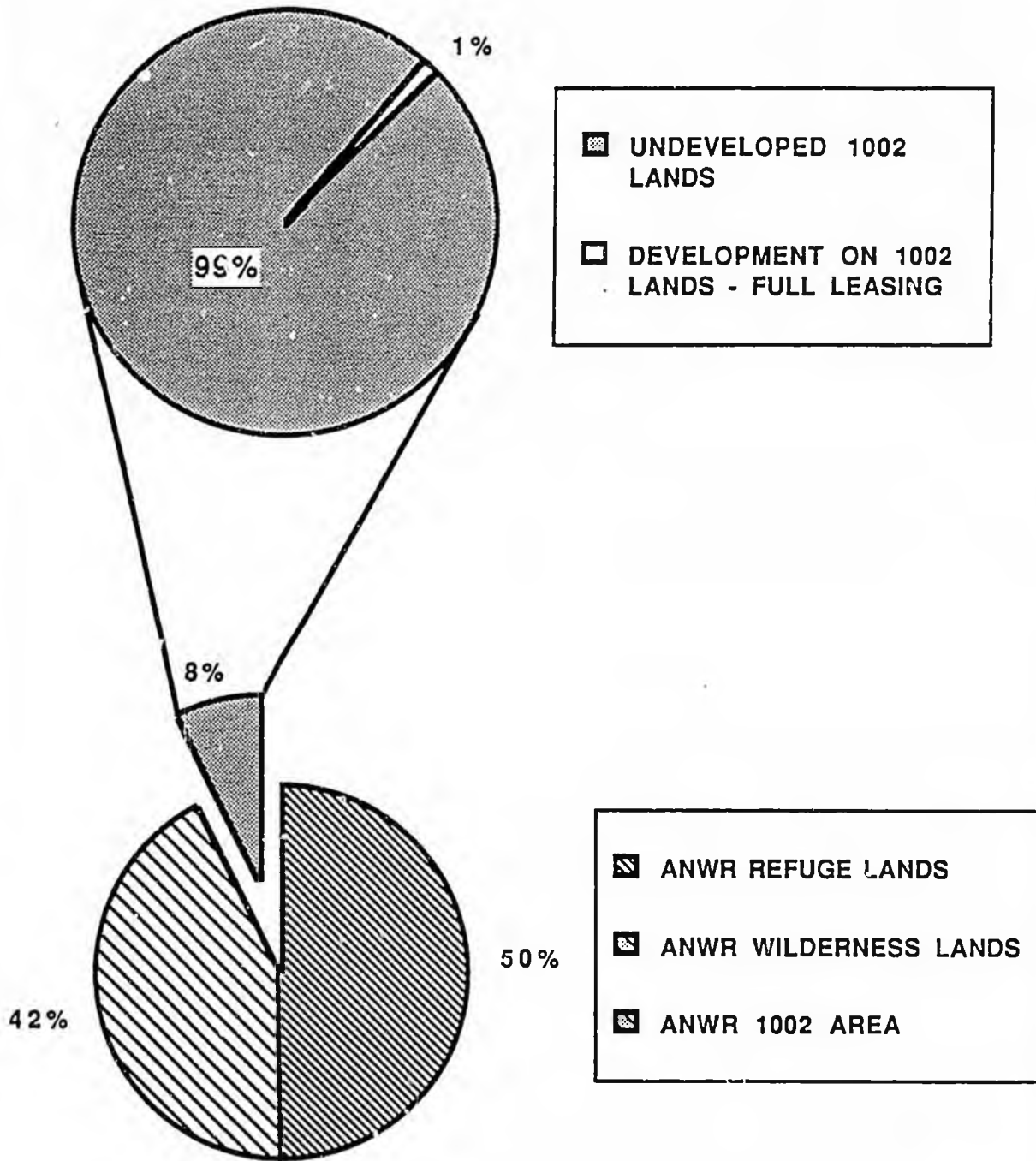


FIGURE 2

LOSS OF SHOREBIRD NESTING HABITATS

Environmental Community Position:

There has been a significant direct loss of habitat at Prudhoe Bay involving 5,500 acres of gravel pads, 720 acres of gravel mines and another 3,400 acres due to flooding by impoundments. This has resulted in a reduction averaging 16 percent in shorebird abundance in developed areas compared with undeveloped control areas. This lost or altered habitat would have supported 18,000 birds for the species studied.

Scientific Resnorse:

There has not been a significant direct loss of habitat at Prudhoe Bay. The surface area covered by gravel facilities amounts to less than 2 percent of the available surface area within the oilfield boundaries and a less than detectable percentage regarding available Arctic Coastal Plain habitat. Furthermore, the calculations concluding an 18 percent reduction in shorebirds within the oilfield (Meehan 1986) are based on an invalid comparison and combines results for several species.

Most of the hypothesized 18 percent reduction is based on a comparison of bird densities within the oilfield to a control area outside the oilfield. However, the "control" area was for a different factor, annual variability in bird densities, and not for direct comparisons of bird use within the oilfield. Therefore, the comparison used to derive the 18 percent figure is not technically valid.

An additional consideration is that the final number represents a summary of information for six species. In actuality, only three species exhibited reduced densities in the oilfield, one species remained the same, and two species actually showed increased densities in the oilfield (Meehan 1986). The primary species contributing to the overall reduction was Dunlin, a species that is not prevalent in ANWR since the Canning River is the eastern limit of its range.

The information gathered in the Meehan study could perhaps be useful in consideration of various project alternatives. It could allow a consistent analysis among alternatives and enhance the objectivity of a relative comparison. However, the absolute values are not necessarily accurate, and users of the information should be cautioned in this regard. The study's real value is in allowing relative comparisons for decision-making by land managers, not in providing numerically precise impact predictions.

A different study was conducted in Prudhoe Bay in 1986 to document bird use of the developed oilfield (Troy 1987). Using the data gathered in that study, and the same comparison used in the Meehan study described

above (using the same six species), it is found that the area inside the oilfield supported about 70 percent more shorebirds than an undeveloped but otherwise similar control area outside the oilfield.

The important point about this information is it documents considerable use of oilfield areas by birds, including nesting. This is a direct contradiction to the impression given by environmentalists that wildlife, particularly birds, avoid developed parts of the North Slope.

DISPLACEMENT OF CALVING CARIBOU

Environmental Community Position:

Displacement of the Central Arctic Herd from its historic calving grounds in Prudhoe Bay has been documented. Maternal groups of caribou, which show long term sensitivity to development, have avoided the Trans-Alaska Pipeline System in all seasons and the Prudhoe Bay area during calving.

Scientific Response:

Caribou continue to calve in the North Slope oilfields including Prudhoe Bay (Fig. 3). There is, however, a lower frequency of major calving activity in the Prudhoe Bay oilfield itself compared to the Kuparuk and Milne Point areas. The Prudhoe Bay oilfield is a rather wet, marshy area that appears to be less well-suited for calving than the drier and better-drained areas to the east and west. Nor is there any evidence that the specific area now included in the Prudhoe Bay oilfield development was ever an important caribou calving area. Child (1973) observed that the Prudhoe Bay area was used "... as a calving ground for a small segment..." of the Central Arctic Herd, which he estimated to have totaled about 3,000 animals in the early 1970s. Thus, the Prudhoe Bay oilfield area does not appear to have ever been used by a large number of calving caribou.

Dau and Cameron (1986) have made the most thorough study of the response of calving caribou to oilfield development. They found displacement of some calving cows within 2 km (1.2 mi., not 2 mi.) of an oilfield road, no difference in use of the area within 3-5 km (1.2-3 mi.), and greater use of the area within 5-6 km (3-3.6 mi.). During the eight-year study, the number of caribou calving in the Milne Point study area approximately doubled. The Central Arctic Herd increased in size from about 3,000 in 1972 (Child 1973), when development was just getting underway, to over 15,000 in 1986 (Sopuck and Jakimchuk 1986), after development of the Prudhoe Bay, Kuparuk, Milne Point, Lisburne, and Endicott oilfields (Fig. 4).

Thus, what has been documented is 1) partial and local displacement of calving caribou within 2 km (1.2 mi.) of an oilfield road, 2) continued use of historical calving grounds within an oilfield, and 3) continued growth of the Central Arctic Herd.

Avoidance of the Trans-Alaska Pipeline corridor, which on the North Slope follows the Sagavanirktok River valley, has been reported by Cameron and Whitten (1980). However, there are other explanations, such as a general tendency of cow and calf caribou to avoid river valleys. Predators are known to forage and travel in river valleys, and the more vulnerable cows and calves may tend to avoid such areas.

Jakimchuk et al. (1987) studied the distribution of caribou bulls and cow/calf groups both in relation to the Trans-Alaska Pipeline System and to river valleys remote from development. They found that bulls and cow/calf groups

tended to occupy different habitats throughout much of the year, whether near the pipeline or in the remote locations. Thus, the presence of relatively fewer cows and calves observed by Cameron and Whitten (1980) along the pipeline corridor may have been unrelated to the pipeline.

CENTRAL ARCTIC HERD CALVING AREAS MAJOR ACTIVITY AREAS 1981-1986

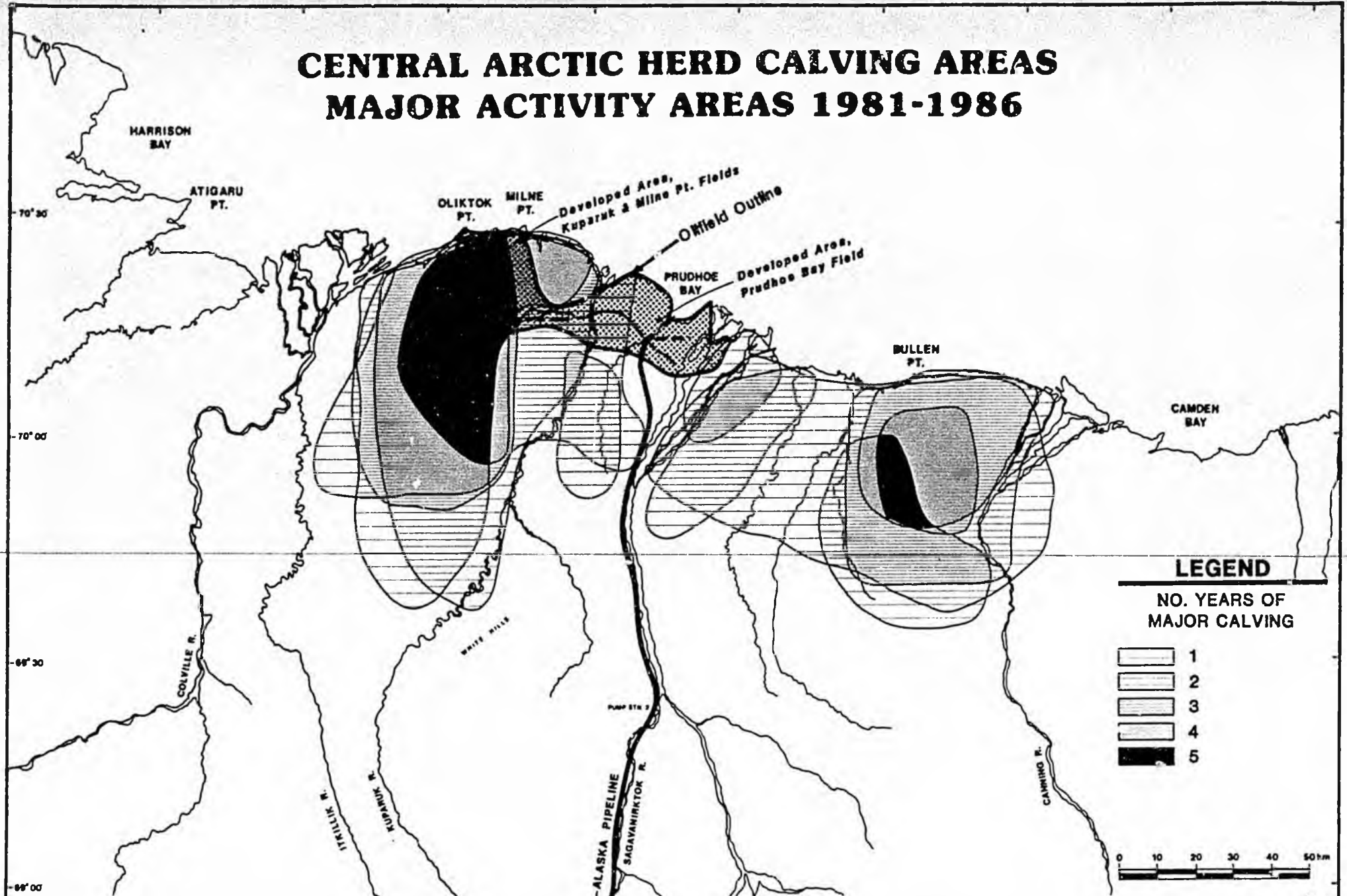


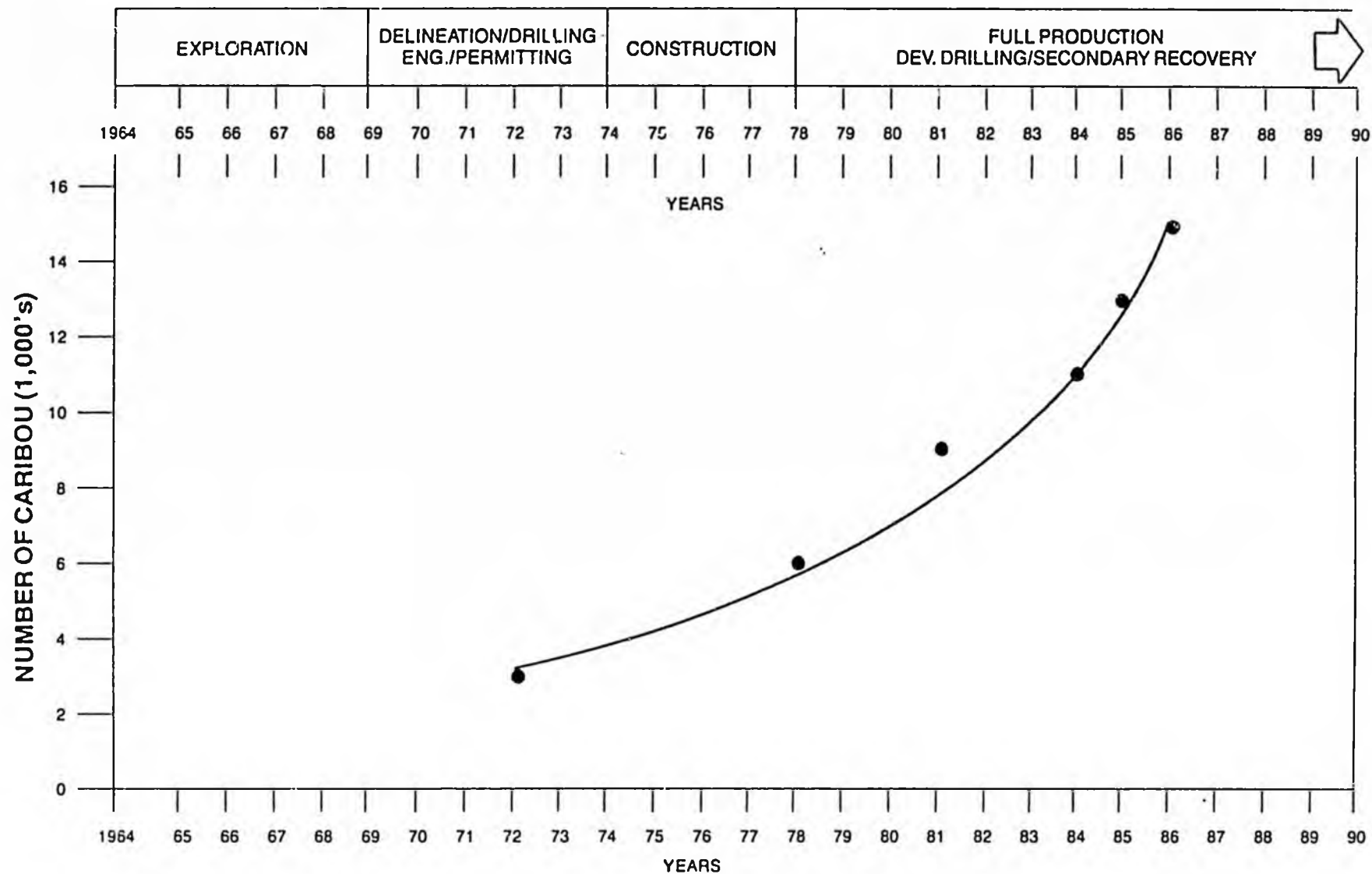
Figure 3. Locations of areas of major calving activity of the Central Arctic Herd, 1981-1986. Note the presence of calving caribou within the general area of the Prudhoe Bay, Kuparuk, and Milne Point oilfields. The Prudhoe Bay Oilfield has never been known to be used often by calving caribou, even prior to development. [Based on data provided by RRCS (1985) and Jakimchuk 1986, pers. comm.].

PRUDHOE BAY FIELD DEVELOPMENT TIMELINE AND POPULATION INCREASE OF CENTRAL ARCTIC HERD

PRUDHOE BAY EXPLORATION / DEVELOPMENT TIMELINE

★ March '68
DISCOVERY

★ June '77
PRODUCTION START-UP



CENTRAL ARCTIC CARIBOU POPULATION GROWTH

PREDICTED DECLINE IN POLAR BEAR POPULATION

Environmental Community Position:

Polar bear populations are in decline world-wide and development in ANWR, which would create a loss of two of the three concentrated denning areas, would exacerbate this problem. Further, the cumulative effects of current and future oil development would virtually eliminate the polar bear in the United States.

Scientific Response:

The potential for contact between oil and gas development operations in ANWR and polar bears is quite limited. Except for pregnant females, some of which come onshore to den and give birth to cubs, polar bears spend their entire lives at sea, mainly on the sea ice. Pregnant polar bears usually enter their dens in October or November. One or two cubs are born in December or January and emerge from the den in March or April.

Until the last few years, biologists believed that polar bears generally denned on land and only occasionally denned on the sea ice. From 1981-82 to 1986-87 biologists followed 71 pregnant females into their dens. Of these, 58 (82 percent) denned on the sea ice, while only 13 (18 percent) denned on land (S. Amstrup 1987, U.S. Fish and Wildlife Service, pers. comm.).

Potential contact with petroleum operations in ANWR would occur only in winter (November - April), when some pregnant females are onshore. As stated in the Final 1002 Report, potential adverse effects can be minimized by avoiding suitable denning areas during the denning period (DOI 1987).

There was concern in the 1960s that largely unregulated hunting threatened the well-being of polar bears world-wide. Since that time, hunting restrictions have reversed the situation. The kill of polar bears in northern Eurasia has been greatly reduced and is strictly controlled in Canada and Greenland. Although the hunting of polar bears in Alaska is restricted to Natives, the Marine Mammal Protection Act does not provide for the imposition of hunting regulations, and as a consequence there has been concern about over-harvest. Recently, however, the Native community has been working to implement voluntary rules that would conserve the polar bear population.

The world population of polar bears may be as large as 40,000, with 3,000 to 5,000 offshore of Alaska in the Beaufort and Chuckchi seas. Amstrup et al. (1986) estimated that approximately 1,800 polar bears occurred in the Beaufort Sea (both Alaskan and Canadian). Amstrup (1986) states that "there appear to be about as many Alaskan polar bears today as there were 25 years ago, and numbers appear stable."

ADVERSE EFFECTS OF GRAVEL CAUSEWAYS ON BEAUFORT SEA FISH POPULATIONS

Environmental Community Position:

The 1002 report fails to address the cumulative impacts of port and causeway development and their effects on water quality and fish migration. The minor to moderate effects on aquatic resources from causeways predicted in the 1002 report underestimate the impacts since evidence from the West Dock and Endicott causeways already indicates adverse effects.

Scientific Response:

Many studies have shown that effects on fish movements by existing causeways in the nearshore area of the Beaufort Sea are local and transitory. There does not appear to be a blockage effect from the physical presence of the causeways. This is not surprising, because there are similar natural features along the Beaufort Sea coast that fish successfully negotiate. At West Dock intrusions of offshore marine water at certain times of the year may temporarily delay fish movement by affecting water characteristics such as temperature and salinity; however, changing wind conditions over periods of often less than several hours can result in rapid changes in water quality conditions and subsequent removal of any "barrier" to free passage by fish. Under certain wind conditions, these marine intrusions are enhanced by the causeways; however, the extent of such intrusions under pre-causeway conditions is not known. Comprehensive monitoring studies conducted since 1981 have not identified any adverse population-level impacts to anadromous fish using the nearshore areas in the vicinity of Prudhoe Bay

Intensive studies during 1985 and 1986 and continuing in 1987 have found no convincing evidence that fish passage through nearshore waters has been inhibited by the Endicott causeway. The species of concern, arctic cisco, has been able to pass around and through the Endicott causeway with no readily apparent delay. Young arctic cisco are carried by the currents and transported around the causeways in moving water. Older, larger cisco use the causeway breaches or go around the causeway, depending on current characteristics and water quality characteristics at a given time.

There has been no indication of any decrease in habitat quantity or quality due to the presence of the Endicott causeway. At any point in time, observed changes in water quality are temporary and well within the naturally occurring variability of the estuary. Two separate overwintering studies conducted during winter 1985-86 were not able to identify any deleterious effects on fish overwintering within the Sagavanirktok River or delta that could have resulted from the Endicott causeway.

Beginning in 1981 and continuing to the present, the petroleum industry has funded over 20 million dollars in contracted fishery and oceanographic studies related to Beaufort Sea causeways. This is probably the most intensively studied geographic area in North America. Yet no biologically significant impacts have been determined.

ENVIRONMENTAL CONTAMINATION FROM RESERVE PITS

Environmental Community Position:

Drilling muds and cuttings, disposed of in reserve pits, contain heavy metal components that are toxic to aquatic life. Those wastes regularly escape to the tundra and surface waters. This occurs through leaking or breaching of reserve pit walls, through pumping of reserve pit fluids directly on to the tundra, and through watering of gravel roads for dust suppression. Effluent limits established by the State of Alaska are regularly exceeded. Evidence from recent studies of tundra ponds indicates elevated levels of heavy metals and hydrocarbons comparable to areas subject to heavy industrial pollution.

Scientific Response:

Reserve pits are built into gravel drill pads to contain used drilling muds (lubricants made from natural minerals, along with small concentrations of additives) and cuttings (rock fragments removed by the drill bit). After one freeze-thaw cycle, the salts and solids settle out and the water quality of the reserve pit fluids significantly increases. Annual snowmelt contributes additional fresh water which further dilutes the reserve pit fluids. Recent tests confirm that reserve pit water does not exhibit any characteristics used by EPA to identify hazardous wastes.

The issue regarding reserve pits is to manage fluid levels to prevent overtopping/breaching of the pit wall as well as to prevent seepage through the pit wall. With fluid management techniques such as snow removal from pits during the winter, annular injection, dedicated wastewater injection wells, and--for water that meets State of Alaska Water Quality Standards--permitted discharge to the tundra or use for road watering, water volumes in reserve pits are reduced and the potential for pit overtopping, breaching, or seepage minimized. Construction techniques have a to been greatly improved in recent years minimizing the potential for operational problems with reserve pits.

Drilling muds and cuttings are solid wastes regulated by the Alaska Department of Environmental Conservation (ADEC). Recent solid waste permits for reserve pits in the Prudhoe Bay oilfield have required detailed design specifications and a detailed operations plan including fluid management procedures, inclusion of a leak detection system, and a pit closure plan. ADEC has recently revised the solid waste disposal regulations to impose additional requirements on design and operation of reserve pits, incorporating provisions for environmental monitoring and specific closure procedures. The new regulations are effective as of August 1987.

Numerous references have been made by critics of the oil industry to a series of research projects conducted at Prudhoe Bay by the U.S. Fish and Wildlife Service (FWS) (West et al., 1986; Woodward et al., 1986; and Snyder- Conn). The results are being presented as confirming severe water

quality problems in tundra ponds near reserve pits. However, there are serious technical flaws in the study design and methods, and the results should be interpreted with caution. It should also be noted that FWS has not yet released copies of the report for public review, largely because of the many adverse comments received on informal drafts. For example, water nutrient levels were not determined in the study, making it impossible to ascertain the cause for apparent differences in invertebrate populations noted by the authors.

One of these FWS studies (Woodward et al., 1986) indicated no toxic effects on fish or invertebrates in a bioassay experiment using undiluted reserve pit fluids. In this study it is concluded that "No acute toxicity was observed with fluids from reserve pits at sites 4, 5, 6, 7, and 8 when tested at 100% strength against arctic grayling and *Daphnia magna*" (emphasis added). Note that Sites 4, 5, 6, 7 and 8 referenced represent ALL THE RESERVE PITS INVOLVED IN THE STUDY. The only effect observed was regarding fecundity and growth (not survival). Daphnia showed reduced fecundity and growth after 42 days at 2.5% and 25% dilutions from one reserve pit, and 25% dilution from another reserve pit. "Other test dilutions...either did not show any significant differences from the controls or showed significant increases in reproduction and growth" (emphasis added).

Additionally, it is inappropriate to attempt to link aquatic toxicity to reserve pit fluids as reserve pits are containment structures for drilling fluids, they are not tundra ponds. Therefore, comparisons which emphasize the differences in water quality between pits and tundra ponds is inappropriate.

Concerns about reserve pit contaminants entering the food chain and potentially resulting in population-level effects on wildlife are unwarranted speculation. While reserve pit contents should be and are managed with care, there is no justification -- and no evidence -- for assuming that these generally innocuous fluids are producing an environmental hazard.

POLLUTION RISK FROM UNDERGROUND INJECTION OF LIQUID WASTES

Environmental Community Position:

Underground injection of wastes, including drilling muds, has not been studied and poses long-term pollution risks.

Scientific Response:

Underground injection of liquid wastes, including drilling muds, is an environmentally sound method of disposal on the North Slope. The North Slope geophysical makeup is ideally suited for deep well injection. Fluids are injected below a zone of continuously frozen ground, called permafrost. This region extends up to 2,000 feet below the surface. Above this zone only 18 to 36 inches of soil thaw in the short summer period. Fluid migration through the permafrost zone would not occur and water aquifers below this zone have been exempted as drinking water sources by EPA due to their high saline nature and the high cost to recover these fluids. Additionally, all wells must be permitted under the Alaska Oil and Gas Conservation Commission and EPA, who require a complete review of well construction and geophysical makeup before the well is permitted for injection of fluids. New wells are required to have fully cemented production casings to prevent back migration through the well and the casings must pass strict mechanical integrity tests. All wells are required to have automatic shut-in devices and must operate at specified injection pressures authorized by the reviewing Agencies. EPA is proposing even stricter construction standards for Class I wells, for injection of hazardous wastes, that will require continuous well monitoring to detect fluid pressure changes in the receiving and confining zones so that any fluid migration can be detected. These regulations are scheduled to be finalized by August of 1988.

The types of fluids injected on the North Slope represent a class of liquids with a low hazard rating. Recent tests on drilling fluids taken from Prudhoe Bay reserve pits in 1986 confirm that these fluids do not exhibit any characteristics used by EPA to identify hazardous wastes. Associated waste fluids injected that consist of waste lube oils and processing fluids will sometimes fail the EPA test for ignitability or contain low levels of lead from vehicle maintenance operations. Liquid wastes generated on the North Slope are not acutely hazardous nor highly corrosive and can be safely handled through deep well injection.

On-site handling of waste liquids is a preferred handling option to off-site shipment of wastes due to the extreme cost of shipping large quantities of fluids from the North Slope. Prudhoe Bay is located over 700 air miles from Anchorage alone. Additionally, long distance transportation of chemicals always carries a risk associated with spills to the environment that on-site handling can avoid. Deep well injection of liquids on the North Slope should not be viewed as a long term environmental risk.

LACK OF ADEQUATE LAND RECLAMATION TECHNOLOGY

Environmental Community Position:

Regulatory requirements for arctic site restoration and rehabilitation have not been implemented by the oil industry, nor has the technology been achieved to restore developed areas in the Arctic. Also, the petroleum industry does not appear willing or able to fund reclamation.

Scientific Response:

Reclamation or rehabilitation of North Slope petroleum development sites (after the removal of facilities, buildings, etc.) can involve gravel pads and roads, reserve pits, and gravel mine sites.

Allegations that no rehabilitation or reclamation has been done at Prudhoe Bay are incorrect. Some reclamation has been done very successfully. However, because the oilfield has only just reached its mature phase of development after 10 years of production, for the most part there have not been any facilities abandoned to necessitate reclamation. Depending on economics and technology, the Prudhoe Bay field will have a life of 30 or more years, and other North Slope fields have only recently started production. Consequently, large-scale rehabilitation or reclamation is well into the future.

A wealth of environmental data on North Slope ecology, hydrology, vegetation, and soils has been gathered during the past 15 years that provides a firm basis for assessing and implementing rehabilitation. Arctic revegetation studies and rehabilitation programs have been conducted in connection with construction of the Trans-Alaska Pipeline System, NPR-A exploration sites, exploration sites on state leases in the Prudhoe Bay and Kuparuk areas, the Prudhoe Bay and Kuparuk oilfields, and the Endicott Project. For example, a series of long-term experiments on revegetation techniques is currently in progress at the Prudhoe Bay and Kuparuk oilfields (Joyce 1987). These involve upland material (gravel mine) sites, floodplain material sites, gravel drill pads, gravel access roads, reserve pits, and disturbed tundra sites. Included in these studies are investigations on natural plant reinvasion and succession, natural recovery of disturbed tundra, and revegetation through transplanting, seeding and fertilizing.

Federal and state permits require reclamation. Regulatory requirements for gravel mine reclamation in the Prudhoe Bay - Kuparuk areas, for example, are specified in material sales contracts with the State of Alaska and in permits issued by state regulatory agencies and the Corps of Engineers. These require rehabilitation plans that involve slope contouring, relocation and sequestering of overburden, revegetation, creation of water reservoirs, and contouring to promote aquatic vegetation.

Considerable research has been conducted on the North Slope and in arctic Canada on reserve pit design and reclamation. Soon to be promulgated State of Alaska solid waste regulations require a reserve pit closure plan involving a pit cap and monitoring program. Standard Alaska Production Company has

submitted for agency approval a test plan to rehabilitate reserve pits located at Prudhoe Bay's East Dock. The main features of this plan include placement of a gravel cap and overburden, revegetation, and a monitoring program to assess any effects on water quality.

Examples of reclamation projects on the North Slope have included:

- o National Petroleum Reserve-Alaska - 14 exploration sites
- o Alyeska Pipeline Project - right-of-way work pad revegetation, material sites, camp sites
- o Prudhoe Bay Sag Mine Site "C" - gravel mine converted to water reservoir with littoral zone recontouring
- o Prudhoe Bay Tract (Delineation) well sites
- o Sag 11 - close-out of exploration well reserve pit
- o Prudhoe Bay K Pad spur roads - revegetation
- o Prudhoe Bay Gathering Center #2 berm - restoration and revegetation
- o East Dock Reserve Pits - close-out and monitoring (planned)
- o Offshore Exploration Island Reclamation
 - Niakuk Shoal
 - Exxon BF 37
 - Mukluk (August/September 1987)

EXISTENCE OF POTENTIAL SUPERFUND SITES AT PRUDHOE BAY

Environmental Community Position:

Several dumpsites in the Prudhoe Bay area are thought to qualify as EPA Superfund sites "because it was suspected that hazardous substances were being released" at those sites. Superfund sites could be expected in ANWR if development were allowed to occur there.

Scientific Response:

The claim that potential Superfund sites exist and have been permitted to exist unchecked at Prudhoe Bay is based on two cases which in fact do not support the claim. The first case is the North Slope Salvage Inc. (NSSI) cleanup, which involved a third-party firm in Deadhorse that contracted to dispose of used drums from oilfield operators and oilfield service contractors. In 1983, the Alaska Department of Environmental Conservation (ADEC) reported discovering hydrocarbon-based chemicals seeping from the pad where NSSI had operated. ARCO Alaska, Inc. and Standard Alaska Production Company voluntarily assumed the lead responsibility for correcting this situation, and a thorough cleanup was accomplished at the site. Drums and spilled wastes were not left on the pad. It should be noted that the NSSI cleanup occurred on a State of Alaska lease tract not controlled by any major oil company. This is an important distinction, as ARCO and Standard had no legal jurisdiction over the area, but did respond to facilitate a timely cleanup of the pad.

The other case is a report prepared for EPA by Tetra Tech, Inc. in December, 1984 entitled, Preliminary Assessment of 45 Hazardous Waste Sites in the State of Alaska. This report was prepared solely as a part of the preliminary assessment process for the State of Alaska under the Superfund Program. This process requires a quick analysis of information available from interviews, as well as agency files of facilities operating in the State, including EPA generators and large businesses. A site investigation must then be conducted by EPA in order to evaluate the appropriateness of placing the sites listed on the preliminary assessment on the National Priorities List (NPL) for Superfund. No sites at Prudhoe Bay have ever been listed on the NPL. A 1985 RCRA inspection at Standard's Storage Yard Facility (referred to as Mukluk Freight Lines in the Tetra Tech Report) resulted in a letter recommendation from the branch chief of the waste management department at EPA, Region X, that the storage yard be removed from the preliminary assessment list. The Standard Storage Yard had been incorrectly included on the preliminary assessment list when chemical storage was reported at the site. Standard uses the site for storage of surplus materials including chemical stock that is sold or reissued to Standard operating facilities.

It is therefore not valid to state that there are potential Superfund sites at Prudhoe Bay, and there is no evidence to support such a conclusion. Furthermore, in the NSSI case where mishandling did occur, oilfield operators acted responsibly in assuming the lead role in a cleanup operation that was necessitated by the action of an independent third-party contractor. These facts do not support the assertion that Superfund sites could be expected in ANWR; rather, they support the opposite conclusion.

LACK OF ACCOUNTABILITY OF OILFIELD SERVICE CONTRACTORS

Environmental Community Position:

The misconduct of oilfield support industries in the Deadhorse area of Prudhoe Bay has created unchecked pollution and illustrates the agencies' inability to enforce environmental regulations in the Arctic. Additionally, proliferation of facilities in Deadhorse has resulted in a substantial loss of habitat. ANWR development will produce a polluted industrial city similar to Deadhorse.

Scientific Response:

Unchecked development of service areas, like the example in Deadhorse, will not be allowed in ANWR. Both the State of Alaska and the oil industry recognize that more control is required over service areas established in connection with oilfield development. The design of the Kuparuk Industrial Center is an example of how ancillary development can be more closely controlled. Because support service contractors for Kuparuk must lease space at the Center from the North Slope Borough, the recurrence of the situation at Deadhorse has been prevented at Kuparuk.

In ANWR, the oil industry recommends that service area leases be held by the operating interests, to allow the operators to assume oversight responsibility for service areas sub-leased to contractors. The operator's presence would allow strict enforcement of environmental programs. Additionally, operators could require posting of bonds that could be levied immediately to respond to cleanup costs. In contrast, State of Alaska lease bonds return to the General Treasury and are not readily accessible for cleanup purposes.

Industry operators at Prudhoe Bay are taking a responsible role in Deadhorse to aid service contractors in cleaning up their solid waste. Support firms desiring to contract with the oil industry are well aware of the importance of this issue.

OIL AND CHEMICAL SPILLS CAUSING SEVERE ADVERSE EFFECTS ON TUNDRA

Environmental Community Position:

The large number of oil spills associated with petroleum development on the North Slope has caused damage to tundra vegetation. If oil and gas development is allowed to proceed in the Arctic Refuge, oil spills are guaranteed to result in substantial environmental damage.

Scientific Response:

This misconception regarding impacts of North Slope oil spills results from a lack of understanding of the size and location of these spills, the measures that are taken in response to them, and the spill prevention and containment features that are engineered into facilities used for storing and transferring oil and chemicals. In addition, facilities handling oil and chemicals are subject to strict state and federal laws and regulations. All spills must be reported and appropriate actions taken to clean up and reclaim the disturbed area as well as dispose of the spilled material.

The vast majority of spills never contact tundra or surface water, because they occur on and are contained by the gravel pads upon which all North Slope facilities are constructed. Because the Prudhoe Bay area is essentially snow-covered and frozen for nearly three-quarters of the year, most of the spills that do occur off pads contact only snow and ice and are easily removed. In fact, snow is an excellent sorbent material for oil spills. Contaminated snow and ice are removed by front-end loaders or by laborers with shovels and transported to a collection area so that the oil can be removed for proper disposal.

Research funded by the oil industry (Pope et al., 1982) has demonstrated that with the use of proper oil recovery and cleanup techniques, followed by simple restoration procedures, vegetation in tundra areas that are affected by oil can quickly recover (as fast as one summer growing season). Standard Alaska Production Company has evaluated numerous restoration techniques and has found that tundra areas affected by oil spills (especially moist or wet tundra) can recover well if the area is cleared of dead vegetation and if fertilizer and seed are applied. Aerial photographs are used to monitor the recovery of spill-affected areas and the overall operations of the field.

The majority of spills are small in volume and are handled relatively easily. Standard reported 573 spills for the period from 1981 through 1986. (These statistics include spills of chemicals and drilling muds.) Most of the spills were less than 100 gallons, and only 64 spills actually left gravel pads. However, many of these were on frozen ground, and in most cases very small areas were affected, much less than an acre. Recently published statistics from the Alaska Department of Environmental Conservation (ADEC) support the Standard data. For the entire North Slope of Alaska which includes the city of Barrow, the Haul Road, and other

North Slope villages, ADEC reported a total of 953 spills for the 1985-86 period, with 93.1 percent (887 spills) less than 500 gallons. Of these 887 spills, 64.7 percent were less than 55 gallons.

Other factors minimizing spills and their effects include spill prevention design in facilities, emphasis on day-to-day good housekeeping practices, spill contingency planning and training, and restoration practices when spills do occur. All facilities used to store or transfer oil and chemicals are designed with spill prevention in mind. Fuel and oil storage tanks are placed in lined containment areas, and drip pans are used under connections that might be prone to leakage. In addition, all operators develop comprehensive spill contingency plans and stockpile spill response equipment either individually or through cooperative arrangements. Standard maintains a dedicated staff of spill response personnel supported by a large inventory of equipment owned by Standard or available to Standard through the cooperative organization Alaska Clean Seas. ACS alone has over 5 million dollars in spill response equipment stored at Prudhoe Bay.

In summary, Standard has been diligent in its efforts to report, respond, clean-up, and restore areas disturbed by oil spills. Restoration techniques are proven and are applied to the small percentage of spills that actually reach the tundra. The company has been able to accomplish the successful rehabilitation of vegetation at spill sites within 1 to 3 years.

BIOLOGICAL DESTRUCTION FROM STORKERSEN POINT OIL SPILL

Environmental Community Position:

A study of an oil spill at a tundra pond at Storkersen Point, Alaska, illustrates the severe environmental damage in North Slope tundra wetlands that can result from spills. That study documented the destruction of all invertebrate and plant life and predicted that long-term recovery of the pond is unlikely due to hydrocarbons in the pond's bottom sediments.

Scientific Response:

The reference to the oiled pond at Storkersen Point is taken from a 1977 Fish and Wildlife Service Report (Bergman et al. 1977) based on efforts during the early 1970s. The main focus of the FWS report is to describe waterfowl use of coastal wetlands. The oil spill information included in the article is qualitative and there are few details presented regarding when the spill occurred, the extent, whether or not the spill was crude oil or a refined product such as diesel; no quantitative data regarding the spillsite are given. There is no followup information included regarding observations subsequent to the initial discovery. In other words, although statements are made regarding the longterm recovery, there is no information documenting that the site was revisited and that recovery data were obtained in any systematic way. (The spill receives a one paragraph description in a 38 page report).

It appears that the conclusions reached in the article regarding the potential for longterm recovery are based solely on speculation. However, there is quantitative information available regarding the fate and effects of crude oil in arctic tundra ponds. For example, Barsdate et al. (1980) conducted a systematic investigation of many aspects of tundra pond ecology in response to an experimental oiling with North Slope crude oil. They evaluated physical and chemical parameters and biological measurements. A few of the biological results broken down by organism category are described below:

Bacteria: "If there was a toxic or stimulatory effect on the microflora after the spill, the microflora were back to the control-pond levels within 2 years" (emphasis added).

Algae: "The long-term primary productivity of the phytoplankton was not changed appreciably by the oil spills... [there is enough variability from pond to pond and year to year that the differences between Pond E [experimental pond] and Pond C (the control) cannot be attributed to the oil. However, the productivity of Pond E certainly was not lessened by the oil except during the first summer" (emphasis added).

Rooted plants: "As long as the oil touched only the stems, there was no damage; some damage did occur when the oil contacted leaves." Barsdate et al. (1980) speculated that the plant leaves that died in the area of heavy

oil accumulation the first year after the spill were the result of a mechanical effect of pushing through the oil layer, rather than a toxic effect. Plants in the area of light accumulation of oil had fewer plants one year after the spill, but were "back to normal" the second year after the spill.

Zooplankton: This was the major effect in the ponds -- the rapid kill of zooplankton. However, they found return of zooplankton within 7 years after the spill and the less-sensitive species returned within a year. An interesting finding of the study was that aeration could eliminate the toxicity of the oil.

Aquatic insects: "These observations on the aquatic insects indicate that the oil-induced changes are on the species level and that such measures as secondary production and carbon flux are virtually unchanged".

These descriptions are included in this discussion to indicate that there is a wealth of quantitative information available regarding the fate and effects of oil in the arctic environment, and that an understanding of the mechanisms for biological damage provide insight into the most meaningful direction for response actions. It must be remembered that both spill situations described herein were not subject to any response or recovery operations. By and large, immediate actions to remove the oil by use of sorbent materials and flushing of emergent vegetation would have significantly minimized the extent and duration of the spill damage. Use of other response techniques, such as aeration, transplanting plant propagules, adding nutrients, or reseeded with planktonic organisms could have enhanced the recovery of these areas.

INCREASING AIR POLLUTION AND ADVERSE EFFECTS ON TUNDRA VEGETATION

Environmental Community Position:

Oil and gas facilities emit large amounts of air pollutants, including oxides of nitrogen (NO_x) and sulfur oxides (SO_x). These pollutants have increased 3 to 10-fold over levels reported by the industry in 1980 and are equivalent to amounts produced by a large U.S. city. The pollutants are of concern due to their potential to acidify the sensitive arctic tundra.

Scientific Response:

Concern over large amounts of air pollutants emitted by North Slope facilities is based on inaccurate information. Quantities of emitted pollutants are grossly overstated. The 80,000 to 100,000 tons per year of NO_x emissions attributed to North Slope oilfields is based on permitted emissions, not actual emissions. The estimated actual NO_x emitted to the atmosphere at Prudhoe Bay is less than 20,000 tons per year, much less than permitted levels.

In determining impact of emitted pollutants one should consider actual emissions, not permitted emissions. There are four main reasons why permitted quantities are much greater than actual: 1) not all of the permitted equipment was actually installed; some were never needed; 2) of equipment actually installed, much is stand-by or consists of redundant spares not normally in operation; 3) equipment that operates generally does so at a reduced capacity (The permit assumes maximum operating capacity.); and 4) the equipment produces a substantially lower concentration of pollutants at maximum capacity than the permit assumes.

In 1979-80 ambient air monitoring was conducted to establish baseline data prior to a major North Slope facilities expansion. When 1980 monitoring data are compared with current data from an on-going air monitoring program, it can be seen that no significant change in ambient air quality has occurred.

The following is a comparison of the annual average ambient concentration of NO_x and SO₂ in Prudhoe Bay (in ug/m³) measured during 1979-80 and 1986-87 monitoring periods (Radian 1981; ERT 1987). Included for comparison is the National Ambient Air Quality Standard (NAAQS) for these pollutants.

	1980	1987*	NAAQS
NO _x (annual average)	4.0	8.1	100
SO ₂ (annual average)	0.5	(below detection limits)	80

* Includes the eight months of data compiled thus far.

The incorrect assumption of a 3 to 10 fold increase in NO_x and SO_2 levels since 1980 is not supported by the monitoring data referenced above. The referenced reports embody all the ambient air quality data collected to date in Prudhoe Bay.

Concern about acidification of the tundra by SO_2 emitted from North Slope facilities is also unfounded. References to 618 tons of SO_2 emitted annually are based on permitted and not actual emissions. The fuel used at North Slope oilfield facilities is very low in sulfur. Permitted discharges are based on fuel with 20 parts per million of hydrogen sulfide, but the actual content is only 8 parts per million. In addition, only half of the equipment permitted is operating at any time. This explains why after 18 years of North Slope oilfield activity, the average annual ambient air SO_2 content is still below detectable limits.

POTENTIAL IMPACTS OF AIR POLLUTION ON LICHEN COMMUNITIES

Environmental Community Position:

Concern has been expressed that air pollutants emitted from oil and gas facilities, particularly sulfur dioxide (SO₂) and nitrogen oxides (NO_x), may have an adverse impact on lichen communities, an important food of caribou.

Scientific Response:

To address these concerns, provided below is a response prepared in a letter from Dr. Neal Van Alfen, Department of Biology, Utah State University, to Mr. Steven D. Taylor, Manager of Environmental and Regulatory Affairs, Standard Alaska Production Company, dated August 7, 1987. The letter states:

"The concern expressed about the effects of air pollution on lichen communities is understandable since they are known to be among the most sensitive of living organisms to air pollution damage. Extensive studies in Great Britain have shown the relationship between damage to lichen communities and air pollution levels. This damage to lichens was thought to be primarily caused by SO₂, but recent studies indicate that heavy metal uptake from atmospheric heavy metal pollution by the lichens may also play an important role in their sensitivity to air pollution. Studies have shown that sensitivity of lichens to air pollution is greatly influenced by the environment. Lichen communities in deserts are not as sensitive as are those in humid, temperate areas such as Great Britain. It is not known how arctic lichens will respond to air pollution, but considering that the Arctic is a cold desert, I would guess that their responses would be more typical of deserts than temperate, humid climates. The differences in responses of the lichens to air pollution in the two environments appears to be related to the fact that in humid, temperate climates, lichens are photosynthetically active much more frequently than in deserts. This is when lichens are susceptible to damage by air pollution. If this is the case, arctic lichens would be essentially immune from damage during much of the year.

Controlled laboratory fumigation studies show that the most sensitive species of lichens are damaged by relatively short (6 hour) exposures to SO₂ concentrations of about 500 µg/m³. This is in the range of concentrations at which the most sensitive vascular plant species are visibly damaged. Chronic fumigation studies of lichens with lower levels of SO₂ have not been reported, but in the absence of atmospheric heavy metal pollution, lichens will probably not be significantly more susceptible to damage by SO₂ than sensitive vascular plants such as alfalfa. The concentrations of SO₂ reported near Prudhoe Bay are much too low to cause either episodic or chronic damage to vascular plants. There is no reason to expect that these low SO₂ concentrations will adversely affect lichens.

Vascular plants are relatively unaffected by NO₂ as a primary pollutant. Concentrations of this gas must reach about 5000 ug/m³ before plants are visually affected. Concentrations of about 250 ug/m³ NO₂ have been reported to stimulate plant growth. The only reported study of the effects of NO₂ on lichens indicated that a concentration in excess of 7,500 ug/m³ for 6 hours was needed before any adverse effect on lichens was measurable. This concentration is much below the peak NO₂ concentrations reported near Prudhoe Bay. One of the lichens used in these fumigation studies, Usnea, is considered one of the most sensitive of lichens to air pollution damage, so there is no reason to suspect that the lichens of the North Slope will be more sensitive than the ones used in the fumigation study."

BLACK SMOKE EMISSIONS CONTRIBUTING TO AIR POLLUTION

Environmental Community Position:

Industry has chronically violated state air quality regulations for black smoke emissions caused by flaring of gas vapors and liquids. This has significantly contributed to air pollution on the North Slope. Industry fails to use the available control technology.

Scientific Response:

Black smoke is created by the flare systems which are associated with the oil processing facilities. These natural gas flares are part of the safety system necessary in oil and gas facilities. Normally, excess gas from facility upsets is diverted to a smokeless flare. Occasionally, however, very large pressures must be immediately relieved by diverting large volumes of gas to a secondary burning system that generates black smoke. It should be remembered that the black material in the smoke is unburned carbon particles.

The assertion that black smoke incidents pose an air quality problem is misleading. Although black smoke is very visible, combustion is still about 95 to 98 percent complete, and the smoke makes no significant contribution to criteria pollutants. The only effect is a temporary visual impact. These events are short-lived and infrequent (about once a month in the Western Operating Area of the Prudhoe Bay oilfield).

The presence of the phenomenon known as arctic haze is another issue that has been raised regarding North Slope air quality. Arctic haze was first described in the Arctic in 1956, long before the presence of any North Slope oil and gas production facilities (Rahn 1984). This pervasive haze is due to the presence in the air of minute particles such as aerosols. Research indicates that oil and gas production facilities on the North Slope do not contribute to the haze.

Investigators believe that arctic haze comes from long-range transport of industrial pollutants from middle-latitude regions of Eurasia. An emissions fingerprinting process has shown that emissions typical of Europe and Asia match those found in the haze (Raatz et al. 1984, Raatz et al. 1985, Rahn 1984). The dominant components are sulfates, and since Prudhoe Bay burns very low-sulfur natural gas, its facilities have not contributed to the arctic haze. Also, because the haze is found at high altitudes in the Prudhoe Bay area, scientists believe that local emission sources do not contribute to it. Long-distance transport is necessary for pollutants emitted near the ground to be lifted to high altitudes.

During an overflight of the Prudhoe Bay area in 1986, the National Oceanic and Atmospheric Administration found no contribution to arctic haze from North Slope oil and gas production facilities (Schnell 1987). Data collected on ambient air quality near ground level, which included emissions from Prudhoe Bay oilfield facilities, did not match the arctic haze fingerprint.

INADEQUATE REGULATORY CONTROL OF OIL INDUSTRY OPERATIONS

Environmental Community Position:

The current regulatory framework has been inadequate to protect the environment on the North Slope from the adverse impacts of petroleum development. The oil industry's violations of environmental laws and regulations range from minor to criminal and show a serious disregard for environmental impacts.

Scientific Response:

The evolution of comprehensive federal environmental regulations has occurred in tandem with the oil industry's development of Prudhoe Bay. The Prudhoe Bay Oilfield was discovered in 1968; the National Environmental Policy Act (NEPA) was enacted in 1969. Subsequent major regulatory milestones include the Clean Air Act (1970), the Federal Water Pollution Control Act and Coastal Zone Management Act of 1972. More recent legislation includes the Clean Water Act (CWA) renamed [FWPCA] amendments and Clean Air Act amendments of 1977 and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. The regulatory framework has thus been evolving through the period of Prudhoe Bay development and in response to the requirements of Arctic petroleum technology and other industrial projects.

In 1979, two years after Prudhoe Bay production commenced, the U.S. Army Corps of Engineers asserted the Clean Water Act, Section 404 jurisdiction over North Slope wet tundra. The Section 404 program regulates the discharge of dredged or fill material (i.e., gravel) into waters of the U.S. and adjacent wetlands. In 1979, the Corps of Engineers determined that North Slope wet tundra met the definition of wetlands for this regulatory purpose and initiated a comprehensive Section 404 gravel permitting program. Since most of the North Slope is wet tundra and since development requires the construction of gravel pads for insulating the permafrost and providing a stable work surface, a Section 404 permit is required for essentially all oil development activities.

Major state permitting authorities include lease operations (permits required for most petroleum activities) issued by the Department of Natural Resources, and under Section 401 of the Clean Water Act, the Department of Environmental Conservation must issue Water Quality Certification as part of a permit approval. At the local level the North Slope Borough has land management regulations applicable to oilfield activities administered through its own permitting program.

The regulatory framework is thus complex, comprehensive and multi-tiered. As part of the NEPA and permitting processes for both small and large projects, extensive pre-construction, site-specific environmental studies may be conducted, various alternatives to the proposed project are considered or modifications made, and many stipulations, including monitoring programs, are required as part of permit issuance.

The adequacy of the current regulatory framework to protect the North Slope environment from detrimental effects of oil and gas activities can best be understood by examining several examples of the regulatory process in action. During permitting of the Endicott Project facilities, permit approval to site a reserve pit for oil-contaminated drilling muds near the Sagavanirktok River delta was not granted. Consequently, oil-contaminated cuttings are taken to an approved disposal site operated by the North Slope Borough, and oil-contaminated drilling muds are injected down an EPA-approved injection well.

In another case, the Sag 11 exploratory well, drilled in the winter of 1984-85, was required by the Alaska Department of Environmental Conservation (ADEC) to have a reserve pit dug into the permafrost for disposal of used drilling fluids. Upon completion of the exploratory well, the below-grade reserve pit was covered with overburden from the reserve pit excavation, encapsulating the drilling fluids in a permanently frozen state.

Enforcement of regulations and permit conditions is monitored on a regular and continual basis by representatives of federal, state, and local agencies. ADEC, the Alaska Department of Natural Resources, and the North Slope Borough maintain offices at Prudhoe Bay to provide constantly available monitoring capability.

LACK OF GRAVEL AVAILABILITY IN ANWR

Environmental Community Position:

Vast quantities of gravel are required for petroleum development. If Prudhoe Bay sized oil fields are expected in ANWR, at least as much gravel would be needed as has been used at Prudhoe Bay and surrounding areas. The availability of adequate gravel supplies on the 1002 area is uncertain. Further, gravel extraction will result in direct and devastating impacts to the habitat of the nation's most biologically productive portion of the entire arctic coast.

Scientific Response:

To preserve the underlying permafrost and provide a structurally sound working surface on which to locate wells, processing facilities, and buildings, large quantities of gravel are required for North Slope petroleum projects.

In the event of the discovery of a field equal in size to Prudhoe Bay, it is very unlikely that construction would require more gravel but rather significantly less. This is because there has been a trend in arctic oilfield development toward ever greater consolidation of facilities and reduction in area of tundra affected (and amount of gravel utilized). These objectives have been achieved through such measures as use of smaller well pads (by reduced well spacing), horizontal drilling, and winter construction of pipelines using ice roads. This trend will continue for future North Slope oilfield projects, including ANWR if approved, so that an even smaller percentage of total oilfield area would be affected by placement of facilities. (Prudhoe Bay directly affected about 2 percent of the oilfield area whereas Kuparuk involved only about 1 percent.) (Heiken 1987)

Drillers' logs of over 14,000 shallow bore holes (75' deep) from geophysical operations on the ANWR Arctic Coastal Plain indicate that virtually the entire region is underlain in the very near surface with gravel. It is logical that this area of the North Slope harbors significant gravel resources. The Brooks Range is closest to the Beaufort Sea and the shorter, steeper gradient streams and rivers carry a significant load of gravel throughout their length. The valleys of the larger streams in the 1002 area such as the Canning, Katakturuk, Sadlerochit, Hulahula, and Jago are underlain by large quantities of gravel. These valleys also have extensive gravel terraces and the intervening uplands are veneered by thick gravel deposits. Some rivers, such as the Canning River, are heavily braided and have unvegetated gravel bars.

Prospective gravel mining and construction entail permitting processes which include Alaska Department of Natural Resources land use and lease operations permits, Alaska Department of Fish and Game Title 16 permits, U.S. Army Corps of Engineers Section 404 permits, North Slope Borough development and use permits, and State of Alaska Coastal Zone Consistency review. Permit stipulations provide strict criteria for gravel removal, stockpiling

techniques, construction monitoring, and restoration plans. Restoration plans require such techniques as recontouring, relocation and storage of overburden, revegetation, and potential use of excavated sites as water reservoirs with provisions to promote aquatic habitat values.

Because there are vast quantities of gravel in the ANWR Coastal Plain, there are multiple choices for sources to supply development projects. Consequently, selection of sources that can be mined in the most environmentally compatible manner is enhanced.

LACK OF WATER AVAILABILITY IN ANWR

Environmental Community Position:

Massive quantities of water are required for oil and gas development. It has not been demonstrated how industry will overcome the acknowledged shortages of fresh water in ANWR or avoid related adverse effects to fish and wildlife.

Scientific Response:

The petroleum industry has operated in many areas, including other parts of the Arctic, where water has been in short supply. Adequate water can be obtained in several ways, such as trapping and melting snow, insulating small non-fish bearing lakes so that they do not freeze deeply, and withdrawing and desalinating seawater. If oil production is warranted, gravel may be obtained from inactive portions of river floodplains and the resulting pits flooded as reservoirs. None of these procedures would result in a significant adverse impact to fish or wildlife.

Water occurrence in ANWR: The water resources in the Coastal Plain of ANWR are more than adequate to meet industry needs without endangering overwintering fish through withdrawal from unfrozen river pools. Marine waters of the Beaufort Sea are available for use at nearby locations. Other potential sources include lakes, ponds and river deltas. Other techniques currently being used in the Arctic, which are totally applicable to ANWR, include creating deep pools in or adjacent to river/stream beds or in lakes, desalinating sea water, erecting snow fences to trap snow to insulate existing impoundments or to be collected and melted, and converting conventional gravel pits to water reservoirs.

Regulations and Water Source Evaluation: The Environmental Impact Statement process (EIS) which proceeds any major development will include evaluation of proposed water sources and uses. These proposals will be evaluated by federal, state, and local agencies, and by the public. In addition to the U.S. Fish and Wildlife Service, other agencies that may be involved in permit applications for water sources and uses in ANWR include the Alaska Department of National Resources, the Alaska Department of Fish and Game (which issues permits for activities in anadromous fish streams), and the North Slope Borough. Permit stipulations provide strict criteria for water removal techniques, extraction periods, discharge limitations, and restoration plans. For example, it is standard practice to avoid both water removal and construction of ice roads where the activity might adversely effect water availability and the survival of overwintering fish. With the techniques and regulatory requirements described above, there is no real danger that uncontrolled water extraction in the 1002 area will deplete sources necessary for fish and wildlife survival.

CUMULATIVE BIOLOGICAL EFFECTS NOT ADEQUATELY ADDRESSED

Environmental Community Position:

The 1002 report failed to assess the cumulative impacts of petroleum development in ANWR, ignoring the massive oil and gas leasing and development elsewhere in northern Alaska including the Beaufort Sea, NPR-A, and state leases at and around Prudhoe Bay. The long-term environmental impacts that should be evaluated include chronic water pollution, air emissions, habitat loss, and effects on fish and wildlife.

Scientific Response:

Predicted cumulative effects are defined as effects "on the environment which result from the incremental impacts of the [proposed] action when added to other past, present and reasonably foreseeable future actions" (DOI 1987). Concerns have been raised about the cumulative effects of ANWR petroleum development in concert with other petroleum activities in the Arctic, including the Prudhoe Bay and Kuparuk oilfields, National Petroleum Reserve-Alaska (NPR-A), and offshore areas in the Alaskan and Canadian Beaufort seas.

Cumulative effects were addressed in the final 1002 report, which correctly stated that more detailed analyses of cumulative effects would be made in subsequent NEPA processes relating to the development of a leasing program. In addition, major petroleum development projects will require preparation of environmental impact statements which have to address cumulative effects. At such time assessment of cumulative impacts and the development of mitigation measures will benefit from site-specific and project-specific information which cannot be realistically provided prior to exploration.

Concerns about potential cumulative impacts to the North Slope environment have been overstated. In the context of the "geographic area of influence of the proposed action," the areas of current and potential future petroleum development are for the most part separated by great distances in arctic Alaska and Canada. Kaktovik lies about 100 miles east of Prudhoe Bay and is in turn over 150 miles west of the Canadian Beaufort Sea discoveries. As well as the vast areas involved, the necessary phasing of petroleum activities minimizes potential cumulative effects, especially those associated with construction. Development of the various North Slope fields has not involved concurrent peaking of activities, nor is that likely to occur in ANWR. By the time any ANWR discoveries begin to be developed in the late 1990s, petroleum activities in the Prudhoe Bay area will be waning.

Predictions of significant cumulative effects on wildlife from direct and indirect loss of habitat are not supported by scientific data. North Slope habitats for most bird species and for caribou are thought to be well below carrying capacities. The Central Arctic Caribou Herd, for example, has quadrupled in size during the past 15 years despite the cumulative developments of Prudhoe Bay, Kuparuk, Lisburne and Endicott.

Because of the vast distances between Prudhoe Bay and ANWR (60-100 miles) and the low concentrations of pollutants emitted to the atmosphere from oil and gas production facilities, it is unlikely that there would be significant air quality interaction. Thus cumulative impacts would be minimal.

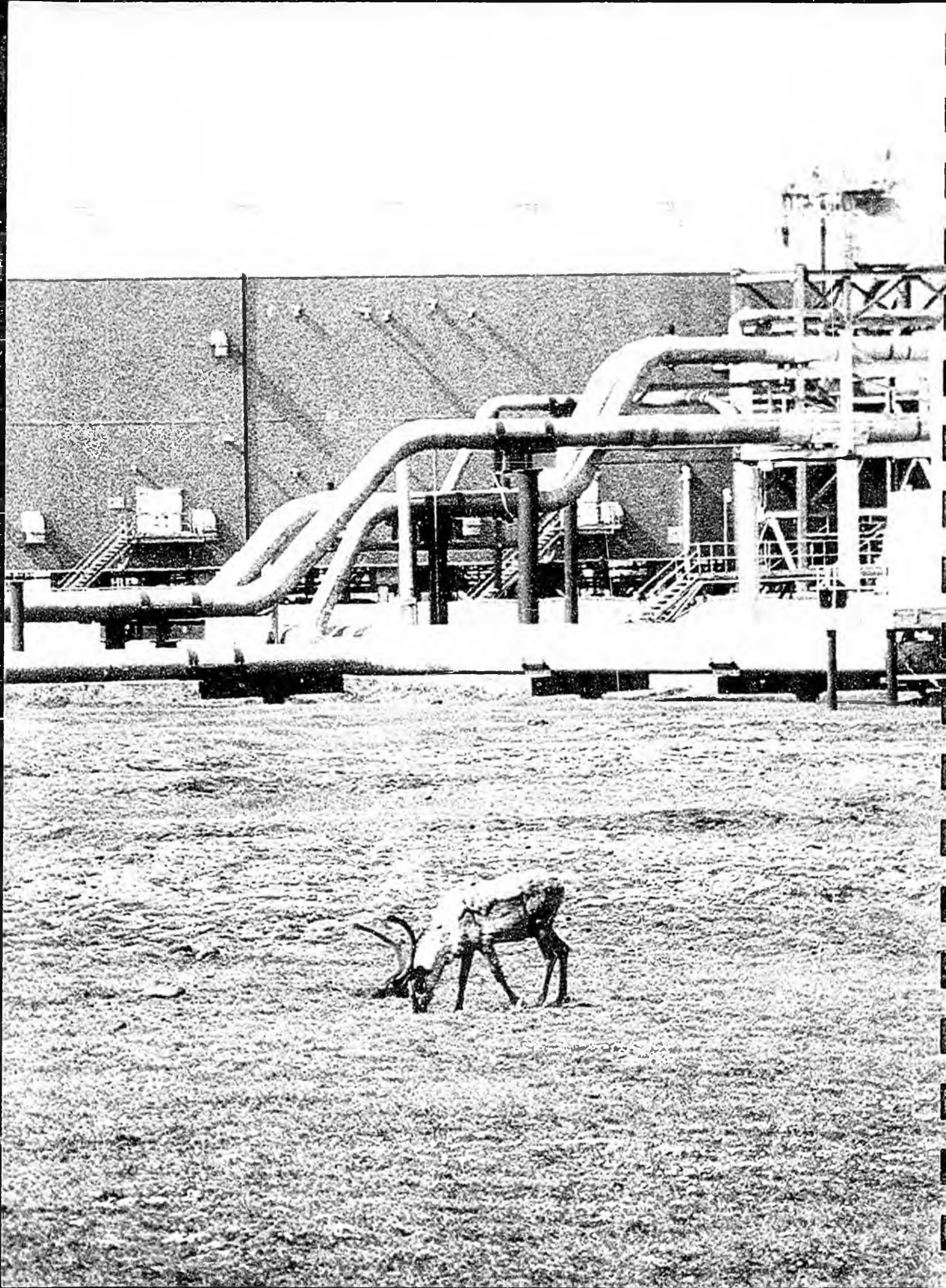
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ANWR file

RDC ALERT

**YOUR IMMEDIATE ACTION IS NEEDED
NOW TO HELP OPEN ANWR TO
ENERGY DEVELOPMENT**

September 16, 1987

The battle over oil and gas development in the Coastal Plain of the Arctic National Wildlife Refuge will take a critical leap forward this month when the Senate Committee on Energy and Natural Resources takes a survey on whether the Senate should consider legislation pertaining to ANWR in this session of Congress. If there is support for acting on the ANWR issue in this session, the panel will move forward with the volatile energy issue. If not, action on ANWR may not occur until 1989 under a new federal administration.

This represents the first time in this Congress that there will be an opinion survey in a Committee of the Congress on the issue of opening ANWR to development.

In order to effectively counter anticipated lobbying efforts by non-development interests, pro-development forces must be heard!

Your immediate action is imperative! It is critical that YOU, your friends and family send a telegram today to any or all member of the Senate Committee on Energy and Natural Resources. Urge each member to "move forward with legislation that will open the Coastal Plain of ANWR to energy development." The timing is very short. You must act now!

===== Senate Committee on Energy and Natural Resources =====
Senator Bennett Johnston, chairman

Each Senator has a common address: U.S. Senate, Washington, D.C., 20510

Senator Bingaman (NM)	Senator Weicker (CT)	Senator Bradley (NJ)
Senator Conrad (ND)	Senator Evans (WA)	Senator Hatfield (OR)
Senator Domenici (NM)	Senator Melcher (MT)	Senator Nickles (OK)
Senator Fowler (GA)	Senator Wirth (CO)	Senator Bumpers (AR)
Senator Johnston (LA)	Senator Ford (KY)	Senator Hecht (NV)
Senator McClure (ID)	Senator Metzenbaum (OH)	Senator Wallop (WY)



Alaska State Legislature

SENATE

Office of the President

P.O. Box V
State Capitol
Juneau, Alaska 99811

ECONOMIC DEVELOPMENT LEGISLATION

Legislation Which Passed the Senate and House:

SCR 5 Relating to promotion and marketing of state operated international airports
(Legislative Resolve 31)

Requests the governor to direct the Dept. of Transportation and Public Facilities to initiate a program to promote and market the services, facilities, amenities, and other advantages of the Anchorage and Fairbanks International Airports.

SB 64* An Act relating to the Alaska Industrial Development and Export Authority (signed into law June 8th)

Expands the responsibilities of AIDA to provide various means of facilitating the financing of industrial, manufacturing, export, and business enterprises.

SB 108 An Act relating to decisions of the commissioner of natural resources regarding the eligibility of an applicant for a pipeline right-of-way permit
(signed into law on June 10th)

Allows the state to issue conditional pipeline right-of-way permits.

SB 196* An Act relating to management of state land
(signed into law June 8th)

Makes comprehensive changes to AS 38, and requires that priority be given to planning and classification in areas of potential settlement, and renewable and nonrenewable resource development.

SB 219 An Act creating the Alaska Center for International Business (signed into law June 8th)

Senate Resolutions Which Passed:

- SR 7 Relating to the timber industry in Southeast Alaska
(Senate Resolve No. 6)

Requests the U.S. Forest Service to immediately provide the full amount of preroad and intensive management funding promised under sec. 705 of ANILCA, and states that the timber base established by ANILCA and the Tongass Management Plan should not be reduced.

- SR 22 Supporting the environmentally sound development and construction of a natural gas pipeline system
(Senate Resolve No. 14)

- SR 24 Relating to the development of an oil refinery in Valdez (Senate Resolve No. 16)

Supports the environmentally sound development of an oil refinery close to the terminus of the Trans-Alaska Pipeline System in Valdez.

- SR 26 Relating to the development of the mineral resources in the state (transmitted to the Governor)

Encourages the development of mineral resource projects as sources of employment and state revenue.

Legislation Which Passed the Senate and is Currently in House Committees:

- SJR 7* Relating to oil and gas exploration, development, and production within the Arctic National Wildlife Refuge (House Resources)

Urges Congress to open the coastal plain of ANWR to environmentally responsible oil and gas exploration, development, and production.

- SJR 35 Relating to maintaining timber industry employment, funding of U.S. Forest Service operations, and the allowable timber harvest level in Southeast Alaska and amendment of sections 703 and 705 of ANILCA
(House Rules)

SB 94* An Act adopting a mineral policy for the state
(House Rules)

Adds a declaration of state mineral policy to AS 44.99 (General State Policy) relating to minerals, and declares that mineral development be encouraged through reasonable and consistent nonduplicative regulations and administrative stipulations.

SB 112* An Act relating to forest management agreements
(House Resources)

Would allow the Commissioner of the DNR to enter into agreements with private purchasers for the sale of timber from state land on which the right to harvest has not been specifically prohibited by law.

SB 136* An Act relating to multiple use of state land and water (House Resources)

Amends AS 38.05.300 so that the section does not preclude multiple use of land whenever different uses are compatible.

SB 137* An Act relating to state land withdrawn from mineral location or mining (House Resources)

Would require the Commissioner of DNR to submit a report to the Legislature and the Governor within the first 10 days of each regular legislative session, detailing the state land closed to mineral location and mining during the previous calendar year.

SB 182* An Act relating to the written findings required for certain state oil and gas lease sales
(House Resources)

States that a written finding is not required before the approval of and oil or gas lease sale if within 36 months before the lease sale a written finding under this subsection has been made for the area of the proposed sale for an area that is contiguous with or adjacent to the area of the proposed lease sale.

Legislation Which is Currently Before Senate Committees:

SB 106* An Act relating to aquatic farming
(Senate Resources)

Would mandate that state policy encourage the establishment and growth of an aquatic farming industry, and that the state assist in the planning and orderly development of the industry.

SB 114* An Act relating to legislative disapproval of the Alaska Coastal Management Program
(Senate Resources)

Would require that Alaska Coastal Management Program additions, revisions, or amendments be submitted to the Legislature.

SB 280* An act relating to the issuance of permits and consistency determinations (Senate State Affairs)

Would require the Office of Management & Budget to designate a lead agency to render, on behalf of the state, each federal consistency determination and certification authorized by the Coastal Zone Management Act of 1972; and each conclusive state consistency determination when a project requires two or more state or federal permits, leases, or authorizations.

House and Governor Sponsored Taxation Legislation:

HB 20 An Act establishing a state sales tax
(by Larson; House Community and Regional Affairs)

HB 154 An Act relating to the taxation of income, relating to individual tax credits (by the Governor; House Rules)

HB 156 An Act relating to the motor fuel tax
(by the Governor; Senate Labor and Commerce)

HB 164 An Act relating to the oil and gas properties production tax (by the Governor; Senate State Affairs)

HB 230 An Act relating to the premium tax on certain insurers (by Ulmer, Goll, and Navarre; Senate Labor & Commerce)

HB 260 An Act establishing a tax on certain tobacco products (by Ellis, Gruenberg, and Pourchot; Senate State Affairs)

* indicates Resource Development Council strategy legislation

status noted as of August 1987

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Resource Review

Resource Development Council for Alaska, Inc. Box 100516, Anchorage,
August 1987

Mr. Sam Cotten
Alaska State House of Reps.
Townsquare Prof. Bldg.
Eagle River, AK 99577

ANWR battle escalates

Critical Senate vote may take place next month

The battle over oil and gas development in the Coastal Plain of the Arctic National Wildlife Refuge may take a critical leap forward in September with the Senate moving out in front of the House in consideration of the highly volatile energy issue.

The Senate Energy and Natural Resources Committee, chaired by Senator Bennett Johnston, D-LA., may vote next month on the limited question of whether the refuge should be opened to development. If there is support for that concept, the panel would then consider conditions for the development.

If the Committee does not take a formal record vote on this matter, it may instead do a survey of its members' attitudes and opinions.

Whatever approach the Committee takes, this represents the first time in this Congress that there will be a vote or opinion survey in a committee of the Congress on the issue of opening ANWR to development.

Meanwhile, members of the House Interior Committee say it will be at least next year before they are ready to debate the issue. Interior Committee chairman Mo Udall said he would appreciate the Senate taking the lead on the issue. The House Interior Committee plans several more hearings on the refuge after Congress returns in September.

During the protracted battle over the Alaska Lands Act, the House twice passed a bill before the Senate acted.

For the past two months, the environmental organizations which are opposed to opening the Coastal Plain to development, and who favor Wilderness designation instead, have put in place a very effective grass roots letter writing campaign to

(Continued on page 7)



Since habitat is not limiting the growth of the Porcupine Caribou Herd, many experts believe that oil development in a very small area of ANWR will not adversely impact the herd. If another Prudhoe Bay was discovered in ANWR, approximately 12,500 acres would be developed, leaving millions of acres of caribou grazing and calving areas on the vast Coastal Plain undisturbed.

Congressmen flock to North Slope to see oil operations

Influential congressmen charged with deciding whether to allow oil and gas development in the Arctic National Wildlife Refuge took a first hand look at the piece of remote real estate that has become the grand prize in a monumental struggle between preservationists and those favoring environmentally-sound development.

Leading the parade to the 1.5 million acre Coastal Plain were three congressional committees studying Interior Secretary Donald Hodel's strong recommendation to allow for exploration and development in what has been defined as America's premier onshore oil and gas prospect.

Visiting committees included the Senate Energy and Natural Resources Committee, the House Interior and Insular Affairs Committee and the House Merchant Marine and Fisheries Committee.

Scores of others, including Interior Department officials, a media contingent, key Senate aides, conservation groups and pro-energy organizations, accompanied the congressmen on a tour that included existing oil and gas operations at nearby Prudhoe Bay.

Industry representatives hosting the visiting congressmen welcomed the opportunity to show off impressive facilities and let the visitors see for themselves that large scale oil and gas development in the Arctic can and does coexist with the surrounding environment and wildlife.

RDC president Joe Henri and executive director Becky Gay traveled across the state to meet with members of the various committees. At a Senate Energy Committee dinner at the Chena Pump House in Fairbanks, Henri pointed out to

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Message from the executive director

By
Becky L. Gay



Becky Gay
adjusts
an RDC pin on
Mo Udall.

A soldier in every camp . . .

Key congressional members and staff have been touring Alaska this past month. Therefore, so has RDC.

RDC's Executive Committee gave staff the determined mandate to arrange for "rubbing elbows" with the various congressional delegations, no matter where we had to go in Alaska to accomplish our mission.

Although RDC would prefer to be leading the congressional delegations instead of following them, we were prepared to do whatever was necessary to show Congress there are good-quality resource development folk who live, work and play in Alaska and who foster a long-term vision and love for this great state.

Thanks to Alaska's helpful congressional delegation, RDC's statewide board, our energetic president, Joe Henri, and a widespread base of support, we were able to do just that.

Joe and Aletha Henri attended Senator Murkowski's dinner for Chairman Bennett Johnston (LA) and Senate Energy members in Fairbanks. Dick Tindall, Renewable Resources division director, carried the day for RDC in Kodiak with House Merchant Marine and Fisheries. Board members Pete Nelson, Don Cornett, Easy Gilbreth and I attended a dinner with Senators Ste-

vens, Heflin (AL) and Stafford (VT), strong proponents of removing the restrictions on ANWR. Other board members visited the Slope and a variety of parties, receptions and fishing trips with the committees.

A most interesting trip involved intercepting House Interior members and staff aboard the ferry Malaspina between Juneau and Sitka. Joe Henri, board member Dick Griffin and Mayor Dan Keck of Sitka, and I took the cruise. Although no one can doubt Chairman Udall's love for Alaska (however misguided in effect), we all laughed when he joked Alaskans were beginning to like him more since "lately they've been waving with all five fingers."

At the ferry terminals in Juneau and Sitka the preservationists welcomed him with open arms, demonstration signs and floats glorifying the Tongass and denigrating anything which had to do with the timber harvest.

We watched from the deck as the delegation made its way through the demonstrators, wondering if those sort of tactics are really effective and if any of the demonstrators used wood or petroleum products, like toilet paper and gasoline. If so, we wondered, where do they think those items come from — Japan?

Upon boarding, the Interior Committee immediately created a "Core Congressional area" by barricading itself in the lounge, protected by its staff and Forest Service personnel from Alaskans and other tourists. RDC managed to penetrate the inner circle, but not without using a variety of tactics which I will not detail for strategic reasons!

Overall, these trips have been illuminating from many angles, including to the Congress, we hope. At least now they have faces to associate with names, and so do we. Meeting firsthand the "soldiers in every camp" opens lines of communication which cannot be established any other way.

I would like to thank our president Joe Henri and the excellent RDC board for their help in rallying the troops we needed. RDC was everywhere, with different faces and representing all resource sectors. We made a difference in the impressions the Congressmen and their staff formed about Alaska.

And thanks to board member Don Cornett, even Chairman Mo Udall was wearing an RDC pin throughout the trip!

Alaska mining activity takes a plunge

Mining activity in Alaska took a nosedive last year in exploration, development, production and employment. The total value of the minerals industry slipped by 14 percent from the previous year.

Overall industry employment fell 20 percent, with the placer gold sector alone losing some 175 jobs. Gold still far outdistanced production of other minerals, but was off 16 percent from 1985 levels.

On the upside, dock, road and fuel-tank farm construction is proceeding for the Red Dog project near Kotzebue. Amselco Minerals Company is starting to develop the Greens Creek silver-gold mine near Juneau. Inspiration Gold, Inc., is well into its first full exploration/production season of offshore gold dredging near Nome and over 130 workers are being kept busy by Valdez Creek Mining Company on a placer gold operation off the Denali Highway.

Alaska Minerals Industry

	1984	1985	1986
Exploration	\$ 22,283,650	\$ 9,150,000	\$ 8,914,744
Development	53,348,055	34,120,775	24,331,972
Production	199,437,167	226,599,250	198,461,007
Total	\$275,068,872	\$269,870,025	\$231,707,723
Employment	N/A	3,600	2,950

Resource Development Council

The Resource Development Council (RDC) is Alaska's largest privately funded nonprofit economic development organization working to develop Alaska's natural resources in an orderly manner and to create a broad-based, diversified economy while protecting and enhancing the environment.

Executive Committee Officers

President Joseph Henri
 Vice President Shelby Stastny
 Vice President John Forceskie
 Vice President John Rense
 Secretary Stephen Ellis
 Treasurer Larry Laughman
 Past President Boyd Brownfield

Staff

Executive Director Becky L. Gay
 Public Relations Director Carl Portman
 Projects Coordinator Mike Abbott
 Membership/Staff Assistant Ann Bradley

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Carl Portman
 Editor & Advertising Manager

Easley went the extra mile



Paula Easley, Becky Gay and Boyd Brownfield were the guests of honor at the President's Party in mid-July.

RDC expresses appreciation for Easley's dedication

Over 120 friends and members gathered at the home of Joe and Aletha Henri in July to honor outgoing executive director Paula Easley, outgoing president Boyd Brownfield and new executive director Becky Gay.

On behalf of the entire statewide Board of Directors, the Executive Committee, and the Council's broad membership, Joe Henri expressed profound appreciation for Easley's intense commitment and dedication to the interests and concerns of Alaskans. Henri described Easley as the "heart and soul" of the Council she guided for 12 years as its executive director.

In a letter to Henri, former Congressman Jim Santini said "Paula went the extra mile in terms of hours and resolve."



Hostess Aletha Henri

Henri noted "this is not the end of the road but merely an important juncture, which means that we can hope to work with Paula during the times ahead, anchored in a well-founded expectation that Alaska's resources will be developed, that the economy will be broadened and diversified, and that Alaskans will enjoy a good way of life in this very great place."



Sharing a laugh are Charles and Roberta Herbert and Bob and Evangline Atwood.

Study reveals gas line price tag

A recent study commissioned by Yukon Pacific Corporation, the firm that wants to market North Slope natural gas in the Pacific Rim, has revealed that a transportation system to carry the gas south could be built for about \$8 billion, several billion dollars less than previously projected.

Conducted by the Institute of Gas Technology of Chicago, the study also confirms Yukon Pacific's assertion that North Slope gas can be competitive in Korea and Taiwan as well as Japan. The study also says that natural gas can be marketed sooner than expected if the Trans-Alaska Gas System is built in phases. It said the system could be in operation by late 1993 or 1994.

Yukon Pacific is proposing to build an 800-mile pipeline to carry North Slope gas to tidewater in Valdez where it would be liquefied and shipped by tanker to the Pacific Rim. The company had estimated the cost to build the line, processing plants and ships to move the gas across the Pacific Ocean at \$11 billion.

Backers of TAGS are now awaiting a presidential finding that North Slope gas can be exported without affecting U.S. energy markets. The finding is necessary before the Alaska-based Yukon Pacific Corporation can enter into contract negotiations with Asian customers. The timing of the presidential finding and necessary permits for the project is crucial if the company hopes to capture a share of the Japanese LNG market. Existing Japanese contracts will expire in the mid-1990s and Japan is already looking for new sources of gas from several countries.

Alaska logs to be exported to China

An agreement between a subsidiary of China International Trust and Investment Corporation and the Anchorage-based Koncor Forest Products calls for harvesting over 30 million board feet of spruce trees for export to China annually for at least five years.

Timber located on Koncor land on Afognak Island north of Kodiak will be cut for industrial use in Chinese construction, packaging and crating.

Dan Dixon, director of the state Office of International Trade, called the joint ven-

(Continued on page 6)



Foss Maritime tug and barge approaches the Delong Regional Transportation port site.



Geologists tour the Red Dog Mine site.

Red Dog project moves forward

Cominco enters into major contract commitments

In an effort to bring the largest zinc mine in the western world into production by 1990, Cominco Alaska Inc., has entered into major contract commitments and construction work on the road and port facilities for its Red Dog project in Northwest Alaska.

In a presentation before a Resource Development Council breakfast forum in late August, Ralph Hargrave, Vice President and General Manager of Cominco Alaska, said the current schedule calls for moving the start up date for the \$420 million project up by one year.

The Red Dog project is a venture of Cominco Alaska Incorporated and NANA Corporation. Another key member of the development team is the State of Alaska, with the Alaska Industrial Development Authority (AIDA) financing the transportation system.

Red Dog is one of the world's great mineral deposits with a unique combination of large size, high grade and a waste-to-ore ratio which will make it one of the world's largest, and lowest cost zinc producers when at full production. The present mineral reserve is estimated to be 85 million tons, at a grade of 17.1 percent zinc, 5 percent lead and 2.4 ounces per ton of silver. Based on the present production forecast, this will yield a mine life of almost 50 years.

Hargrave noted that Red Dog is the second largest zinc deposit ever discovered. He expressed confidence that the deposit will be the largest in the world once the area is adequately explored.

The production plan is based on mining



Workers lay geotextile fabric out on the tundra as work begins on the Red Dog haul road.

at a rate of 2.1 million tons of ore per year to produce 720,000 dry tons of concentrates per year.

Hargrave explained that the AIDA agreement commits Cominco to pay AIDA an annual toll fee of about \$12 million. On the basis of this guaranteed toll fee, AIDA will finance and build the \$150 million road and port with funds from the state, plus the proceeds of a bond sale.

Cominco's toll fee is calculated to give the state a 6.5% return on the total investment in the system over 50 years. The toll fees will amount to about \$600 million during this period. In addition, the state will receive from Red Dog at least \$300 million in taxes and fees, which are the direct result of the state facilitating this development. This will give the state a total of \$900 million on a \$150 million investment. Red Dog will inject up to \$100 million annually into the Alaskan economy.

Completion of this agreement has allowed AIDA to start construction of the DeLong Mountain Transportation System. The first contract was awarded last year to Enserch Alaska Construction to build a shallow water dock and staging area at the

port site. In February a second contract was awarded to Rockford Corporation of Anchorage for the construction and installation of four double-wall diesel fuel storage tanks.

Last month Enserch Alaska began construction of the \$48 million mine road. The company anticipates having an initial 52-mile pioneer road to the mine site completed by February 1988.

Green Construction of Anchorage will do the major earthwork at the mine site. The work will consist of building the tailing dam, fresh water dam, initial stripping of the orebody and preparation of the mill site area for the modules which will begin to move into the area next year.

Green began work at the mine site in July preparing its construction camp for major construction commencing in February.

Other major contracts will be awarded for accommodation module fabrication, a services complex, concentrate haulage, general mechanical and electrical, module fabrication, module bases and structural steel and a mine concentrate storage building.

Upcoming contracts which will be issued by AIDA include the port site concentrate storage building, offshore structures and the conveyors.

Hargrave said Red Dog ore will be mined by open-pit methods since the mineral is very close to the surface. He said the process plant layout is based on the concept of construction off-site in large modules, a technique which has been successfully used in development of the North Slope oil facilities.

Because of a restricted shipping season, Hargrave said concentrates will be stored over the winter for shipment in the summer, adding significantly to the cost of the project. The shipping concepts are based on a 100-day season.

For land transportation, the present concept is to move the concentrate in truck-trailer units on the 52-mile road, to a storage building at the coast which will hold about nine months production.

Beluga coal developer optimistic

Diamond Alaska project offers economic stimulation

Since the 1890's Gold Rush, Alaska has built its future on the development of its resources. With the sudden fall in oil prices and the subsequent decline in Alaska's economy, state leaders have come to recognize that recent efforts to diversify the economy will depend greatly on the state's determination to develop a variety of resources.

The Beluga field, 25 air miles west of Anchorage, is one example of a vast source of mineral wealth offering a major shot in the arm to Alaska's future prosperity. However, before this tide-water coal can help usher in a new horizon in terms of jobs and other economic benefits, RDC says the state must do everything reasonably possible to allow the Diamond Alaska project to become a competitive coal source in domestic and international markets.

The project could become one of several major mineral developments to play a role in expanding Alaska's economic base. Over its 34-year life, it will employ hundreds of Alaskans and provide tax revenues to the Kenai Peninsula Borough and the state.

Speaking before an RDC breakfast forum earlier this month, Luke Franklin, Manager of Environmental and Regulatory Affairs for Diamond Alaska Coal Company, said his company has been working steadily on the project since 1981 when it launched exhaustive environmental studies in an effort to obtain necessary state and federal permits.



Exploratory drilling was conducted by Diamond Alaska Coal Company in 1982.

On June 22, Diamond submitted an amended application for a mine permit from the Alaska Department of Natural Resources.

"We feel the state decision on the permit will be positive, but whether the stipulations are those of which we can live with the economically develop the mine is important," Franklin said.

The two key issues that appear to be the crux of the amended application are

topsoil handling and sediment and drainage control.

In a letter to Jerry Gallagher, director of the state Division of Mining, RDC said the state should study these issues carefully and insure protection of public resources, without unnecessarily challenging the commercial viability of the project.

Topsoil handling is an issue of major concern to the entire coal mining industry. In its comments RDC asked the state to be open-minded and not rely on formulas and processes used with greater utility in other parts of the U.S.

The Resource Development Council believes state proposals to force the developer to remove, stockpile and regrade up to three times as much soil as Diamond's proposal are "overkill" and have no higher likelihood of sustaining sufficient re-vegetation.

Water quality treatment, as proposed by Diamond Alaska, involves primary, secondary and tertiary treatment regimens in addition to rigid effluent release monitoring.

"Diamond Alaska has demonstrated the effectiveness and efficiency of its proposed sediment control program," Gay said. "By requiring further treatment processes without actually demonstrating need, the state may very well be insisting on a level of protection that is unnecessary and commercially debilitating."

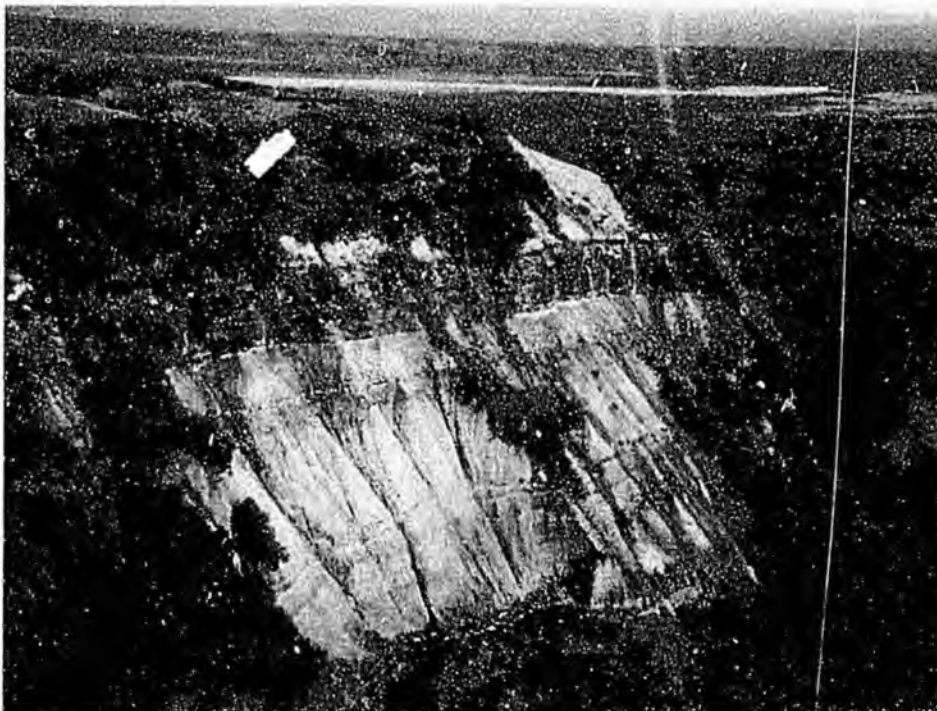
"Alaska must recognize the precedent setting nature of this permit process," Gay said. "The state must make sure that every stipulation and requirement, and ultimately the permit itself, is fully supportable, based on the empirical evidence at hand."

After the state permit is granted, Diamond Alaska will move into phase II of the project, focusing on the environmental impact statement process, additional federal permits and the remainder of the state permits. Franklin estimates that 40 permits will be sought under phase II.

Franklin is anticipating a pre-draft EIS to hit the street by the end of September. After a public review process, the final EIS should be out in early 1988. Once dozens of new permits are granted, construction could begin later in 1988, but markets for the Beluga coal must first be secured.

Franklin said the company's main marketing effort is being handled out of Dallas where executives are optimistic that markets will be in place for the coal.

Diamond Alaska anticipates several years of operation before reaching peak production levels. With that being the case, RDC believes the state can use the experience gained in early stages of development to determine the most appropriate environmental protection measures.



A coal seam is visible along a ridge line in the Diamond Alaska coal project area about 45 miles west of Anchorage.

Senate partnership aims to stimulate economy

Legislature faces a challenge

This past legislative session the Senate leadership entered into a partnership with the Resource Development Council (RDC). This partnership's goal was to move forward with a package of economic development legislation which would implement the recommendations made in RDC's publication *New Strategies for Advancing Alaska's Economy, 1986-1990*.

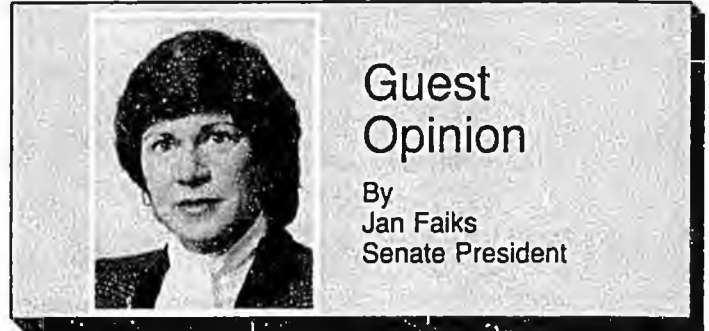
This publication proved to be especially helpful to members of the Legislature because it contained specific recommendations for legislative action to further economic development in our state. This contrasts with many other efforts which have focused on the problems instead of offering solutions.

All Alaskans have felt the effects of downturns in the world oil market during the last two years, and it has driven home the point that we can no longer rely on only one industry as the engine to drive our economy — a point, I might add, which groups like RDC have been making for a long time. As a result, the Legislature faced a crucial challenge when the session convened this past January. It had to do all it could to turn our economy around.

The Senate's answer to this challenge was to move forward with over 20 different pieces of economic development and diversification legislation. This legislation was aimed at stimulating development in the mining, timber, and fishing industries as well as fostering international trade.

Unfortunately, the Governor and House Majority had a different approach. Instead of working on incentives for development, they proposed six new or increased taxes so Alaskans could continue to support an oversized state government which already spends many times the national average per capita! These measures included the reinstatement of an income tax, establishing a state sales tax, doubling the motor fuel tax, increasing the severance tax burden on the oil industry, increasing the premium tax on insurers, and establishing a smokeless tobacco tax. The Senate said no to each of these taxes. The Senate also said no to a raid on the earnings of the Permanent Fund in order to fuel an insatiable bureaucracy.

While the House Majority seemed to have no problem passing many of these taxes, they failed to pass a great deal of the RDC strategy legislation. By the end of the session the most crucial



economic development legislation such as SB 112, relating to forest management agreements, SB 136, relating to the use of state land and water, SB 137, relating to state land withdrawn from mineral location or mining, and SB 182, relating to the written findings required for oil and gas lease sales was stalled in the House Resources Committee.

While it may seem hard to believe, the House Majority even killed the Senate's ANWR resolution. This is especially frustrating when a number of other states have already passed resolutions in support of oil and gas development in the Coastal Plain of ANWR.

Also in the issue of the *Resource Review* is a list of RDC's economic development legislation, along with the status of each bill and resolution. The Senate will continue pushing forward with this important legislation when the next session convenes on January 11th. However, if we are going to be successful in getting the RDC strategies passed by the House, we are going to need your help.

Between now and January it would be especially helpful if you would let your Representative in the House, and especially the members of the House Resources Committee, know that you feel economic development is important to the future of our state, and that in order to achieve this goal you would like to see them act positively on this important economic development legislation. House Resources Committee members are Sam Cotten D-Eagle River, Adelheid Herrmann D-Naknek, John Sund D-Ketchikan, Mike Navarre D-Kenai, Cliff Davidson D-Kodiak, Drue Pearce R-Anchorage, Heinrich Springer D-Nome, Lyman Hoffman D-Bethel, and Dick Shulte R-Tok.



Koncor will export over 30 million board feet of timber to China annually for at least five years.

Afognak timber to be shipped to China

(Continued from page 3)

ture a big step toward opening mainland China to Alaska exports.

Koncor is owned by natives of Kodiak and the Chenega, Yakutat and Ouzinkie village corporations. It has operations on Afognak Island and in the Yakutat area.

The China International Trust and Investment Corporation is an economic development and finance ministry of the Chinese government.

The new joint venture, known as Citikon, is unique to Alaska in that one company will harvest the timber and market it overseas. Citikon has purchased a large amount of Afognak Island timber and will

sell it to "end users" in China and perhaps to companies in other Far East countries. The arrangement eliminates some expensive steps in selling timber on the spot market and strengthens Koncor's logging operations on Afognak.

Citikon's annual shipments of at least 30 million board feet will amount to about 10 percent of the state's total annual log exports to the Pacific Rim. Enough wood will be exported to build about 3,000 U.S. type homes.

A dozen U.S. companies sell logs to China, which is second only to Japan in log imports.

Senate may take ANWR vote in September

(Continued from page 1)

key members of Congress on this issue. The anticipated vote or opinion survey in September has prompted the environmental community to redouble its lobby effort.

RDC believes it is imperative that its members encourage friends and family to mount a strong effort reaching each of the 19 members of the Senate Energy Committee and urging them to open the Coastal Plain to oil and gas development. **Action is needed now.**

The Council suggests brief letters, telegrams and phone calls. Congressional staffers are keeping a tally of all post cards and letters received on the issue. Send RDC a copy of your letters.

RDC urgently needs your active support to persuade the members of the Senate Energy Committee to proceed with hearings and legislation to open 8% of ANWR to oil and gas development.

Senator Jeff Bingaman
502 Hart Senate Office Building
Washington, D.C. 20510

Senator Bill Bradley
731 Hart Senate Office Building
Washington, D.C. 20510

Senator Dale Bumpers
229 Dirksen Senate Office Building
Washington, D.C. 20510

Senator Kent Conrad
825 A Hart Senate Office Building
Washington, D.C. 20510

Senator Pete V. Domenici
434 Dirksen Senate Office Building
Washington, D.C. 20510

Senator Daniel J. Evans
702 Hart Senate Office Building
Washington, D.C. 20510

Senator Wendell H. Ford
173A Russell Senate Office Building
Washington, D.C. 20510

Senator Wycle Fowler, Jr.
320 Hart Senate Office Building
Washington, D.C. 20510

Senator Mark O. Hatfield
711 Hart Senate Office Building
Washington, D.C. 20510

Senator Chic Hecht
302 Hart Senate Office Building
Washington, D.C. 20510

Senator J. Bennett Johnston
136 Hart Senate Office Building
Washington, D.C. 20510

Senator James A. McClure
309 Hart Senate Office Building
Washington, D.C. 20510

Senator John Melcher
730 Hart Senate Office Building
Washington, D.C. 20510

Senator Howard M. Metzenbaum
140 Russell Senate Office Building
Washington, D.C. 20510

Senator Frank H. Murkowski
709 Hart Senate Office Building
Washington, D.C. 20510

Senator Don Nickles
713 Russell Senate Office Building
Washington, D.C. 20510

Senator Malcolm Wallop
206 Russell Senate Office Building
Washington, D.C. 20510

Senator Lowell Weicker, Jr.
225 Russell Senate Office Building
Washington, D.C. 20510

Senator Timothy E. Wirth
237 Russell Senate Office Building
Washington, D.C. 20510

Congressmen inspect ANWR *Continued from page 1*

chairman Bennett Johnston that "we can draw on the experience of oil production at Prudhoe Bay and the operation of the Alaska pipeline to provide an empirical base of evaluating the claims of both sides of the resurrected Alaskan oil debate." Henri stressed, "Unlike the Prudhoe Bay debate, a decision about developing the vast potential of ANWR can be made on the basis of fact and experience, rather than rhetoric and speculation."

Henri cautioned that those now opposing development in ANWR frequently cite arguments alarmingly similar to those brought forward by environmental groups some 15 years ago attempting to halt Prudhoe Bay development. There is one exception; many preservationists then argued that ANWR was far less environmentally sensitive or important than the land the 800-mile Alaska pipeline would cross.

"Today they have either quickly forgotten those arguments or twisted them in such a way to meet their current agendas," Henri said.

Although the attack on Prudhoe Bay development centered on the disaster certain to befall the caribou, any effect to date has been virtually undetectable. In fact, the caribou population at Prudhoe Bay has tripled since production began in 1977.

RDC contends there is no reason to believe oil exploration activities on the ANWR Coastal Plain would affect wildlife

more than they do at Prudhoe Bay or along the pipeline. To the contrary, ANWR oil and gas exploration would take place at times when caribou were not present.

Even if development were to occur, it would consume less than one percent of ANWR's 19 million acres, leaving millions of acres of untouched wilderness inside refuge boundaries. Since caribou know no political boundaries, experts believe they'll continue to calve across the Alaska and Canadian arctic coastal plain where millions of acres of caribou habitat will remain undisturbed.

RDC is continuing its national efforts directed at convincing Congress to open the Coastal Plain to environmentally-sound development. For information on how you can help make a difference, call RDC at 276-0700.



RDC Executive Committee member Pete Nelson shares a laugh with Mo Udall, Chairman of the House Interior Committee, at a barbeque hosted by former Governor Walter J. Hickel.



RDC president Joe Henri and Executive Committee member Easy Gilbreth and Milly discuss oil and gas development in ANWR with Roy Jones, Chief Counsel for the House Interior Committee.

ATTENTION: RDC Board Members

Homer Board Meeting

September 19, 1987

11:30-3:30 p.m.

Formal Meeting

If you are a member of the RDC statewide Board of Directors, then you recently received details in the mail of our Fall Board Meeting. Please return response form to RDC as soon as possible.

Red Dog



A Venture of...



Cominco Alaska

and



NANA

Possible speeches + Publications

Sam

This is the oped piece I drafted on ANWR late last session. It's feisty and the content is a bit stale, but maybe it would be a good start for thinking about how to counteract the Senate Majority newsletter.

N

ANWRCP2

ANWR: A MAJOR RESOURCES ISSUE FOR ALASKANS

By Rep. Sam Cotten (D-Eagle River)

One of the major issues before the Alaska Legislature, and simultaneously before the U.S. Congress, is the decision about opening the coastal plain of the Arctic National Wildlife Refuge to oil and gas exploration and development.

Should the coastal plain be opened to oil and gas exploration and development? The question seems simple. It is a matter of jobs and revenue for Alaska. But some of the wrinkles in the U.S. Interior Department's proposal to open ANWR could trip Alaskans and threaten to trip Congress as well.

Early during this legislative session, the House Resources Committee held hearings on some proposed land exchanges in ANWR. At that point, the U.S. Interior Department had revealed very little about the exchanges, except that they would assist politically in Washington, D.C.

Members of the committee asked a broad range of questions. The Interior Department did not have many answers and did not want the exchange process to be public. The Department's assurances about the land appraisals and net impact on the State were not very convincing.

Since then, Interior has told the public only a little more about the proposed land exchanges. We can tell that potentially valuable ANWR lands will be traded to private corporations, which will receive all the rents and royalties from any future oil and gas production. Yet we don't know whether the taxpayers will get a good deal in the proposed trades, and we do know that so far Congress has been quite hostile to the trade proposals.

Last week the Alaska Senate passed a resolution that advocates opening ANWR to oil and gas. I fully support opening ANWR, wanting to see environmentally responsible oil and gas development wherever it can occur in Alaska. But the Senate resolution also includes an endorsement of the proposed trades.

For Alaskans, the problem is this: if the trades go forward, the people of the State of Alaska will forfeit their existing right to 90% of the revenues from oil and gas production from such wildlife refuge lands. That could mean billions of dollars of future revenue that might have been available for schools, roads, and other purposes. It could mean that the corporations will be raking in profits while the rest of us pay new taxes.

Should this share be traded to private corporations?
My answer is no, not now. Any decisions on land trades should be held until after Congress decides whether or not ANWR should be opened. Governor Cowper made a good decision not to get involved in the trades or to support them unless they are more open and guarantee more benefits to all Alaskans.

This question threatens the Legislature's passage of a resolution favoring ANWR oil activity, because some members of the Legislature believe strongly that the trades should be endorsed now. My position, as co-Chair of the House Resources Committee, is that the Legislature should acknowledge the lack of consensus on the trade proposals and suggest more review by Congress and Alaskans.

~~It's not unusual to have political trades and pressures build up at the end of the legislative session. I was not surprised to see the Senate's resolution include and endorsement of the proposed land trades. But I do not agree that they should be endorsed, and neither do a lot of Alaskans and legislators.~~

~~If we are going to arrive at a decision on the opening of ANWR, the subsidiary issue of land trades should be shelved. It isn't acceptable for legislators late in session, to try to protect a parochial interest under the~~

~~cloak of a larger one. So I plan to continue working with~~
other legislators to give the issues full public review and
consideration, and then to protect the broad interests of
all Alaskans.

File: ANWR - environmental

ALASKA ARCTIC COAST ISSUES FORUM

*4.8 million
members*

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NATIONAL WILDLIFE FEDERATION
BOARD OF DIRECTORS

IN COOPERATION WITH THE
WILDLIFE FEDERATION OF ALASKA

Anchorage Hilton Hotel
Denali Room
Anchorage, Alaska

August 14, 1987

SESSION I: THE PERSPECTIVE OF THE STATE GOVERNMENT

10:30 A.M. WELCOME AND INTRODUCTION OF PANELISTS

Jay D. Hair, President, National Wildlife Federation
Forum Moderator

Dennis D. Kelso, Commissioner
Alaska Department of Environmental Conservation

Norman Cohen, Deputy Commissioner
Alaska Department of Fish and Game

James Eason, Director, Division of Oil and Gas
Alaska Department of Natural Resources

Robert E. Gilmore, Special Assistant to the Director
U.S. Department of the Interior Fish and Wildlife Service

Jack Coghill, Chairman
Senate Resources Committee, Alaska State Senate

Sam Cotten, Chairman
House Resources Committee, Alaska State House of Representatives

12:30 P.M. INFORMAL BUFFET LUNCHEON
Denali Room

ALASKA ARCTIC COAST ISSUES FORUM

Page 2

SESSION II: PERSPECTIVES OF CORPORATE, ENVIRONMENTAL
AND SUBSISTENCE GROUPS

2:00 P.M. INTRODUCTION OF PANELISTS

Jay D. Hair, President, National Wildlife Federation
Forum Moderator

Celia Hunter
Writer-Columnist

Jacob Adams, President
Arctic Slope Regional Corporation

David R. Cline, Regional Vice President
National Audubon Society

Sarah James, Representative, International Caribou Treaty
Negotiations
Arctic Village Council

Robert W. Adler, Executive Director
Trustees for Alaska

Susan Alexander, Field Representative, Alaska Region
The Wilderness Society

Mark McDermott, Senior Environmental Coordinator for
ARCO Alaska
Alaska Oil and Gas Association

Ann Rothe, President
Wildlife Federation of Alaska

*The National Wildlife Federation
1412 Sixteenth Street, N.W.
Washington, D.C. 20036-2266
(202) 637-3700*



Working for the Nature of Tomorrow™

NATIONAL WILDLIFE FEDERATION, 1412 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

Office of the President

July 22, 1987

The Honorable Sam Cotten
Chairman, House Resources Committee
Alaska House of Representatives
P.O. Box 296
Eagle River, Alaska 99577

Dear Mr. Cotten:

The National Wildlife Federation's Board of Directors will hold its mid-year meeting in Anchorage, Alaska on August 13-15, 1987. In conjunction with their meeting, the Board will host a forum in the Denali Room of the Anchorage Hilton Hotel on the question of whether further oil and gas exploration and leasing should be permitted on the Arctic Coastal Plain.

On behalf of our Board, I would like to extend an invitation to you to participate in the forum on Friday, August 14, along with other panelists who will present differing points of view on the future of the Arctic National Wildlife Refuge. For the morning session (10:30-12:00) at which we hope you will appear, we have also invited representatives from the Alaska Department of Environmental Conservation, Alaska Department of Fish and Game, Alaska Department of Natural Resources, U.S. Department of the Interior Fish and Wildlife Service, and Senator Jack Coghill (who has accepted our invitation).

You would be welcome to stay for the afternoon session (1:30-5:00) which will include representatives from the Alaska Oil and Gas Association, Arctic Slope Regional Corporation, Arctic Village Council, Trustees for Alaska, National Audubon Society, The Wilderness Society and the Wildlife Federation of Alaska.

The format will include a brief opening statement of approximately 10 minutes by each participant, followed by a question-and-answer period. An informal buffet luncheon will be served at noon. I will serve as moderator, and members of the press will be present.

The Hon. Sam Cotten
July 22, 1987
Page 2

On June 9, I wrote to Speaker Grussendorf and, through his office, extended our invitation to you on behalf of our Board of Directors. If that invitation did not reach you, I apologize. I hope you will be able to be with us on August 14th, and would ask that you call my office in Washington, D.C. (202/637-3742) by August 3rd with your response.

Your knowledge and experience about this issue would provide a valuable dimension to our discussion, and I hope you will be able to accept our invitation.

Enclosed you will find a copy of the current edition of NATIONAL WILDLIFE magazine which features the Arctic National Wildlife Refuge, as well as a copy of our most recent Annual Report.

Thank you for considering our invitation, and I look forward to hearing from you.

Best wishes.

Sincerely,

Jay D. Hair
JAY D. HAIR

JDH:rac

Enclosures



Working for the Nature of Tomorrow

NATIONAL WILDLIFE FEDERATION, 1412 Sixteenth Street, N.W., Washington, D.C. 20036-2266 (202) 797-6800

Office of the President

July 30, 1987

The Honorable Sam Cotten
Chairman, House Resources Committee
Alaska House of Representatives
P.O. Box 296
Eagle River, Alaska 99577

Dear Mr. Cotten:

Thank you for accepting our invitation to participate in the Alaska Arctic Coast Issues Forum hosted by the Board of Directors of the National Wildlife Federation on Friday, August 14, 1987 in Anchorage. A copy of our agenda is enclosed.

Please be at the Denali Room of the Anchorage Hilton Hotel no later than 10:00 A.M. on the 14th. Session I, in which you will participate, will begin promptly at 10:30 and will run until 12:30 P.M. Following a brief introduction, each panelist will make an opening statement of no more than 10 minutes. Questions and answers from the floor will be accepted after all of the opening presentations are completed. I will serve as moderator, and press and other media representatives will be present.

An informal buffet luncheon, to which you are cordially invited, will be served at 12:30 P.M. in the Denali Room. Session II of the forum will begin at 2:00 P.M., and I hope you will be able to stay for the entire program, which should be concluded by 5:00.

If you have any questions, please call Ruth Corlett at my office in Washington (202/637-3742).

Again, on behalf of our Board of Directors, we appreciate your taking the time to participate in our forum. We are delighted with the response we have had, and the program promises to be an exciting one. I look forward to seeing you there.

Best wishes.

Sincerely,

JAY D. HAIR

JDH:rac

Enclosure

ALASKA ARCTIC COAST ISSUES FORUM

SPONSORED BY THE
NATIONAL WILDLIFE FEDERATION
BOARD OF DIRECTORS

IN COOPERATION WITH THE
WILDLIFE FEDERATION OF ALASKA

Anchorage Hilton Hotel
Denali Room
Anchorage, Alaska

August 14, 1987

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Dennis D. Kelso, Commissioner
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Norman Cohen, Deputy Commissioner
Alaska Department of Fish and Game

James Eason, Director, Division of Oil and Gas
Alaska Department of Natural Resources

Robert E. Gilmore, Special Assistant to the Director
U.S. Department of the Interior Fish and Wildlife Service

Jack Coghill, Chairman
Senate Resources Committee, Alaska State Senate

~~Sam Cotten, Chairman~~
~~House Resources Committee, Alaska State House of Representatives~~

12:30 P.M. INFORMAL BUFFET LUNCHEON
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ALASKA ARCTIC COAST ISSUES FORUM

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STATE OF ALASKA

OFFICE OF THE GOVERNOR

OFFICE OF MANAGEMENT AND BUDGET
DIVISION OF GOVERNMENTAL COORDINATION

STEVE COWPER, GOVERNOR

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675 SEVENTH AVENUE
STATION H
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PHONE: (907) 456-3084

February 6, 1987

Mr. Robert Gilmore
Regional Director
U.S. Department of the Interior
U.S. Fish and Wildlife Service
1011 East Tudor Road
Anchorage, AK 99503

Dear Mr. Gilmore:

The state has reviewed the Draft Arctic National Wildlife Refuge (ANWR), Alaska, Coastal Plain Resource Assessment 1002(h) Report. We appreciate the additional time granted the state to review this important report. Based on our review of the substantial amount of information contained in the draft 1002(h) report, we strongly support the conclusion that oil and gas exploration be allowed in ANWR consistent with the chief purpose of the refuge to preserve its unique wildlife values.

The State of Alaska recommends that Congress immediately open the 1002 area to oil and gas leasing, with the exception of the area described by U.S. Fish and Wildlife Service (USFWS) as the "core" caribou calving area. The state strongly recommends that leasing in the "core" calving area be deferred for a ten-year period. During this ten-year period, the Department of the Interior (DOI) should establish an ANWR Caribou Impact Assessment Study Group composed of federal, state, university, and private researchers to further study the potential impacts of oil and gas activities in the calving area on the Porcupine Caribou Herd. The study should be conducted over a seven-year period following commencement of the first exploratory well and result in a report to the Secretary of the Interior and Governor of Alaska. The report would seek to document the biological importance of the core calving area, the effects of oil and gas activities in the 1002 area on the Porcupine Caribou Herd, and the effectiveness of mitigation measures employed in the 1002 area to minimize adverse impacts to caribou. Based on the report findings, the Governor and Secretary would recommend to Congress to extend the deferral or open the core calving area to oil and gas leasing. If

Congress failed to act on the recommendations within the ten-year period, the recommendation of the Secretary and Governor would be implemented.

It is imperative that the recommendations from the Governor of Alaska be included with those of the Secretary of the Interior given the significant interests of the state involved in both the leasing and protection of resources in the 1002 area. Not only is the state a sovereign steward of natural resources with regulatory responsibilities in the area, it is the principle owner of lands which any ANWR production transportation system must cross.

This recommendation is based on several salient facts. First, Congress has mandated that fish and wildlife populations in ANWR receive a very high level of protection. Because of this mandate, USFWS is required to take a conservative approach when making decisions regarding the impact of development activity on the refuge's fish and wildlife populations. Second, while a sizable amount of information has been collected on the impact of oil and gas activity on the Central Arctic Caribou Herd, questions remain regarding the potential impact of the oil and gas activity on the Porcupine Caribou Herd population because of its larger size, distribution and movement patterns, and population dynamics. Contrary to the statements made on page 112 of the draft 1002(h) report, at this point in time there is inadequate information to predict what population impacts would occur if oil and gas development were to take place in the core calving area. Third, protection of the herd and its habitat is of great concern to our Canadian neighbors, and the deferral and studies will respect those concerns.

Special Values of ANWR

We predicated our review on two fundamental facts inherent to ANWR. First, the fish and wildlife resources of ANWR are of significant state, national, and international importance. The Porcupine Caribou Herd, which numbers some 180,000 animals, annually migrates between Canada's Northwest Territories and Alaska's arctic coastal plain where it spends a portion of each summer. These animals are of great importance to both the people of Alaska and Canada. The Porcupine Caribou Herd and other fish and wildlife of the ANWR coastal plain are the foundation of the subsistence way of life to the residents of Kaktovik, Arctic Village, Venetie, and Fort Yukon in Alaska and Old Crow in the Yukon Territory of Canada. Furthermore, within the refuge, "The 1002 area is the most biologically productive part of the Arctic Refuge for wildlife and is the center of wildlife activity on the refuge." (Draft 1002(h) report, page 46.) The Alaska Department of Fish and Game has conducted an extensive review of ANWR fish and wildlife information which is available on request to USFWS

and other interested parties. The department's data on distribution and abundance of fish and wildlife and areas of special concern confirm the great importance of ANWR's renewable resource base.

The second intrinsic feature of ANWR is that it has high oil and gas potential. The state concurs with the draft 1002(h) report findings on page 1 that the 1002 area, ". . . is clearly the most outstanding oil and gas frontier remaining in the United States, and could contribute substantially to domestic energy supplies." As you know, the Alaska Department of Natural Resources has recently made public a preliminary appraisal it conducted of petroleum resource potential in ANWR's coastal plain. Alaska's report confirms DOI's conclusion that ANWR's coastal plain has the potential for an unusually large accumulation of oil.

Past Lessons Learned from Oil and Gas Activities in Alaska

As indicated in the draft 1002(h) report, development of ANWR's coastal plain will alter the existing environment and to some degree affect the Porcupine Caribou Herd. It is critical that appropriate and effective measures be taken to minimize the potential adverse effects of oil and gas activities on ANWR's coastal plain. Alaska has nearly two decades of experience in dealing with oil exploration, and lessons of the past will serve as a guideline for development in the future. In the event Congress permits exploration, the state would encourage that the best and latest technology be used.

The state assumes the draft 1002(h) report was not intended to be all inclusive, and that more detailed performance standards would be developed in concert with the state prior to any lease sales or any transfer of subsurface rights. Clearly, additional time will be needed in order to develop an adequate set of terms and conditions designed to ensure protection of air and water quality and fish and wildlife resources. With this understanding, our general comments on the proposed mitigation measures summarized in the draft 1002(h) report are included in Enclosure A.

Federal/State Consultation and Resolution of Issues

The state is encouraged to read on page 97 of the 1002(h) report that "The FWS would emphasize early and continuous consultation and coordination with leaseholders, permittees, and state and federal agencies at the start of planning." Consistent with this federal intent, the state feels it is essential that DOI establish a formal consultation process with the state and other parties in order to clearly establish at what points in the process and what level of detail different issues and authorities will be addressed. This process would also allow the opportunity for the parties to clarify their respective authorities,

permitting, and field procedures to avoid duplication or conflicting efforts. These consultations should identify or acknowledge existing regulatory requirements and authorizations at federal, state, and local levels. At a minimum, it should address different agencies' review times and public notice requirements. Issues that should be addressed are the timing of the various phases of review for specific projects; the level of detail to be addressed at each; and the coordination of permitting, review of plans of operations, field surveillance, and field approvals. Experiences associated with the development of the Trans-Alaska Pipeline System (TAPS) and the proposed Alaska Natural Gas Transportation System (ANGTS) from Prudhoe Bay to the Canadian border could provide useful models for cooperative management programs.

A coordinated interagency process for planning, design review, permitting, field surveillance, compliance and enforcement, and reclamation would serve the state, DOI, and industry well. The state's existing coastal management consistency process as well as the jurisdiction of state agencies such as the Departments of Fish and Game, Environmental Conservation, Natural Resources and the Alaska Oil and Gas Conservation Commission need to be acknowledged and effectively implemented in the review and permitting of each stage of the overall project. Lack of sufficient and effective coordination could lead to each agency dealing independently with applicants and could result in permitting inefficiencies with duplicative and inconsistent compliance and enforcement actions.

Topics Needing Further Discussion in the Final 1002(h) Report

Overall, the State finds that USFWS did an excellent job in compiling and summarizing a large amount of biological and geological information in the draft 1002(h) report. Considerably more work needs to be directed to the following eight issues of major importance to the state.

1. Standards for Air and Water Quality Protection

The draft 1002(h) document focuses primarily on a discussion of habitat and wildlife issues and petroleum potential. The document is considerably weaker with respect to air, land, and water quality issues. DOI must acknowledge and accurately reflect in the final 1002(h) report state authority in this area and the body of regulations and requirements associated with sound environmental practices. A list of pertinent state authorities is included in Enclosure B for your reference.

a) Air Quality Management

Particular attention should be paid to emissions associated with start-up and upset flaring, emissions of nitrogen oxides, and the best available technology review process associated with "prevention of significant deterioration" review.

b) Drilling Wastes and Solid Waste Management

Major waste streams include garbage, drilling wastes, metal wastes, and oily wastes. Our experiences on the north slope verify that it is very important that proper management of all these wastes be addressed from the beginning.

Drilling wastes are of particular concern. Improper management of drilling wastes can result in the contamination of adjacent habitats with potential negative effects to the vegetation and fish and wildlife species. Management of drilling wastes should involve development of best practices to minimize waste generation and to ensure total containment or injection of all produced wastes. Best practices should be based in part on a thorough evaluation of the effectiveness of past practices of drilling waste disposal in Alaska. Recent efforts by the Alaska Department of Environmental Conservation to develop a workable set of regulations governing these activities are nearing completion and should be viewed as the framework for developing specific requirements. In addition, the U.S. Environmental Protection Agency is currently studying the issue of proper drilling waste disposal and should soon have a report available.

Provisions for pickup of windblown litter and other debris must be addressed by stipulation. Early planning for sound disposal of each waste stream will lead to the best environmental results.

c) Liquid Waste Management

Possible liquid waste discharges include domestic wastewater, reserve pit fluids, produced water discharges, hydrostatic test discharges, vessel rinsates and radiographic wastes. Each needs to be identified and provisions made for proper disposal. The existing local, state and federal regulatory structure, ranging from plan review to the use of the best practicable technology, needs to be addressed. Reinjection of produced waters and non Resource Conservation and Recovery Act (RCRA) regulated liquid wastes is routinely practiced on state lands on the north slope.

d) Hazardous Waste Management

No discussion of hazardous waste management is included in the draft 1002(h) report. Hazardous waste management is governed by stringent requirements under the federal RCRA. Transportation of hazardous materials is regulated by the federal Department of Transportation. Proper management must be addressed.

e) Oil Spill Prevention and Response

The draft 1002(h) report refers to the need to address oil spill control requirements at page 84. More detailed plans will be required under the cited state and federal statutes. Provision for a coordinated response capability should be provided by stipulation.

2. Provisions for Offshore Support Facilities

It is important that the final 1002(h) report and management alternatives address the siting in ANWR of oil and gas facilities needed to support offshore oil and gas development occurring adjacent to ANWR on state-owned submerged lands and on the federal Outer Continental Shelf. As written, none of the alternatives specifically state that support facilities, if needed, would be permitted.

3. Alternative Development and Transportation Scenarios

Statements in the draft 1002(h) report refer to a transportation corridor (road and pipeline) between ANWR and TAPS Pump Station 1 in Prudhoe Bay. The state recognizes that the scenario which was analyzed is only one of many potential alternatives. The actual alignment of transportation facilities if, in fact, discoveries are made and any facilities are required, will be dependent upon many factors including the location and size of any reserves discovered, the need to accommodate delivery of any additional nearby reserves, terrain constraints, habitat considerations, and project economics. We suggest that the final report reflect the interrelationship of these factors in determining the size and location of needed transportation facilities. In addition, we suggest that the report describe the level of any review that will proceed these decisions. Interagency and public reviews of TAPS and ANGTS projects provide a good model of the scope of analysis which accompanies the review and approval of a major transportation project.

4. Subsistence ANILCA 810 Analysis

The draft 1002(h) report does not address the process by which the impacts of oil and gas development on subsistence activities will be identified and mitigated. Such an analysis is required by Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA).

Impacts of oil and gas activity in the 1002 area on fish and wildlife resources can adversely affect human uses of these resources. This is true both in the 1002 area and in other Canadian and Alaskan communities that rely on wildlife which use the 1002 area, most notably the Porcupine Caribou Herd. The draft 1002(h) report does not present a complete picture of subsistence uses in the area. The discussion focuses principally on subsistence uses in the community of Kaktovik, and makes only passing reference to some but not all other communities that use the Porcupine Caribou Herd. A more comprehensive discussion of subsistence uses by communities that use Porcupine Caribou Herd is required in order to better assess the future impacts of development in the coastal plain. The potential impacts associated with oil and gas exploration and development in the 1002 area, like the siting and design of transportation facilities, cannot be addressed with certainty until exploration has confirmed the existence and location of potential oil and gas fields and some understanding of the scope of development is known. Enclosure C describes the basic requirements of ANILCA 810, and provides a recommended approach for meeting these requirements.

5. Water Availability and Use

The draft 1002(h) report correctly notes that water resources in the 1002 area are very limited and confined to the surface. Most of these water sources freeze solid by late winter. Given the paucity of fresh water for industrial use within the 1002 area, the draft report concludes that adjacent marine waters must be viewed as a water resource. Little attention is given to other alternatives used elsewhere on the north slope, such as snow melters and deep thaw lake reservoirs.

Fresh water for use in the Prudhoe Bay oilfield was taken from the Sagavanirktok River adjacent to the Deadhorse industrial area during the early years of that field's development. This removal of water from the Sagavanirktok River resulted in dewatering of fish overwintering habitats with documented mortality of large numbers of fish. As a consequence, the state no longer allows the use of water from this and similar sources. Currently, in order to provide fresh water for industrial uses in the Prudhoe Bay area, the state requires the use of several large surface

water reservoirs that have been developed. The majority of these reservoir sites are depleted deep gravel mine sites that have been flooded with surface water. Other sites are shallow tundra lakes that have been deepened to provide winter water supplies. These water reservoirs are filled either passively or actively from nearby drainages during the spring breakup period and are, in general, isolated from river and stream systems during the remainder of the year. DOI should initiate a more thorough analysis of similar alternatives for industrial water use in the 1002 area.

6. Gravel Use

Gravel sites in ANWR should be sited, developed, and reclaimed in such a manner that overall impacts to water quality and fish and wildlife resources are mitigated. Plans for gravel removal should include detailed plans for the reclamation of the site to be conducted in phases concurrent with the removal of gravel. Gravel sites may also be developed in such a manner that they can be used as water sources for both exploration and development.

7. Disputed Acreage

Although the draft report references the submerged lands ownership dispute between the state and federal government regarding the coastal lagoons between the mainland and offshore barrier islands, it does not address the ownership status of the beds of nontidal navigable waters. The state asserts ownership of the submerged lands underlying the Aichilik, Jago, Okpilak, Hulahula, Salerochit, Staines, and Canning rivers within the 1002 area.

8. Decision Rules and Mitigation Policy

The terms "avoidable adverse impacts" and "unnecessary adverse effects" are not defined and do not appear in USFWS Mitigation Policy (Federal Register, Vol. 46, No. 15). Adding further to the confusion is a list of "unavoidable effects" on page 101 that includes a mix of those that are truly unavoidable (e.g., loss of habitat by gravel overlay for roads and pads) with many that are avoidable with proper design (e.g., erosion and ponding along roads, water storage pits in streambeds).

There also appear to be discrepancies between the explanation regarding Resource Category 1 and 2 in the draft 1002(h) report and the explanation for both of these categories in the federal mitigation policy regulations. Further, the draft 1002(h) report makes no mention of the requirement for "no significant adverse affect" as provided

February 6, 1987

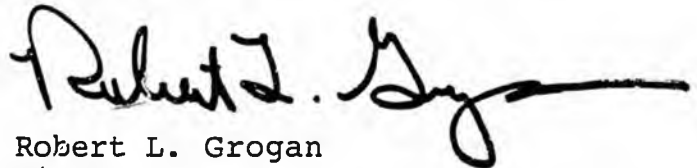
under Section 1002(h) of ANILCA. DOI should address these apparent inconsistencies with USFWS mitigation policy in the final 1002(h) report.

As discussed earlier in our comments, the Alaska Coastal Management Program standards and review procedures need to be addressed in the final 1002(h) report. In particular, reference should be made to the Habitat Standard (6 AAC 80.130) which requires habitats to be managed so as to maintain or enhance their characteristics and that uses and activities which will not conform to this standard may be allowed if there is a significant public need and there is no feasible and prudent alternative to meet the public need.

Conclusion

Recognizing the important renewable and nonrenewable resource values found in ANWR, the state fully supports the opening of the coastal plain to oil and gas leasing subject to appropriate and effective mitigation based on our firm belief that exploration, development, and production can occur in a manner consistent with the established purposes of ANWR. We look forward to reviewing the final 1002(h) report and actively pursuing a joint consultation process in the near future to resolve specific aspects of concern to the State of Alaska.

Sincerely,



Robert L. Grogan
Director

Enclosure

cc: Lieutenant Governor Steve McAlpine
Commissioner Don Collinsworth, DFG, Juneau
Commissioner Judy Brady, DNR, Juneau
Commissioner Dennis Kelso, DEC, Juneau
John Katz, Office of the Governor, Washington DC
Rod Swope, Office of the Governor, Juneau
Mayor George Ahmaogak, North Slope Borough, Barrow
Mayor Loren Ahlers, Kaktovik

ENCLOSURE A
State Comments on Summary of Recommended
Mitigation for the 1002 Area

The following comments are provided within the context of the federally proposed stipulation package summarized on pages 145-147 of the draft 1002(h) report. Our comments represent the state's position in response to the specific federal proposal and do not represent the state's total concern regarding mitigation requirements. The state reserves the right to comment further on stipulations not yet included or discussed with DOI. In addition to the following major comments on the specific stipulations, there are a number of terms and conditions which should be added.

First, there are mitigative measures for certain "non evaluation" species mentioned in the species discussions in the "Environmental Consequences" chapter of the draft 1002(h) report that are not contained in the summary section. These mitigative measures should be added to the summary section. Second, there are a number of factors which are either not addressed or not handled in sufficient detail in order to provide for an overall effective mitigation program. Examples include the following: coordinated state/federal process for design review, permitting, field surveillance, compliance, and enforcement; rehabilitation; maintenance of public fish and wildlife resource use; material exploration, extraction, and rehabilitation; solid waste management; timing restrictions on activities, and setbacks required for the use of explosives; liquid waste management; hazardous waste management; stream crossings and fish passage; water management; bonding and financial responsibility; right of access; erosion control; oil spill contingency planning; penalty provisions for non-compliance; definitions of key terms; identification of information needs; design criteria and compliance plans; quality assurance/quality control; air quality; and support service industries. These subjects need to be addressed in a comprehensive manner and appropriate mitigative measures described.

In addition, the DOI stipulations do not clearly differentiate between stipulations or restrictions applied to exploration versus development. The state suggests that the DOI reorganize the entire mitigation section into two distinct components: exploration, and development. Implementation of the stipulations should be tied to the type of activity proposed. Stipulations referring to area specific closures may be effective forms of mitigation during exploratory activities but may be ineffective or inappropriate during development. For example, the stipulation on no activity within 1/2 mile of a documented polar bear den could be useful and effective during exploration, but it is unclear how it would be implemented during development when facilities are fixed and certain activity levels are required. There are other stipulations that fall into a similar category

and clarification is needed in order to interpret how and when they will be used and implemented.

Stipulation 1 - Sensitive Habitats and Species:

As written it is unclear how this stipulation would be enforced. DOI should define what is included in the term "non essential facilities."

Stipulation 2 - Road and Drainage Designs:

Roads and other facilities should be designed, constructed, and maintained in such a manner that the following performance standards are achieved: natural drainage is maintained; free passage of fish is provided; gravel fills are stable; upslope ponding and downslope dewatering is prevented; the number of stream crossings is minimized; natural floodplains and flow patterns are maintained; spring areas are avoided; and road alignments are perpendicular to stream flows and sited in areas of minimal floodplain width. Design criteria and specifications to satisfy these performance standards should be developed by the industry and should be approved by the appropriate federal and state agencies.

Stipulation 3 - Exploration Pad Construction:

The state strongly supports the objective of this stipulation to minimize gravel requirements for exploration activities.

Stipulation 4 - Rehabilitation Plan:

The need for rehabilitation plans is clear, but the timing of their submittal and definition of measures necessary to ensure that they will be implemented needs further consideration. Separate rehabilitation plans for exploration and development, including abandonment should be required. Also, requirements for conducting necessary research to develop techniques and measures for the rehabilitation of specific sites (e.g., gravel pads, seismic lines, material sites, etc.) should be addressed.

Stipulation 5 - Off-Road vehicles:

Should be modified to prohibit off-road vehicle use, except for travel by snowmachines, unless otherwise specifically permitted.

Stipulation 6 - Limits on Oil Exploration:

While we agree in principle with this stipulation, as written it may be too restrictive. Exploration includes both surface disturbing and non surface disturbing activities. The stipulation should limit any surface disturbance activities to the winter months and allow only non surface disturbing activities during the summer, provided there are no area or timing restrictions that would dictate otherwise.

Stipulation 7 - Gravel and Water Removal:

The state recommends that DOI address gravel removal and water removal separately. In addition, DOI should prohibit winter water removal from fish-bearing waters, springs and tributaries. We also recommend that DOI modify summer/fall water removal language to read: "During summer and fall, water removal shall be restricted to those operations that will maintain instream flows at levels necessary to provide optimum fish passage and rearing habitat, and water quality. In addition, large surface water reservoirs should be created to provide an adequate supply of fresh water for oil and gas related industrial activity." Deep pit type excavations adjacent to active channels of the streams identified as lacking suitable fish overwintering habitat could provide a winter water source and provide overwintering fish habitat. These reservoir sites should incorporate features that will enhance their value as fish and wildlife habitat (e.g., areas of shallow water, varying shoreline, provide for free movement of fish in and out of sites).

With respect to gravel removal, prohibit removal in all fall spawning fish and overwintering areas. Additionally, prohibit gravel removal from all fish-bearing rivers/streams unless approved on site-specific basis. Plans for gravel removal should include detailed plans for the rehabilitation

of the site and rehabilitation must be conducted in phases concurrent with the removal of gravel. The importance of rehabilitation cannot be overemphasized. At a minimum, any gravel site, whether upland and/or floodplain, should be sited and designed to conform to the guidelines as defined in the Gravel Removal Guidelines Manual for Arctic and Subarctic Floodplains (USFWS, Woodward-Clyde Consultants, 1980).

Stipulation 8 - Pipeline Elevation:

We recommend this stipulation be modified by adding a general statement of intent and then incorporate stipulations 8 thru 11 under that statement, and add an additional item regarding traffic control. Suggested language is as follows:

- (a) Include language as proposed in stipulation No. 9.
- (b) Include language as proposed in stipulation No. 10 except pipelines should be buried where "feasible and prudent" not just where "possible."
- (c) Roads and pipelines should be separated. Offset distances shall be optimum for preventing the synergistic effect of roads and pipelines on caribou movement, based on most current relevant research.
- (d) A surface traffic control plan should be prepared, approved by the Regional Director, and implemented. The plan should consider such measures as convoying, pulsed traffic, and seasonal or daily restrictions.

Stipulation 12 - Restrict Surface Occupancy within 3 Miles of Coastline:

The blanket 3-mile buffer for facilities adjacent to the coast is too stringent as written. Provisions must be made to allow drill pads, flow stations, and other

essential support facilities for offshore development, in this buffer strip. In addition, measures must be taken to ensure free passage of caribou along the coast. Criteria must be established to determine which facilities will be allowed in the buffer area.

Stipulation 13 - Monitoring and Research Requirements:

Modify to make two separate terms. One that states: "The DOI should be responsible for ensuring appropriate monitoring of populations, productivity, movements, and general health of key species in relation to overall oil and gas activities in ANWR." Then add a separate requirement to read: Where there is a possibility that an activity could adversely affect fish and wildlife, "Lessees and permittees may be required to monitor the impacts of the activity on selected species, their habitats, and human uses; to evaluate impact hypotheses and the effectiveness of specific mitigation measures employed; and to develop corrective actions, including improved mitigative techniques, as necessary."

Stipulation 14 - Watercourse Setbacks:

The blanket 3/4-mile buffer for all permanent facilities is too stringent as written. Provisions must be made to allow drill pads, flow stations, and other essential facilities within this 3/4-mile buffer. Criteria must be established to determine which facilities will be allowed in the buffer area.

Stipulation 15 thru 18 - Peregrine Falcon and other Raptors Protection:

The state concurs with the need for special protection for the peregrine falcon, however, stipulations should be modified to incorporate language developed by the federal peregrine falcon recovery team. In addition, the same level of protection provided to the endangered peregrine falcon should not be provided to all raptors.

Stipulation 19 - Polar Bears:

This stipulation should be expanded to require an annual fall monitoring program to follow bears moving ashore and identify den site locations.

Stipulation 20 - Construction Near Coastal Bluffs:

Support language as proposed.

Stipulation 21 - Discharge of Firearms:

Restrictions on the discharge of firearms in the vicinity of structures is necessary to protect human safety and oil field operations, however, the five-mile prohibition may be excessive. Further discussion is needed on the subject and the potential effects on human use of resources in the 1002 area.

Stipulation 22 - Prohibit Surface Occupancy in Sadlerochit Spring Special Area:

In addition to the Sadlerochit Spring Special Area, surface occupancy should be prohibited in the area within 1/2 mile of the Fish Hole No. 1 spring outlet located in the Hulahula River, and extend for 1/4 mile on either side of mean high water for a distance of 3 miles downstream of the outlet.

Stipulation 23 - Protection of Thaspi arcticum:

It is not known how widespread this plant is, so it is impossible to determine how large an area will be placed off limits by this stipulation. Until the plant is placed on the endangered species list and more is known regarding its areal extent, it is premature to impose such a restriction.

Stipulation 24 - Causeways:

Based on the state's case-by-case review and experience in authorizing the Westdock, Endicott and Lisburne causeways, we recommend that the proposed stipulation be revised such that the construction of docks and causeways minimize nearshore hydrographic changes and avoid significant adverse effects on fish populations and movements.

Stipulation 25 - Time and Area Closures for Wildlife:

Although the state generally supports the language as proposed, it should be made clear that the stipulation applies only to exploratory activities, vehicle movements, and other activities that can reasonably be re-scheduled for another period of time.

Stipulation 26 - Overflight Restrictions:

Expand to include aircraft overflight restriction above barrier islands, lagoons, river deltas, and wetlands within one mile of coast between May 15 and September 30 (excluding take-offs and landings). Also make clear that human safety takes precedence over the restrictions.

Stipulation 27 - Reduction of Human/Bear Conflicts:

Modify to read, "Measures must be taken to minimize human/bear interaction and conflict. These measures may include, but not be limited to, the use of bear-proof fencing around certain facilities, special solid waste management plans (such as incineration of putrescible wastes), and employee education programs."

Stipulation 28 - Limit Use of Infrastructure to Official Business:

Support language as proposed.

Stipulation 29 - Inventory Areas for Cultural Resources:

Support language as proposed.

Stipulation 30 and 31 - Air and Water Quality Provisions:

As discussed in our cover letter, the proposed stipulations represent a very small step toward defining what will be needed to provide an appropriate level of air and water quality protection as leasing moves forward. Further consultation between DOI and the state is needed on this subject to jointly develop a workable package of specific measures. Such a process would better acquaint DOI with the extensive body of environmental regulation and provide appropriate forums for decisions about stipulations, plans of operations, and permits. It is crucial to ensure that exploration and

Enclosure A

- 8 -

development is conducted in accordance with environmental standards appropriate for the coastal plain of ANWR.

Stipulation 32 - Environmental Orientation Programs:

Support the language as proposed.

Enclosure A/kfi

ENCLOSURE B

SUMMARY OF MAJOR STATE AUTHORITIES PERTINENT TO ANWR

The State of Alaska defines and regulates the following:

<u>Program</u>	<u>Statutes</u>	<u>Definitions</u>	<u>Regulations</u>	<u>Definitions</u>
1) SOLID WASTE	AS 46.03.100-120 800-810	AS 46.03.900(24)	18 AAC 60 (draft)	18 AAC 60.910(49)
Construction Waste				(Not defined)
Industrial Waste		AS 46.03.900(10)		-- --
Other Wastes		AS 46.03.900(16)		-- --
"Drilling Wastes"		AS 46.03.900(31-32)		18 AAC 60.910(16)
Putrescible Waste		-- --		18 AAC 60.910(40)
Septage, Sewage Sludge Sludge		-- --		18 AAC 60.910(46) to (48)
Sanitary Waste		-- --		-- --
2) LITTER	AS 46.06	AS 46.06.150(4)		
3) HAZARDOUS	AS 46.03.296-308 830-833	AS 46.03.299(a)-(b)	18 AAC 62	

<u>Type of Waste</u>	<u>Statutes</u>	<u>Definitions</u>	<u>Regulations</u>	<u>Definitions</u>
4) OIL and HAZARDOUS SUBSTANCES*	AS 46.03.740 758-760 760-790 822-826		18 AAC 20 18 AAC 75	
Oil	AS 46.04	AS 46.03.758 (6) AS 46.03.826 (4) AS 46.04-120 (9) AS 46.08.900 (7)		
Hazardous Substances	AS 46.03.826 (3)	AS 46.08.900 (6) AS 46.09.900 (4)		
5) WASTEWATER	AS 46.03.100-120		18 AAC 72	
Domestic Wastewater		-- --		18 AAC 72.990 (16)
Graywater		-- --		18 AAC 72.990 (24)
Non-domestic Wastewater		-- --		18 AAC 72.990 (29)
Other Wastes		-- --		18 AAC 72.990 (32)
Septage		-- --		18 AAC 72.990 (44)
Sludge		-- --		18 AAC 72.990 (50)
Spoils		-- --		18 AAC 72.990 (52)

* Note new legislation adding AS 46.08, AS 46.09, and amending AS 46.03.745, 758(k), 760(a), 765, 780(a), 790(a) (b) (d) and AS 46.04.010 and 090(b).

	<u>Type of Waste</u>	<u>Statutes</u>	<u>Definitions</u>	<u>Regulations</u>	<u>Definitions</u>
6)	TOXIC MATERIALS and WASTES	are a "special class regulated under the Federal Toxic Substances Control Act and National Emission Standards for Hazardous Air Pollutants.			
7)	HABITAT PROTECTION				
	Fish Habitat Permit	AS 16.05.840 AS 16.05.870	-- --		
8)	COASTAL MANAGEMENT	AS 46.40		6 AAC 50 6 AAC 80 6 AAC 85	6 AAC 50.190 6 AAC 80.900 6 AAC 85.900
9)	WATER USE	AS 46.15		11 AAC 93	
10)	GRAVEL SALES			11 AAC 76	
	a. Near Shore	AS 38.05.110-120			
	b. Navigable Rivers	AS 38.05.110-120			
11)	PIPELINE RIGHT OF WAY LEASES			11 AAC 80	
	a. Near Shore	AS 38.35			
	b. Navigable Rivers	AS 38.35			
12)	OIL AND GAS LEASES			11 AAC 83	
	a. Near Shore	AS 38.05.180			
	b. Navigable Rivers	AS 38.05.180			

<u>Type of Waste</u>	<u>Statutes</u>	<u>Definitions</u>	<u>Regulations</u>	<u>Definitions</u>
13) SURFACE LEASES			11 AAC 62	
a. Near Shore	AS 38.05.070-075			
b. Navigable Rivers	AS 38.05.070-075			
14) LAND USE PERMITS				
a. Near Shore	AS 38.05.850		11 AAC 62	
b. Navigable Rivers	AS 38.05.850			
15) CLASSIFICATION				
a. Near Shore	AS 38.04.065-900		11 AAC 55	
b. Navigable Rivers	AS 38.04.065-900			
16) ACCESS ALONG HISTORIC TRAILS	RS 2477			

Enclosure B/kfi

ENCLOSURE C

**A Recommended Approach to
Implementation of ANILCA §810**

March 14, 1986

§810 of ANILCA requires federal agencies to consider the effects of proposed land actions upon people engaged in subsistence uses. Specifically, it requires agencies to:

1. Evaluate the effects of the proposed action on subsistence uses and needs;
2. Determine the availability of other lands for the purposes sought to be achieved and assess whether other alternatives are available which would reduce or eliminate the use, occupancy or disposition of public lands needed for subsistence purposes;
3. Determine whether the proposed action would "significantly restrict" subsistence uses;
4. If the proposed action would significantly restrict subsistence uses, to:
 - a. Meet certain public notice and hearing requirements.
 - b. Determine that such a restriction meets certain standards, including involving the minimum amount of public lands and minimizing adverse impacts upon subsistence uses and resources.

This paper describes the basic requirements of §810 and provides a systematic approach to meeting these requirements when making a decision on an OCS oil and gas lease sale.

Evaluating Effects on Subsistence Uses

ANILCA §810 provides, as a starting point, that "in determining whether to...lease...public lands...the head of the federal agency having primary jurisdiction over such lands...shall evaluate the effect of such use, occupancy, or disposition...on subsistence uses and needs...."

This section is clearly intended to require a specific assessment of impacts on subsistence uses. An adequate §810 evaluation must include complete and accurate information about the proposed action and about the subsistence uses of potentially affected wild resources.

Information about the wildlife populations, fish stocks, and geographic areas which could be affected by the proposed action

are needed to determine the scope of potential effects on subsistence. Information about the specific subsistence uses of, and needs related to, these resources and areas is required to identify and evaluate these effects. This includes data on:

1. Who uses the resources which could be affected;
2. Where, when, and how the resources are harvested;
3. How much they use; and,
4. The significance of the harvested resources for meeting socioeconomic and cultural needs.

Maps of community subsistence use areas can provide valuable data about which communities and groups of people use fish and wildlife that could be affected. Each §810 evaluation should include a map and list of communities that use the stocks and populations of resources potentially affected by a proposed action. The Alaska Department of Fish and Game routinely develops maps of subsistence use as it conducts community subsistence studies. The state welcomes opportunities to cooperate with federal agencies in improving the subsistence data base.

Once the area and communities which could be affected by an action are identified, an assessment must be made of the potential effects of the action on uses of fish and wildlife. The potential linkages between the proposed action, fish and wildlife resources, and subsistence uses need to be clearly described. This can be accomplished through developing hypothetical scenarios, and tracing their implications out through the biological system to the people who rely on subsistence uses.

The evaluation of effects should address potential positive, neutral, and negative effects, as well as direct and indirect impacts on subsistence uses resulting from a proposed lease sale. The guidelines for implementation of §810 developed by the Alaska Land Use Council are helpful in identifying several effects which would restrict subsistence uses:

1. A reduction in subsistence uses due to direct impacts on the resource, adverse impacts on habitat, increased competition for the resources, or other factors;
2. A reduction in the subsistence uses due to changes in availability of resources caused by an alteration in their distribution, migration, or location; and
3. A reduction in subsistence uses due to limitations

on the access to harvestable resources, such as by physical or legal barriers.

An adequate §810 assessment must consider the potential effects of the proposed action in each community which would be affected. In some circumstances, however, it may be necessary to examine effects on the subsistence uses of "typical" communities or groups of people within the affected zone.

Biological and socioeconomic data need to be at a level of detail which will allow a meaningful assessment of potential impacts on the people who use resources for subsistence. These effects can occur at the individual, household, community and regional level.

A working document has been developed by the Alaska Land Use Council which identifies minimum data standards for making an adequate §810 assessment. (Alaska Land Use Council Working Group II; November 28, 1984, Draft Standards and Guidelines for the Collection, Analysis, and Presentation of Subsistence Use Information for ANILCA §810 Determination, pp. 5-6.) In some cases existing data on subsistence uses may not be adequate to conduct a §810 analysis. Agencies must anticipate these special data needs at the earliest stages in the EIS process. Public meetings may be useful in compiling additional data on subsistence uses and needs. Additional research may also be necessary to address particular data gaps. New studies should be closely coordinated with the State of Alaska as required by ANILCA §812.

The §810 evaluation must thoroughly describe and document data about subsistence resources and uses so that all concerned parties can ascertain which resources and subsistence uses could be affected by a proposed action.

Identifying Alternatives

§810(a) also requires federal agencies to evaluate "...the availability of other lands for the purposes to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes."

In ANILCA §802 Congress states its policy that the "...utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands...." It is therefore important that §810 analyses fully identify and explore alternative areas and approaches which would minimize adverse impacts on rural residents.

Determining Whether Actions Would "Significantly Restrict"
Subsistence Use

Once the potential effects of the lease sale upon subsistence uses have been described, the next step required by §810 is to determine whether these effects could "significantly restrict subsistence uses...."

The legislative history of ANILCA gives no clue to the intended meaning of "significantly restrict." The closest parallel to the "significantly restrict" standard appears to be the requirement of the National Environmental Policy Act (NEPA) to analyze actions which may "significantly affect" the environment. Regulations of the Council on Environmental Quality (CEQ) for implementing NEPA state that both the context and intensity of impacts must be considered in deciding significance.

The people who would be affected, and the roles that the particular resources play in their lives provide the obvious context for evaluating significance in relation to restrictions on subsistence uses. The "intensity" of effects also has to be evaluated in relation to use of specific resources by people.

In §810 Congress recognized that subsistence uses are essential to many rural Alaskans, and intended federal land actions to have the least adverse impact possible upon them.

When considered in relation to this mandate, a "significant" restriction to subsistence uses is an effect which imposes a meaningful burden or hardship on particular people.

A determination of "significance" therefore requires discussion of such factors as socioeconomic circumstances, the degree to which harvest of particular resources could be reduced by the proposed action, and the consequences of the frequency, timing, and location of restrictive effects. These need to be evaluated in the context of the people who actually harvest and use the potentially affected resources, and in the context of what would constitute a meaningful burden to those people.

A hypothetical example may be useful in demonstrating the approach suggested above:

During an EIS study a proposed lease sale is determined potentially to affect local salmon stocks. The studies suggest that the activity will not have a major impact on regional salmon populations or regional harvest levels, but depending on its timing and precise location, it could reduce a particular stock or run. It is impossible, given uncertainty about where or when the activity will occur, to predict exactly which salmon stock might be affected. However, the EIS has identified 20 communities and groups of people who make subsistence use of the

salmon runs which migrate through the general impact area and could be affected. The §810 evaluation therefore identifies these communities and the potential risks. It then examines what effect a reduction in a local salmon run could have for households within typical communities, perhaps dividing the communities into four or five categories, based on location, degree of reliance on subsistence resources, and so forth.

In the hypothetical example, the FEIS concludes that the proposed action could substantially reduce local stocks of king salmon for one or more seasons. As subsistence uses have been shown to occur on these stocks the §810 analysis would then identify this as a potential restriction and then go on to determine whether the action would "significantly restrict" the subsistence use of king salmon. In this analysis king salmon are one of the first fresh foods available to particular households in early summer, and the loss of king salmon for one or more seasons would be a meaningful burden on families in the communities. The §810 analysis, after weighing the risks to subsistence use of king salmon against the important role of king salmon to the people, might conclude that the action could "significantly restrict" subsistence use of king salmon in several of the communities.

Meeting Notice and Hearing Requirements

§810(a) requires the head of each federal agency to meet certain notice and hearing requirements before allowing an action which would significantly restrict subsistence uses. The appropriate state agency and appropriate local committees and regional councils established under §805 must be notified, and a hearing must be held in the vicinity of the area involved.

In ANILCA §801 Congress clearly stated its intent that rural residents, who have knowledge of local conditions and subsistence requirements, should have a meaningful role in decisions affecting subsistence uses and needs. The specific requirements of §810 are intended to ensure that federal agencies have the best available information about the potential effects of proposed actions on rural residents. They also seem, when taken in conjunction with §810(a)(3), to be intended to ensure that local knowledge and experience is brought to bear on the requirement that adverse impacts on subsistence be minimized.

Again, a community focus in evaluating effects would simplify the notice and hearing requirements. Each §810 evaluation should include a map and list of the communities potentially affected, and identify those where subsistence uses could be significantly restricted. In this way §810 assessment itself would indicate many of the groups which should be notified.

It is ~~essential~~ for agencies to follow the §810 procedures for public involvement in instances where a determination of significance is not clear or where there may be significant restriction even though certain data may not yet be available to support the finding.

Public notification of hearings following a determination of significant restriction should follow several avenues, including:

1. Notice published in local and regional newspapers;
2. Notice mailed to local fish and game advisory committees, regional councils, local governments, and Native organizations;
3. Notice aired on local radio and/or television broadcasts;
4. Notice posted in community halls and other local meeting places; and
5. Personal communications with individuals or groups known by the land manager to have an interest in the action.

Minimizing unavoidable adverse impacts upon subsistence uses and resources

§810(a)(3) requires three findings before an action which would significantly restrict subsistence uses can proceed.

1. That such a significant restriction of subsistence uses is necessary, consistent with sound management principles, for the utilization of public lands.

This finding of necessity should be specific to the proposed action, and should be based upon an analysis of the potential impacts upon subsistence uses and the relative value of the proposed action in meeting the goals for the use of public lands.

2. That the proposed activity will involve the minimal amount of public land necessary to accomplish its purposes.

The finding of necessity should exclude all public lands that are not necessary to achieving the proposed purpose.

3. That reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources.

Identification and consideration of possible mitigation measures are required to minimize the adverse impacts to subsistence uses that could result from the proposal to use, occupy, or dispose public lands. These can take many forms, and as noted above, public involvement can play a key role in developing suitable mitigation measures.

The following categories represent a broad range of types of mitigation measures:

1. Alternatives for delating public lands from the proposed action to reduce the risk of potential subsistence resource restriction.
2. Alternatives for reducing impact to seasonal camps and other harvest and use locations;
3. Alternatives for reducing habitat changes that may reduce species abundance and decrease harvest opportunity;
4. Alternatives for reducing numbers of people living in, working in, or passing through area;
5. Alternatives for reducing numbers of people competing for resources;
6. Alternatives for reducing disturbance, roads, noise, water quality degradation, etc., that may affect distribution of species;
7. Alternatives for reducing land classification and ownership changes;
8. Alternatives for reducing changes in access routes to use areas; or
9. Alternatives for compensating people for losses.

Time and area restrictions on activity may frequently be useful in mitigating effects on subsistence uses.

Summary

Federal agencies can satisfy the requirements of ANILCA §810 by following the systematic approach outlined above. An adequate §810 evaluation for an OCS oil and gas lease sale would clearly meet the following standards:

1. Identify the people who make subsistence use of all wild resources which would be affected by the proposed action;
2. Identify the nature of their subsistence uses and needs for these resources;
3. Describe the potential effects of the proposed action on wild resources and upon community subsistence uses and needs, and identify which of these effects could be restrictions;
4. Make a determination of whether potential restrictions would be "significant" in the context of the meaning of the affected resources to the people who use them, and the role the resources play in their lives;
5. Identify alternatives that would minimize adverse impacts on rural residents;
6. If the proposed action could significantly restrict particular subsistence uses:
 - a. Meet notice and hearing requirements;
 - b. make findings that:
 1. the necessity for the proposed action outweighs the risks to subsistence;
 2. the proposed action will involve the minimal amount of public lands needed to accomplish its purpose;
 3. reasonable steps will be taken to minimize adverse impacts upon subsistence uses and needs.
7. Thoroughly document all data and findings so that concerned parties have access to them.

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Katz

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JUL 10 1987

THE SECRETARY OF STATE
WASHINGTON

GOVERNOR'S OFFICE

July 6, 1987

Dear Governor Cowper:

Thank you for your letter of June 9 concerning the Porcupine Caribou Herd Agreement.

I realize the importance of this herd to the people of Alaska, and I appreciate your comments on the suggested changes to the draft language of this agreement. You will be pleased to know that after discussion, it was decided to retain the original text without the proposed changes.

For your information, I am enclosing a draft copy of the Agreement as provided to the Government of Canada for concurrence. We expect the Porcupine Caribou Herd Agreement to be signed in the very near future.

Sincerely yours,

George P. Shultz

Enclosure
As stated.

COMMISSIONER'S OFFICE
RECEIVED
JUL 14 1987

The Honorable
Steve Cowper,
Governor of Alaska,
Juneau.

DEPARTMENT OF FISH AND GAME