HJR

9

****

MARCH 12, 1987
HOUSE RESOURCES
ANWR
SITKA
KATHY KYLE - MODERATOR

PARTICIPANT LIST

NAME/REPRESENTING	ADDRESS	PHONE #	T O
1. HAL KUMMEROW, BOX 2353			OBSERVE
2. BRUCE ENGDAHL, 801 LINCOLN ST.			OBSERVE
3.			

0 TESTIFIED
0 UNABLE
2 OBSERVED
2 TOTAL

START/END TIME: 8:30 - 10:00 AM

****
*
* DELIVER TO: LHSCSKM
*
*
* ORIGINAL
* SENT: 03/16/87 TIME: 09:34
* FROM: LIOCFWW
* SUBJECT: ANWR STATS,3-12,SHARON
* PRINT DATE: 03/16/87 TIME: 10:02
*
****

** FINAL STATS **

T/C; HOUSE RESOURCES
SUBJECT;LEG. PUB. HEARING - HJR 7 HJR 9
DATE; 3/12/87
SITE; BETHEL
TIME IN/OUT; 8;30 A.M. TO 10;00 A.M.
MODERATOR; HELEN EDGE

TESTIFIED; MYRON NANENG,
BOX 44
HOOPER BAY, ALASKA

OBSERVED JOE CHIMEGALREA,
BOX 2049

MARCH 12, 1987
HOUSE RESOURCES
ANWR
SITKA
KATHY KYLE - MODERATOR

PARTICIPANT LIST

NAME/REPRESENTING	ADDRESS	PHONE #	T/O
1. HAL KUMMEROW.	BOX 2353		OBSERVE
2. BRUCE ENGDAHL.	801 LINCOLN ST.		OBSERVE
3.			

0 TESTIFIED
0 UNABLE
2 OBSERVED
2 TOTAL

START/END TIME 8:30 - 10:00 AM

DELIVER TO: LHSCSKM
ORIGINAL
SENT: 03/16/87 TIME: 09:34
FROM: LIOCFWW
SUBJECT: ANWR STATS,3-12,SHARON
PRINT DATE: 03/16/87 TIME: 14:02

** FINAL STATS **

T/C, HOUSE RESOURCES
SUBJECT;LEG. PUB. HEARING - HJR 7 HJR 9
DATE; 3/12/87
SITE; BETHEL
TIME IN/OUT, 8;30 A.M. TO 10,00 A.M.
MODERATOR; HELEN EDGE

TESTIFIED, MYRON NANENG,
BOX 44
HOOPER BAY, ALASKA

OBSERVED JOE CHIMEGALREA,
BOX 2468

DELIVER TO: LIOCFWW

ORIGINAL
SENT: 03/12/87 TIME: 13:47
FROM: LIOCBET
SUBJECT: F
PRINT DATE: 03/12/87 TIME: 13:47

EMAIL # 1
T/C; HOUSE RESOURCES
SUBJECT; HJR 7 AND HJR 9 ANWR
DATE; 3-12-87
SITE; BETHEL
TIME IN/OUT; 8;30 A.M. TO 11;00 A.M.
MODERATOR, HELEN EDGE

PARTICIPANT LIST.
1. MYRON P. NANENG
BOX 44
HOOPER BAY, ALASKA
2. JOE CHIMEGALREA, BOX 2068, BETHEL.

BOTH SAID THAT THEY WOULD TESTIFY AFTER THEY LISTEN TO THE TELECONFERENCE.
THANK YOU.

DELIVER TO: LIDCFWW

ORIGINAL
SENT: 03/12/87 TIME: 13:55
FROM: LTCCANC
SUBJECT: 3-12 H. RESOURCES T.C.
PRINT DATE: 03/12/87 TIME: 13:55

*** FINAL TELECONFERENCE STATISTICS ***

DATE: 3-12-87
SITE: ANCHORAGE
SPONSOR: HOUSE RESOURCES
SUBJECT: HJR 7 AND 9: ANWR
LOCAL MODERATOR: JEANNE

TESTIFIED:

NAME\REPRESENTING	ADDRESS	PHONE #

OBSERVED:

NAME\REPRESENTING	ADDRESS	PHONE #
BETTE MORRISON	550 W. 7TH #1840	258-7200
RICHARD OGAR\ARCO	P.O. BOX 100360	265-6878
AL HASTINGS\CONOCO	3201 C ST.	564-7600

TESTIFIED 0
OBSERVED: 3
TOTAL: 3

START TIME: 8:30 P.M.
END TIME: 10:00 P.M.

* ORIGINAL *
* SENT: 03/12/87 TIME: 13:56 *
* FROM: LTCCFBX *
* SUBJECT: 3/12 H. RESOURCES, ANWR T/C *
* PRINT DATE: 03/12/87 TIME: 13:56 *
* *
****

****** F I N A L S T A T S *****

DATE: _____3/12/87____
SITE: _____FAIRBANKS______________________________________
SPONSOR: _____HOUSE RESOURCES________________________________
SUBJECT: _____HJR 7, 9 ANWR_________________________________
MODERATOR: _____MAXINE WALTON_________________________________

****
TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE:#
1.) -0-		

****
OBSERVE:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)FRED PRATT,	BOX 72901, FAIRBANKS 99707	452-3061
2.)CARL JOHNSON,	822 SKYLINE DR., FAIRBANKS 99712	457-2011
3.)MIKE WALLERI,	201 1ST AVE., FAIRBANKS 99701	452-8251
4.)LISA JAEGER,	201 1ST AVE. , FAIRBANKS 99701	452-8251
5.)RON SILAS,	201 1ST AVE., FAIRBANKS 99701	452-8251
6.)WILLIAM SILAS,	EAGLE, ALASKA 99738	______

****
TESTIFY__________0_______ TIME STARTED_________8:30 A.M.____
OBSERVED_________8_______ TIME ENDED__________9:55 A.M.______
TOTAL____________8_______

****
* *
* DELIVER TO: LIOCFWW *
* *
* *
* ORIGINAL *
* SENT: 03/12/87 TIME: 14:05 *
* FROM: LIOCBAR *
* SUBJECT: FINAL STATS - ANWR *
* PRINT DATE: 03/12/87 TIME: 14:05 *
* *
****

03/12/87
HOUSE RESOURCES
ANWR - HJR 7 AND 9
BARROW
LACEN

FINAL STATS

NAME/REPRESENTING	ADDRESS	PHONE	T	O
1.WARREN MATUMEAK/	NORTH SLOPE BOROUGH PLANNING DEPT./BOX 69	852-2611	X	
2.CHARLES D.N.BROWER	/NORTH SLOPE BOROUGH DEPT. OF WILDLIFE MNGT.	852-2611		X
3.JOHN TRENT	BOX 939 / BARROW	852-6075		X
4.JACOB ADAMS/PRESIDENT, ARCTIC SLOPE REG'L. CORP.	BOX 429, BARROW	852-8633	X	
5.CONRAD BAGNE/ARCTIC SLOPE REG'L CORP.	BOX 429, BARROW	852-8633		X
6.FLOSSIE ANDERSON	BOX 801, BARROW	852-4875		X
7.ARCHIE K. BROWER/PRESIDENT, KAKTOVIK VILLAGE CORP. (KIC)	KAKTOVIK		X	

DELIVER TO: LIOCFWW

ORIGINAL
SENT: 03/12/87 TIME: 12:33
FROM: LTCCFBX
SUBJECT: H RES. CMTE FBX#1
PRINT DATE: 03/12/87 TIME: 12:33

DATE: ~~3/12/87~~
SITE: FAIRBANKS
SPONSOR: HOUSE RESOURCES
SUBJECT: HJR 7, 9 ANWR
MODERATOR: MAXINE WALTON

TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE:#
1.)RON SILAS, TANANA CHIEFS		
2.)		
3.)		
4.)		
5.)		
6.)		
7.)		
8.)		

OBSERVE:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)FRED PRATT, FREELANCE REPORTER		
2.)CARL JOHNSON		
3.)MIKE WALLERI		
4.)LISA JAEGER		
5.)		
6.)		
7.)		
8.)		
9.)		

DELIVER TO: LIOCFWU

ORIGINAL

SENT: 03/12/87 TIME: 12:33
FROM: LTCCFBX
SUBJECT: H RES. CMTE FBX#1
PRINT DATE: 03/13/87 TIME: 12:33

DATE: 3/12/87
SITE: FAIRBANKS
SPONSOR: HOUSE RESOURCES
SUBJECT: HJR 7, 9 ANWR
MODERATOR: MAXINE WALTON

TESTIFY:
NAME\REPRESENTING ADDRESS PHONE:#
1.)RON SILAS, TANANA CHIEFS
2.)
3.)
4.)
5.)
6.)
7.)
8.)

OBSERVE:
NAME\REPRESENTING ADDRESS PHONE:#
1.)FRED FRATT, FREELANCE REPORTER
2.)CARL JOHNSON
3.)MIKE WALLERI
4.)LISA JAEGER
5.)
6.)
7.)
8.)
9.)

****
*
* DELIVER TO: LIOCFWW
*
*
* ORIGINAL
* SENT: 03/12/87 TIME: 12:35
* FROM: LTCCANC
* SUBJECT: 3-12 ANWR T.C.
* PRINT DATE: 03/12/87 TIME: 12.35
*
****

**** ANCHORAGE PARTICIPANT LIST ****

THE FOLLOWING PEOPLE ARE STANDING BY TO PARTICIPATE IN TODAYS H
RESOURCES, ANWR_____ TELECONFERENCE:

TO TESTIFY:

1.)
2.) None
3.)
4.)

TO OBSERVE:

1.) BETTE MORRISON
2.) RICHARD OGAR, ARCO
3.) AL HASTINGS, CONOCO

EOM

KAKTOVIK will be on line by 9:20

```
**********************************************************************
*                                                                    *
* DELIVER TO: LIOCFWW                                                *
*                                                                    *
*                                                                    *
* ORIGINAL                                                           *
* SENT:          03/12/87  TIME: 12:44                               *
* FROM:          LIOCBAR                                             *
* SUBJECT        ANWR T/C                                            *
* PRINT DATE:    03/12/87  TIME: 12:45                               *
*                                                                    *
**********************************************************************
```

03/12/87
HOUSE RESOURCES
ANWR - HJR 7 AND 9
BARROW
LACEN

PARTICIPANT LIST
FINAL STATS

NAME/REPRESENTING	ADDRESS	PHONE	T	O
1.WARREN MATUMEAK/ NORTH SLOPE BOROUGH PLANNING DEPT./BOX 69		852-2611	X	
2.CHARLES D.N.AROWER /NORTH SLOPE BOROUGH DEPT. OF WILDLIFE MNGT.		852-2611		X
3.JOHN TRENT / BOX 939 / BARROW		852-6875		X
6.				

Jacob ADAMS

**********: **********

*

* DELIVER TO: LIOCFWW *

*

*

* ORIGINAL *

* SENT: 03/12/87 TIME: 13:26 *

* FROM: LIOCANC *

* SUBJECT: UPDATE FROM THE BRIDGE *

* PRINT DATE: 03/12/87 TIME: 13:26 *

*

****

LISA FROM DAVID

BETHEL HAS ADDED ON WITH 3 PEOPLE PARTICIPATING THERE.

KAKTOVIK'S OPEN HANDSET MICROPHONE HAS BEEN TURNED DOWN TO 'LISTEN ONLY' FOR THE DURATION OF THE CONFERENCE.

DAVID

HAL KUMMEROW IN SITKA
MAY WISH TO SPEAK

1 more person in Galena
to testify

HAL KUMMEROW IN SITKA
MAY WISH TO SPEAK

1 More person in Galena
to testify

* FROM: LIOGS1
* SUBJECT: ANWR TE
* PRINT DATE: 03/12/87 TIME: 12:40

MARCH 12, 1987
HOUSE RESOURCES
ANWR
SITKA
KATHY KYLE - MODERATOR

SITKA

Both are listed now to observe

PARTICIPANT LIST

NAME/REPRESENTING	ADDRESS	PHONE #	T	O
1. HAL KUMMEROW,	BOX 2353			OBSERVE
2. BRUCE ENGDAHL,	801 LINCOLN ST.			OBSERVE
3.				

TESTIFIED
UNABLE
OBSERVED
TOTAL

START/END TIME

Galena has come on line

* DELIVER TO: LHSCSKM
*
*
* ORIGINAL
* SENT: 03/16/87 TIME: 09:22
* FROM: LIOCFWW
* SUBJECT: STAT3-12,ANWR,SHARON
* PRINT DATE: 03/16/87 TIME: 10:00
*

FINAL STATS

DATE: MARCH 12, 1987
SITE: FORT YUKON, ALASKA
SPONSOR: HOUSE RESOURCES
SUBJECT: HJR 7 & HJR 9 - ANWR
MODERATOR: RON SOLOMAN

TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE: #
1. JOHN TITUS	VENETIE, AK 99781	NONE
2. JONATHON SOLOMON	FORT YUKON, 99740	662-2415

OBSERVE:

NAME\REPRESENTING	ADDRESS	PHONE #

TESTIFIED 2 TIME START 8:20 A.M.

OBSERVED 0 TIME END 9:55 A.M.

TOTAL 2

* DELIVER TO: LHSCSKM
*
*
* ORIGINAL
* SENT: 03/16/87 TIME: 09:24
* FROM: LIOCFWW
* SUBJECT: STAT3-12,ANWR,SHARON
* PRINT DATE: 03/16/87 TIME: 10:01

```
* DELIVER TO: LHSCSKM                                                *
*                                                                    *
*                                                                    *
* ORIGINAL                                                           *
* SENT:          03/16/87  TIME: 09:22                               *
* FROM:          LIOCFWW                                             *
* SUBJECT:       STAT3-12,ANWR,SHARON                                *
* PRINT DATE:    03/16/87  TIME: 10:00                               *
*                                                                    *
**********************************************************************
```

FINAL STATS

DATE: MARCH 12, 1987

SITE: FORT YUKON, ALASKA

SPONSOR: HOUSE RESOURCES

SUBJECT: HJR 7 & HJR 9 - ANWR

MODERATOR: RON SOLOMAN

TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE:#
1. JOHN TITUS	VENETTE, AK,99781	NONE
2. JONATHON SOLOMON	FORT YUKON,99740	662-2415

OBSERVE

NAME\REPRESENTING	ADDRESS	PHONE #

TESTIFIED 2

OBSERVED 0

TOTAL 2

TIME START 8:30 A.M.

TIME END 9:55 A.M.

```
**********************************************************************
*                                                                    *
* DELIVER TO: LHSCSKM                                                *
*                                                                    *
*                                                                    *
* ORIGINAL                                                           *
* SENT:          03/16/87  TIME: 09:24                               *
* FROM:          LIOCFWW                                             *
* SUBJECT:       STAT3-12,ANWR,SHARON                                *
* PRINT DATE:    03/16/87  TIME: 10:01                               *
*                                                                    *
**********************************************************************
```

TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)MAX HUHNDORF,	BOX 329, GALENA 99741	656-
2.)PATRICK KLIER,	BOX 38, GALENA, 99741 (GANA-A YDD)	656-1606
3.)PAT SWEETSIR,	BOX 38, GALENA, 99741 (GANA-A YDD)	656-1606

(SWEETSIR DIDN'T GET TO SPEAK)

OBSERVE:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)GEORGE TROXEL,	BOX 157, GALENA 99741	656-1370

TESTIFY_____3_____ TIME STARTED_____8:30 A.M.___
OBSERVED_____1_____ TIME ENDED_____9:55 A.M.___
TOTAL_____4_____

DELIVER TO: LHSCSKM

ORIGINAL
SENT: 03/16/87 TIME: 09:28
FROM: LIOCFWW
SUBJECT: STATS,3-12,ANWR,SHARON
PRINT DATE: 03/16/87 TIME: 10:01

*****FINAL STATS*****

DATE: 3-12-87
SITE: KOTZEBUE
SPONSER: HOUSE RESOURCES
SUBJECT: LEG. PUBLIC HEARING: HJR 7 AND 9\A.N.W.R.
MODERATOR: KAREN SUE JOHNSON

TESTIFIED:

1. PETE SCHAEFFER, ACTING PRESIDENT NANA REG. CORP., BOX 49, KOTZEBUE, 442-3301
2. CHUCK GREENE, MAYOR N.W.A.B., BOX 1110, KOTZEBUE, 442-2500

OBSERVED:

1. JEFF SMITH, N.W.A.B., BOX 1110, KOTZEBUE, 442-2500

TESTIFIED: 2
OBSERVED: 1
TOTAL: 3

TIME START: 8:30 AM
TIME END: 10:00 AM

*****EOM*****

DELIVER TO: LHSCSKM

TESTIFY:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)MAX HUHNDORF,	BOX 329, GALENA 99741	656-1223
2.)PATRICK KLIER,	BOX 38, GALENA, 99741 (GANA-A 'YOO)	656-1606
3.)PAT SWEETSIR,	BOX 38, GALENA, 99741 (GANA-A 'YOO)	656-1606

(SWEETSIR DIDN'T GET TO SPEAK)

OBSERVE:

NAME\REPRESENTING	ADDRESS	PHONE #
1.)GEORGE TROXEL,	BOX 157, GALENA 99741	656-1370

TESTIFY_____3_____ TIME STARTED_____8:30 A.M.___
OBSERVED_____1_____ TIME ENDED_____9:55 A.M.___
TOTAL_____4_____

* DELIVER TO: LHSCSKM

* ORIGINAL
* SENT: 03/16/87 TIME: 09:28
* FROM: L10CFWW
* SUBJECT: STATS,3-12,ANWR,SHARON
* PRINT DATE: 03/16/87 TIME: 10:01

*****FINAL STATS*****

DATE: 3-12-87
SITE: KOTZEBUE
SPONSER: HOUSE RESOURCES
SUBJECT: LEG. PUBLIC HEARING: HJR 7 AND 9\A.N.W.R.
MODERATOR: KAREN SUE JOHNSON

TESTIFIED:

1. PETE SCHAEFFER, ACTING PRESIDENT NANA REG. CORP., BOX 49, KOTZEBUE, 442-3301
2. CHUCK GREENE, MAYOR N.W.A.B., BOX 1110, KOTZEBUE, 442-2500

OBSERVED:

1. JEFF SMITH, N.W.A.B., BOX 1110, KOTZEBUE, 442-2500

TESTIFIED: 2 TIME START: 8:30 AM
OBSERVED: 1 TIME END: 10:00 AM
TOTAL: 3

*****EOM*****

* DELIVER TO: LHSCSKM

Official Business

COMMITTEE: Resources

DATE: Feb. 4, 1987

SIGN-IN

Subject of meeting: Arctic National Wildlife Refuge HJR 7, HJR 9

NAME	ADDRESS	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
Joe Thomas	315 Barnette St. Fbks.	452-3139	Laborers Local 942	YES
Gail Gatton			AEL	No
Richard Holland	9914 Cohen Dr., Juneau	789-5259	Sierra Club	Yes
April E Crosby	380 STYX RIVER RD FBX 99709	479-2846	ARCTIC AUDUBON NATL. AUD. SOCIETY	YES
Phil Holdsworth	326-4th St. #1009 Juneau	586-1383	RDC	Yes

REPRESENTATIVE
SAM COTTEN
DISTRICT 15

P.O. BOX 298, EAGLE RIVER, AK 99577
P.O. BOX V, JUNEAU, AK 99811

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES

February 16, 1987

The Honorable Ted Stevens
United States Senate
522 Hart Building
Washington, D. C. 20510

Dear Senator Stevens:

I am writing with regard to the proposed land exchanges in the Arctic National Wildlife Refuge. As you may know, the House Resources Committee of the Alaska State Legislature has been investigating the proposed land exchanges and last week heard about them from the Interior Department, ANCSA Corporations, and the State of Alaska.

As Senator Murkowski stated in his annual address to the Legislature on February 13th, the protection of the state's interest is vital in any ANWR land exchange. I agree with him that one way of protecting the state's interests would be to provide that the state's entitlement to revenues from the traded ANWR acreage will not be reduced by the exchange.

However, in our hearing last week, we heard from Bob Gilmore of the U.S. Fish and Wildlife Service (who stated that he has the "responsibility for making the exchanges happen") that the exchanges are "a long way down the road," and that inclusion of a provision to retain the state's revenue entitlement would require renegotiation of the proposed land exchange contract. To my understanding there would also need to be an adjustment of the subsurface appraisals of ANWR acreage to reflect the lower revenue potential for holders of the limited subsurface interests after the trades occur.

Senator Stevens, it is my belief that the time has come for our congressional delegation to work as closely and immediately as possible with the Interior Department to assure that the state's revenue entitlement is protected in any land exchange agreement. Obviously, we cannot afford for the agreements to proceed to finalization without this protection.

I hope that you will be able to help out on this issue which needs your personal attention right now.

Sincerely,

Sam Cotten

Sam Cotten, Co-Chairman
House Resources Standing Committee

cc: The Honorable Steve Cowper
Governor, State of Alaska

Mr. John Katz, Special Assistant
Office of the Governor, Washington D. C.

Mr. Robert Gilmore, Regional Director
United States Fish and Wildlife Service

For the Committee, in the audience are

Dennis Kelso, DEC Commissioner
Norman Cohen, Acting DF+G Dep. Comm'r
Jim Hanson, Chief Geophysicist, DNR

Phil Holdsworth } who testified yesterday
Gail Gatton }

House Resources
2/4/87

February 4, 1987

NOTES FOR ORAL PRESENTATION BEFORE HOUSE RESOURCE COMMITTEE

My name is April Crosby, and I am the Conservation Committee Chairperson for Arctic Audubon, the Fairbanks Chapter of the National Audubon Society. I appreciate the opportunity to comment on the House Resolutions which may be proposed in the name of the people of Alaska, which includes me.

We all know that whether or not the Arctic coastal plain is opened to industrial development is not a matter that will be decided by Alaskans but rather by Congress in the name of the people of the United States, which also includes me. But where Alaska stands will be significant and will be heard by those weighing the facts and making the decisions. It is therefore very important that we Alaskans take a position which is economically, scientifically, ecologically and aesthetically defensible and a position we will still be pleased with and proud of 10 to 50 years from now.

This position should therefore be based on research and data of the highest quality and reliability. Our position should reflect the wisest response to management options for the coastal plain, given Alaska's interest in the area. Our position should reflect knowledge of such research as presented in the US Fish and Wildlife 1002 report which is the resource assessment of oil and gas potential and the wildlife and wilderness values of the area.

I suggest that the drafted House resolutions do not reflect the research of this and other reports, except perhaps some proprietary oil industry research with which I am unfamiliar because neither you nor I have access to that pertinent information.

I suggest that despite the careful attempts in H. R. #9 to specify to Congress the carefull attention needed to maintain environemtnal quality, this Resolution is premature. Let me say why:

It seems to have forgotten that prodevelopment and proconservation interests have negotiated extensively already on the north slope acres and that the Arctic Refuge, expanded by ANILCA in 1980, is already a compromise position: it was the settlement made for a few acres to be reserved with protected status. We should remember that over 90% of the Arctic Coastal plain is already open to development. In other words, of the 50 million acres of incredibly biologically productive wild area, not one acre is being recommended for protective designation by the State of Alaska. A Resolution to protect the coastal plain from oil and gas development would be a move to protect 1/50 of the area.

PARTICIPANTS IN THE PROJECT APPROVAL PROCESS

FOUR MAJOR CATEGORIES OF PARTICIPANTS:

- RAILBELT UTILITIES
- STATE POLICY ISSUE PARTICIPANTS
- ECONOMIC AND FINANCIAL ISSUE PARTICIPANTS
- ENVIRONMENTAL ISSUE PARTICIPANTS

Secondly, the Resolution is premature because although we are told that our nation needs the oil that may or may not be there, no one is reminding us of the National Petroleum Reserve-Alaska has 37,000 square miles set aside due to its promising oil potential to be developed in times of national need. No one is reminding us that there are other ways to get the energy resources we need, such as the National Appliance Energy Act which would have saved billions of barrels of oil for national security but which was just vetoed by President Reagan.

The Resolution is premature because although we are told that Alaska would reap millions of dollars in local hire construction projects and severance tax revenues, the legal arrangements and confirmations to ensure these incomes are not yet in place; and in fact, some of our Congressional delegation is suggesting that we should not ask for nor expect to get so much.

Urging development is premature because, as the FWS 1002 report states, drilling one or two exploratory wells would give us much better information regarding whether there is sufficient oil potential to warrant private leasing. That we need better information is probably clear to anyone who has read the 1002 report. For those who have not read the report, keep in mind the comments made by the representative from DNR before me and his statements about oil as compared with the following quotes from the 1002 report:

"All of the oil production in the Prudhoe Bay-Kuparak River field areas is from rocks of the Ellesmerian sequence" (p. 54)
"If most of the Ellesmerian rocks are missing from most of the 1002 area, the assessment number would be greatly reduced" (p. 54)
"Such fault-bounded blocks [as the Ellesmerian sequence] are well known in the Prudho Bay area, but have not yet been identified thus far on the seismic data in the 1002 area." (p. 67)
"Only actual exploration can provide the information needed to determine the extent and distribution of the resources, and therefore, the potential benefit to the economy." (p. 166)

As you can see the text of the 1002 report suggests that further information is necessary.

It is premature for Alaskans to be urging development in the name of our sad state economy. The state is not out of oil, we are piping it out right now, but the price is very low. We are not getting top dollar for the oil or for the leases, and having more of something for which the price is low

DEPARTMENT OF EDUCATION (CONT.)				
		APPROPRIATION	APPROPRIATION FUND SOURCES	
	ALLOCATIONS	ITEMS	GENERAL FUND	OTHER FUNDS
LONG ISLAND LEARN ALASKA TRANSMITTER (ED 2)		35,000	35,000	
NAPAKIAK LEARN ALASKA TRANSMITTER AND EARTH STATION (ED 25)		50,000	50,000	
TYONEK LEARN ALASKA TRANSMITTER AND EARTH STATION (ED 24)		30,000	30,000	
EXECUTIVE ADMINISTRATION/SPECIAL PROJECTS				
ALASKA GOVERNMENT TEXT COMPLETION (ED 99)		79,000	79,000	
ALEUTIAN REGION SCHOOL DISTRICT				
AKUTAN AND FALSE PASS SCHOOL COMPLETION (ED 26)		600,000	600,000	
ANNETTE ISLAND SCHOOLS				
ELEMENTARY SCHOOL ADDITION DESIGN AND PHASE I CONSTRUCTION (ED 2)		1,000,000		1,000,000
CHATHAM SCHOOLS				
EIGHT FATHOM BIGHT - MODULAR SCHOOL BUILDING (ED 3)		175,000	175,000	
TENAKEE SPRINGS-SCHOOL CONSTRUCTION PHASE II (ED 3)		518,700	518,700	
CHUGACH SCHOOLS				
TATILEK SCHOOL - MAINTENANCE OF OIL TANK BERM LINER (ED 6)		25,000	25,000	
WHITTIER SCHOOL MODIFICATION - PHASE II (ED 6)		300,000	300,000	
COPPER RIVER SCHOOLS				
GLENALLEN SECONDARY SCHOOL (ED 17)		3,000,000	3,000,000	
CRAIG CITY SCHOOLS				
HIGH SCHOOL RENOVATION AND CONSTRUCTION PHASE I (ED 2)		941,000		941,000
HYDABURG CITY SCHOOLS				
SCHOOL REPAIRS AND IMPROVEMENTS (ED 2)		20,000	20,000	

will not solve the problem. The prudent position would be to wait until the demand is high for both the product and its potential locations, and then consider the trade offs we'd be making.

Most of all, the Resolution is premature because we don't fully understand the resources we have up north, the oil potential, the wildlife there and how it would behave under industrial stress, and we don't understand the processes required to manage the resources...for extracting the oil and protecting its environment...as demonstrated by these slides.

The final slide of oil barrels on the tundra refers us to the article in the Fairbanks News-Miner (February 1, 1987) which points out the fact that the oil and gas industry is not subject to the federal and state regulations for hazardous waste disposal. This exemption is due to lobbying from the industry which states that, first, they do not produce enough toxic waste to be concerned with and that secondly, the costs of compliance would be economically devastating to the industry. ---This position seems a bit contradictory because if there are minimal wastes it seems there would be minimal costs.

This and other points in the article, including the peculiar postion that since the oil industry is exempt, we have the very same hazardous wastes regulated in some industries but not in others. This is only one more confusion of the many which surround the issues of oil development in delicate areas.

In sum, there is enough confusion about whether there is oil and how to get it out safely, that I, as an Alaskan, don't want to jump to conclusions or to actions which I'll later regret. Alaska must take the lead in protecting the wild and wonderful land we are known for, and waiting on the development of 1/50 of the biologically critical coastal plain would be a small commitment. To my mind, the unsolved issues regarding this delicate resource are too important for a precipitous rush to judgement.

In other priority issues, AEL expects to rally around the Governor's proposed figures for the departments of Fish and Game, Environmental Conservation, and Natural Resource budgets. "We will fight to protect budget areas of sound resource management and environmental protection," Highleyman declared.

Also in the Lobby's priority list are several land designation bills including. 9 marine parks additions for southeast, Alaska's third state forest at Yakataga a critical habitat area to protect sandhill cranes in Gustavus, and a system of Recreation Rivers in the Mat-Su valley.

Hazardous waste and environmental health legislation will continue to be important in the 14th State Legislature, Highleyman noted. The Lobby will support amendments to strengthen 1983's Worker Right to Know bill and creation of an oil and hazardous substance release response fund. Creation of the fund is particularly important, Highleyman said. "Such a fund would give the state the flexibility to clean up an oil or hazardous substance spill immediately and still recoup the costs from any guilty parties.

END END END

STEVE COWPER

STATE OF ALASKA

OFFICE OF THE GOVERNOR

JUNEAU

STATE OF ALASKA'S

OFFICIAL POSITION ON THE

ARCTIC NATIONAL WILDLIFE REFUGE

Local Hire

There are two principal ways that the economy of Alaska receives benefits from oil and gas development in the state. The first is through taxes and royalties that are collected by the State of Alaska and then redistributed into the economy in various forms. The second is through salaries and wages that are paid directly to employees and then channeled into the economy through individual expenditures. The second benefit can only be achieved when all or a substantial portion of the employees engaged in work with ANWR are Alaska residents who live and make personal expenditures within the state. It is therefore a matter of prime importance that the State of Alaska support the hiring of Alaska residents on any development with ANWR.

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Congress extended the Mineral Leasing Act to Alaska in Section 28(b) of the Alaska Statehood Act, and considered this one of the "major provisions" of that Act. Provisions of a Statehood Act are obligatory on the United States, and any modification of the revenue distribution formula with respect to public lands (including reserved public lands in wildlife refuges) would probably violate the solemn compact between the United States and Alaska which formed the basis for Alaska's admission to the Union.

Congress incorporated this revenue distribution formula in the Statehood Act because so much land in Alaska was owned by the federal government, and almost one-fourth of it had been included in withdrawals and reservations prior to statehood. Modifying the distribution formula only for the reserved lands in the ANWR would discriminate against Alaska in relation to other states, in effect making Alaska the only state in which public land mineral revenues are not distributed under the Mineral Leasing Act. This would contrast with Congress' traditional practice of treating all states equally.

The Mineral Leasing Act represented a historic tradeoff in the history of public land law. In enacting it, Congress terminated the historic policy of disposing of public lands; instead, it determined to retain the public lands in federal ownership but to use the revenues from those lands for the benefit of the states in which the lands were located. Changing the revenue distribution formula would radically alter this historic compromise on which federal public land administration has been based for decades.

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Congress is to consider whether the coastal plain of the ANWR ought to be open for oil and gas exploration, development, and production. We concur with the finding of the Department of the Interior's 1002 report that there is substantial oil and gas potential in the coastal plain and that exploration should proceed to determine the extent of that potential. Given current world oil consumption trends, oil under the coastal plain may soon be needed to meet America's demands and help ensure its energy security.

The development of the coastal plain will alter the environment, and to some degree affect the Porcupine Caribou herd. This 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. The Porcupine herd, the second largest in the U.S., uses the coastal plain as its calving area. Therefore, any oil and gas exploration there must be done in a manner that is consistent with the chief purpose of the refuge - preservation of wildlife values.

Similarly, we are concerned about the potential impacts to land, air, and water quality, including the proper disposal of waste products that result from drilling activities. Our past experience in Prudhoe Bay and other North Slope petroleum developments will be helpful in determining appropriate measures to avoid potential problems. However, the draft 1002 report does not adequately address these environmental issues.

The state will be providing specific comments and recommendations to the Secretary of the Interior regarding the 1002 report. The Department of Interior's deadline for providing these comments is February 6, 1987.

ARCTIC NATIONAL WILDLIFE REFUGE
November 14, 1986

Background Information

During its consideration of the Alaska National Interest Lands Conservation Act (ANILCA), the U.S. Congress recognized that there is a high potential of discovering oil and gas deposits on the coastal plain of the Arctic National Wildlife Refuge (ANWR). Under provisions of the Alaska Statehood Act and other federal laws, any revenue generated from oil and gas development in ANWR would be shared by the federal government with the State of Alaska. Based on current estimates, as much as $32 billion in revenues could accrue to the state from development of ANWR. Therefore, a decision by the Congress whether or not to open the refuge to oil and gas exploration could have important consequences both for the state's economic future and for the nation's energy needs.

Given the high oil and gas resource potential contained within the coastal plain of ANWR, the Congress, pursuant to Section 1001 of the ANILCA, directed the Secretary of the Interior to assess ANWR for potential oil and gas resources and make recommendations concerning future use and management of those resources as well as protection of the wildlife resources of ANWR.

Section 1002(h) of ANILCA requires that the Secretary, in consultation with the Governor, conduct a continuing inventory and study of the fish and wildlife of the coastal plain of ANWR and submit a final report, known as the 1002(h) report, to Congress.

Budget Requirements

This is an extremely important issue to the state in terms of potential employment and revenue. Similarly, since ANWR is a wildlife refuge, protection of nationally recognized fish and wildlife resources that reside in the area is also important. In order to achieve the delicate balance between developing ANWR and protecting the fish and wildlife resources, special efforts will be required at the state and national level. Such efforts will likely require additional travel by agency staff to Washington, D.C., to consult with Washington officials and/or assist the Governor's Office, additional public relations and lobbying efforts, and some additional travel within Alaska.

Discussions are presently occurring regarding the acquisition of lands in ANWR by a number of Native corporations, and possibly the state, in exchange for land owned (by the Native corporations and the state) elsewhere in Alaska. In the event these land

exchanges appear to be in the state's best interest, a significant amount of money will be required by the state to conduct computer processing, modeling efforts, and field work to obtain needed area-specific information regarding the geology of the area.

ATTACHMENT A

BUDGET REQUIREMENTS

The following budget requests/needs were identified by the indicated agency as being necessary to effectively deal with various aspects of ANWR decision making. This budget request would be presented to the Legislature as a request by the Governor's Office for a supplemental appropriation.

Department of Law

° FY 87

One trip to Washington, D.C., to consult with Washington officials (air fare $1,204, per diem $558).	$ 1,762
Outside counsel with Charles Meyers of Gibson, Dunn & Crutcher, author of Williams & Meyers, Oil & Gas Law. (This contract would continue into FY 88)	$25,000

° FY 88

Based on the ANILCA experience, an equivalent of ten trips to Washington, D.C., would likely be necessary.	$16,938
TOTAL	$43,700

Department of Natural Resources

° FY 87

One trip to Washington, D.C., to consult with Washington officials (air fair $1,204, per diem $558).	$ 1,762
Charter flights for appraisal staff to field inspect @ 900,000 acres of state land (selected) and TA's).	$12,500
Aerial photos, USGS maps, printing, reproductions, films, etc., for land appraisal work.	$ 1,500

° FY 88

One trip to Washington, D.C., to consult with Washington officials.	$ 1,762
Title litigation reports, insurance, reproductions, printings.	$ 2,500
TOTAL	$20,024

Department of Fish and Game

° FY 87

One trip to Washington, D.C., to consult with Washington officials (air fare $1,204, per diem $558).	$ 1,762

° FY 88

One trip to Washington, D.C., to consult with Washington officials to work on land exchanges.	$ 1,762
TOTAL	$ 3,524

Department of Environmental Conservation

FY 87 - 88

Two full time equivalents at the Environmental Engineer III level will be needed. One would serve as the prime organizer and reviewer. The second would take the lead in preparing decription of past management practices. Staff in all areas of the agency would be drawn upon as well. Both positions would be stationed in Fairbanks. The cost per position is approximately $70,000 per year (including salary and associated costs). This can be prorated for FY 87, depending on a starting date.	$140,000
One trip to Washington, D.C., for technical consultations with Washington officials.	$ 1,762
TOTAL	$141,762

Governor's Office, Washington, D.C.

° FY 87 - 88

Full-time position to lobby, assist in liaison with Washington, D.C. interest groups, attend hearings and meetings, help coordinate various elements of an advocacy program, and maintain contact with agency personnel and others in Alaska.	$ 40,000
Lobbying firm (contract).	$ 72,000
Public relations/media firm (contract).	$ 72,000
TOTAL	$184,000

In summary, based on input from the indicated agency, the following additional money would be needed for the state to deal effectively with the various aspects of ANWR:

Total Supplemental Request -	Governor's Office	$184,000
	Law	43,700
	DNR	20,024
	DFG	3,524
	DEC	141,762
	TOTAL	$393,010

Sam -
A draft.
Ned

Dear Secretary Horn:

I am writing with a set of questions about the possible Arctic National Wildlife Refuge land exchanges. The House Resources Committee appreciated the appearance of Bob Gilmore at our meeting last week on ANWR land exchanges. However, several issues remained unresolved at the hearing because time ran out or because Mr. Gilmore was not prepared to discuss them. The Committee's next meeting on this issue is scheduled for the week of March 2; it would be our hope to have your responses in hand before this meeting occurs.

1. Mr. Gilmore stated that the exchanges are "a long way down the road," but that he doesn't think it is too late to include National Park lands in this exchange proposal. The State of Alaska has been approached by the Park Service numerous times since the passage of ANILCA toward the purpose of eliminating state-owned inholdings in Alaska parks, including Denali and Wrangells-St. Elias. Acquisition of some of these lands by the Interior Department would appear to be in the national interest. Can you explain why the Department's only interest at this time centers on acquisition of Refuge inholdings? Has the Department established a priority list for Refuge and Park inholdings throughout Alaska, ranking them against each other? Has the Department reviewed all inholdings in Alaska parks and refuges to be certain that this apparent

opportunity to acquire state or private inholdings is best used? Has the Department invited all Refuge inholders the opportunity to become involved in the proposed exchange process, based on the appraised value of their inholdings?

2. As one legislator stated at the House Resources Committee meeting, there appears to be a stampede underway to accomplish the proposed land trades, even though basic documentation, planning, and public review are incomplete or unavailable. Proponents of the land exchanges, including representatives of ANCSA corporations and Interior, have said that there are political advantages to moving forward with the secret land trades now so that they can be put before Congress soon after the 1002(h) study is presented. Does the exchange process to date comply with federal laws, regulations, and procedures regarding public disclosure? What are the political advantages of conducting land exchanges prior to congressional opening of the coastal plain to oil and gas leasing? What public process does Interior intend for the proposed agreements? Is there a chance that Congress, which in ANILCA directed Interior to study the coastal plain's wilderness potential and make a recommendation about federal oil and gas leasing in the area, will find that Interior has misdirected its efforts into exchange discussions prior to congressional involvement? Are the planned acquisitions consistent with applicable Refuge management plans?

3. The appraisal process for affected lands is very unclear, but information provided to date indicates that there is a large amount of discretion and guesswork going on in Interior to establish both subsurface ANWR values and the value of surface acreage of other Refuge inholdings. Mr. Gilmore stated that the BLM's ANWR subsurface appraisal "needs to go through several levels of approval (at Interior) in Washington" before it will be available. He also said that inholdings cannot be appraised by standard procedures because these do not allow for consideration of wildlife (i.e. public interest) values, and that "any value over and above (the standard appraised value) will be determined by negotiation between the Department and the Native corporations." Mr. Gilmore said that the Department expects to "know precisely" what the inholdings are worth based on highest and best use and future value, as opposed to present value for ANWR subsurface. Please describe the appraisal process for both surface acreage and subsurface oil and gas values, including the discretion that may be exercised within the Secretary's Office. Will the appraisal process and negotiations be documented? Is there a written appeal process for participants? What considerations and criteria will guide the Department in the negotiations to establish surface values?

4. With regard to the exchange contracts, we understand that there will be a final negotiating session in Washington during the week of February 23, and that the documents produced so far are not available for public distribution. We also are led to understand that the contracts will not be made available to the public until after they are completed and perhaps signed. From our review of the state's comments on the draft contracts, and from discussion at the committee meeting last week, we believe that there are major unresolved issues that must be considered in the contract. These include:

a) Overriding revenue retention for the State of Alaska. According to Mr. Gilmore the negotiations would have to be redirected, and draft agreements and appraisals will have to be adjusted, so that the State's existing revenue entitlement can be protected. Senator Murkowski has supported the concept of retained revenue for the State and I agree. The State should not be expected to agree to land exchanges that could remove the best geologic structures from public ownership unless the State is assured of revenue protection. Has the Interior Department revised the agreements and appraisals to include this provision; if not, why?

b) We understand that Interior is proceeding with the exchange of ANWR lands claimed by the State of Alaska on grounds of navigability. What consideration is being provided for these claims in the contracts?

c) The issue of ANCSA 7(i) subsurface revenue sharing has been raised with regard to trade lands acquired by the Arctic Slope Regional Corporation in ANWR. Will the trade lands within the proposed ANWR coastal plain exchanges be subject to 7(i)? Will any provision be made in these contracts for subsurface revenue sharing? If not, how will disputes be resolved in the future?

d) The agreement is reported to contain a provision allowing the original inholder to retain a subsistence easement. What are the reasons for including this provision? How does it affect the value of the inholdings? Does it protect larger hunting and fishing interests? Is it considered constitutionally and legally allowable?

e) Mr. Gilmore said that he does not understand a reported contractual provision allowing some corporations to "rescind" the exchange after exploring ANWR tracts for oil and gas. The inclusion of such a provision seems highly unbelieveable, if the purpose of the exchanges is to acquire and hold valuable Refuge

inholdings in perpetuity. What is the reason for the rescission clause? How is it structured? Does Interior believe that the rescission clause has any prospect of being politically acceptable to Congress, and on what basis?

f) Mr. Gilmore stated that ANILCA Title XI standards for access will be waived in the contract. How will access rights and needs be protected, particularly on lands that lie in important transportation corridors?

5. Even though tract selection may occur in the next four to six weeks, it seems that the ANWR tracts have not yet been identified. Mr. Gilmore stated that virtually all of the coastal plain would be available for exchange. In the past we have heard that anywhere from 25,000 to 250,000 acres may be exchanged. When will the public know which tracts may be traded? Why has the Department chosen to keep the tract identification and selection process secret? How will conflicts be resolved between parties which bid on the same tract?

6. Proponents of the exchanges have justified their support by stating that Congress will find opening ANWR more acceptable if it knows that the exchanges are going to

occur. Could you explain this reasoning? What are the political risks of the exchanges?

7. When asked whether he regarded the State of Alaska as a supporter or advocate of the exchanges, Mr. Gilmore stated that it is "my impression from the sincerity of the negotiations and the people involved in the negotiations... that the State is proceeding as an active, interested participant in the exchange." On the other hand, the State has indicated that it is not committed to the exchange process and does not at this time endorse the concept of trading ANWR subsurface to eliminate ANCSA inholdings in other Refuges. Do you believe that the State has effectively endorsed the trades?

8. One committee member raised the question of the State of Alaska's prior existing rights to the ANWR subsurface. As you know, the State regards its entitlement to 90% of oil and gas revenues produced in Alaska refuges as part of the solemn compact between Alaska and the United States leading to statehood. Mr. Gilmore also stated that he believes that Congress will attempt to reduce this entitlement to 50% on the basis of the NPRA model, and that this would serve as the basis for any retention mechanism preserving the State's entitlement. Is it the Interior Department's view that this existing right may be traded away without the State of

Alaska's concurrence? May Congress amend the State's existing entitlement without State concurrence?

9. The disposal of oil and gas rights on federal lands is ordinarily an open, competitive process. Why has the Interior Department chosen to keep the exchange process -- which amounts to a disposal of ANWR oil and gas rights -- under wraps? What are the political advantages seen by the Department? Would the Department object to opening the process to all Refuge and Park inholders for a competitive disposal/exchange at some later time, after a clear and public tract identification process and open, appealable appraisal approvals?

In addition to posing these questions on behalf of the Committee, I would also like to make a few suggestions on my own behalf. I believe that the public interest -- national and state -- is likely to be served by opening up this secret process and slowing it down. From my vantage point, I cannot believe that Congress would not agree that the process should be open and accessible, and should occur later rather than sooner.

The Refuge and Park systems will benefit from maximum competition, which does not appear to be occurring at this time in the closed process. It would be foolish for the State of Alaska, entitled to 90% of the oil and gas revenue

from ANWR, to agree to a land exchange process that is so vaguely laid out, lacks protection of our revenue entitlement, and affords only questionable assurance of political benefit in Congress.

The Committee looks forward to your response, and appreciates Mr. Gilmore's offer to provide any further assistance or information that the Committee may request.

Sincerely,

Sam Cotten

Co-Chairman

House Resources Committee

M E M O R A N D U M

To: Rod Swope, Special Assistant
Office of the Governor

From: Ned Farquhar, Special Assistant
Representative Sam Cotten

Date: February 10, 1987

Re: ANWR Land Exchange Meeting

This summarizes our telephone call of Friday, February 6th regarding the Resources Committee's February 13, 1987 meeting at 1:00 p.m., Capitol 124 on the topic of ANWR land exchanges.

The committee will hear from Bob Gilmore, who will do a general briefing on the land exchange proposals, and from interested ANCSA corporations.

From the state, the committee will be interested in:

(1) The administration's policy position (as much is known) on the proposed trades;

(2) The state's participation to date and in the future - what state lands have been offered and are now being considered? What problems does the state identify in proposed agreements, appraisals, and trade processes? What timeline does the state see (and what would it prefer) for movement on land trades and state policy making? Would the state support the "recission" clause?; and

(3) Legal analysis - what does the state believe would be legal in the way of exchanges or ANWR development <u>without</u> Congressional approval? What regulatory authorities would the state and federal governments lose in a land trade, if any? Does the 7(i) revenue-sharing clause apply to exchange lands?

I hope that the state will be able to have present appropriate technical and policy staff. Thanks for your assistance.

cc: Bob Arnold, DNR
Tom Hawkins, DNR
Tom Koester, AGO
Norm Cohen, ADF&G
Dennis Kelso, DEC

ANWRI.TXT

Sam — Ned
I'm sure you
[illegible]

February 10, 1987

Sharman Piper
108 Hope Street
Providerce, Rhode Island 02831

Dear Sharman:

You will be pleased to know that ANWR: What's Best for Alaska, is in third printing. We have distributed almost 400 copies and people are still requesting the report.

House Resources will conduct its third hearing on ANWR this Friday, February 13th. Special guests will include Interior's Bob Gilmore, Native Corporations, and state policy and technical staff.

I am enclosing a copy of Senator Josephson's letter which you will find of interest.

OK

Let hand write any further notes

ALASKA STATE SENATE

JOE P. JOSEPHSON
DISTRICT H ANCHORAGE
1526 F STREET
ANCHORAGE, ALASKA 99501
(907) 277-4419

WHILE IN JUNEAU
POUCH V
JUNEAU, ALASKA 99811
(907) 465-4525

January 29, 1987

Representative Sam Cotten
Alaska House of Representatives
P.O. Box V
Juneau, Alaska 99811

Dear Sam:

I have read the report by Sharman Piper (ANWR: What's Best for Alaska?) and want to commend both the author and yourself for its production.

I am deeply concerned that the state is rushing headlong into a massive "PR" effort in Washington which may not be well-considered and which puts the state into a "Give us ANWR at Any Price" mode, a position which would be a detriment in the long run.

I am gratified that Governor Cowper seems to be very sensitive to, and very well informed about, the nuances of the ANWR situation, and especially the implications of land trades with the Native corporations. But I am troubled by the possibility that the delegation in Congress may be eager to satisfy the oil interests (and the Native interests) without proper and full attention to State interests.

One detail which may or may not be important is that I have the understanding that Native proceeds from resources and lands acquired by trade with the Fish and Wildlife Service may not be subject to section 7(i) revenue-sharing under ANCSA. I believe Sharman indicates that they are so subject, at par 21 of the report, and this may not be accurate.

I will retain the report for further reference. Two facts struck me vividly: first, there is an enormous range of revenue possibilities, even if oil is produced within ANWR and even if land trades with Native corporations do not occur or do not affect future State revenues; second, ANWR production might not occur until the last few years of the century, or early in the twenty-first century -- hardly a "fix" to the current budget crisis of the State.

With all that in mind, I remain convinced that the most immediate and urgent lobbying effort by State government has to be on behalf of the Oil Import Fee. Last year, I sponsored a Senate Joint Resolution on the subject, and got little help from the congressional delegation. I noted that Senator Murkowski, in his 1986 campaign, spoke very favorably and hopeful about the prospects of an Oil Import Fee, and with the make-up of the new Senate, it would seem that those prospects are further enhanced.

Passage of an Oil Import Fee would have immediate revenue effects and I hope you will help join in this effort for securing congressional action.

With best wishes, I am

Sincerely,

Joe P. Josephson
State Senator

JPJ:rak
Enclosure

P.S. Please share with Sharman my gratitude for the report; I think you have rendered a very great public service. The report is also readable by lay people (like me) and should be of interest to hundreds or even thousands of our fellow Alaskans.

INFORMATION PACKET

House Resources Committee
February 4 & 5, 1987

Arctic National Wildlife Refuge
HJR 7 and HJR 9

Packet contains:

Position statement of Gov. Cowper p-1
Administration Budget request p-4

p. 14 caribou impacts.

Maps and texts excerpted from U.S. Interior Department 1002(h) study (draft):

Study area p. 1
Geology/Oil and Gas p. 7-12
Caribou movement/use p. 13-14
Alternatives p. 15-20
National Interest p. 21-26

"What's Best for Alaska" - Rep. Cotten's Office

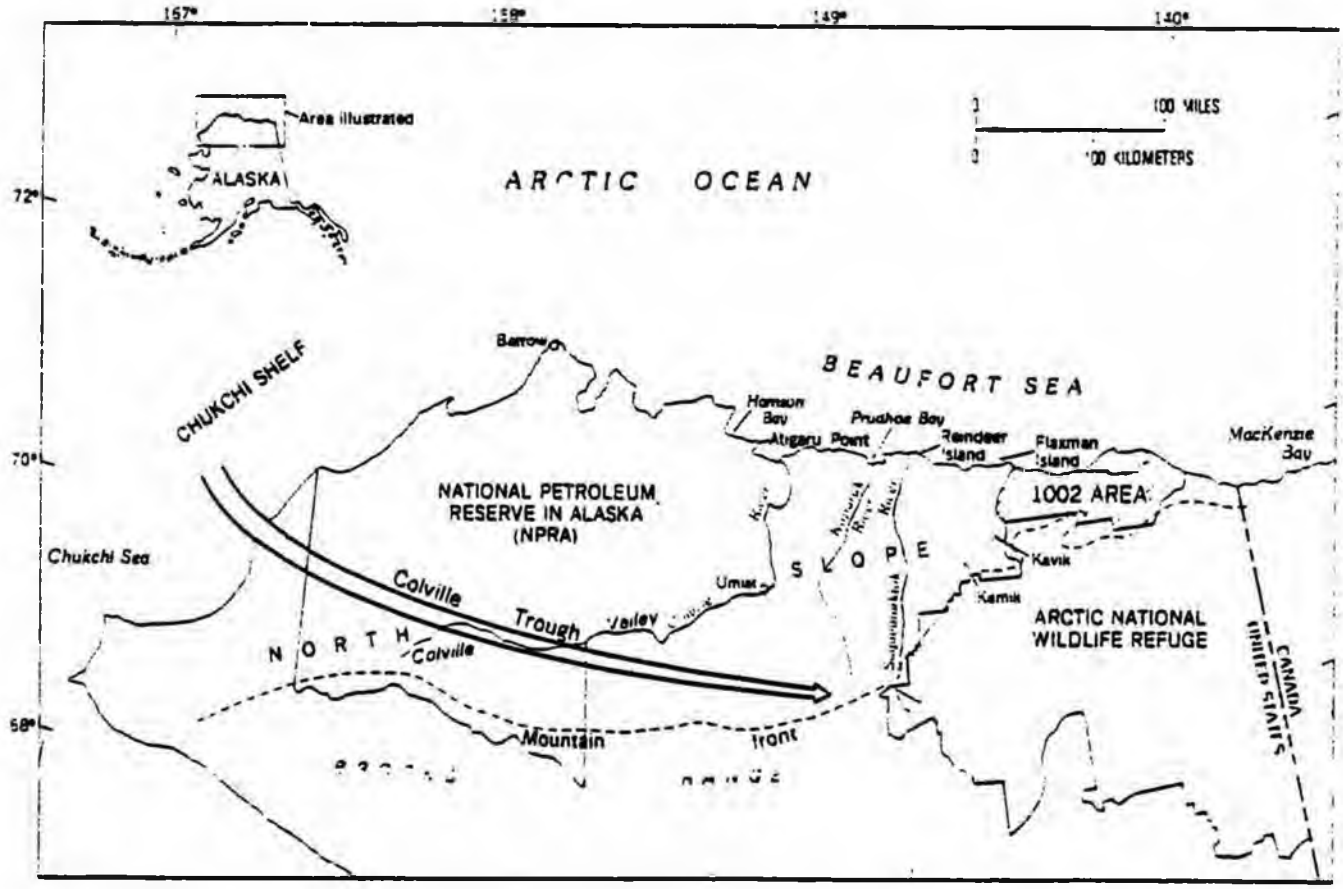

Figure I-1.—Index map of northern Alaska showing location of 1002 area in relation to the Arctic National Wildlife Refuge (Arctic Refuge), the National Petroleum Reserve in Alaska (NPRA), and Prudhoe Bay.

STEVE COWPER

STATE OF ALASKA

JUNEAU

STATE OF ALASKA'S

OFFICIAL POSITION ON THE

ARCTIC NATIONAL WILDLIFE REFUGE

Local Hire

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Department of Law

- FY 87

Three trips to Washington, D.C., to consult with Washington officials (air fare $1,204, per diem $558).	$5,186
Outside counsel with Charles Meyers of Gibson, Dunn & Crutcher, author of Williams & Meyers, Oil & Gas Law. (This contract would continue into FY 88).	$25,000

- FY 88

Based on the ANILCA experience, an equivalent of ten trips to Washington, D.C., would likely be necessary.	$17,620
TOTAL	$47,806

Department of Natural Resources

- FY 87

Three trips to Washington, D.C., to consult with Washington officials (air fare $1,204, per diem $558).	$5,186
Charter flights for appraisal staff to field inspect @ 900,000 acres of state land (selected and TA's).	$12,500
Aerial photos, USGS maps, printing, reproductions, films, etc., for land appraisal work.	$1,500
Seven trips from Anchorage to Juneau for DLWM staff to participate in legislative briefings, interagency discussion, etc. (air fare $328, per diem $210).	$3,766

- FY 88

Three trips to Washington, D.C., to consult with Washington officials to work on land exchanges.	$5,186
Seven trips from Anchorage to Juneau for DLWM and DOG staff to participate in legislative briefings, interagency discussions, etc.	$3,766
Title litigation reports, insurance, reproductions, printings.	$2,500
TOTAL	$34,404

Department of Fish and Game

- FY 87

Three trips to Washington, D.C., to consult with Washington officials (air fare $1,204, per diem $558).	$5,186

- FY 88

Three trips to Washington, D.C., to consult with Washington officials to work on land exchanges.	$5,186
TOTAL	$10,372

Department of Environmental Conservation

- FY 87

Two full time equivalents at the Environmental Engineer III level will be needed. One would serve as the prime organizer and reviewer. The second would take the lead in preparing description of past management practices. Staff in all areas of the agency would be drawn upon as well. Both positions would be stationed in Fairbanks. The cost per position is approximately $70,000 per year (including salary and associated costs). This can be prorated for FY 87, depending on a starting date.	$140,000
Two trips to ANWR per year for field work.	$4,000
Six meetings in Anchorage per year to consult with regional staff.	$1,500

	Four trips to Washington, D.C., for technical consultations with Washington officials.	$5,186
	TOTAL	$150,686

Governor's Office, Washington, D.C.

- FY 87

Full-time position to lobby, assist in liaison with Washington, D.C., interest groups, attend hearings and meetings, help coordinate various elements of an advocacy program, and maintain contact with agency personnel and others in Alaska.	$40,000
Lobbying firm (eight months effort @ $9,000 per month).	$72,000
Public relations/media firm (eight months effort @ $9,000 per month).	$72,000
TOTAL	$184,000

In summary based on input from the indicated agency, the following additional money would be needed for the state to deal effectively with the various aspects of ANWR:

FY 87 Supplemental	Governor's Office	$184,000
	Law	30,186
	DNR	22,952
	DFG	5,186
	DEC	150,686
	TOTAL	$393,010

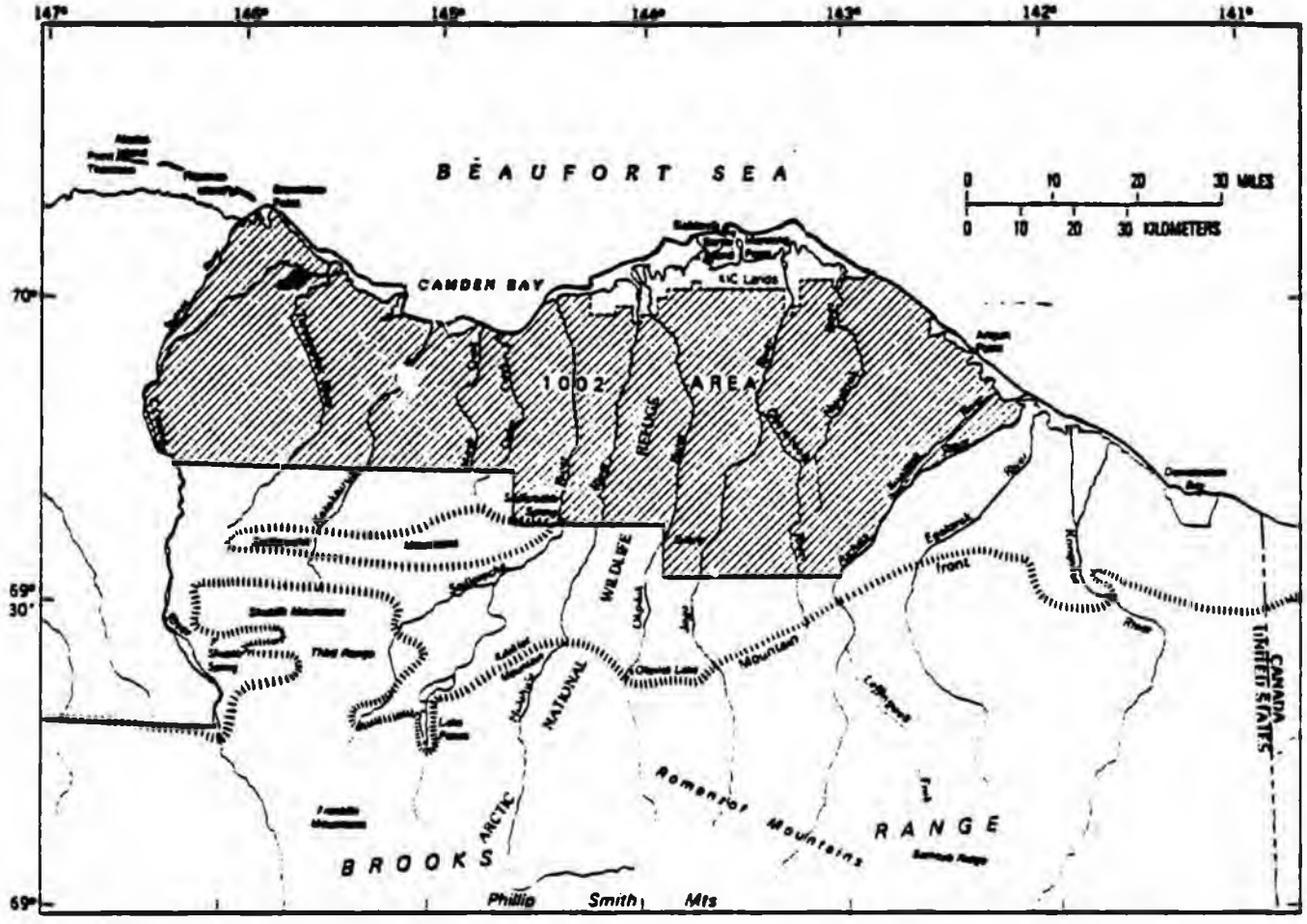


Figure II-1.—Map of northeastern Alaska showing the 1002 area and important nearby geographic features.

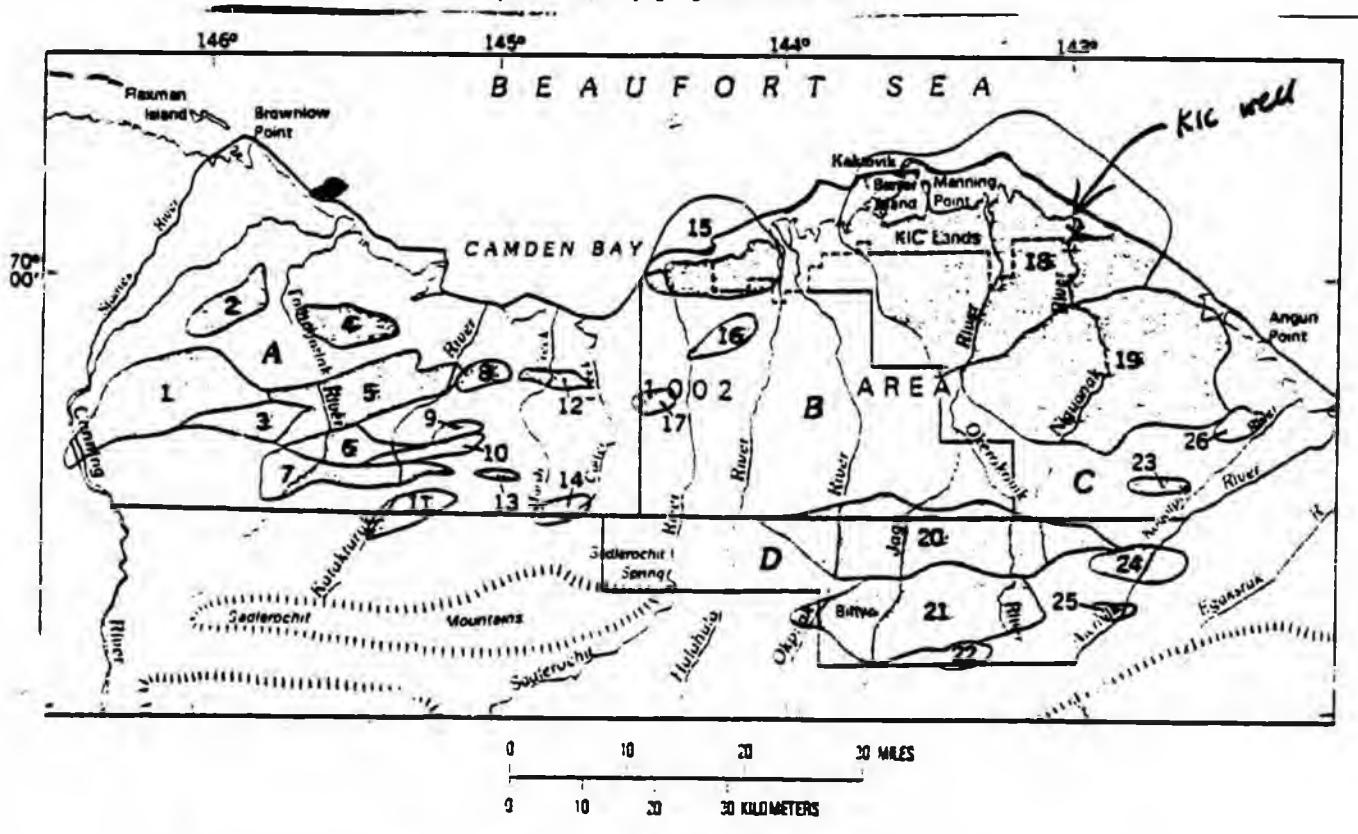


Figure III-1.—Seismically mapped prospects (1-26) and resource blocks (A-D) in the 1002 area.

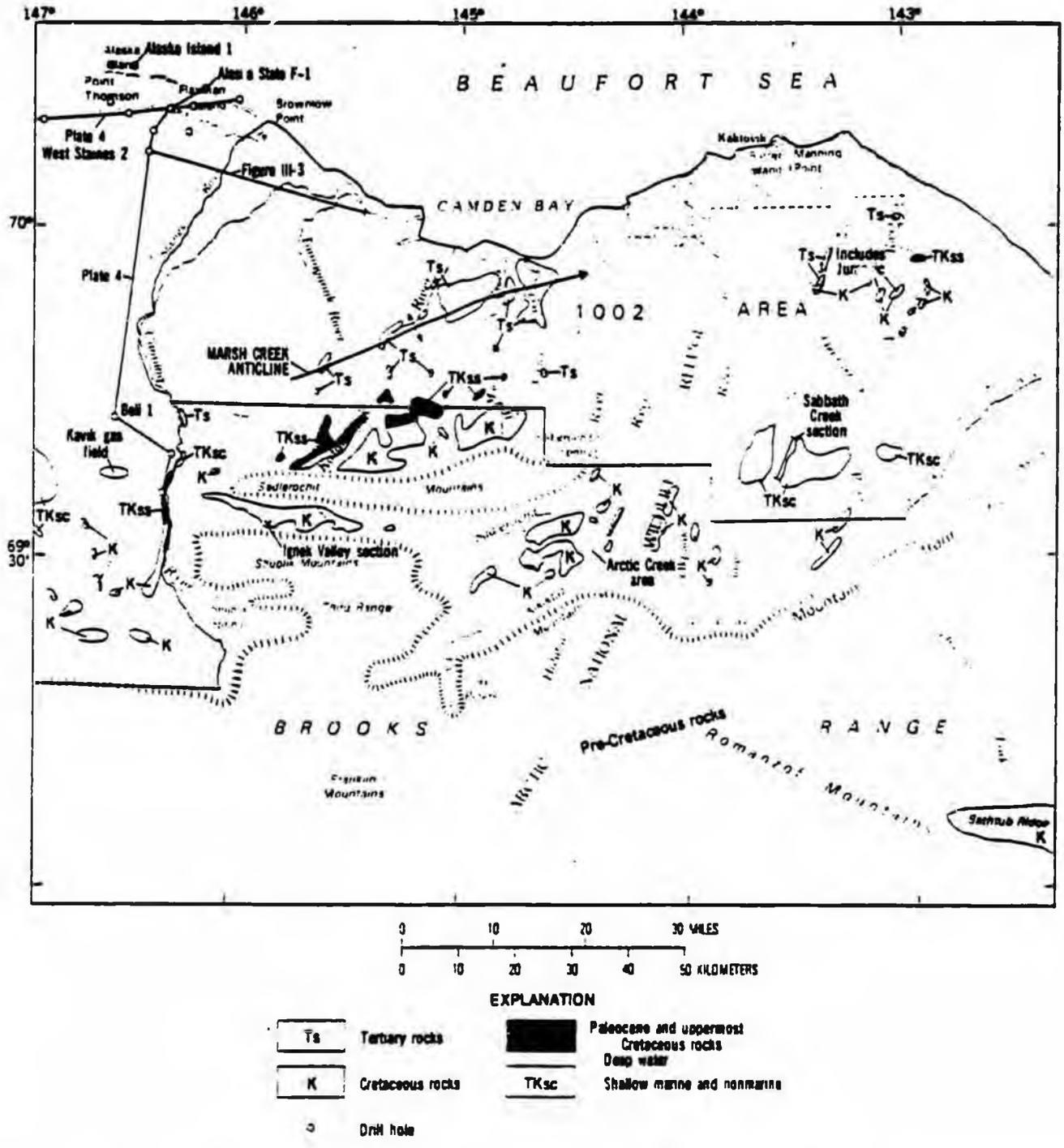


Figure III-3.—Map of the 1002 area and adjacent mountains showing locations of Cretaceous and Tertiary outcrops and lines of sections of figure III-8 and plate 4.

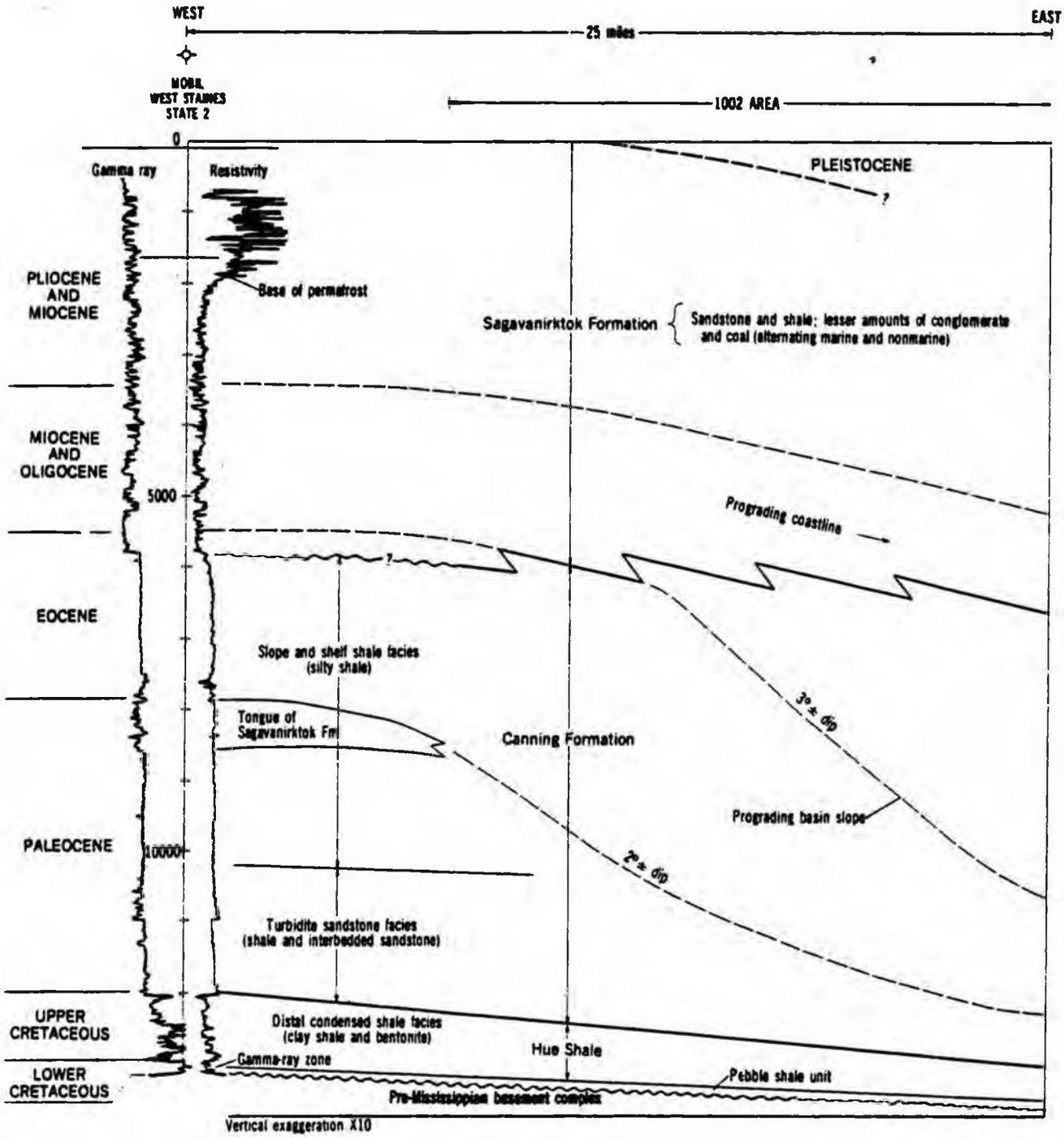


Figure III-8.—Diagrammatic section showing stratigraphic relations of the Brookian sequence between the Mobil West Staines State 2 well and the northwest corner of the 1002 area. Dashed lines represent time lines as inferred from seismic reflections. Depths on well logs are in feet. Ages based on micropaleontologic data correlated from wells to the west. See figure III-3 for location of section.

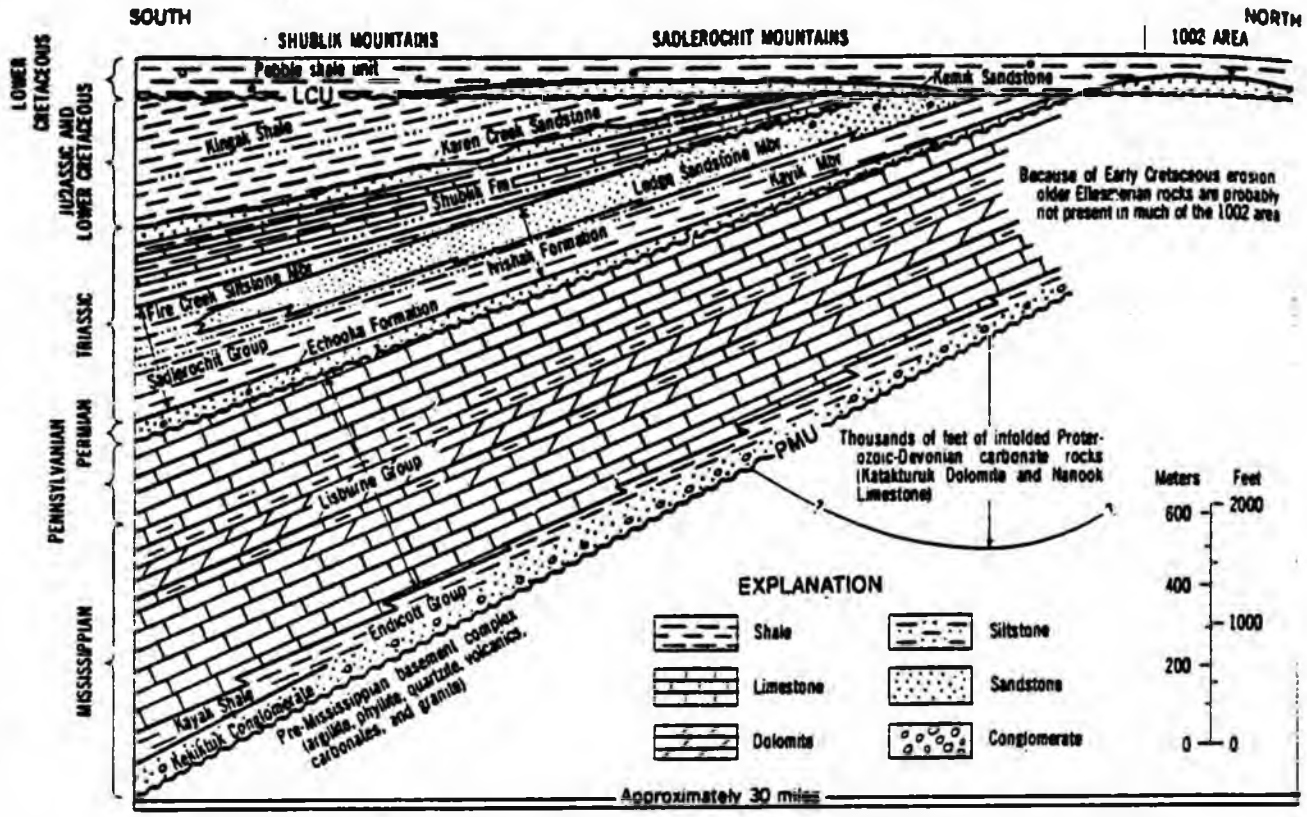


Figure III-5.—Diagrammatic section showing stratigraphic relations of the Ellesmerian sequence along the mountain front south of the 1002 area.

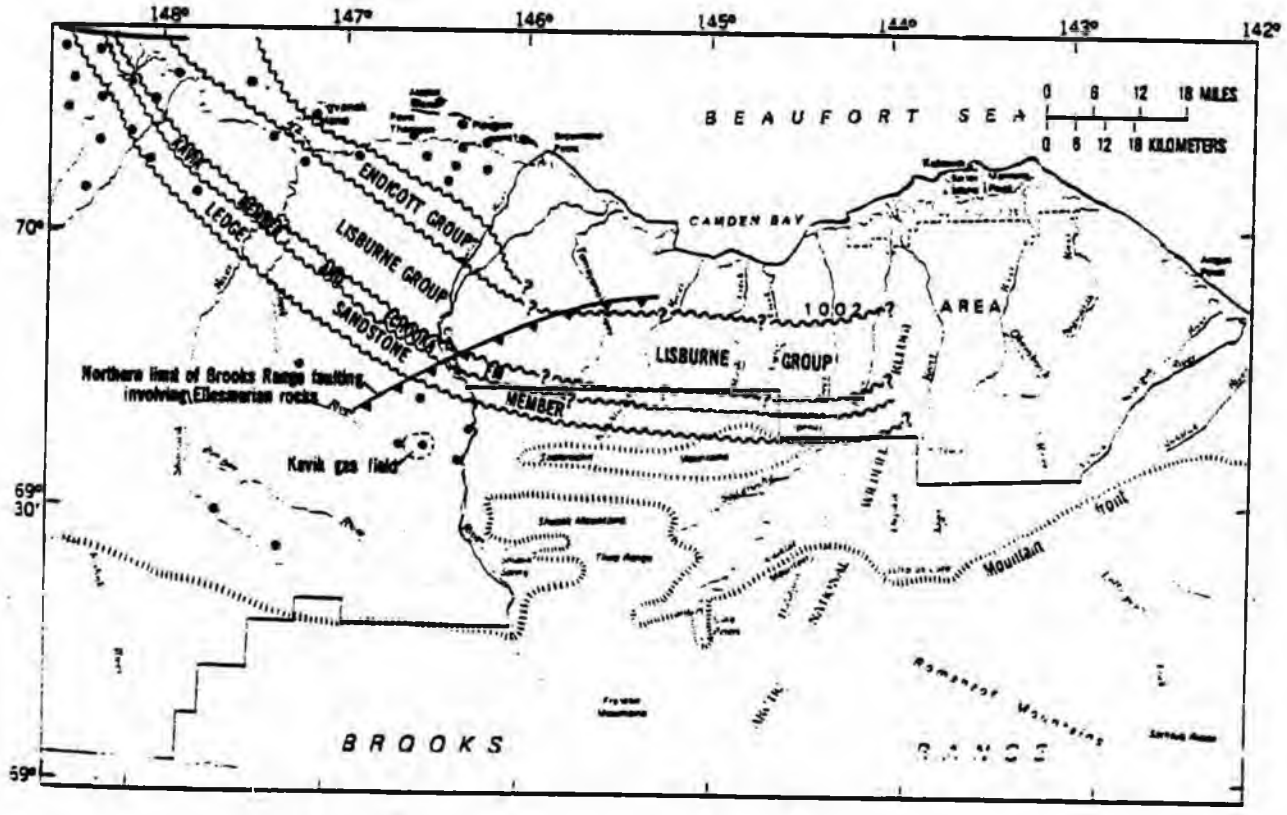


Figure III-6.—Map summarizing the northern limits of the Ellesmerian potential reservoir rocks preserved under the Lower Cretaceous unconformity. (Based on regional control.)

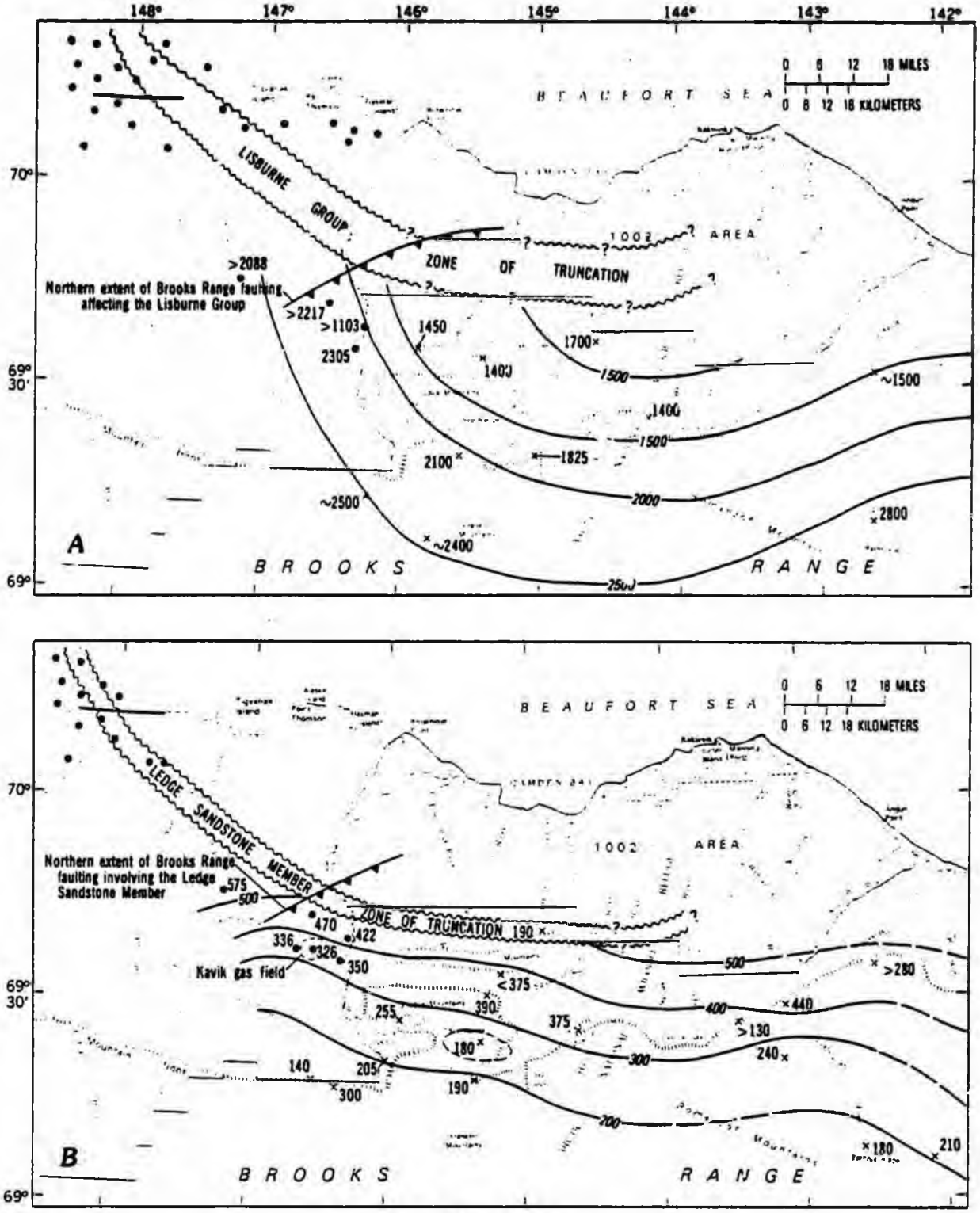


Figure III-7.—Maps (facing and above) summarizing regional and local geologic trends of the Lisburne Group (A), Ledge Sandstone Member of the Ivishak Formation (B), and Kemik Sandstone and Thomson sand (C).

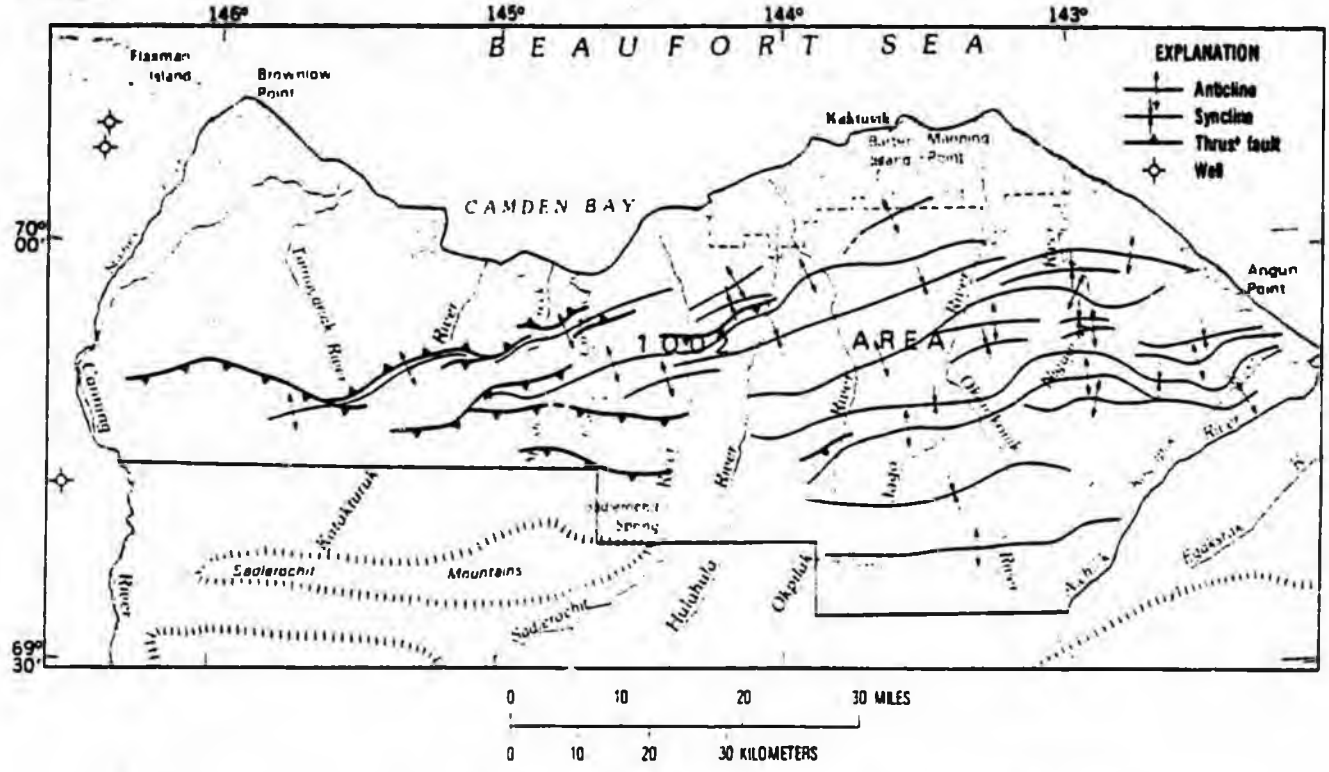


Figure III-9.—Generalized near-surface structural trends in Brookian rocks, based on seismic data. Because of structural complexity, not all features are shown, particularly in the east part of the 1002 area.

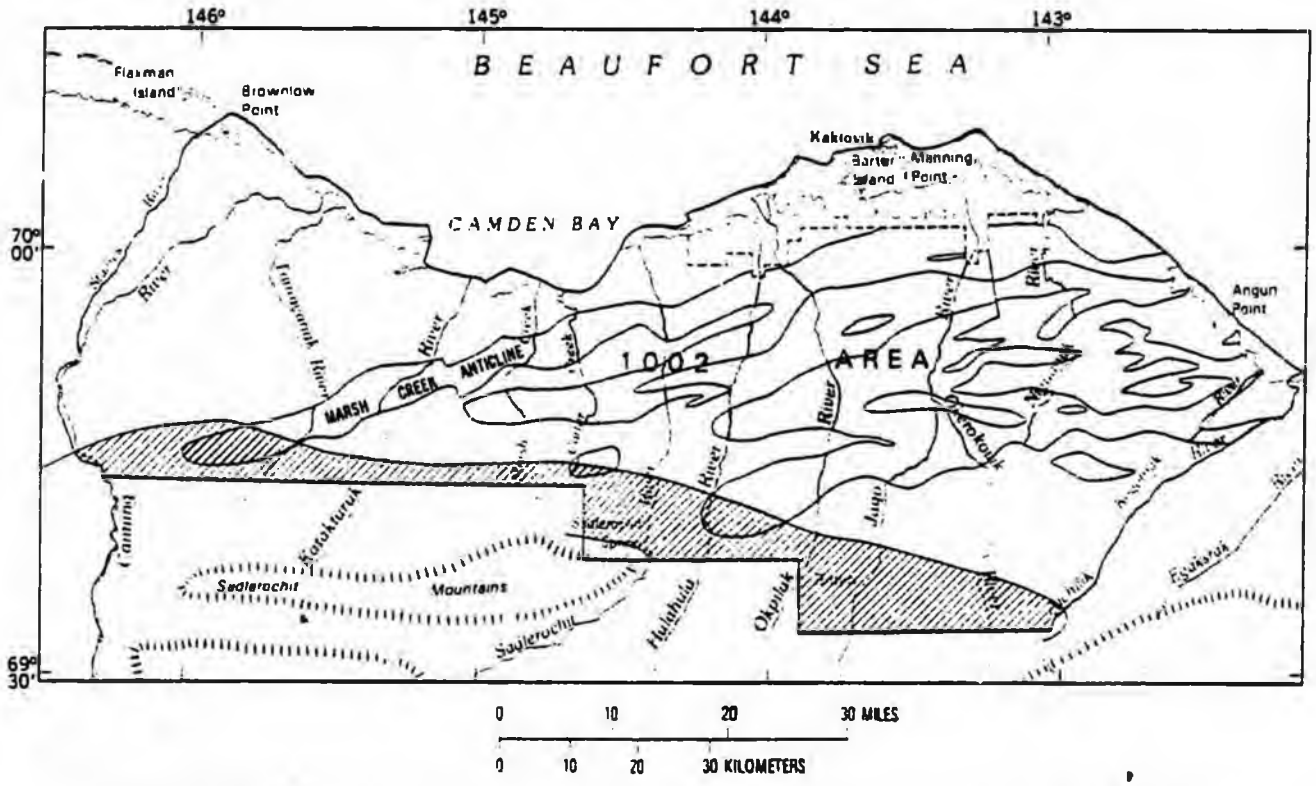
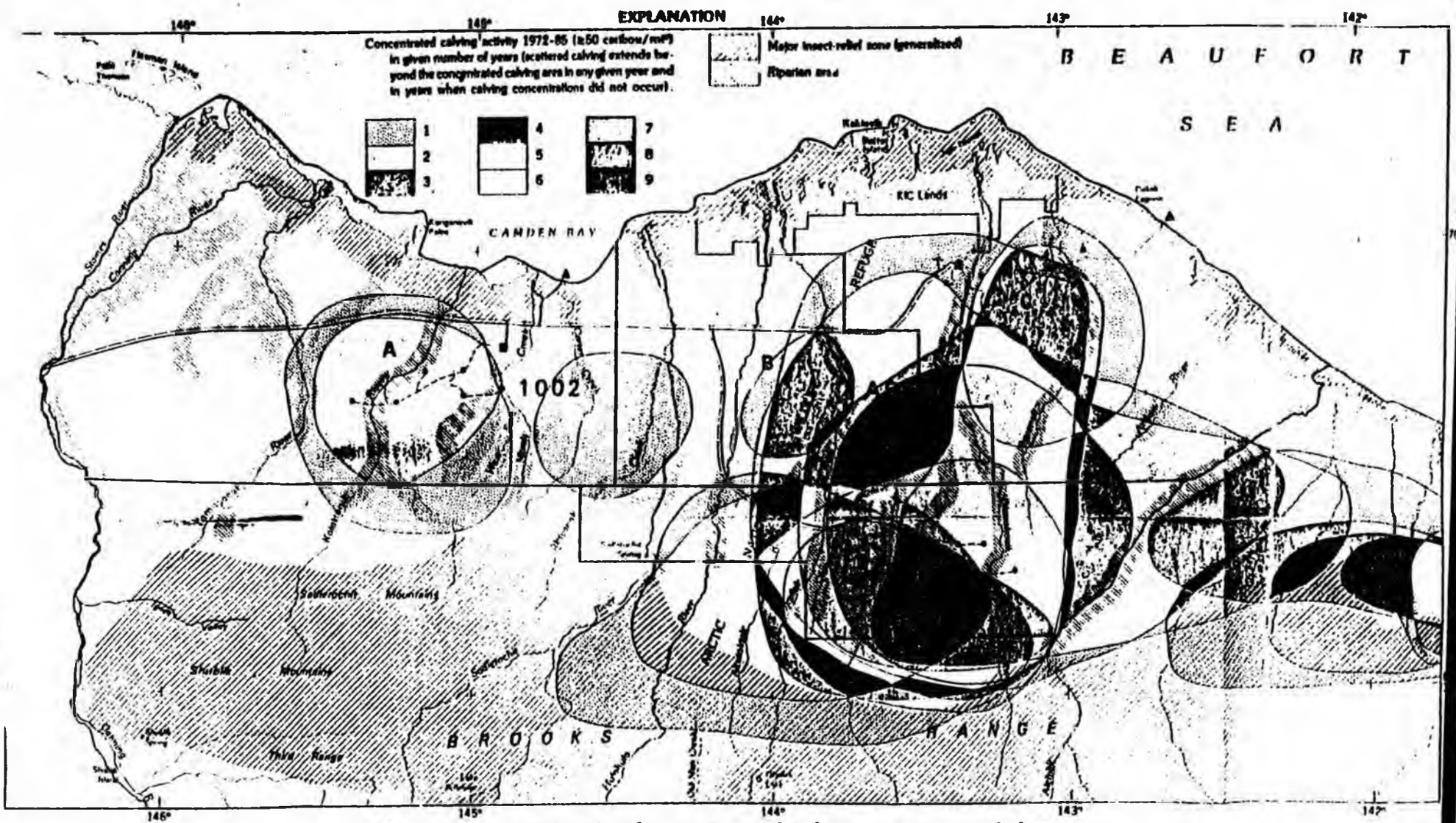


Figure III-10.—Trends of structural culminations in highly deformed Mesozoic and Tertiary rocks (shaded) and area of monoclinal north-dipping strata (line pattern) that may have petroleum potential in the 1002 area.



A. Porcupine caribou herd concentrated calving and insect-relief areas

CARIBOU IMPACTS - conclusion
Fr. 1002(h) study

Conclusion

Surface geologic exploration and study conducted throughout the year would be controlled by specific time and area closures to avoid conflicts with caribou calving and movements during the insect-relief period. Seismic activity would be confined to winter work only. Based upon experience from the 1983-1985 exploration program in the 1002 area, only negligible effects would occur. Localized avoidance and disturbance of a minor nature may occur in the area of exploration wells if caribou entered the area while well drilling activities were underway. Because human activity would be low, effects would most likely result from some avoidance and displacement around well pads.

The expanding population trend for the CAH in the past decade would indicate that the CAH is not at carrying capacity (the number of healthy animals that can be maintained by habitat on a given unit of land). However, the point at which cumulative effects and expanding developments all modify suitable displacement habitat is unknown. Also unknown is carrying capacity of the PCH. Given the geography of the calving areas and current densities in those areas, the availability of suitable alternative habitats is not apparent.

A major change in distribution as an adverse result of displacement of both that portion of the CAH using the 1002 area as well as the entire PCH could occur if the 1002 area were fully developed. The main oil pipeline would bisect the 1002 area between the western and northeastern boundaries. Disturbance would occur from the presence and activities of up to 6,000 people, hundreds of vehicles, and major construction and production activities scattered throughout the 1002 area, including sensitive caribou calving areas. Use of approximately 25 percent of the total PCH core calving area and 29 percent of the coastal insect-relief habitat could be reduced or eliminated. Potentially a much larger portion, nearly 80 percent of coastal insect-relief habitat, could be affected if development proves to be a barrier to caribou movements. Loss of calving habitat, barriers to free movement causing reduced access to insect-relief and other areas, disturbance, stress, and other factors would cumulatively reduce both available habitat and habitat values on remaining areas, resulting in caribou population declines.

These changes in habitat availability and value, combined with increased harvest, could result in a major population decline and change in distribution of 20-40 percent, based on the amount of calving and insect-relief habitats to be adversely affected. Because of the many variables involved and lack of relevant experience in estimating impacts on this herd and because of the difficulty in quantifying impacts, this estimate is uncertain.

For the CAH, a moderate change in distribution or decline in that portion of the CAH using the 1002 area could occur. The effect on the entire CAH population throughout its range may also be moderate. Those effects on the segment of the CAH within the 1002 area would be similar to those on the PCH that occur from disturbance, displacement and barriers to free movement. The population decline or distribution change would be 5-10 percent for the CAH throughout its range.

CHAPTER V

ALTERNATIVES

ALTERNATIVE A–FULL LEASING OF THE 1002 AREA

Under the alternative of full leasing, it is assumed that Congressional action would allow all Federal subsurface ownerships of the 1002 area to be available for development through a leasing program administered by the Department of the Interior. This action would also open to oil and gas development and production the private lands within the refuge. The exact terms of the leasing program would be developed in response to specific legislation passed by the Congress. If the Congress chooses to authorize leasing in the entire 1002 area, the legislation would probably contain the important elements of the Mineral Leasing Act and the NPPA legislations, with special provisions to meet the unique needs of the Arctic Refuge.

Presumably, major portions of the 1002 area would be leased and additional geophysical exploratory work would take place on all leased areas before exploration wells are drilled. Leaseholders would likely focus first on those areas and geologic structures believed to have the highest probability of containing commercial quantities of oil. It is feasible for phased development to occur.

The 1002 area contains a combination of identified potential petroleum prospects having a mean conditional estimated total of 3.2 billion barrels of economically recoverable oil under current and foreseeable economic conditions (Chapter III). These prospects are grouped into 4 geographic areas (blocks) of the 1002 area to facilitate an analysis of the effects of oil development on the environment. These blocks are depicted in Chapter III (fig. III-16).

Alternative A assumes that:

1. Although both oil and gas would be leased, initially only oil will be developed and transported to market. Associated gas will be reinjected and/or used for field operations in the manner similar to other North Slope fields, until it becomes economical and adequate markets are identified.

2. Oil production will start about the year 2000.

3. Development will be unitized within the 1002 area and on privately owned subsurface resources in the vicinity of Kaktovik.

4. A single trunk oil pipeline will transport oil from Federal leases and from any private lands in the 1002 area to Pump Station 1 of the Trans-Alaska Pipeline System (TAPS).

5. Development, production, and transportation of oil from the 1002 area are considered to be independent of any offshore production; however, infrastructure could be shared.

6. The State of Alaska will allow a trunk oil pipeline to cross State lands between the western boundary of the 1002 area and Pump Station 1 at Prudhoe Bay (a distance of about 50 miles).

7. Once the Congress approves leasing, but prior to lease sales, industry will be allowed to conduct additional geophysical and surface geological exploration work.

8. Surface occupancy for oil and gas purposes will not be permitted within areas formally designated by the Congress as Wilderness.

According to the size, number, and characteristics of prospects described in Chapter III, and production and transportation scenarios described in Chapter IV, the number and types of facilities likely to be required for development and production of oil resources in the 1002 area are listed in table V-1. Figure V-1 shows a conceptual placement of production and transportation facilities based on typical North Slope prospect characteristics for three localities within the 1002 area.

Actual placement of oil production facilities and marine facilities on the 1002 area, or location of the trunk pipeline from producing fields to TAPS Pump Station 1, depends upon site-specific geotechnical, engineering, environmental, and economic data that can be determined only after a specific prospect has been drilled, and a discovery made and confirmed.

Chapter IV describes the types and numbers of facilities that might be necessary for oil production in the 1002 area. Typically, these include for each developed prospect: central processing facility (CPF) and initial pump station for the oil pipeline, all-weather airfield, consolidated production and reinjection well pads, and an internal network of roads and gathering lines connecting pads and the CPF. A trunk oil pipeline would connect the CPF to Pump Station 1. From Pump Station 1, oil from the 1002 area would move through the existing TAPS to Valdez and then by tanker to market. Depending on the amount of final through-put, one or several additional pump stations may be required.

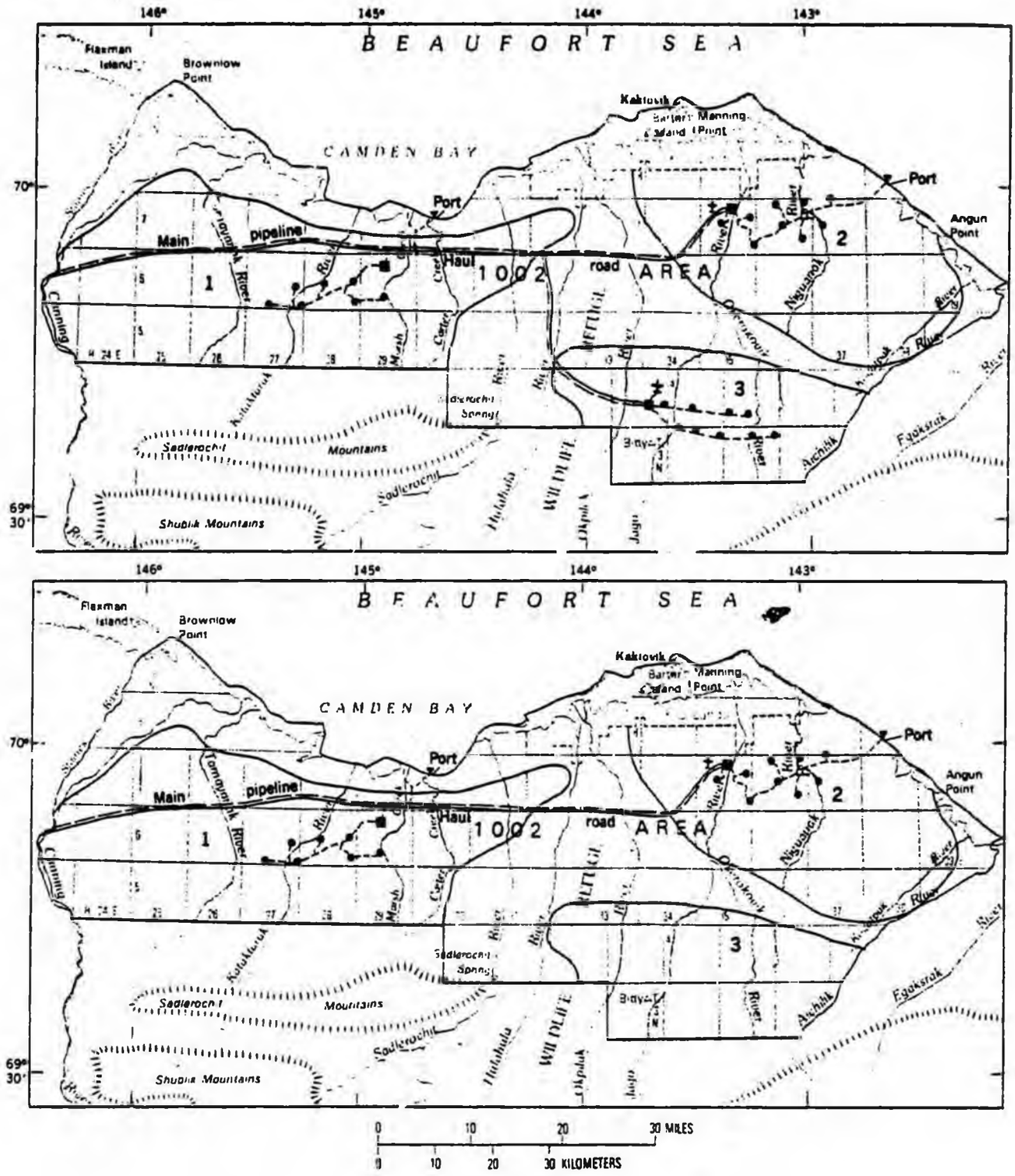


Figure V-1.—Hypothetical generalized development of the 1002 area under full leasing (upper) or limited leasing (lower) if economic quantities of oil are discovered. Numbers indicate three localities (shaded) having typical prospect characteristics.

Table V-1.—Number and area of in-place oil-related facilities assumed to be associated with development of estimated mean conditional recoverable oil resources made available by full leasing or limited leasing of the 1002 area.

[mi, miles; cu yds, cubic yards; ac, acres]

Facility	Approximate units[1] Full leasing	Limited leasing
Main oil pipeline within the 1002 area[2]	100 mi (610 ac)	80 mi (490 ac)
Main road paralleling main pipeline and from marine facilities[2]	120 mi (730 ac)	100 mi (610 ac)
Spur roads with collecting lines within production fields	160 mi (980 ac)	120 mi (730 ac)
Marine and salt water treatment facilities	2 (200 ac)	2 (200 ac)
Large central processing facilities	7 (630 ac)	6 (540 ac)
Small central processing facilities	4 (160 ac)	3 (120 ac)
Large permanent airfields	2 (260 ac)	2 (260 ac)
Small permanent airfields	2 (60 ac)	1 (30 ac)
Permanent drilling pads	50-60 (1,200-1,600 ac)	30-40 (700-1,000 ac)
Borrow sites	10-15 (500-750 ac)	8-13 (400-650 ac)
Gravel for construction, operation, and maintenance	40 million-50 million cu yds	35 million-40 million cu yds
Major river or stream crossings	Maximum 25	Maximum 15

[1]Figures given in miles refer to linear miles of the facilities. Areas were calculated on the basis of 50-foot widths each for the main oil pipeline and main road, totaling a 100-foot right-of-way for the main transportation corridor. A 50-foot right-of-way was assumed for spur roads with collecting lines. The numbers of nonlinear units are also provided.

[2]The distance from the 1002 western boundary to TAPS Pump Station 1 is approximately 50 miles, across State of Alaska land. This 50 miles is not included in the mileage estimates.

ALTERNATIVE B—LIMITED LEASING OF THE 1002 AREA

This alternative discusses a leasing program that would develop if the Congress chose to pass legislation, based on environmental considerations, that would limit the amount of the 1002 area available for leasing. There would be no leasing, exploration, development, or transportation of oil from or through the traditional core calving area of the Porcupine caribou herd (Chapter II and pl. 2A). The remainder of the 1002 area would be offered for leasing; presumably, all potentially economic prospects would be leased, explored, and developed. The assumptions in this alternative are the same as for full leasing, including the opening of the KIC and ASRC lands. Approximately 2.4 billion barrels (600 million barrels less than in Alternative A) of economically recoverable oil are estimated as the mean conditional resource which might be available for development under this alternative.

A conceptual placement of production and transportation facilities under the limited leasing alternative is also shown on figure V-1.

Production and transportation facilities were described in the full leasing alternative. Under limited leasing, facilities would not be constructed in the core caribou calving area. All other facility requirements would be virtually the same (table V-1).

ALTERNATIVE C–FURTHER EXPLORATION

Under this alternative, the Secretary would recommend additional exploration, to include exploratory drilling, to permit acquisition of more data to aid the Secretary and the Congress in their decision of whether or not to authorize leasing of the 1002 area. Acquisition of additional data could be by the Government, or industry, or both.

Section 1002 of ANILCA has afforded the Department of the Interior the opportunity to acquire a substantial amount of exploration data in the 1002 area. During two winter field seasons, private industry obtained 1300 line miles of seismic data on a 3x6-mile seismic grid over a large part of the 1002 area. A substantial amount of gravity, magnetic, geochemical, paleontological, and shallow stratigraphic data was also collected. The BLM and GS acquired additional data through in-house research and field investigations over several field seasons.

Analysis of the available geological and geophysical data has revealed that the 1002 area is a very complex geological terrane, and additional geological and geophysical data might provide a basis for a more defined assessment of the oil and gas potential of the 1002 area. Additional seismic data could better define some of the more complex geologic structures that have been identified. It is expected that if a decision was made to allow leasing of the 1002 area, industry would want to obtain more detailed seismic data over particular areas of interest in order to make a more accurate determination of oil and gas potential prior to a lease sale. These data would also be made available to the Department for its use in determining the fair market value of tracts to be leased.

The location and size of geologic structures have been generally defined. However, the nature of the rocks present remains virtually unknown, owing to a lack of deep stratigraphic, paleontological, and geochemical data specific to the 1002 area. Therefore, only indirect inferences based on surface and near-surface geological data and on well data outside the 1002 area can be made as to the nature of source and reservoir rock and the type of hydrocarbon present. A program to drill off-structure test wells would provide subsurface geological information on the 1002 area and eliminate some of the uncertainties in the oil and gas assessment such as the probability of the occurrence of adequate source and reservoir rocks, and also the probable mix of hydrocarbons. This type of information might better define the more prospective parts of the 1002 area that should be considered for leasing.

Four deep test wells could be drilled off-structure similar to the stratigraphic test wells (COST wells) drilled in the Outer Continental Shelf. These wells would provide more definitive data on the stratigraphy, paleontology, geophysics, and geochemistry of the rock formations present. Core samples would be taken to determine the quality of the source rocks, the characteristics of the reservoir rocks, and the availability of seals to trap hydrocarbons. Possible locations for stratigraphic test wells are:

1. East of the Canning River in the northwest block (Block A, fig. III-16) to test primarily for geologic conditions similar to those of the Prudhoe Bay field.

2. Near the Hulahula River between the Marsh Creek anticline to the west and larger mapped geologic structure to the east (Block B, fig. III-16 and fig. III-9).

3. In the northeastern part of the 1002 area north of the large mapped geologic structure and south of the Kaktovik lands (Block C, fig. III-16, and fig. III-9).

4. Near the large mapped geologic structure in the southern foothills (Block D, fig. III-16, and fig. III-9).

ALTERNATIVE D–NO ACTION

This alternative describes the probable future management of the 1002 area if the Congress chose to take no further legislative action regarding the 1002 area of the Arctic Refuge. According to the provisions of sections 1002 and 1003 of ANILCA, an act of the Congress would be prerequisite to leasing or other development leading to oil and gas production on the Arctic Refuge. If the Congress chose instead to designate all or part of the 1002 area as wilderness, that too would take legislative action. If instead, the Congress chose to allow the management of the 1002 area to continue under existing legal authorities guided by the Arctic Refuge comprehensive conservation planning (CCP) process outlined by section 304(g) of ANILCA, no additional Congressional action would be required.

The management goals of the Arctic National Wildlife Refuge, until further defined by the CCP process, are to maintain the existing availability and quality of refuge habitats with natural forces governing fluctuations in fish and wildlife populations and habitat change; provide the opportunity for continued subsistence use of natural resources by local residents, in a manner consistent with sound natural resource management; and provide recreational and economic opportunities compatible with the purposes for which the refuge was established.

Section 304(g) of ANILCA mandates that management of the 16 National Wildlife Refuges in Alaska, including the Arctic Refuge, be assessed through the CCP process. This process requires that the plan: (1) designate areas within the refuge according to their respective resources and values; (2) specify the programs proposed for conserving fish and wildlife and maintaining the values for which the refuge was established; and (3) specify uses which may be compatible with the major purposes of the refuge. The preferred alternatives identified in this process

would establish the long-term basic management direction for each refuge. This planning process allows for the evaluation of a range of alternatives for refuge management and consultation with the appropriate State agencies and Native Corporations. The FWS is using the environmental impact statement (EIS) process to implement the CCP's. Following a series of public scoping activities and a comment period on a draft EIS, a preferred alternative would be chosen by the Alaska FWS Regional Director, described in a final EIS, and documented by a Record of Decision.

Currently, the CCP process for the Arctic Refuge is in the first or scoping and data-collection phase and calls for completion of the CCP by the spring of 1988. The 1002 area has been deleted from this planning process, pending the decision of the Congress as to its future management. If this no-action alternative were selected by the Congress, the 1002 area would be added to the planning process as an integral part of the Arctic Refuge. Depending on the stage of planning, at least the CCP, and perhaps some step-down management plans, would need to be amended or supplemented to include management of the 1002 area.

Under section 1008 of ANILCA, a policy was established to permit certain oil and gas activities, including leasing and development, on Alaska refuges in areas where such activities are deemed to be compatible with the major purposes for which a particular refuge was established. Because of the provisions of sections 1002 and 1003, section 1008 does not apply to any part of the Arctic Refuge. Selection of Alternative D would preclude production of oil and gas from the Arctic Refuge, and leasing or other development leading to oil and gas products.

Step-down management plans for the Arctic Refuge would be developed for specific activities once the CCP was completed. These management plans might address activities such as public use, wildlife inventories and other scientific research, wild and scenic rivers, wilderness management, and fire management. Harvest of fish and wildlife would generally be conducted in accordance with the State of Alaska Department of Fish and Game regulations, and subsistence use of the refuge would continue.

The Arctic Refuge would be managed under the legal authorities found in ANILCA and the National Wildlife Refuge System Administration Act of 1966 (Public Law 89-669). Other laws and their amendments that affect the management of the 1002 area and the Arctic Refuge in general include but are not limited to the Migratory Bird Treaty Act, Endangered Species Act, Antiquities Act, Clean Air Act, Clean Water Act, Coastal Zone Management Act, Fish and Wildlife Act of 1956, Marine Mammal Protection Act, National Environmental Policy Act, National Historic Preservation Act, Refuge Recreation Act, Refuge Revenue Sharing Act, and the State of Alaska Fish and Game Regulations. Provisions of the Wilderness Act would apply to those 8 million acres of the Arctic Refuge outside the 1002 area.

Activities proposed for the 1002 area would be subject to a compatibility determination as required by ANILCA section 304(b) and the Refuge Administration Act. Permissible activities could include hunting, fishing, subsistence harvest, river trips, hiking, photography, and certain other forms of recreation and compatible scientific research. Guiding for recreational activities, trapping, and other commercial activities determined to be compatible with refuge purposes also would be allowed. These commercial activities could conceivably include activities as diverse as onshore support and transportation facilities for offshore oil and gas activities. Any proposed activity would be reviewed for compatibility before it could be permitted. Because compatibility determinations are very site-specific, and the list of probable activities long and speculative, effects of specific activities are not assessed in Chapter VI.

The establishment of aids to navigation and facilities for national defense would be authorized under ANILCA section 1310. Weather, climate, and research facilities could also be permitted.

Title XI of ANILCA governs access on Federal lands in Alaska. Authorized forms of access on the Arctic Refuge include snowmachines (during periods of adequate snow cover), aircraft, motorboats, and other means if found compatible.

Refuge management could include activities such as wildlife surveys, reintroduction of native fish and wildlife species, fisheries management, prescribed burning for habitat enhancement, and construction of public use facilities where appropriate. Although these activities are allowed by law, their actual implementation and the extent of implementation would be decided through the CCP process and the subsequent management plans.

Implementation of Alternative D would preclude the development of estimated oil resources, as discussed in Chapters III and VII.

ALTERNATIVE E—WILDERNESS DESIGNATION

Under this alternative, the Congress would designate the 1.55-million-acre 1002 area as wilderness, within the meaning of the 1964 Wilderness Act (Public Law 88-577).

No further study or public review is necessary for the Congress to designate the 1002 area as wilderness. Previous studies and public debate have sufficiently covered the issue. A wilderness review of the Arctic Refuge was conducted in the early 1970's pursuant to the provisions of the Wilderness Act. A draft report was prepared in 1973; however, the draft was never made final nor was public comment obtained.

The issue of wilderness designation for all of the Arctic Refuge, including the 1002 area, was debated extensively by the Congress and the public in widely held hearings from 1976 through 1980 during the development and passage of ANILCA (Eastin, 1984). The House of Representatives generally favored designation of the 1002 area as wilderness, whereas the Senate generally did not. The Senate view was that designating the area as wilderness was premature until a resource assessment of the oil and gas potential was completed and reviewed by the Congress. The Senate view prevailed and became the section 1002 portion of Title X of ANILCA.

The draft report resulting from the original wilderness study recommended that all of the original 8.9 million acres of the Arctic Refuge be designated as wilderness, with the exception of 74,516 acres consisting of tracts at Camden Bay (456 acres), Beaufort Lagoon (420 acres), Demarcation Point (10 acres), Lake Peters (10 acres), the village of Kaktovik (141 acres), the military withdrawal on Barter Island (4,359 acres,, and land in the vicinity of Barter Island that was to be selected by the Kaktovik Inupiat Corporation (KIC) under the Alaska Native Claims Settlement Act (ANCSA) (69,120 acres). Section 702(3) of ANILCA ultimately designated approximately 8 million acres of wilderness on the Arctic Refuge which encompassed all of the pre-ANILCA refuge with the exception of the 1002 area.

This alternative considers wilderness designation of the entire 1.55-million-acre 1002 area, except for the abandoned DEW line sites at Beaufort Lagoon and Camden Bay, native allotments, and land owned by KIC. The 1002 area would still be included in the CCP process, as described in Alternative D, but would be managed as wilderness under the provisions of the Wilderness Act, the National Wildlife Refuge System Administration Act, and ANILCA.

Permitted uses in wilderness include hunting, fishing, backpacking, river trips, and photography. Commercial activity would be restricted to commercial guiding for such activities. These activities may be restricted or eliminated if necessary in designated wilderness areas under the provisions of other laws or regulations. Motorized equipment would generally be prohibited. Exceptions would include operation of aircraft, including landing. Wilderness designation would not affect the air space over the area. The use of motorboats and snowmachines (during periods of adequate snow cover) would be authorized for traditional activities--for example, subsistence uses or for access to inholdings such as native allotments. Cabins could be constructed in wilderness areas if they were necessary for subsistence trapping, public safety, or administration of the area.

In contrast to the "no-action" alternative, use of motorized equipment by the FWS in administering the area would only be allowed consistent with the minimum-tool concept. (Minimum-tool concept is use of the minimum action or instrument necessary to successfully, safely, and economically accomplish wilderness management objectives.) Situations for which motorized access might be used include emergencies involving public health or safety and search-and-rescue operations. Landing of aircraft would be permitted. Other government agencies (local, State, and Federal) would also be allowed to use motorized equipment in carrying out legitimate activities in wilderness consistent with the minimum-tool concept. An example would be the use of helicopters by the Department of the Interior to carry out the ANILCA section 1010 Alaska Mineral Resource Assessment Program (AMRAP). Management activities such as wildlife control, prescribed burning, habitat rehabilitation, predator control, reintroduction of native fish and wildlife species, and wildlife surveys would be permissible, though not necessarily practiced, in the designated wilderness area. The appropriateness of these activities would be addressed in the CCP.

As in the "no-action" alternative, placement and maintenance of navigation aids, communication sites and related facilities, and facilities for national defense could be permitted (ANILCA section 1310). Facilities for weather, climate, and fisheries research could also be permitted.

Implementation of this alternative precludes the development of estimated oil resources, as discussed in Chapters III and VII.

REFERENCE CITED

Eastin, K. E. 1984, Wilderness review for Arctic National Wildlife Refuge's 1002 area: U.S. Department of the Interior, Office of the Solicitor, 21 p.

CHAPTER VII

OIL AND GAS--NATIONAL NEED FOR DOMESTIC SOURCES AND THE 1002 AREA'S POTENTIAL CONTRIBUTION

INTRODUCTION

Section 1002(h)(5) of ANILCA requires an evaluation of how hydrocarbon resources in the 1002 area of the Arctic Refuge relate to the national need for additional domestic sources of oil and gas. This chapter discusses this national need, and describes the potential contribution of oil from the 1002 area. Benefits which would accrue to the nation are described. They include gains in national income, reduced vulnerability to disruptions in the world market, and improvements in the balance of payments and national security. The analysis focuses only on oil because it is not anticipated that natural gas from the 1002 area will become economic to produce and transport to market within the timeframe considered.

The estimates used in this chapter depend on many variables. If the 1002 area were opened and leased in a timely manner, production would not be expected until about the year 2000. Therefore, the refuge's contribution to U.S. energy needs has been determined by comparing its production potential against projected energy needs, beginning about 15 years from now and extending perhaps 30 years out to the year 2030, possibly beyond. It is difficult to anticipate world oil prices beyond the year 2000 and the rate of real growth of the U.S. economy--two important determinants of the future demand for energy. Nevertheless, potential production from the 1002 area can be compared against various forecasts about future U.S. energy demand and supply. This chapter relies mainly on the Department of Energy's (DOE) long-term projections contained in its 1985 National Energy Policy Plan, but also considers several private forecasts.

THE 1002 AREA'S POTENTIAL CONTRIBUTION TO U.S. NEEDS

The unique geologic features underlying the 1002 area create the potential for discoveries which would make a very substantial contribution to domestic oil reserves. Despite the area's remote location and hostile environment, it is the most attractive petroleum exploration target in the onshore U.S. Data from outcropping rocks within the area and from nearby wells, combined with seismic information gathered from 1983 to 1985, indicate geologic conditions which would be extremely favorable for major discoveries.

The billions of barrels of oil that may exist in the 1002 area could make an important contribution to the national need for domestic sources of oil. Alaska North Slope crude oil, especially that from Prudhoe Bay, now contributes almost 20 percent of domestic production. Production from Prudhoe Bay has peaked and a decline is expected no later than 1988. Arctic Refuge oil could help moderate this decline and substantially reduce the need for increased imports.

The oil resources and possible production capability of the larger potential oil fields in the 1002 area are substantial by U.S. standards. Estimates of oil in place range from 4.8 billion barrels (BBO) to more than 29.4 BBO. Recoverable resource estimates range from 0.6 BBO to 9.2 BBO. In some cases, the potential recoverable reserves of the 1002 area's fields may sizably exceed 1 BBO. Only 13 domestic fields with total reserves greater than 1 BBO have been discovered in this country. Their original reserves, remaining reserves, current production rate, and year of discovery are displayed in table VII-1.

If productive, the 1002 area's fields could be the largest domestic fields discovered since Prudhoe Bay and Kuparuk River in 1968 and 1969. Except for these, no U.S. field with reserves exceeding 1 BBO has been discovered since 1948. The size of the 1002 area's structures and their potential for oil accumulations are geologically the Nation's best onshore targets for the discovery of very large oil fields. If productive, the large fields would join the list of "giant" oil fields which have contributed over two-thirds of total domestic oil production. The previously discovered giants, except for the two Alaskan fields, are over 75 percent depleted (table VII-1), and even the Prudhoe Bay field is almost half depleted.

For purposes of assessing the 1002 area's possible contribution, the conditional mean recoverable resource estimate of 3.2 BBO has been used. The estimate for limited leasing is 2.4 BBO. These figures do not consider resources that may occur in undefined but potential stratigraphic traps (see Chapter III).

Contribution to Domestic Oil Demand and Supply

It is important to assess the 1002 area's potential contribution to the national need for domestic oil production in light of supply and demand conditions. Oil consumption in the U.S. has exceeded domestic production for more than 20 years. Using the daily production estimates for the 1002 area, table VII-2 compares the area's contribution with the Department of Energy's (DOE) reference case projections for domestic oil supply and demand, taken from the 1985 DOE National Energy Policy Plan, to illustrate the magnitude of the contribution 1002 area oil production

Table VII-1.—U.S. oil fields having ultimate recovery exceeding 1 billion barrels of oil.

[BBO, billion barrels of oil; MBO/Y, million barrels of oil per year. From Oil and Gas Journal (1986) and Roadifer (1986)]

Field	Year discovered	Original reserves (BBO)	Remaining reserves (BBO)	Current production (MBO/Y)
Prudhoe Bay, AK	1968	9.47	5.10	568
East Texas	1930	6.00	1.11	48
Wilmington, CA	1932	2.55	.38	41
Midway-Sunset, CA	1894	2.16	.45	54
Kern River, CA	1899	1.99	.92	51
Yates, TX	1926	1.95	.90	45
Wasson, TX	1936	1.68	.57	33
Kuparuk River, AK	1969	1.59	1.30	79
Elk Hills, CA	1911	1.47	.70	47
Panhandle, TX	1921	1.46	.07	11
Kelly-Snyder, TX	1948	1.35	.15	19
Huntington Beach, CA	1920	1.12	.07	8
Slaughter, TX	1936	1.03	.06	24

could make in the face of increasing demand and steadily declining domestic production.

The U.S. has stabilized its oil production capability and temporarily moderated the decline in domestic reserves since 1974. This is largely due to successful exploration and intensive exploitation of known fields, including the use of improved and enhanced oil recovery (EOR) technology, and to the 1.5 million barrels per day produced at Alaska's Prudhoe Bay.

U.S. crude oil production peaked at 9.64 million barrels per day (MBO/D) in 1970 and has been relatively constant over the last decade, being 8.90 MBO/D in 1985. However, in February 1986, the Department of Energy (DOE, 1986) predicted that domestic oil production would decrease by about 3 percent per year beginning in 1987, declining to about 8.05 MBO/D in 1990 and to 6.53 MBO/D by 1995. These estimates represent a substantial reduction from previous DOE forecasts. In June 1986, the Chevron Corporation predicted that production would decrease to 8.8 MBO/D in 1986 and steadily decline to 6.2 MBO/D by the year 2000 (Chevron, 1986). Other recent estimates suggest levels as low as 4.0 MBO/D by the year 2000. The lower forecasts are largely the result of reduced oil and gas prices, price uncertainty, consequent reduced drilling levels and discovery rates, higher annual production declines in known fields, and decreased emphasis on production stimulation projects (Spaulding, 1986; Doscher and Kostura, 1986; Kuuskraa, 1986).

Table VII-2.—The 1002 area's potential contribution to U.S. oil demand, production, and imports.

[In thousands of barrels per day. U.S. demand, production, and import data from U.S. Department of Energy, 1985d, tables 4-6 and 4-7]

Year	2000	2005	2010
U.S. OIL DEMAND	16,100	15,800	15,700
1002 area oil production:			
Full leasing	147	659	404
Percent of U.S. total demand	.91	4.17	2.57
Limited leasing	105	473	300
Percent of U.S. total demand	.65	2.99	1.91
U.S. OIL PRODUCTION	8,600	8,200	7,400
1002 area oil production:			
Full leasing	147	659	404
Percent of U.S. total production	1.71	8.04	5.46
Limited leasing	105	473	300
Percent of U.S. total production	1.22	5.77	4.05
U.S. OIL IMPORTS	7,500	7,600	8,300
1002 area oil production:			
Full leasing	147	659	404
Percent of U.S. total imports	1.96	8.67	4.87
Limited leasing	105	473	300
Percent of U.S. total imports	1.40	6.22	3.61

Oil reserves decreased over 27 percent, about 11 billion barrels from 1970 to 1985 and declined annually during 14 of these 15 years despite extensive exploration and active field exploitation programs.

J. P. Riva (Riva, 1984; Riva and others, 1985; Gall, 1986), of the Science Policy Research Division of the Library of Congress, predicted that shrinking American oil reserves will plunge by 1990 to their lowest levels since shortly after World War II, based on current drilling rates. Riva predicts a decline from the 1985 reserve figure of 28.4 BBO to 25.1 BBO in 1990, and perhaps to as low as 23.2 BBO in 1995. The most significant declines in reserves will occur in the older, traditional oil-producing areas of the western United States, Texas, the Gulf Coast, and the Midcontinent. In the frontier regions of Alaska and offshore California, prospects are better for substantial reserve additions.

If current production and reserves in known fields are assumed (the reserves/production ratio), theoretically the Nation's oil reserves would be exhausted in about 9 years. But because oil-field production conventionally declines about 10 percent per year compounded, in practice it will take about 30 years to exhaust known reserves.

Production capability and reserves can be increased by (1) exploring for new fields; (2) extending or finding new reservoirs in known fields; (3) producing more of the total oil-in-place by enhanced recovery methods, infill drilling, well stimulation, etc.; and (4) developing improved production technology. Use of each technique depends on projected prices of oil and gas, economics, and relative costs of the technique.

From 1977 through 1985, a period of high oil prices and the greatest boom in domestic exploration history, an average of 930 million barrels of new reserves were discovered each year (MBO/Y). Revisions and adjustments added an average of 1483 MBO/Y. Consumption during the same period averaged almost 3000 MBO/Y. Reserves therefore decreased by an average of 585 MBO/Y. Approximately 7 percent of the increase resulted from discovery of new fields; 31 percent from the discovery of extensions and new zones in known fields; and 62 percent from EOR, other increased recovery methods, and statistical revisions. Oil is being consumed faster than it is being discovered, and the Nation is reducing its oil inventory.

The historical quantities of petroleum discovered per foot of exploratory drilling dramatically demonstrate the increasing difficulty in finding large oil and gas fields (table VII-3). No reversal of the trend has occurred since 1979.

Oil fields with recoverable reserves exceeding 100 (MBO) are frequently described as national class giants. Giant fields with reserves exceeding 500 MBO are supergiants or world class giants. Giants and supergiants are few in number, but contribute the bulk of the world's oil production. In fact, fewer than 300 supergiant oil fields (out of 30,000 oil fields worldwide) contain more than 60 percent of the world's known oil reserves. Over 40 supergiants have been discovered in the U.S., almost all prior to 1939. Only one was discovered from 1977 to 1985. More significantly, only five have been discovered since 1951: McArthur River (1965), Prudhoe Bay (1968), and Kuparuk River (1969), all in Alaska; Jay in Florida (1970); and East Anschutz Ranch in the Overthrust Belt in Wyoming (1981). Point Arguello in the Outer Continental Shelf (OCS) off California may be added to this list once the reserves are fully defined.

Table VII-3.—Historical recoverable U.S. oil and natural gas finding rates.

[Modified from U.S. Geological Survey]

Period during which footage was drilled	Increment feet of exploratory drilling (billions)	Finding rate per foot exploration drilling	
		Oil (barrels)	Gas (MCF)
1859-1949	0.0-0.5	236	916
1949-1958	0.5-1.0	51	347
1958-1967	1.0-1.5	21	252
1967-1977	1.5-2.0	20	186
1977-1979	2.0-2.1	9	134

Discovery patterns for giant oil fields are only slightly more favorable. About two-thirds of the U.S. giants were found before 1940, 94 since, and the number of such discoveries decreases in each successive decade.

The onshore basins in the U.S. that hold the greatest potential for very large discoveries have already been explored, except for the 1002 area. While there are some very attractive offshore areas yet to be explored, the 1002 area is particularly promising because it contains extensions of other producing trends, and wells on adjacent properties show highly favorable evidence of petroleum deposits. These evidences, when combined with the structural traps mapped or inferred for the area, indicate that the 1002 area is currently the unexplored area in the U.S. with the greatest potential to contain giant and supergiant fields.

Not only might discovery of a supergiant field in the 1002 area make a significant contribution to domestic reserves and production, it could do so at a relatively low average cost per barrel because of economies of scale. The combination of high production and low average costs makes the total net economic value much higher for large fields. Moreover, because average costs are lower, larger fields can be produced economically and can contribute to the economy even when world oil prices are lower.

Contribution to National Objectives

The potential contribution from the 1002 area's production goes well beyond that of simply providing a certain percentage of U.S. domestic oil needs that might otherwise have to be obtained from foreign sources of supply. Production of oil from the 1002 area can also help achieve this Nation's national economic and security objectives as well.

FOSTERING ADEQUATE ENERGY SUPPLIES AT REASONABLE COSTS

DOE's 1985 National Energy Policy Plan has as its general goal fostering adequate energy supplies at reasonable costs. Adequate supply requires "a flexible energy system that avoids undue dependence on any single source of supply, foreign or domestic, and thereby contributes to national security (and) implies freedom of choice about the mix and measure of energy needs to meet our industrial, commercial, and personal requirements." The National Energy Policy Plan also recognizes leasing Federal lands as important in the Nation's effort to ensure long-term energy supplies.

REDUCING DEPENDENCE ON IMPORTED OIL

Since 1970 this Nation has been heavily dependent on foreign petroleum supplies to meet domestic demand. The prospect is for continued U.S. dependence on foreign oil. Imports in 1985 were expected to average about 5 MBO/Y, to supply about one-third of domestic oil needs. DOE's latest forecasts show that U.S. dependence on foreign oil is expected to increase significantly by the end of the century and beyond. Table VII-2 compares the percent of the 1002 area oil contribution to U.S. oil imports.

The Nation's oil imports come from two general sources: members of the Organization of Petroleum Exporting Countries (OPEC), such as Saudi Arabia, Venezuela, Indonesia; and non-OPEC nations, such as Mexico, Canada, the United Kingdom.

Because of decreasing production in the U.S. and other non-OPEC nations it is likely that this Nation will become significantly more dependent on imports from the oil-rich Persian Gulf OPEC nations no later than the mid-1990's. If so, oil prices will also increase as supply competition decreases, and the Persian Gulf OPEC nations regain market leverage and control of the international oil market.

As imports have increased, the U.S. has become vulnerable to the actions of oil-exporting countries and has essentially become a price taker in the international oil market. The cost of imported oil to the U.S. economy is not only the price paid for the oil but also the losses caused by a disruption in supply, should one occur. Because domestic production substitutes for oil imports, the Nation benefits not only from the savings that result when the costs of producing additional domestic oil are less than the world price, but also benefits from the reduction in the economy's vulnerability to supply disruptions. The potential contribution of the 1002 area's oil resources should be gauged as a displacement of potentially costly and insecure imported oil by less costly, more secure production from domestic fields. The costs of a price change or a supply disruption will be less if the economy relies more on less expensive domestic supplies than on imported oil. U.S. oil reserve and production trends suggest a shift toward greater vulnerability, possibly exacerbated by the declines of 1985-86. Thus, the 1002 area's oil may be able to significantly reduce the economy's vulnerability to world oil market changes.

ENHANCING NATIONAL SECURITY

Continued dependence on imports for a substantial part of U.S. oil consumption creates many national security concerns. The potential for a supply disruption limits the flexibility of U.S. foreign/national security policy, including the ability to respond to security threats. There is also potential for the U.S. to be drawn into dangerous political and military situations involving import nations. Dependence on oil imports entails dependence on extended supply lines (tanker routes), which are targets for attack; this adds to the defense burden. Key weapons systems in the Nation's current arsenal and under development are designed to use hydrocarbon fuel. The most secure sources of supply for such fuel are clearly domestic sources.

Secure oil supply lines can have a direct bearing on the achievement of national economic goals that depend on uninterrupted economic activity. Interruption of these supply lines, on the other hand, disrupts the production and consumption of goods and reduces economic activity. This occurred, for example, in the aftermath of the OPEC oil embargo in 1973 when a recession resulted.

ACHIEVING A MORE FAVORABLE BALANCE OF INTERNATIONAL TRADE

The deficit in the U.S. international trade balance has increased significantly in the last decade. In 1984, it totaled a record $123 billion. In that same year, the gross cost of importing crude oil and refined petroleum products amounted to more than $59 billion, almost 50 percent of the deficit. If oil imports increase as projected, achieving a favorable trade balance will be even more difficult. The deficit trade balance in recent years has meant that more U.S. dollars are spent on foreign goods, leaving fewer dollars available to consumers and businesses for buying U.S. goods and services. Production from the 1002 area reduces not only the need for imported oil but also the amount of foreign exchange required to pay for imports, bringing a more favorable trade balance. Using the mean estimate of the 1002 area's anticipated production amounts, oil from the 1002 area could result in U.S. dollar savings

24

spent on imports of $1.7 billion in the year 2000, $8.1 billion in 2005, and $5.8 billion in 2010.

PROVIDING ECONOMIC BENEFITS TO THE NATION

The importance of oil in the economy is widely recognized. In 1985, 42 percent of the energy used in the U.S. came from oil, of which approximately 9 MBO/Y was produced domestically and 6.8 MBO/Y was imported.

The cost of a resource that is so widely consumed in our economic system has a strong effect on economic productivity. The higher the cost of oil, the more other resources (labor, materials, energy) must be used or given up in acquiring it. As a result, these other resources are no longer available in the economy to help produce the income and the goods and services that support the American standard of living. Thus, the higher the cost of the oil used, the lower the productivity of the U.S. economy. The national need for oil is a need for the economic productivity and the gains in income that result when lower-cost oil is used to produce goods and services.

If oil can be produced from the 1002 area at a cost lower than the revenues generated from its sale, it will result in a net increase in national income and the Nation will realize a net economic benefit. The "net national economic benefit" (NNEB) is the expected net value of oil production, or the difference between revenues from sale of oil and the costs of exploration, development, production, and transportation. The NNEB includes economic benefits expected to accrue as bonuses, royalties, rental fees, taxes, and after-tax business profits. The NNEB expected from the mean potential oil production of 3.2 BBO from the 1002 area for full leasing is $79.4 billion in undiscounted 1984 dollars, and $14.6 billion discounted (10 percent real) dollars. Assuming production from a 9.2-billion-barrel field, a more optimistic economic assumption, and oil prices of $40 per barrel, the undiscounted NNEB would exceed $325 billion (1984 dollars). Potential oil production from limited leasing would contribute $54.0 billion undiscounted, and $9.4 billion discounted. (The discounted value was derived by using a discounted cash flow simulation model, in which annual revenues and annual costs for projected years of production are discounted to the present.)

PROVIDING FEDERAL, STATE, AND LOCAL REVENUES

Lease production from the 1002 area could be expected to generate revenues to the public as lease bonus payments and rentals, royalties, Federal corporate income taxes, severance tax payments to the State of Alaska, and State corporate income taxes. The revenues expected from providing this return to the public are shown in table VII-4 for the full leasing and limited leasing alternatives. Federal revenues include royalties, lease rental payments, and corporate income taxes. State and local revenues include property, severance, conservation, and corporate income taxes. Transfer payments from the Federal Government are not included, and the figures do not include Federal revenue sharing.

Table VII-4.--Estimated revenues, in billions of dollars, from full leasing and limited leasing.

[Bonuses, royalties, and lease rental payments are shown as Federal revenues. Portions of some of the seismically mapped structures lie outside the 1002 area. If these non-Federal subsurface areas are leased by others (for example, the State of Alaska or Native Corporations), portions of bonus, rent, and royalty income shown here as Federal revenue would accrue to those organizations]

	Full leasing	Limited leasing
Federal revenues:		
Undiscounted 1984 dollars..	$ 38.9	$ 25.9
Discounted dollars (10% real).....	8.0	5.1
State and local revenues:		
Undiscounted 1984 dollars..	16.1	11.0
Discounted dollars (10% real).....	3.6	2.4

CONTINUED USE OF THE TRANS-ALASKA PIPELINE SYSTEM

The Trans-Alaska Pipeline System (TAPS) is already in place and has been assumed as available to transport oil from the 1002 area. Oil from the 1002 area could play an important role in helping to offset the production declines slated for the Alaska North Slope, thereby reducing the per barrel transportation costs for oil from existing fields. Inclusion of the 1002 area's oil is, therefore, likely to prolong the useful life of TAPS and to permit additional production from North Slope fields which would otherwise be uneconomical.

THE 1002 AREA'S OIL POTENTIAL COMPARED TO U.S. PROVED OIL RESERVES

Table VII-5 compares the 1002 area's estimated conditional economically recoverable oil resource to U.S. proved reserves. DOE's Energy Information Administration has estimated total U.S. proved oil reserves to be 28.446 BBO as of January 1, 1985. The 1002 area's oil potential equals 11.7 percent of this. The DOE National Energy Policy Plan (NEPP) has estimated that U.S. proved reserves will be only 11.602 BBO in the year 2000, thus making the 1002 area's oil resources 28.8 percent of the total. For limited leasing, the 1002 area's estimated recoverable resource would equal 8.4 percent of proved U.S. reserves in 1985, and 20.6 percent in the year 2000. These

comparisons should be used with caution, however, because of differences in the items being compared. "Proved reserves" are those that have been demonstrated with reasonable certainty to be recoverable from known reserves. The 1002 area's economically "recoverable resources," on the other hand, are, by definition, speculative and less precise. The 1985 reserves figure is based on current oil prices at the time of the estimates. The recoverable resources figure for the year 2000 is based on DOE's NEPP reference case assumptions regarding world oil prices.

Table VII-5.—The 1002 area's conditional, economically recoverable oil resources compared with total U.S. proved oil reserves.

(In billions of barrels. Year 1985 data from Department of Energy (1985, p.5); year 2000 data, for lower 48 States only, from Department of Energy (1985e, table 3-15)

	Year	
	1985	2000
U.S. proved reserves	28.5	11.60
1002 area's recoverable resources:		
Full leasing	3.23	3.23
Percent of U.S. total	11.35	27.80
Limited leasing	2.36	2.36
Percent of U.S. total	8.30	20.34

ANTICIPATED MARKETS FOR THE 1002 AREA'S OIL

Assuming that potential oil production from the 1002 area is similar in quality to current North Slope production, the marketing location for the 1002 area's oil could be expected to follow similar marketing patterns. Crude oil markets are already established for production from the Alaskan North Slope (ANS), and this system could probably be used for oil from the 1002 area. Oil produced from Prudhoe Bay and Kuparuk is transported via TAPS to Valdez and from Valdez by tankers to ports on the West, Gulf, and East coasts. The Trans-Panama Pipeline at the Panama Canal is used extensively to transport crude oil from the Pacific Ocean to the Atlantic. Crude oil is off-loaded on the Pacific side and loaded onto tankers on the Atlantic side for shipment to Gulf of Mexico, East Coast ports, Puerto Rico, and the Virgin Islands.

Significant discoveries have been made in California's OCS areas in the Santa Barbara Channel and Santa Maria Basin, and elsewhere. This potential production could effectively back-out a portion of the future ANS production that would otherwise be marketed on the West Coast. However, production from known ANS fields is projected to benin declining in 1987 and fall to approximately 29 percent of 1984 production by the year 2000 (Alaska Department of Revenue, Petroleum Revenue Division, 1985). At the same time, crude oil production from any discoveries in the 1002 area is not projected to be on-line until the late 1990's or after the year 2000. Therefore, the market opportunities for the 1002 area's oil could conceivably be available in roughly the same proportions as current ANS markets.

Because of the statutory ban on export of U.S. oil, the West Coast market is well established as the primary area for ANS crude oil; this is logical if viewed solely on the basis of transportation cost. Shipments to the West Coast increased to a peak of 0.9 MBO/D in 1980. Over the period 1980-84, an average 52 percent of ANS crude oil was marketed on the West Coast. Alaskan crude oil in excess of West Coast demand is transported to the Panama Canal for shipment to other markets.

CONCLUSION

In summary, the 1002 area has a very significant potential to contribute to the national need for oil. Despite the degree of uncertainty, there is some chance that the area may contain a field the size of Prudhoe Bay. There is an even better chance of one or more smaller fields, still supergiants, totaling more than 3 billion barrels. Only actual exploration can provide the information needed to determine the extent and distribution of the resources, and, therefore, the potential benefit to the economy.

REFERENCES CITED

Alaska Department of Revenue, 1985, Petroleum production revenue forecast, quarterly report: Alaska Department of Revenue, Petroleum Revenue Division.

Chevron, 1986, World energy outlook, forecast through the year 2000: Chevron Corporation Economics Department, June 1986, p. 2-16.

Cooke, L. W., 1985, Estimated of undiscovered, economically recoverable oil and gas resources for the Outer Continental Shelf as of July 1984; U.S. Minerals Management Service Offshore Resource Evaluation Division OCS Report MMS 850-012, 45 p.

Data Resources Incorporated, 1984, Energy review, executive summary: Winter 1984-1985, p. 4-23.

Dickson, David, 1985, Britian's oil bubble about to deflate: Science (American Association for the Advancement of Science), v. 230, no. 4722, p. 154-155. (October 11 issue).

Dolton, G. L., and others, 1981, Estimates of undiscovered recoverable conventional resources of oil and gas in the United States: U.S. Geological Survey Circular 860, 87 p.

Doscher, T. M., and Kostura, J. A., 1986, Enhanced oil recovery and domestic oil reserves 10 years later: Society of Petroleum Engineers/U.S. Department of Energy Paper 14881, p. 7-10.

Gail, Norman, 1986, We are living off our capital (interview with Joseph P. Riva): Forbes magazine, v. 138, no. 6, p. 62-66 (September 22 issue).

Gas Research Institute, 1984, 1984 GRI baseline projection of U.S. Energy supply and demand 1983-2010: Gas Research Insights, October 1984, p. 4-48.

Gas Research Institute, 1985, Description and implications of the 1984 GRI baseline projection of United States demand for liquid fuels: Gas Research Insights, May 1985, p. 3-25.

Kuuskraa, V. A., 1986, The status and potential of enhanced oil recovery: Society of Petroleum Engineers/U.S. Department of Energy Paper 14851, p. 367-374.

Masters, C. D., 1985, World petroleum resources–A perspective: U.S. Geological Survey Open-File Report 85-248, 27 p.

Meyer, R. F., and Fleming, M. L., 1985, Role of small oil and gas fields in the United States: American Association of Petroleum Geologists Bulletin, v. 69, no. 11, p. 1950-1962.

Nehring, Richard, 1981, The discovery of significant oil and gas fields in the United States: The Rand Corporation, report R-2654/1-USGS/DOE, 2 volumes, prepared for the U.S. Departments of Energy and the Interior.

Oil and Gas Journal, 1985a, OGJ Newsletter (unpaged): v. 83, no. 40, October 7 issue.

Oil and Gas Journal, 1985b, OGJ Newsletter (unpaged): v. 83, no. 50, December 16 issue.

Oil and Gas Journal, 1986, OGJ report–U.S. fields with reserves exceeding 100 million bbl: Oil and Gas Journal, v. 84, no. 4, p. 104-105 (January 27 issue).

Riva, J. P., Jr., 1984, Domestic crude oil production projected to the year 2000 on the basis of resource capability: Washington, D.C., The Library of Congress Congressional Research Service Report 84-129 SPR.

Riva, J. P., Jr., Schanz, J. J., and Ellis, J. G., 1985, U.S. conventional oil and gas production–Prospects to the year 2000: Boulder, CO, Westview Press.

Roadifer, R. E., 1986, Size distributions of world's largest known oil, tar accumulations: Oil and Gas Journal, v. 84, no. 8, p. 93-98, 100 (February 24 issue).

Spaulding, A. O., 1986, The looming energy crisis: Oil and Gas Journal, v. 84, no. 20, p. 89-90 (May 19 issue).

U.S. Department of Commerce, 1985, Statistical abstract of the United States 1985: [105th edition]: U. S. Department of Commerce, Bureau of the Census.

U.S. Department of Energy, Energy Information Administration, 1983, Petroleum supply annual: DOE/EIA - 0340 (82), v. 1, June, 1983, p. 8-61.

U.S. Department of Energy, Energy Information Administration, 1984, Petroleum supply annual: DOE/EIA - 0340 (83), v. 1, June, 1984, p. 2-51.

U.S. Department of Energy, Energy Information Administration, 1985a, Monthly energy review: DOE/EIA - 0035 (83/02), February 1985, p. 11.

U.S. Department of Energy, Energy Information Administration, 1985b, Annual energy review: DOE/EIA - 0340 (84), v. 1, April 1985, p. 1-273.

U.S. Department of Energy, Energy Information Administration, 1985c, Petroleum supply annual: DOE/EIA - 0340 (84), v. 1, June 1985, p. 16-68.

U.S. Department of Energy, 1985d, National energy policy plan projections to 2010–A technical report in support of the National energy policy plan: Washington, DC, U.S. Department of Energy Office of Policy, Planning, and Analysis DOE/PE-0029/3 (December).

U.S. Department of Energy, 1985e, U.S. crude oil, natural gas, natural gas liquids reserves: September 1985.

U.S. Department of Energy, 1986, Annual energy outlook 1985, with projections to 1995: U.S. Department of Energy DOE/EIA-0383(85), February 1986.

Williams, Bob, 1984, Santa Barbara-Los Angeles line project pressed: Oil and Gas Journal, v. 82, no. 42, p. 72-74 (October 15 issue).

World Oil, 1985, Outlook to 2000-Higher energy demand to benefit OPEC: v. 201, no. 5, p. 114 (October issue).

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ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES

February 6, 1987

The Honorable Bill Horn
Assistant Secretary for
Fish, Wildlife and Parks
U. S. Interior Department
Washington, D. C. 20240

Dear Secretary Horn:

I am writing with regard to the draft 1002(h) study which presents alternatives for management of the coastal plain of the Arctic National Wildlife Refuge (ANWR).

The interest shared by Alaskans in the decisions about ANWR are fairly clear: we need to maintain a clean, healthy environment and provide jobs and revenue for Alaska's people. These are national interests as well.

Toward achieving these goals, the U. S. Congress should promptly open the coastal plain of the ANWR to oil and gas exploration, production, and transportation under conditions that are in the interest of the nation and the state; reserving the leasing of land in the core caribou calving grounds until a later date. Although, at this time, there is some controversy about the location of the calving ground, we are hopeful that the research data can be put to good use in the near term to define it. Protection of the Porcupine herd is in the interest of American and Canadian citizens. Other environmental issues such as air and water quality, waste management and disposal, and development coordination also need attention.

The Interior Department should desist from discussing land trades that would eliminate the State of Alaska's revenue share from oil and gas activity in the Refuge and that could reduce the ownership influence of the state and federal governments.

Unless the state concurs, the U. S. Congress should not allow measures or actions that reduce the state's entitlement to oil

and gas revenue from the Refuge. The Congress should require the protection of the environmental and subsistence resources of the Refuge, including habitat, air, and water, in the event of oil and gas development on the coastal plain of the Refuge.

In recognition of Alaska's economic situation and the need for long-term economic development in the state, the Congress should require that exploration and development activity in the Refuge be conducted by Alaska work forces.

The Congress also should amend the Export Administration Act to reduce America's trade problem and energy costs by allowing the export of new production from Alaska's North Slope.

Thank you for considering these concerns. I hope that the Interior Department will work toward accomplishing these objectives during the Congressional debate on ANWR.

Sincerely,

Sam Cotten

Representative Sam Cotten
co-Chairman, House Resources Committee
(907) 465-3711/15/99

SC:smc

Alaska State Legislature
House

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

Official Business

Representative Mark Boyer

465-3466

TO: Representative Sam Cotten
Representative Adelheid Hermann
House Resources Committee

FROM: Representative Mark Boyer MB

DATE: February 3, 1987

SUBJECT: House Joint Resolution 7 and
House Joint Resolution 9,
Relating to the Arctic National Wildlife Refuge

The Resources Committee has before it two resolutions dealing with the State's position on development of the coastal plain of the Arctic National Wildlife Refuge. House Joint Resolution 7 puts the Legislature on record as supporting the opening of the area to "environmentally responsible oil and gas exploration, development, and production". While I support this effort, I am equally concerned that ANWR be developed in a manner which is economically responsible with regard to the interests of all Alaskans. I cannot support HJR 7 as written because it fails to address critical issues such as land exchanges, royalty share, and the utilization of Alaskan businesses and labor in exploration and development. The importance of fish and wildlife habitat to the subsistence economy of rural Alaska must be specifically addressed as well.

House Joint Resolution 9 addresses the major concerns which the State must, in my opinion, consider before we can

actively support exploration and development of the coastal plain. As revenues from Prudhoe Bay decline over the next decade, maximization of revenue from ANWR will be of primary importance. We must protect the state's revenue share by insisting upon full and equal participation by the state in land exchange negotiations. The 90/10 split of royalties between the state and federal government, which compensates Alaska for its exclusion from the Reclamation Act, must be preserved.

Protection of fish and wildlife habitat, particularly the calving grounds of the Porcupine herd, must be ensured before exploration and development commence. At this time, I am not convinced that a delay in the leasing of the calving grounds is necessary for their protection, but there should be a meaningful dialogue on the issue before the State articulates its position. I think the Governor is correct in attempting to learn from the Prudhoe Bay experience how best to proceed in ANWR with minimal disturbance of the environment. The oil industry record there has been good, but far from perfect, and much can be learned from a detailed study of the environmental impact of exploration and development of the Sadlerochit and Kuparuk fields.

A primary concern in my district with regard to ANWR is the utilization of Alaskan labor and businesses in the exploration and development of the resources. We remember the tremendous benefits to the Fairbanks economy when the Project Agreements for constuction of the Trans-Alaska pipeline and the first ten years of Prudhoe Bay construction mandated the use of Fairbanks hiring halls. In dismal contrast, this past year saw the largest Sealift in Prudhoe Bay history and few, if any, Fairbanks workers or businesses were involved. I have spoken with hundreds of Fairbanksans who have been displaced from jobs on the North Slope by cheaper non-resident workers. Efforts by the previous administration to secure voluntary resident hire by North Slope producers and their subcontractors failed miserably.

I am convinced that the only way to put Alaskans to work on natural resource development projects is by statute, contractual provisions in lease agreements, or through project labor agreements. One or any combination of these measures must be implemented as a meaningful guarantee that Alaskan workers and Alaskan businesses will benefit from this major project in their own backyard.

The coastal plain of the Arctic National Wildlife Refuge is the best prospect for a major oil and gas discovery in

North America. Its exploration and development can be an enormous benefit to the state, if conducted in a manner congruent with the best interest of Alaska and her citizens. Determination of that "best interest" will require considerable discussion and debate, but I am convinced that the gravity of issues associated with ANWR development dictate a conditional statement of support from this body. We cannot rush headlong into an endorsement of coastal plain development, as HJR 7 would have us do.

ALASCOM Telegram

C20C9

1987 FEB 2 11 25

ANCHORAGE ALASKA 441 02-01 1020 AST
PMS

REP SAM COTTEN

JUNEAU AK

HJRS OPPOSES NATIVE LAND TRADES FOR LANDS IN ANWR, CHIEFLY ON THE BASIS THAT THE STATE NEEDS THE 90 PERCENT OF FEDERAL ROYALTIES THAT IT WOULD GET UNDER PRESENT LAW IF THE U.S. GOVERNMENT OWNS AND LEASES THE LAND. THIS REASONING IS MISGUIDED FOR FIVE REASONS.

FIRST, 90 PERCENT OF NOTHING IS STILL NOTHING. NATIVE INVOLVEMENT AND SUPPORT WILL BE ESSENTIAL IF CONGRESS IS TO OPEN ANWR AT ALL. ALASKA IS SEEN OUSIDE AS HAVING HAD ITS FLING, AND HOW MANY NEW VOTES CAN THE OIL COMPANIES DELIVER? CONGRESSIONAL SUPPORT IN D.C. TOWARD NATIVE AMERICANS AND WILDLIFE REFUGE ENHANCEMENT THROUGH NATIVE TRADES WILL OFF-SET THE INCLINATION TO CAST AN EASY PRO-ENVIRONMENTAL VOTE TO KEEP ANWR CLOSED. LANDS GIVEN UP BY THE NATIVES WILL INCLUDE EXTREMELY IMPORTANT INHOLDINGS IN OTHER WILDLIFE REFUGES IN ALASKA, SUCH AS THE MAJOR HABITAT FOR SEVERAL THREATENED SPECIES OF GEESE AND BRANDT. FEDERAL ACQUISITION OF SUCH IN-HOLDINGS WILL WIN THE SUPPORT OF SEVEREL WILDLIFE ORGANIZATIONS, AND FORM

THE BASIS FOR THE KIND OF COMPROMISE WHICH WILL BE NEEDED TO OPEN ANWR. OPPOSING THESE LAND TRADES PLAYS RIGHT INTO THE HANDS OF THOSE WHO WOULD LOCK UP ANWR FOREVER.

SECOND, THE 90 PERCENT FIGURE IS CERTAIN TO BE REEXAMINED IF CONGRESS OPENS ANWR TO OIL AND GAS DEVELOPMENT. NATIVE SUPPORT WILL BE VALUABLE FOR THE STATE IN ITS ATTEMPT TO KEEP ITS SHARE OF FEDERAL ROYALTIES AT A HIGH LEVEL.

THIRD, THE POTENTIAL SIZE AND IMPACT OF THE NATIVE TRADE ON THE ANWR LANDS HAS BEEN GREATLY EXAGGERATED. WHILE THE NATIVES WILL BE TRADING IN VERY SUBSTANTIAL ACREAGE IT WILL BE TRADED ON A VALUE BASIS. THE VALUE OF THE ANWR LANDS FAR EXCEEDS THAT OF THE NATIVE LANDS.

FOURTH, THE TRADES WILL ESTABLISH A STRONG TAX-BASE. STATE PRODUCTION TAXES WILL BE PAID FOR NATIVE ROYALTY PRODUCTION FROM NATIVE LANDS.

FIFTH, NATIVE CORPORATIONS, BEING PRIVATE, CAN IMPOSE AND ENFORCE ALASKA HIRE PROVISIONS IN A WAY THAT THE STATE CAN NEVER HOPE TO MATCH CONSTITUTIONALLY.

FINALLY, THE BOTTOM LINE IS NOT TO LOSE SIGHT OF THE ULTIMATE OBJECTIVE OF OPENING ANWR, CREATING JOBS AND DEVELOPMENT, AND ESTABLISHING A SOUND TAX BASE FOR THE STATE. IT IS AN HISTORICAL AXIOM THAT ALASKA HAS NEVER ACHIEVED MAJOR LAND LEGISLATION IN CONGRESS WHEN THE STATE WAS DIVIDED.

ON BEHALF OF OUR 6300 SHAREHOLDERS AND THE 12 VILLAGE CORPORATIONS IN OUR REGION AND WESTERN ALASKA COMPRISING THE NATIVE LANDS GROUP, COOK

INLET REGION INC. ASKS FOR YOUR CONSIDERATION IN REMOVING THE PROVISIONS IN HJR9 OPPOSING NATIVE LAND TRADES.

ROY M. HUHNDORF, PRESIDENT
COOK INLET REGION INC.

CC: GOVERNOR STEVE COWPER
COMMISSIONER BRADY
COMMISSIONER KELSO
COMMISSIONER COLLINGSWORTH
COMMISSIONER SMITH
COMMISSIONER MALONE
COMMISSIONER GUITTEREZ
JOHN KATZ, SPECIAL ASSISTANT TO THE GOVERNOR

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

Representative Sam Cotten, co-Chair - 465-3715
Representative Adelheid Herrmann, co-Chair - 465-4942

Committee Schedule February 9 - 13, 1987

Monday, February 9, 1987
8:30 - 10:00 a.m., Capitol 124

HB 29 "An Act making a supplemental appropriation to the Department of Commerce and Economic Development for distribution to qualified regional aquaculture associations; and providing for an effective date."

* HB 61 "An Act relating to the renewal of permits for the use of mental health land of the state, and providing for an effective date."

Tuesday, February 10, 1987
8:00 - 10:00 a.m., Governor's Conference Room, (Senate invited)

8:00 a.m. Commonwealth North
8:30 a.m. Senate of Canada Standing Committee on Fisheries

Wednesday, February 11, 1987
8:30 - 10:00 a.m., Capitol 124

Department of Natural Resources
Overview by Judith Brady

Thursday, February 12, 1987
8:30 - 10:00 a.m., Capitol 124

* HB 18 "An Act establishing the Willow Creek State Recreation area; and providing for an effective date."

* HB 93 "An Act establishing a system of recreation rivers; and providing for an effective date."

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

Friday, February 13
8:30 - 10:00 a.m., Capitol 124

8:30 a.m.	Bills previously heard before committee
9:30 a.m.	Overview by the Alaska Water Resources Board

Official Business

COMMITTEE: Resources

DATE: Feb. 5

Subject of meeting: HJR 9
HJR 7

SIGN-IN

NAME	ADDRESS	PHONE	REPRESENTING	DO YOU WANT TO TESTIFY?
Ron Somerville	Juneau	789-3450	AK Outdoor Council	Yes

5-0230B
Bradley
3/5/87

Original sponsors: Cotten, Pourchot, Rieger, et al.

MASTER

IN THE HOUSE BY THE RESOURCES COMMITTEE

CS FOR HOUSE BILL NO. 93 (Resources)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FIFTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act establishing six recreation rivers; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

Section 1. FINDINGS. The legislature finds that the special values and uses of certain river corridors in southcentral Alaska ~~[illegible]~~ justify their retention ~~[illegible]~~ for public use. ~~[illegible]~~ The river corridors can support many public uses, including some that will enhance the local economy as well as improve public access to retained lands. The designation of these corridors as recreation rivers recognizes the value of the affected land and should not become an undue impediment to the use and enjoyment of adjacent lands or to ~~[illegible]~~ development of access within, across, and around the rivers.

(2) conservation of the scenic and natural integrity of the recreation river corridor and continued recreational and economic use and enjoyment by the public, including hunting, fishing, trapping, boating, hiking, snowmachining, skiing, dog mushing and wildlife viewing;

(3) management of upland activities within the recreation river corridor for the protection and maintenance of water quality and stream flow; and

(4) accommodation of ~~access~~, access for recreation, tourism, and other compatible economic uses of the river corridor.

Sec 41.23.205 COMPATIBLE ACTIVITIES. In accordance with a management plan adopted pursuant As 41.23.220, the commissioner shall allow and may regulate ~~[illegible]~~ activities including but not limited to:

5-0230B
Bradley
3/5/87

Original sponsors: Cotten, Pourchot, Rieger, et al.

MASTER

* Section 1. AS 41.23 is amended by adding new sections to read:

ARTICLE 3. RECREATION RIVERS.

Sec 41.23.200 PURPOSES. The purpose of AS 41.23.200 - 41.23.280 is to establish ~~a~~ recreation rivers and land and water presently owned by the state and all land and water acquired in the future by the state lying within the boundaries described in AS 41.23.280(b). ~~The legislature declares that~~ The primary purposes for the establishment of the recreation rivers are

(1) the protection and maintenance of the fish and wildlife populations and habitat on a sustained-yield basis;

(2) conservation of the scenic and natural integrity of the recreation river corridor and continued recreational and economic ~~uses~~ use and enjoyment by the public, including hunting, fishing, trapping, boating, hiking, snowmachining, skiing, dog mushing, and wildlife viewing;

(3) management of upland activities within the recreation river corridor for the protection and maintenance of water quality and stream flow; and

(4) accommodation of ~~access~~ for recreation access, tourism, and other compatible economic uses of the river corridor.

Sec 41.23.205 COMPATIBLE ACTIVITIES. In accordance with a management plan adopted pursuant to AS 41.23.220, the commissioner shall allow and may regulate ~~recreation~~ activities including but not limited to:

(1) use of aircraft, powerboats, snowmachines, all-terrain vehicles, and other motorized transportation;

(2) harvest of wood products;

(3) ~~mineral~~ mining/leasing and oil and gas leasing;

(4) sand and gravel extraction for public use; and

(5) public use facilities.

Sec. 41.23.210. GENERAL MANAGEMENT OF RECREATION RIVER CORRIDORS. (a) The state-owned land and water within the area established as a recreation river corridor under AS 41.23.280(b) is assigned to the commissioner for management consistent with the purposes of AS 41.23.200 - 41.23.280.

(b) The commissioner shall reserve to the state under AS 46.15.145 an instream flow or level for the water in the rivers described in AS 41.23.280(b) that is adequate to achieve the purposes of AS 41.23.200 - 41.23.280.

(c) The provisions of AS 41.23.200 - 41.23.280 do not affect the authority of

(1) the Department of Fish and Game, the Board of Fisheries, the Board of Game, or the Guide Licensing and Control Board under AS 08.54, AS 16, or AS 41.99.010;

(2) the Department of Environmental Conservation under AS 46.03; or

(3) state agencies and municipalities under AS 44.19.145(a)(11) and AS 46.40.100.

(d) The commissioner may not restrict the use of weapons, including firearms, within a recreation river corridor except in sites of high public use such as picnic areas, boat ramps, camping grounds, and parking areas when the commissioner determines that the use of weapons constitutes a threat to public safety. Except as provided in

this subsection, the commissioner may not restrict fishing, hunting, or trapping within a recreation river corridor.

~~(e) The commissioner may lease land competitively within a recreation river corridor for the construction and operation of a public use facility.~~

(f) The commissioner may not restrict commercial or private activities on state-owned land within the boundaries of a recreation river corridor ~~existing~~ permitted on the effective date of this Act unless the commissioner determines that the activity is incompatible with AS 41.23.200~~(a)~~.

Sec. 41.23.220. MANAGEMENT PLAN. (a) After consultation with local authorities and state agencies, including the commissioner of fish and game, the commissioner shall adopt ~~and may revise~~ a management plan for a recreation river corridor. The commissioner shall comply with the notice requirements of AS 38.05.945 and shall hold at least one public hearing in the municipalities and communities near the recreation river corridor and with the local fish and game advisory committee in the area in the adoption or revision of a management plan. The management plan shall establish long-range guidelines and management practices consistent with AS 41.23.200~~(a)~~ to

(1) protect, maintain, or enhance the fish and wildlife habitat and the free-flowing nature of the river;

(2) identify special recreational values and manage the level of intensity and types of recreational uses;

(3) designate compatible land uses and management guidelines for associated development;

(4) manage commercial activities or development, including recreational services such as guiding;

(5) provide for necessary public services, such as

transportation and utility corridors, public safety, and law enforcement;

(6) allow reasonable and necessary access to public land and private inholdings, including municipal lands that may be offered for sale, and to land beyond the recreation river corridor;

(7) establish criteria and timelines to review future proposed uses for compatibility with AS 41.23.200~~(5)~~;

(8) establish guidelines and setback restrictions for an activity occurring under AS 41.23.~~200(c)~~ 205 or for ~~mineral~~ mining leasing and oil and gas leasing under AS 41.23.250(b) - (d).

(b) The commissioner may adopt regulations necessary to implement the plan.

(c) A management plan adopted ~~or revised~~ by the commissioner under (a) of this section shall be submitted to the legislature for review within the first 10 days of the first regular session of the legislature to convene after its adoption or revision by the commissioner.

Sec. 41.23.230. MANAGEMENT OF MUNICIPAL LAND. If a municipality commits land for inclusion in a recreation river corridor established under AS 41.23.280(b), the commissioner shall obtain the concurrence of the municipality to the management plan proposed under AS 41.23.220 as it applies to municipal land. The commissioner shall cooperate, at the request of a municipality, in planning for municipal land adjacent to a recreation river corridor.

Sec. 41.23.240. ACQUISITION OF ADDITIONAL LAND. (a) The commissioner may acquire in the name of the state land that is adjacent to or located within the land described in AS 41.23.280(b) by purchase, lease, gift, or exchange.

(b) The commissioner may not acquire land for inclusion in -

recreation river corridor by eminent domain.

Sec. 41.23.250. APPLICATION OF PUBLIC LAND LAWS. (a) Except to the extent that a provision is inconsistent with a provision of AS 41.23.200 - 41.23.280, the provisions of AS 38.04, AS 38.05, AS 38.35, and AS 38.95 apply to land described in AS 41.23.280(b).

(b) ~~Except as provided in (c) of this section,~~ The state-owned land and water within a recreation river corridor is closed to mineral location ~~and entry~~ under AS 38.05.195 and to disposal of leasable minerals under AS 38.05.150 - 38.05.175.

(c) Except on state-owned land ~~within 200 feet of~~ or mean high tide below ordinary high-water, the commissioner may permit mineral prospecting under AS 38.05.245 and, upon a subsequent discovery, ~~mineral~~ mining leasing under AS 38.05.205 in an area within a recreation river corridor if leasing is allowed under a management plan that has been adopted by the commissioner. The commissioner shall establish appropriate conditions in permits, operating plans, and leases to protect the environment and prevent degradation of the recreational uses of the river.

(d) The state-owned land and water within a recreation river corridor is available for oil and gas leasing subject to conditions in an adopted management plan.

(e) To enhance public use and enjoyment of a recreational river corridor in accordance with an adopted management plan, the commissioner may ~~lease land for~~ provide for the construction and operation of commercial facilities such as lodges, campgrounds, and boat launches by

1) competitively leasing land, among prequalified bidders, under ~~competitive bidding~~ AS 38.05.070; and

2) contracting for the construction or operation of facilities ~~if needed~~ under AS 36.30.

recreation river corridor by eminent domain.

Sec. 41.23.250. APPLICATION OF PUBLIC LAND LAWS. (a) Except to the extent that a provision is inconsistent with a provision of AS 41.23.200 - 41.23.280, the provisions of AS 38.04, AS 38.05, AS 38.35, and AS 38.95 apply to land described in AS 41.23.280(b).

(b) ~~Except as provided in (c) of this section,~~ the state-owned land and water within a recreation river corridor is closed to mineral entry by location and entry under AS 38.05.195 and to disposal of leasable minerals under AS 38.05.150 - 38.05.175.

(c) Except on state-owned land within 200 feet of or below ordinary high-water or mean high tide of a stream, the

(f) The commissioner of administration shall separately account for funds collected under this section and deposited in the general fund. The annual estimated balance in the account may be appropriated by the legislature to the department to carry out the purposes of this chapter.

Sec. 41.23.260. COOPERATIVE MANAGEMENT AGREEMENTS. (a) The commissioner may enter into a cooperative management agreement for the management of land and water described in AS 41.23.280(b) or of other adjacent land and water with a federal agency, a municipality of the

state, another agency of the state, or a private landowner.

(b) The commissioner may transfer the management of a specific site within a recreation river corridor described in AS 41.23.280(b) to a state agency to assist in the development of a facility or to carry out a program authorized by law.

(c) The commissioner may not manage a recreation river corridor described in AS 41.23.280(b) as a unit of the state park system. The commissioner may assign management of a recreation site such as a campground or a boat launch to the division of parks and may adopt regulations allowing the division of parks to manage recreation activities in a recreation river corridor.

Sec. 41.23.270. ESTABLISHMENT OF RECREATION RIVER CORRIDORS. State-owned land and water may be established as a recreation river corridor only by the legislature.

Sec. 41.23.280. DESIGNATED RIVERS. (a) Subject to valid existing rights, the state-owned land and water established as a recreation river corridor under (b) of this section is reserved as a special purpose area under art. VIII, sec. 7, Constitution of the State of Alaska, and is not subject to surface disposal under AS 38.

(b) The land and water presently owned by the state and all land and water acquired by the state in the future, including shore and submerged land, that lies within the following described parcels are established as recreation rivers:

(1) Talachulitna State Recreation River

(A) Township 16 North, Range 10 West, Seward Meridian

Section 6: W1/2

Section 7: NW1/4

(B) Township 16 North, Range 11 West, Seward Meridian

Section 1: E1/2, SW1/4

Section 35: NW1/4, W1/2NE1/4

ARTICLE 4. GENERAL PROVISIONS.

Sec. 41.23.900. DEFINITION. In this chapter, "commissioner" means the commissioner of natural resources.

* Sec. 2. Until a management plan has been adopted for a recreation river corridor under AS 41.23.220(a) as enacted in sec. 1 of this Act, interim management shall be consistent with AS 41.23.200. The commissioner of natural resources shall adopt management plans for the ~~[three] most extensively used~~ rivers by July 1, 1992.

* Sec. 3. This Act takes effect immediately under AS 01.10.070(c).

SPONSOR: Senate Resources
pub hear work ses inv hear

T/C DATE/DAY: 2-13-87

TIME: 1:30 PM

LEGISLATIVE REFERENCE: Confirmations

JUNEAU ROOM: Capitol 124

SUBJECT: Admin Confirm

BRIDGE: _____

OF PORTS: _____

CONTACT: _____ PHONE: _____ DATE TAKEN/BY: _____

****

SITES PARTICIPATING:

LIO'S	LTC'S	VTS'S
✓Anchorage		See List on
✓Barrow	Fort Yukon	Reverse Side
✓Bethel	Galena	
Delta Junction	Homer	
✓Dillingham	✓Naknek	
✓Fairbanks	✓Newhalen	ALL LIO'S
Glennallen	St. Paul	
Juneau	Sand Point	ALL LIO's/LTC'S
Ketchikan	Togiak	
Kodiak	Unalaska	OTHER SITES WELCOME
Kotzebue	Wrangell	WITH PRIOR NOTIFICA
✓Mat-Su		
Nome		
Petersburg		
Sitka		
Soldotna		
Valdez		

OFFNETS: Larson Bay

CHAIRING SITE: _____

CHAIRPERSON: _____

[ ] CONFORMS TO LEGISLATIVE COUNCIL POLICY 4/85

Steve K. McCauley Feb. 9, 1987

SIGNATURE OF SPONSOR/CONTACT PERSON DATE

****

SPECIAL INSTRUCTIONS

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

M E M O R A N D U M

To: Representative Mike Navarre
Representative Lyman Hoffman
Representative Drue Pearce
Representative John Sund
Representative Cliff Davidson
Representative Henry Springer
Representative Dick Shultz

Fr: Representative Sam Cotten, Co-Chair
Representative Adelheid Herrmann, Co-Chair
House Resources Committee

Dt: January 29, 1987

Re: Committee Procedure

Committee staff has asked us to be sure that you never leave the committee room with your bill files, ~~unless you promise to bring them back.~~ except for duplication. Bill files should be available for you

Also, in the interest of a more informed committee, ~~it is good~~ we would appreciate (whenever possible) ~~to~~ your providing the chair and staff with possible amendments before a meeting so that they can be duplicated and circulated.

Many thanks.

nf2:smc

~~bills~~ during the day prior to a hearing on a new bill. (Sharon - where?)

Alaska State Legislature
HOUSE OF REPRESENTATIVES
COMMITTEE ON RESOURCES

JOHN RINGSTAD, CO-CHAIRMAN
RICHARD G. HULTZ, CO-CHAIRMAN
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3715

February 5, 1987

The Honorable William Horn
Assistant Secretary for Fish,
Wildlife and Parks
U. S. Department of the Interior
Washington, D. C. 20240

Dear Secretary Horn:

We are writing to invite you or a representative of your office to appear before the House Resources Committee of the Alaska Legislature on the issue of proposed land trades in the Arctic National Wildlife Refuge. Our meeting on this topic is scheduled for Friday, February 13, from 1:00 - 3:00 p.m., in the State Capitol Building.

Several members of the Committee and other legislators are deeply interested in the land exchange proposals. At this time in our consideration of HJR 9 (enclosed), it would be very informative to have the Interior Department come before us to:

(1) describe any proposed/possible land exchanges in ANWR, and their possible national and state benefits;

(2) explain the proposed land exchange agreements;

(3) describe the land and subsurface appraisal process; and

(4) explain why inholdings in national parks have not been included in the proposed exchanges.

The meeting will not be limited to these issues, but we expect discussion on at least these topics and would be most interested in starting out with a briefing by Interior Department policy makers.

We look forward to your response and appreciate your cooperation. Please contact Representative Cotten's office to arrange any details.

Sincerely,

Sam Cotten

Rep. Sam Cotten
co-Chairman
(907) 465-3711

Rep. Adelheid Herrmann
co-Chairman
(907) 465-4942

SC:smc

THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

ACQUISITION AND LOGISTICS
DASD(P)DARS

29 JAN 1986

In reply refer to:
DAR Case 86-3

MEMORANDUM FOR THE DIRECTOR, NATIONAL SECURITY AGENCY
THE DIRECTOR, DEFENSE COMMUNICATIONS AGENCY
THE DIRECTOR, DEFENSE INTELLIGENCE AGENCY
THE DIRECTOR, DEFENSE NUCLEAR AGENCY
THE DIRECTOR, DEFENSE MAPPING AGENCY

SUBJECT: Section 8078, 1986 Defense Appropriations Act - Restrictions on the Employment of Personnel for Work on Construction/Service Contracts

On 24 January 1986, the DAR Council approved the attached new Subpart 22.72 of the DFARS for publication in the Federal Register as an interim rule and for immediate Departmental implementation. This action is necessary because Section 8078 of the FY 1986 Defense Appropriations Act, enacted on 23 December 1985, requires that whenever the unemployment rate in Alaska or Hawaii exceeds the national average as determined by the Secretary of Labor, service and construction contracts awarded in FY 1986 and calling for performance in whole or in part within those states must contain a restriction on who can be employed to perform work on that contract. This requirement is implemented by a new clause at DFARS 52-222-7002. Contracting officers shall include the clause in all new solicitations, as well as modify existing solicitations to incorporate the clause when to do so will not unduly delay the procurement. For contracts already awarded in FY 1986, contracting officers should attempt to modify them to include the clause on a no cost basis, provided the Government's interests are adequately protected.

This Departmental is effective immediately.

Otto J. Guenther

OTTO J. GUENTHER, COL, USA
Director
Defense Acquisition
Regulatory Council

Attachments
DFARS 22.72 and 52.222-7002

XEROX TELECOPIER

XEROX TELECOPIER 295 ; 2-10-CITTITOU AM ; 2022240JJUT 7 ; 0110440UOUT ; # 2

THE OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-8000

ACQUISITION AND LOGISTICS

DASD(P)DARS

28 JAN 1986

In reply refer to:
DAR Case 86-3

697.9125

SUBJECT: Section 8078, 1986 Defense Appropriations Act - Restrictions on the Employment of Personnel for Work on Construction/Service Contracts in Alaska and Hawaii

The attached Departmental Implementation Letter was issued by the Military Departments and by this office to the Defense Agencies under our cognizance.

OTTO J. GUENTHER, COL, USA
Director
Defense Acquisition
Regulatory Council

Attachment

Add a new Subpart 22.72 as follows:

SUBPART 22.72—SECTION 8078, 1986 DEFENSE APPROPRIATIONS ACT - RESTRICTIONS ON THE EMPLOYMENT OF PERSONNEL FOR WORK ON CONSTRUCTION/SERVICE CONTRACTS IN ALASKA AND HAWAII

22.7200 Policy.

(a) Except as provided in (b) and (c) below, Section 8078 of the 1986 Defense Appropriations Act requires that notwithstanding any other provision of law, every contract awarded during FY 1986 calling for construction or services to be performed in whole or in part within the State of Alaska or the State of Hawaii shall include a provision requiring the contractor to employ, for the purpose of performing that portion of the contract work within the particular state, individuals who are residents of that state, and who, in the case of any craft or trade, possess or would be able to acquire promptly the necessary skills to perform the contract.

(b) This section shall not apply at any time during FY 1986 when the unemployment rate in Alaska is not in excess of the national average rate of unemployment as determined by the Secretary of Labor.

(c) This section shall not apply to contracts to be performed in whole or in part within the State of Hawaii unless in FY 1986 the unemployment rate in Hawaii is in excess of the national average rate of unemployment as determined by the Secretary of Labor.

22.7201 Waivers. This section may be waived by the Secretary of Defense, the Deputy Secretary of Defense, the Assistant Secretary of Defense for Acquisition and Logistics, and any Secretary, Undersecretary, or Assistant Secretary of the Army, Navy, and Air Force, in the interest of national security. Requests for waiver shall be processed in accordance with Departmental or agency procedures.

22.7202 Contract Clause. The contracting officer shall insert the clause at 52.222-7002, Restrictions on Employment of Personnel, in all solicitations and contracts in accordance with 22.7200.

Add a new clause as follows:

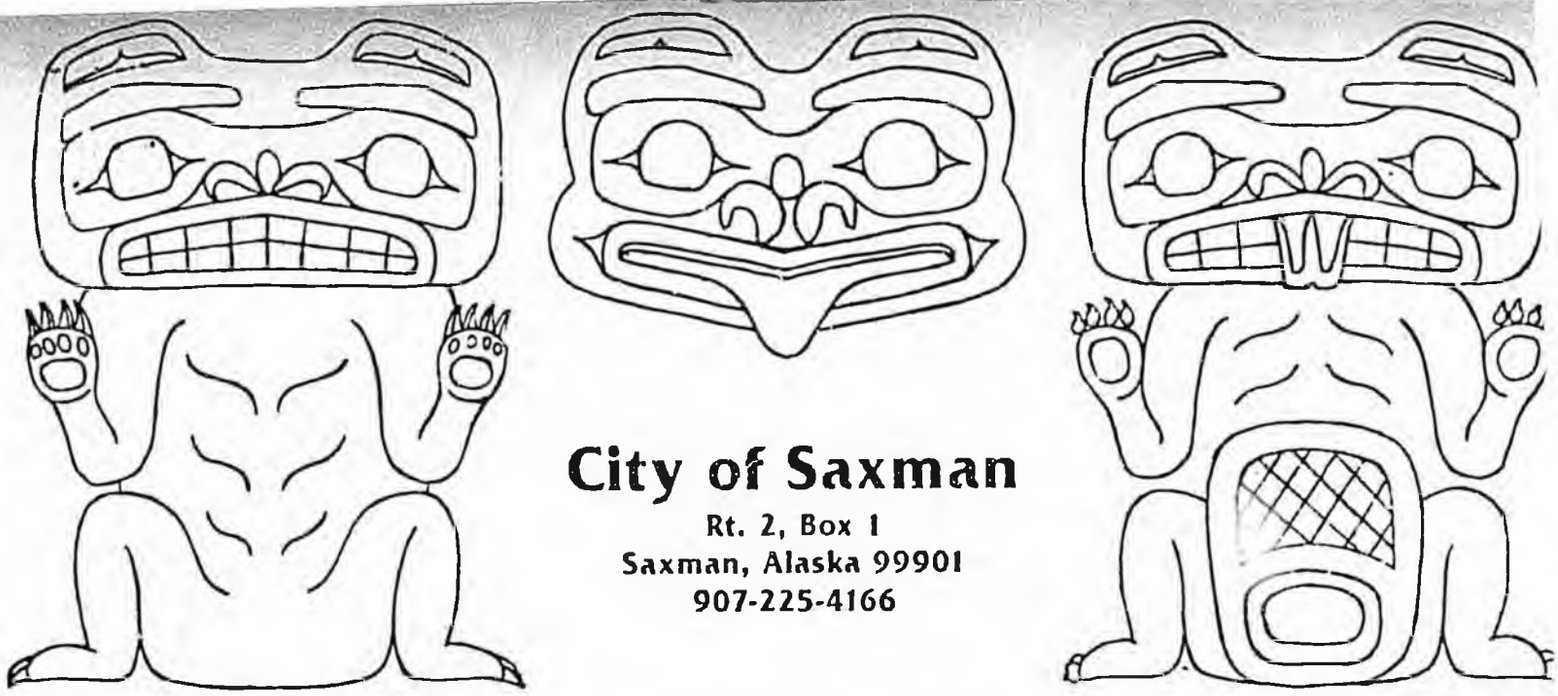
52.222-7002 Restrictions on Employment of Personnel. As prescribed in 22.7202, insert the following clause.

RESTRICTIONS ON EMPLOYMENT OF PERSONNEL (JAN 1986)

(a) The Contractor shall employ, for the purposes of performing that portion of the contract work in the State of (insert appropriate state), individuals who are residents of the state, and who, in the case of any craft or trade, possess or would be able to acquire promptly the necessary skills to perform the contract.

(b) The Contractor agrees to insert the substance of this clause, including this paragraph (b), in each subcontract.

(End of clause)



City of Saxman

Rt. 2, Box 1
Saxman, Alaska 99901
907-225-4166

CITY OF SAXMAN, ALASKA

RESOLUTION #86-12-029

A RESOLUTION ON THE ALASKA'S ARCTIC NATIONAL WILDLIFE REFUGE (ANWR) COASTAL PLAIN

WHEREAS, Alaska's Arctic National Wildlife Refuge includes more than 19 million acres of land, amounting to approximately five percent of the entire state landmass, and

WHEREAS, the Coastal Plain is approximately eight percent of the refuge, it is considered to be highly prospective for the discovery of large quantities of oil and gas; and

WHEREAS, Congress has reserved the discretion to decide if the 1.5 million acres will be opened to further exploration, development and production; and

WHEREAS, the petroleum industry had consistently demonstrated its ability to operate in conditions similar to those found on the coastal plain in a safe, responsible manner without significant adverse environmental impacts, and

WHEREAS, the United States must prepare to develop domestic petroleum resources if it is to preclude overwhelming dependence on foreign petroleum sources in the 21st century; and

WHEREAS, the value and development potention of state-owned tidelands and federally-owned OCS lands offshore of the ANWR Coastal Plain would be enhanced by a Congressional decision to open the coastal plain to further exploration, development and production; and

WHEREAS, facilities developed to transport petroleum resources on the coastal plain to Pump Station One may allow marginal discoveries between the ANWR Coastal Plain and Prudhoe Bay to developed; and

WHEREAS, national energy security depends on the development of domestic oil and gas resources to replace depleted U.S. reserves; and

WHEREAS, the nation stands to derive revenues including portions of bonuses, royalties and rents from oil and gas development; and

WHEREAS, opening the ANWR Coastal Plain to further exploration, development and production will generate increased employment and business opportunities for all Alaskans and all Americans;

NOW THEREFORE, BE IT RESOLVED that the Saxman City Council strongly urges the Congress of the United States to the ANWR Coastal Plain to environmentally responsible oil and gas exploration, development and production.

APPROVED by a vote of 6 for and 0 against on December 18, 1986, constituting a majority of the City Council.

James E. Swink, Mayor

Attest:

Nora DeWitt, Administrative City Clerk

ANWR Hearings

DRAFT

General Information for Requested Witness

Hearing times and Places

1st Hearing: Friday, March 6th, Fairbanks, Borough Assembly Chambers
Saturday, March 7th, Fairbanks

2nd Hearing: Friday, March 13th, Anchorage, Z.J. Loussac Municipal Library
Saturday, March 14th, Anchorage

3rd Hearing: Friday, March 20th, Ketchikan, Community College
Saturday, March 21st, Ketchikan / Forum Room

4th Hearing: Friday, March 27th, Kodiak, Assembly Chambers
Saturday, March 28th, Kodiak

Friday Format: 9am opening of hearing
Testimony from:
US Fish and Wildlife Service
Bureau of Land Management

Testimony will include a 30-minute background presentation on the agencies' role in development of the draft 1002 (h) report for Congress, on the ANWR. The remaining time will be for the answering of questions from the committee.

12pm Break for Lunch

Friday Afternoon
Format: 1pm reconvene hearings
Testimony will be heard from the state departments of Natural Resource, Fish and Game, and Environmental Conservation. 30 minutes will be allowed for the agency to present its role in the development of the 1002 (h) report, with the remaining time being for questions from the committee.

5pm recess until 9am the following day.

Saturday Format: 9am reconvene hearings
Testimony will be heard from requested witnesses, including industry and individuals with specific expertise on ANWR, related to the 1002(h) report.

11am Testimony will be heard from the general public, with 3 minutes allowed for comment and 2 minutes for questions from the committee.

DRAFT

Saturday Continued

12pm to 1pm Lunch Break

1pm reconvene general public testimony

3pm close location hearing

Saturday's hearing may run over to 5pm, depending on public interest.

The purpose of these hearings is two fold. One is to build a public record which the Alaska State Legislature will utilize, in making an informed decision on proposed development activities in the coastal plain of the ANWR. The second is to allow the public as great an opportunity as possible to have input into this decision making process, and access to the same information which the legislature will be basing it's findings.

Requested Witness will have a limited amount of time for general comments. Time allocations will be determined by the structure of the presentation, i.e. single witness or panel; and by the total number of witnesses. Only two hours are set aside for this portion of the hearing.

General Witness Catagories

Environmental
- representative organizations
- biological experts

Labor
- union leaders

Industry
- environmental
- engineering
- geology
- regulatory

Native
- organization
- corporate

DRAFT

Industry related areas of concern

1. Regulatory framework industry would be working within in ANWR.
   - Environmental protection
   - Permitting process
   - Timelines associated with permits

2. Work that industry has done or participated in, dealing with ANWR and the 1002 report.
   - Geologic data gathering
   - Development feasibility studies
   - Wildlife assessments including: offshore - Bow Head
     onshore - PCH
     Subsistence

3. Specific involvement in development of the 1002 report

4. How the information that has been collected influences industries evaluation of ANWR's potential to be an oil producer.

5. What sort of development scenarios might take place, given a range of recoverable oil reserve being located in ANWR.

6. How long would it take to get a range of discoveries into production.

7. How long might the range of reserves last

8. What other advantages to development on the North Slope exist if recoverable economic reserves are discovered in ANWR.

Ned Farquhar

07/02/86

ARCTIC NATIONAL WILDLIFE REFUGE (ANWR)

INFORMATION NOTEBOOK

PREPARED BY

THE AOGA NORTH SLOPE LANDS TASK FORCE

CONTENTS

INTRODUCTION

Purpose

The purpose of this notebook is to provide background and briefing material on a number of concerns which will have direct bearing on the ultimate decision by Congress on whether to allow oil and gas exploration in the Coastal Plain of the Arctic National Wildlife Refuge (ANWR). The advocacy paper, presents concise and factual reasons why the ANWR coastal plain should be opened to oil and gas exploration and development. The advocacy paper and briefing and background papers are to be used by members of the oil and gas industry in contacts and efforts to provide congressional members, other public officials and private organizations the information needed to form responsible opinions and make informed decisions on this important national issue. These materials will be used in conjunction with other AOGA material, such as the ANWR Slide Presentation and the ANWR Video Presentation.

Executive Summary

The ANWR coastal plain has the highest potential of any unexplored region in the onshore United States. The United States must continue to explore for and develop its petroleum resource potential in the face of increased dependence on foreign sources.

The decision to open the Coastal Plain needs to be made now, since it is likely to take 15 years to bring resources from the coastal plain to market if commercial discoveries are made. Leasing on federal lands is a major source of revenue for federal, state and local governments. Exploration and development in ANWR will create jobs and employment in Alaska and in other states that provide the equipment and materials for the oil and gas industry. Finally, the oil and gas industry has developed the experience and technology in arctic Alaska to safely operate in the Coastal Plain of the ANWR in harmony with the environment.

NS1:7

July 2, 1986 ADVOCACY PAPER

REASONS TO OPEN ANWR COASTAL PLAIN TO OIL AND GAS EXPLORATION DEVELOPMENT AND PRODUCTION

Why explore ANWR?

- Most other high potential frontier basins have been tested with disappointing results.

- The Arctic National Wildlife Refuge (ANWR) has the highest potential of any unexplored region in the onshore U.S.

- Development of new domestic hydrocarbon supplies is critical to the national interest.

- Oil and gas activities on the North Slope provide significant economic benefits to federal and state governments and to Alaskans.

ANWR offers an extraordinarily high potential for oil and gas discoveries

- Geologists agree that the hydrocarbon potential is high in the region: USGS mean estimate for oil resources in the ANWR Coastal Plain is almost 4.9 billion barrels in-place; a

similar statistic prepared by the National Petroleum Council in 1981, prior to the conduct of seismic surveys of 1984 and 1985, indicates a mean estimate of 2.3 billion barrels of recoverable oil.

- Geologists also agree that the same hydrocarbon-bearing geologic strata of the Prudhoe Bay oil field and Pt. Thomson gas/condensate field are believed to occur in the subsurface of the ANWR Coastal Plain; only drilling and testing can confirm the viability of oil and gas production from these units.

National interest will be served by ANWR exploration and production

- Reduced dependency upon imported oil: at this time one third of the nation's trade deficit results from imported oil (net payments for imported oil amounted to almost $53 billion in 1984).

- Reliable sources of domestic oil should be developed and maintained: an API survey indicates that domestic crude oil production would fall from 8.9 million barrels a day in 1985 to 6.2 million barrels a day in 1991 if prices remain at $15 per barrel. Domestic production is forcast to fall below 3

million barrels a day by year 2000, the earliest any ANWR discovery is likely to be produced.

- Foreign policy implications: prevention of disruption of oil supplies is key factor in foreign policy decisions.

- The U.S. will be vulnerable to serious economic and security dislocations if it allows itself to become unnecessarily dependent on foreign oil: foreign sources of petroleum are concentrated in the Middle East--the region contains about two-thirds of the free world's proven reserves; Saudi Arabia alone contains over one-forth; the Middle East is no more stable now than it has been during the Iranian revolution (1979) and the Iran-Iraq war (1980 to date) when oil import curtailments occurred.

- In light of declining domestic reserves and increased domestic consumption resulting from present low oil prices, opportunities to develop new commercial fields should not be precluded.

- Sixty percent of the U.S. flag tanker tonnage is employed in transportation of North Slope crude oil to U.S. markets: reduced production from the North Slope will result in increased retirement of vessels from this service and an overall decline of the merchant marine fleet.

Sam –
Some national interest arguments here

ANWR COASTAL PLAIN
EXPLORATION DEVELOP-
JCTION

ion to explore and develop the ANWR Coastal Plain

ow

Alaska supplies our nation with approximately 20% total domestic production. Lead times are long in Alaska regions--at least 10 years from discovery to first production, but more likely to extend beyond 15 years. Without significant new discoveries, our nation could be dependent upon foreign sources for 60% of its demand by the year 2000.

- U.S. consumes more than 25 percent of worldwide petroleum production even though it has less than 4 percent of proven worldwide reserves; policies which slow or prohibit replenishment of domestic reserves exacerbate this problem.

- The argument has been presented that depressed oil prices will result in bids at less than fair market value for oil and gas leases in ANWR. This argument ignores, however, the discretion that the government has to establish the type of bidding system including the long-term royalty and revenue criteria to insure realization of fair market value. The federal government can reject bids not considered fair market value.

REASONS TO OPEN ANWR COASTAL PLAIN
TO OIL AND GAS EXPLORATION DEVELOP-
MENT AND PRODUCTION

- While the bidding system can provide significant up-front revenues to the government, it is the royalties that provide major revenues over a long period of time. The highly prospective area will attract broad industry competition. The industry needs access to the most promising areas now to insure timely development of needed future reserves. The fact is that classifying the ANWR Coastal Plain as wilderness insures that there will be no return to the federal government and no access or future benefit to U.S. citizens from the oil and gas that may be in place in the region.

Oil and gas development provides economic benefits

- Leases on federal lands are a major source of revenue for the government; in 1984 the federal government received $1 billion in oil and gas lease bonuses, rentals, and royalties, as well as about 25 percent of the revenue generated by North Slope state leases through excise and income taxes; in 1984 alone, Alaska received about $3.5 billion in oil and gas royalties, bonuses, and taxes, primarily from the North Slope operations.

- Exploration and production activities provide jobs. Thirty percent of Alaskan households have members holding jobs in the oil and gas industry; decline in Cook Inlet and North Slope construction work will significantly affect statewide

unemployment levels; opening additional lands to exploration and potential development will have an important positive effect on employment in the state.

° North Slope Borough (the local government) presently derives about seventy percent of its income from property taxes on oil and gas facilities; these revenues will decline as book value of taxed properties declines; real property values at Prudhoe Bay/Kuparuk are expected to peak at $16 billion in 1987 and decline to $813 million by 2010.

Oil exploration, development and production is consistent with ANWR management goals

° Oil and gas exploration, development and production are now occurring in the Swanson River Field in the Kenai National Wildlife Refuge in southcentral Alaska and many other refuges in the United States; production has continued in the Kenai refuge since 1962 without adverse impacts to moose that browse throughout the Refuge and to salmon that spawn in the Swanson River and its tributaries.

° Implementation of migratory waterfowl treaties affecting ANWR will not be hampered by petroleum exploration and production; many of the same species now utilize habitats in the Prudhoe

Bay/Kuparuk area west of ANWR where crude oil has been produced since 1977.

- Subsistence species (primarily caribou and waterfowl) in the Coastal Plain will not be diminished by petroleum exploration and development; access to these resources by Natives would not be significantly affected by oil and gas activities. Caribou herds coexist with oil and gas development in other areas on the North Slope; the Central Arctic Caribou Herd, whose summer range includes the Prudhoe Bay and Kuparuk oil fields has grown from about 3,500 animals in 1975 to 18,000 in 1985.

<u>Proven technology can be applied to exploration and production in ANWR in a manner to protect the environment</u>

- Application of forty years of engineering experience in Arctic Alaska culminating in developments in the Prudhoe Bay and Kuparuk oil fields demonstrate that oil development can and does exist in harmony with the environment.

- Directional drilling techniques have been developed that allow consolidation of facilities to minimize the amount of surface area impacted by exploration and development facilities.

REASONS TO OPEN ANWR COASTAL PLAIN
TO OIL AND GAS EXPLORATION DEVELOP-
MENT AND PRODUCTION

- In addition to reducing the size of facilities to the greatest extent possible, developers routinely consider wildlife habitat, drainage, and wildlife usage in selecting sites for production facilities, roads, and pipelines; in the Prudhoe Bay development botanical maps have been generated to assist engineers in selection of new sites for facilities and in designing expansions for existing ones.

- Climatic conditions provide additional protection for wildlife and tundra (for example, onshore seismic work and construction activities are conducted during the winter months when the tundra is frozen and wildlife are scarce in the area) and assures a high degree of protection for important renewable resources.

- A transportation facility to deliver production to an ice-free port in Valdez (the Trans Alaska Pipeline) already exists.

Development in ANWR would affect an extremely small percentage of the Refuge and would not interfere with refuge management goals

- Roughly 8 million acres (approximately 45%) of ANWR has already been set aside as wilderness and is closed to any oil and gas exploration and/or production activities.

REASONS TO OPEN ANWR COASTAL PLAIN
TO OIL AND GAS EXPLORATION DEVELOP-
MENT AND PRODUCTION

- Only 1.5 million acres (approximately 8% of the Refuge) is under consideration for exploration, development and production at this time.

- Given existing technology, coupled with the expected size of any potential discoveries, a development in the Refuge would comprise an extremely small portion of the Coastal Plain.

- Because the economics of operating in ANWR are generally extreme due to the physical conditions and geographic isolation, it is relatively certain that only giant oil fields (larger than 500 million barrels of recoverable oil) will be commercial. Such fields are rare and even in ANWR it is unlikely that more than 2 or 3 of them will be discovered. Consequently the most optimistic production scenario will physically utilize only a very small area of the coastal plain. Conversely production from three giant fields could be measured in millions of barrels of oil per day.

Conclusion

- The present glut of oil on the world market and distortions of crude oil prices are temporary situations which will have an adverse effect on the medium and long term energy supplies for the U.S. Current market conditions are causing a rapid

shut-down of exploration which means a decrease in already declining future production. Other effects are a decrease in conservation efforts, a shut-in and permanent loss of stripper well production (up to 1/8 of all U.S. production), huge job losses in the oil and service industries, international debt payment problems, (e.g. Mexico, Brazil, etc.), and a cessation of research into alternate energy sources.

- These adverse economic and market effects can be significantly offset by successful exploration and development in the Coastal Plain of the ANWR. The potential in the Coastal Plain for large future oil production with proven protection of the wildlife and environment, is unique in the United States. Nowhere else, not even on the Continental Shelf, are the factors so positive for improving an energy situation which makes us a pawn of Middle East exporting countries, reduces our national security and cripples our international balance of payments. By the year 2000, the Coastal Plain of the ANWR could produce enough oil to help maintain U.S. foreign policy based on strength and domestic policy based on a more complete knowledge of U.S. energy availability.

- Concerning the wilderness issue, if ANWR is not opened to exploration, development and production, the potential losses to our national energy position will be incalculable while the "gains" would only be a slight increase (2.6%) in the

amount of wilderness designated lands in Alaska. Further, the coastal plain of ANWR would be managed to protect the environment and wildlife values should discoveries result in the development of the Coastal Plain.

NS1:102

07/02/86

PAPER 1

PETROLEUM POTENTIAL IN THE ARCTIC NATIONAL WILDLIFE REFUGE

The Arctic National Wildlife Refuge (ANWR) could contribute significantly to offsetting a rapidly declining domestic proven reserves. It is estimated that that daily U.S. production from existing fields will decline from the nearly 9 million barrel today to less than 3 million barrels by the year 2000. To supply the U.S. demand in the year 2000, we will need an additional 12 million barrels per day from new domestic reserves or become even more dependent on foreign sources. ANWR could go a long way in providing those additional discoveries.

The Coastal Plain of the ANWR has long been recognized by geologists as a potential major petroleum province with undiscovered reserves on the order of billions of barrels of recoverable oil. ANWR is located less than 100 miles east of the two largest oil fields in North America (Prudhoe Bay and Kuparuk) and west of major oil and gas discoveries in the Mackenzie Delta and Canadian Beaufort Sea. The major geologic trends and rock formation in those areas are believed to extend into ANWR.

The Arctic coastal plain within ANWR is a narrow strip of land gently sloping from the foothills of the Brooks Range to the Arctic Ocean shore. It is occasionally interrupted by rolling hills. Drainage north to the sea is divided among a dozen or so streams, the largest being the Canning, Hulahula and Kongakut Rivers. The Coastal Plain described in ANILCA Section 1002 for study covers about 1.5 million acres - - 8% of the ANWR total - - between Canning River on the west and the Aichilik River on the east, an area of about 100 miles long and varying in width from 17 to 40 miles.

The earliest investigations in the ANWR consisted of boundary and reconnaissance surveys beginning in 1900. Between 1906 and 1914, a monumental task of topographic and geologic mapping and investigation was carried out by Ernest de K. Leffingwell in the Canning River area, Franklin Mountains, and Romanzof Mountains. Among his discoveries were a number of oil seeps and outcrops of oil-stained sandstones. Commencing in 1944, in cooperation with the U.S. Navy (1944-53), and continuing to the present time, the U.S. Geological Survey (USGS) has compiled detailed geological maps and reports on this area through the efforts of many investigators. From limited rock outcrops on the Coastal Plain and numerous exposures in the rugged and remote northeastern end of the Brooks Range strata representing virtually every geologic age, from pre-Cambrian to the present, have been identified. Several cycles of deformation and mountain-building, modified by erosion and glaci[illegible] action, have caused the complex geological situation of today. [illegible]man, 1972.) Most importantly, geologists first recognized i[illegible] [illegible]WR foothills

and northern flanks of the Brooks Range the major rock units that form the oil and gas reservoirs later proved to be oil producing to the west of the refuge. They also recognized that sequences of prospective reservoir rocks as much as 20,000 feet thick lie beneath ANWR. These include older rocks probably equivalent to those at Prudhoe Bay as well as younger rocks in which important oil and gas discoveries have been made in the Mackenzie Delta and Canadian Beaufort Sea to the east. Also recognized were other important geologic characteristics favorable for oil and gas occurrence, such as petroleum generating source rocks and large geologic structures to trap petroleum.

As geologic knowledge of ANWR was gained in the 1960's, exploration west of the refuge resulted in the discovery of the Prudhoe Bay Field in 1968, the largest oil field in North America, lying 65 miles to the west. Also, the Canadian Beaufort/Mackenzie Delta area about 120 miles to the east was being explored in the 1980's and resulted in a number of major oil and gas discoveries. A large gas and condensate reservoir has also been discovered near the Pt. Thomson/Flaxman Island area in the coastal plain adjoining ANWR.

In his paper on the geology and mineral assessment of the ANWR, Hartman (1972, revised 1973) described the large Marsh Creek anticline which has a surface expression in the Tertiary rocks in the coastal area just south of Camden Bay. He suggested that at least four formations, all hydrocarbon productive in other areas of the Arctic Slope, are prospective in this Marsh Creek structure, and

calculated a potential reserve of nearly 14 billion barrels of oil, which exceeds that of the Prudhoe Bay Field.

Later, USGS investigators Grantz and Mull (1978), recognizing that available rock exposures were insufficient to understand the complex geology beneath the Coastal Plain, used seismic data from offshore in the Beaufort Sea to extrapolate onshore, since at that time, no seismic data in ANWR existed. Using this technique, they suggested that the primary hydrocarbon potential of the ANWR "is for a number of medium to large gas and oil accumulations in Cretaceous and Tertiary rocks." Additionally, the seismic data together with other geologic information, including the presence of three known oil seeps and two outcrops of oil-stained sandstones, convinced the authors that the Arctic Coastal Plain has significant petroleum potential.

Estimating undiscovered hydrocarbon resources is difficult even when good data are abundant. Within the ANWR, geological information was sparse consisting of only proprietary aeromagnetic data, gravity data and surface geology. Data adjacent to ANWR included surface geology, subsurface geology (several wells), and both onshore and offshore seismic profiles. One of the most valuable types of data for resource assessment is seismic, but, as noted, there were no seismic data available for ANWR. In the absence of seismic data in ANWR, geologists made interpretative judgments by projecting available information into the subsurface and by constructing one or more "models" describing the subsurface geology. (Mast, et al 1980)

However, the need for more exacting hydrocarbon resource estimates encouraged explorationists to develop better assessment techniques.

One such technique, the "play-analysis" method, was used by the USGS, as well as the oil and gas industry. Utilizing this method, geologists provide (1) their professional judgments on the relative favorability of various geologic conditions necessary for petroleum accumulation within a given play area, and (2) quantification of a set of geologic variables. A sophisticated data processing technique then generates probability distributions of undiscovered hydrocarbons in-place as well as estimates of field size.

There have been several assessments of the petroleum potential of the ANWR Coastal Plain by the USGS in recent years based on the play-analysis method. Mast and others (1980) estimated a potential ranging from 160 million barrels up to 17 billion barrels of oil in-place with the average being 4.85 billion barrels of oil. In analyzing field size distribution, they estimated the mean oil field to contain 890 million barrels which is classified as a supergiant field.

USGS investigator Kenneth Bird (1984), in a similar analysis, estimated a potential ranging from one billion barrels of oil in-place up to 22.4 billion barrels, with an average 6.9 billion barrels of total oil in-place. He also determined the average field size to be in the supergiant class and contain 900 million barrels of oil. Results of these USGS assessments confirm and quantify what

geologists have believed for years -- that the ANWR Coastal Plain has the potential for large hydrocarbon reserves.

Finally, these estimates of major potential should be placed in the context of lower 48 oil field discoveries. In recent years, the typical oil field discovered was less than one million barrels. As a prospective petroleum province, ANWR may exceed that of Beaufort Sea, offshore California and the deeper waters of the Gulf of Mexico.

REFERENCES

Bird, Kenneth J., 1984, A comparison of the play-analysis technique as applied in hydrocarbon resource assessments of the National Petroleum Reserve in Alaska and of the Arctic National Wildlife Refuge: U.S. Geological Survey Open-File Report 84-78, 19 p.

Grantz, Arthur and Mull, C.G., 1978, Preliminary analysis of the petroleum potential of the Arctic National Wildlife Range, Alaska: U.S. Geological Survey Open-File Report 78-489, 21 p.

Hartman, D.C., 1972 (revised January, 1973), Geology and mineral evaluation of the Arctic National Wildlife Range, northeast Alaska: Alaska Division Geological and Geophysical Surveys Open-File Report 22, 14 p., pl. 1.

Mast, R.F., McMullin, R.H., Bird, K. J., and Brosge, W. P., 1980, Resource appraisal of undiscovered oil and gas resources in the William O. Douglas Arctic Wildlife Range: U.S. Geological Survey Open-File Report 80-916, 62 p.

NS1:1

07/02/86

PAPER 2

PROTECTING THE NATURAL ENVIRONMENT: MINIMIZING IMPACTS TO ARCTIC COASTAL PLAIN VEGETATION, SOILS, WATER BODIES AND STREAMS IN THE COURSE OF OIL AND GAS EXPLORATION AND DEVELOPMENT

The natural physical and vegetational characteristics of the Arctic National Wildlife Refuge's coastal plain closely resemble those found across Alaska's Arctic rim north of the Brooks Range. Petroleum exploration and development activities have taken place in comparable areas west of the ANWR since 1944 when the Navy began its exploration program on the National Petroleum Reserve. Activities have continued through the development of production facilities in the Prudhoe/Kuparuk region. Forty years of operating experience on the North Slope has provided the oil and gas industry the expertise and technology to develop oil and gas resources while protecting the Arctic environment.

Two key points should be kept in mind when discussing potential impacts to ANWR's coastal plain. First, the actual physical area which may be disturbed by exploratory and, if successful, development activities will represent a extremely small fraction (probably less than 1%) of the 1.5 million acres which constitute that plain. Secondly, oilfields and their associated facilities are only temporary uses of the land.

What's To Be Protected?

The dominant characteristic of the coastal plain is its organic mat of tundra plants that overlay the permanently frozen earth and ice rich formations beneath. Even this surface mat is hard-frozen and snow covered for more than three quarters of the year in this harsh and frigid climate. This situation--a frozen operating surface--is the major source of environmental protection from disturbance. The many water bodies (lakes, thaw ponds, streams, rivers, and lagoons) are frozen to thicknesses that can support without significant damage the passage of heavy vehicles and equipment during the eight or more months they remain in that condition. It is during the brief summer season when rivers and streams break up and flow freely, when the tundra mat is thawed and dotted with melt ponds and the lakes are ice free that the surface is subject to serious impact. It is during this time that the most careful planning and thorough protective measures must be used.

Plants consist of two main categories: lichens and mosses, which provide significant forage for the caribou; and vascular plants, which in their many species and variety make up the principal biomass of the tundra organic mat. These plants are of two main kinds: herbaceous (grass-like and broad-leaf) and woody. They grow low to the ground, have developed effective nutrient storage mechanisms designed to withstand the lengthy dormant winter season.

The period of germination, growth, and maturity must all be accomplished in the brief six to eight weeks of summer. They must also endure many natural disturbances common to the Arctic such as fire, frost-heaving, and erosion.

The physical features of the coastal landscape are also most susceptible to damage in the summer. Stream and riverbanks are subjected to the dual forces of waterflow and thermally induced erosion. Where sensitive areas have been disturbed by either natural or man-made actions, thawing in the permafrost or ice lenses dramatically reshapes the landforms. It is therefore necessary to protect sensitive areas during the thaw season.

Measures Taken To Insure Environmental Protection.

The principal measures taken to insure that landforms and plant communities are not significantly disturbed during exploratory activities are tied to the use of the frozen protective cover that shields both land and water bodies throughout the long winter. Access roads are constructed from ice and snow and are built to thickness standards capable of sustaining the heavy loads to be transported without either destroying the plant communities that lie dormant beneath them or unduly compacting the soils in which they live. Specially designed low-ground-pressure vehicles are employed extensively on both seismic survey and materials and personnel transport operations. For example, the broad-tired Rolligon,

lespite its size, distributes less pressure per square inch on the ground surface than does a human foot.

Geophysical Service, Inc., the firm which undertook the seismic exploratory work on the ANWR coastal plain in the winters of 1984 and 1985 was carefully monitored by the Fish and Wildlife Service during its operations. The areas physically touched in this seismic work were then subjected to detailed inspection in summer. The inspectors were able to report without serious qualification that no significant impact on ANWR's coastal plain resulted from the geophysical operations.

Exploratory drill pads may be constructed of foam insulation and removable timbers which prevent the thaw of the permafrost. This material is removed from the site after the completion of operations. Other alternatives for the construction of drill pads include the use of gravel to insulate the tundra, and possibly the use of ice pads (in winter) if there is a ready source of fresh water and if the drilling depth is shallow enough to be reached in a single winter season. Removal of any human debris around the pads is accomplished at the time of demobilization, and any that might remain entrapped in the site's snow and ice is thoroughly cleaned up after the thaw.

If exploratory drilling in the coastal plain is allowed and if commercial discoveries result, there is ample evidence from other Arctic operations (TAPS, Prudhoe Bay, Kuparuk, and Milne Point) to

demonstrate the development can be undertaken in a manner which protects surface values. Roads and drill pads will be constructed in accordance with proven engineering practices. Facilities will be consolidated and surface use minimized. Construction activity can be concentrated in the winter months to protect the frozen tundra and to minimize environmental disturbance.

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07/02/86

PAPER 3

WILDLIFE AND HABITAT PROTECTION DURING PETROLEUM EXPLORATION AND DEVELOPMENT

I Habitat Impacts

The Arctic National Wildlife Refuge (ANWR) comprises 18 million acres in northeast Alaska, largely uplands and mountainous terrain of the Eastern Brooks Range. Of this approximately 1.5 million acres, or 8%, is coastal plain. It is beneath this coastal plain that oil and gas potential exists. Should oil and gas be found in commercial quantities and developed, only a small portion of this coastal plain would be affected. As a comparison, the giant Prudhoe Bay oilfield, largest in North America is developed from a combined operating area of 212,000 acres. This is approximately 1% of the surface area of ANWR, and 14% of the area of the coastal plain. The Kuparuk oil field, probably more likely to be the size of a developed field in ANWR, would comprise less than 10% of the coastal plain, or 0.8% of ANWR. Only an extremely small surface area would actually be impacted by facilities.

Of the small area that might be developed as a result of the discovery of a major oilfield, the vast majority of this oilfield will contain accessible habitat potentially utilized by caribou and waterfowl. Habitat loss is minimized in the development of Arctic

oilfields by consolidating production wells and development facilities. Consequently, the direct loss of habitat due to gravel pads, roads and pipelines becomes vanishingly small, less than 0.1% of the coastal plain.

Exploration and production activities have little lasting or significant impact on wildlife and habitat using today's accepted techniques. The U.S. Fish and Wildlife Service (FWS) will require that oil and gas exploration and production operations in Alaska wildlife refuges be conducted in a manner consistent with the purposes of those refuges. ANILCA mandates that all oil and gas activities on lands leased pursuant to Section 1008 be performed in accordance with plans of operation approved by the FWS. These plans will ensure that refuge values will not be harmed by such activities as has been true for the exploratory activities already permitted and carried out in ANWR, and will further ensure that no unacceptable social costs will result from operations on refuge lands. It is also entirely likely that plan approvals will be conditioned upon satisfaction of additional mitigating measures to promote refuge values and further refuge purposes. To the extent that these additional conservation benefits are provided by the lessees at no direct economic cost to the public, such benefits are additional factors that enhance the national interest in permitting evaluation and development of the petroleum resources of refuge lands in Alaska.

PROTECTING WILDLIFE AND HABITAT

Modern petroleum exploration and development activities are compatible with environmental protection objectives for refuges and other sensitive lands. Petroleum industry activities are usually temporary in nature and conducted in a manner that protect environmental values. Petroleum operations today are carried out conscientiously, mindful of environmental goals and in compliance with the comprehensive body of laws enacted to further these goals. Moreover, oil industry activities may complement environmental objectives. In a number of instances, the oil industry has contributed toward the development of environmental data bases and studies on the effects of operations on refuges and has financed the development of infrastructure improvements (roads, weirs and other water control structures, etc.) that not only serve petroleum operations, but further proper management of these lands.

A recent survey concluded that oil and gas lease activities in wildlife refuges "have had little or no adverse effect on wildlife in most refuges...and have often enhanced other economic and recreational uses which occur on the refuges..."API Research Study, Survey of Oil and Gas Activities on Federal Wildlife Refuges and Waterfowl Production Areas (Study #031, October 1983).

Modern petroleum activities demonstrate that energy production and environmental protection are compatible with a clean, protected environment. Special care is taken to protect living resources (including threatened and endangered species), minimize disturbance of the land, reduce air and water pollution and protect archaeo-

logical and cultural resources. Millions of barrels of oil are produced safely in the U.S. every day in sensitive environments, including wells in wildlife refuges on the Gulf Coast and in the extremely fragile tundra of the North Slope of Alaska.

Petroleum exploration and production operations usually are relatively brief occupations of the land that have no long term adverse impact on environmental values. For example, the acreage involved in drilling an exploratory well is small, normally five acres or less. Even that acreage will not be used unless seismic and other data indicate that drilling is warranted. Most successful oil fields are depleted of their recoverable reserves within 20 to 30 years. While production activities are ongoing, the nation benefits from the availability of secure domestic supplies of energy. After production ceases, the land can be reclaimed with little evidence remaining to indicate oil and gas exploration and production had ever occurred.

The Palisades area in the Bridger-Teton National Forest is one example of the effectiveness of reclamation. After an exploratory well was drilled and abandoned, the site was reclaimed by company personnel working with Forest Service experts. Shortly thereafter, Congress designated the Palisades are as a wilderness, thereby acknowledging the lack of any lasting impact from oil and gas operations.

The following additional examples of the environmental compatibility of petroleum operations with sensitive areas, derived from pp. 46-50 of the API Onshore Oil Publication, illustrate that the petroleum industry can conduct its activities in different types of environments by sharing sensitive lands with sensitive and endangered species.

- Aransas National Wildlife Refuge in south Texas. Extensive drilling and production operations have co-existed since 1947 with several endangered species, including the Whooping Crane (which makes this area its winter home), the southern Bald Eagle, Attwater's great prairie chicken and five species of sea turtles. Over these years, the Whooping Crane population has steadily increased. Shared use of this area has been facilitated by deferring seismic and drilling during winter months when birds are in the refuge.

- Delta National Wildlife Refuge, southeast of New Orleans. This, the site of Chevron's Romere Pass production field and terminal station, is also a feeding and resting ground for thousands of water fowl.

- Kenai National Wildlife Refuge in southern Alaska. Oil operations, beginning in the 1930's, have successfully shared this area with a moose populations of more than 4000. The area is also visited by swans, eagles, wolves, and loons.

- Rockefeller State Wildlife and Game Preserve. The state of Louisiana has a multimillion dollar income from petroleum production in this sanctuary, where the American alligator, once thought to be threatened with extinction, has come back. Revenues from the oil and gas leases contribute to a trust for research and wildlife conservation and management of this reserve.

- Avery Island, Louisiana. This is a private bird sanctuary where, since the early 1940's, petroleum exploration and production have been conducted in harmony with numerous birds and animals through careful wildlife management and environmental practices.

- National Audubon Society's Paul J. Rainey Sanctuary in southern Louisiana. Thousands of migratory birds use this 26,000 acre preserve with its valuable marshland that serves as the wintering ground of the lessor snow goose. Royalties from more than 25 years of petroleum production have helped support wildlife management and research in this sanctuary.

- Big Cypress Swamp in southern Florida. The Florida Department of National Resources recently conducted an investigation of the effects of oil exploration and production on the swamp and concluded that 30 years of petroleum operations have had no significant adverse effects on this wetland area.

- National Audubon Society's Corkscrew Swamp Sanctuary in Florida. This area also illustrates how environmentalists and petroleum operators have developed a drilling plan that protects marshes and wildlife.

- Texas coastal plain. These areas, the site of numerous wellheads, drilling sites, and pipelines, are also the mating and breeding grounds for the endangered Attwater prairie chicken. Studies have shown that the prairie chickens behave no differently on artificially maintained grounds near oil operations than on their natural mating and breeding grounds.

- Alaska's North Slope. The extensive measures undertaken by industry on the North Slope and along the Trans-Alaska Pipeline (TAPS) are outstanding examples of this compatibility of oil operations and the environment. Oil companies operating in this area cross the tundra by rolligons with huge soft tires, concentrate construction in the winter months and minimize building of permanent roads by building temporary ice roads to protect the tundra, use insulated casing for wells, lower noise levels by muffling engines, and install redundant safety systems. Drilling pads, roadways, building sites, and pipelines are insulated from the tundra by layers of gravel, elevation, or other methods to prevent the underlying soil from thawing.

In some cases, innovative restoration and reclamation techniques have enhanced wildlife habitat over its original status. In

Louisiana's coastal marshes, for example, operators have established water control networks to prevent saltwater intrusion and loss of marsh lands during periods of drought and low tides.

In summary, industry's concern for wildlife habitat and the modern techniques now used, together with governmental programs for environmental protection, ensure that sensitive environments will be protected while oil and gas activities are conducted on these lands. Petroleum companies take positive measures in sensitive areas both during and after exploration, development and production operations, including funding of environmental research and wildlife and habitat management programs and land restoration once petroleum activities are completed. These comprehensive measures should be considered when evaluating the national interest in exploring and developing the petroleum resources of Alaska's refuge lands.

II CARIBOU

In trying to predict the impact of oil field development on the Porcupine Caribou Herd there is an excellent case history to base predictions upon. That is, the 18 year history of the coexistence of the Central Arctic Herd (CAH) with the development of the Prudhoe Bay and Kuparuk oilfields.

The Prudhoe Bay and Kuparuk oil fields lie within the summer range of the 13,000 member CAH. There has been a great deal of controversy and research on the impact of the oilfields on the herd. All

of these studies have concentrated on the effects of facilities on individuals or groups of caribou. The translation of these studies of disturbance on groups of animals to effects on the population dynamics of the entire herd is difficult, if not impossible.

Census figures produced by the Alaska Department of Fish and Game show that between 1973 and 1982 the herd has increased at an average annual rate of 13%. More recent estimates are even higher, between 14-20%. All indicators show a healthy and expanding herd, despite the pipeline and Dalton Highway bisecting their range and the growth of oil field activities in the summer range. These data clearly indicate that during the period of maximum developmental growth at Prudhoe Bay and Kuparuk, the CAH has continued to proliferate at rates rivaling and even exceeding those observed for herds existing in areas where no development has occurred.

Exploration drilling and geophysical surveys are occasionally conducted during summer months and routinely during the winter months on the North Slope. During this time the Porcupine Caribou Herd is largely wintering away from the Coastal Plain. Even when caribou are present, one of the conclusions from the NPR-A Caribou/Waterbird workshop conducted by the BLM in May 1982 that "winter seismic and exploratory drilling operations have had little impact on caribou to date". Further, "these activities would be unlikely to have significant impacts in the future given current

standard operating permits and procedures". (Gilliam and Lent, 1982)

During the early 1970s there was concern that the Trans-Alaska Pipeline and Dalton Highway would fragment the Central Arctic Herd and disrupt free movement across it's range. These fears have not been realized primarily due to two factors. Studies allowed design elements to be incorporated into pipeline construction that included buried and elevated portions that did not present an impenetrable barrier (Child, 1973) and caribou have proven to be more adaptable than was recognized 15 years ago (Davis et al., 1983, Bergerud et al., 1984). Caribou habituate to stimuli that do not present a threat to their survival, as indeed, they must, or they would spend their whole lives constantly reacting to non-threatening stimuli. The adaptability of the species to human presence is underscored by the fact that the species (reindeer) is semi-domesticated throughout much of its Scandanavian range. An extreme example of a caribou herd's adaptability comes from the Delta Caribou Herd (Davis et al., 1983). The herd calves on a military bombing range and is subjected to bombing, strafing and frequent low level flights. The herd has also experienced habitat alteration by wildfires covering large portions of their core calving area. Despite these significant disturbances, "the herd has increased at an annual rate of 19-22% since 1976 and is now larger than ever recorded" (Davis et al., 1983).

Studies of the herd reaction to low level aircraft show that they react significantly less violently than the western Arctic herd (Valkenburg and Davis, 1983). Their conclusion is "that the Delta herd has become habituated to aircraft or never learned to fear them".

In general, roads with low traffic levels are not physical or behavioral barriers to caribou movements. (Curatolo and Murphy 1983, Smith and Cameron 1985). The Dempster Highway, initiated in 1959 and completed in 1979, bisects the winter range of the Porcupine Caribou Herd in Canada. At the low levels of traffic this highway supports (10 vehicles per day), there have been no significant effects on the daily activity budgets of caribou using the road corridor, or their migration success (Russel and Martell, 1983, A. M. Martell, Per. Comm.). A pipeline elevated sufficiently to allow caribou to pass underneath (current regulations require 1.5 m) is generally not a barrier to most caribou, dependent on the intensity of insect harassment, the sex/age composition of the group, and the group size. (Curatolo and Murphy 1983) Pipelines next to heavily traveled roads do present an impediment to movement, but studies have shown that these effects can be effectively mitigated by increasing the road-pipeline separation and/or imposing traffic restriction.

Due to the fact that cows are sensitive to disturbance during calving, and calving is such a critical period for a herd's overall welfare, the issue of "cow/calf avoidance of TAPS" has been contro-

versial. ADF&G reports, primarily those of Whitten and Cameron, present data which indicate lower proportions of cows with calf along the TAPS corridor during the calving season (other times of the year show no difference). Cameron and Whitten have interpreted these data to indicate that cows and calves avoid the pipeline corridor (Cameron and Whitten, 1976, 1977, 1978, 1980).

Carruthers et al., 1984, found similar low numbers of cows and calves along the TAPS corridor. However, the TAPS line runs along the Sagavanirktok River and Carruthers found that throughout the Central Arctic Herd's summer range cows with calves avoided all riparian (river associated) habitats. Their conclusion was that cows with calves preferred open tundra areas to avoid predators and that their low numbers near the TAPS line was a natural avoidance of riparian habitat, not the TAPS line.

Debate has occurred concerning the assertion by some individuals that caribou have been displaced by the Prudhoe Bay oilfield. It is uncertain whether these effects have indeed occurred, and therefore, if any caribou have been negatively affected. The point is, however, that the Prudhoe Bay oilfield was built during a period when the areal extent of the oilfield was very small and Arctic oilfield technology and environmental awareness was evolving. For example, in the Prudhoe Bay oilfield some flowlines are only 2-3 feet above the tundra and present an obstacle to caribou movement.

In the years following the construction of the Prudhoe Bay oilfield the oil and gas industry and environmental resource agencies have learned much about wildlife/oil field interactions. This information has been utilized to design enhanced mitigation measures in the construction of the Kuparuk River oilfield, about 25 miles west of the Prudhoe Bay field. When wildlife/oilfield relationships and dynamics are discussed, data from the Kuparuk field should be cited, not data from the Prudhoe field - they are not built like that any more.

III. BIRD STUDIES

Two main issues concerning potential impacts of oil development on birds on the North Slope are:

1. Alteration of critical habitat, such as barrier islands for nesting, salt marshes for feeding, and lagoons and ponds for molting and staging.

2. Possible disturbance due to low flying aircraft, road traffic, noise, and other activities.

Four years of studies in ANWR by the U.S. Fish and Wildlife Service and numerous studies of the use of critical habitat in and around oil fields to the west have greatly expanded the body of knowledge about North Slope birds. USF&WS is currently conducting studies on the ecology of lesser Snow Geese, baseline studies on Tundra Swans,

migratory bird use (primarily Oldsquaw) of coastal lagoons, and terrestrial bird populations and habitat use in ANWR (USF&WS 1984 Update Report). Future planning of facilities can build on this data base to minimize impacts to critical habitats. Regulatory agencies are keenly aware of sensitive wildlife areas and routinely advocate and promulgate stipulations with permits that protect critical habitats.

Disturbance studies on birds in the Prudhoe Bay area have been done on the Lisburne, Endicott, and Mukluk Island projects. These projects have attempted to quantify the degree of disturbance of oil field activity on birds and examine the consequence of any disturbances. Hampton and Joyce, 1984, found that "Snow Geese and Brant displayed accommodation to the oil field activities (Lisburne Development Area) and were not significantly disturbed". Murphy, (pers. comm.) concluded that "it does not appear that the activity budgets of brant and Snow Geese were significantly affected by development activity. The budgets of Canada and Greater White-Fronted Geese, on the other hand, did appear to be altered by oilfield activity; but these effects apparently were not detrimental". During spring/summer of 1983, Thetis Island (Mukluk Island Project) was used as a staging area for over 1 million cubic meters of gravel used to build an artificial island. Facilities included a support camp for several hundred workers and the construction of a landing pad supporting regular helicopter service to mainland. A

study conducted by LGL that season concluded that the industrial activity did not have a measurable effect on the number and distribution of nests and the nesting success of common Eiders. The study also determined that the activities had no measurable effect on the number and distribution of moulting Oldsquaw Ducks (Johnson, S.R., 1984).

Although there are large differences from species to species on how birds will accommodate disturbance by oilfield activities, generally most species can and do successfully adapt. Since most of these species winter in the continental US and Mexico, they come into contact with development activities regularly throughout their lifecycle.

Bergerud, A.T., R. D. Jakimchuk, and D.R. Carruthers. 1984. The Buffallo of the North: Caribou (Rangifer Tarandus) and Human Developments, Arctic, V 37, No. 1, pp. 7-22.

Cameron, R.D. and K.R. Whitten. 1976. First interim report of the effects of the Trans-Alaska Pipeline on caribou movements. Spec. Rept. No. 2, Joint State/Fed. Fish and Wildl. Advis. Team, Anchorage. i+38 pp. + appendix.

_____ and _____. 1977. Second interim report of the effects of the Trans-Alaska PIpeline on caribou movements. Spec. Rept. No. 8, Joint State/Fed. Fish and Wildl. Advis. Team, Anchorage. i+10 pp. + appendix.

_____ and _____. 1978. First interim report of the effects of the Trans-Alaska Pipeline on caribou movements. Spec. Rept. No. 22, Joint State/Fed. Fish and Wildl. Advis. Team, Anchorage. ii+29 pp.

_____ and _____. 1980. Influence of the Trans-Alaska Pipeline corridor on the local distribution of caribou. Pages 475-484 In E. Reimers, E. Gaare, and S. Skjenneberg, eds. Proceedings of the Second International Reindeer/Caribou Symposium, Røros, Norway. Direktoratet for vilt og ferskvannsfisk, Trondheim. 799 pp.

Carruthers, D.R., R.D. Jakimchuk, and S.H. Ferguson. 1984. The relationship between Central Arctic Caribou Herd and the Trans-Alaska Pipeline, report to Alyeska Pipeline Serv. Co. by Renewable Resources Consulting Services Ltd., Sidney B.C. xvii+207 pp.

Childs, K.N. 1973. The Reactions of Barren Ground Caribou (Rangifer Tarandus Granti) to simulated pipeline and pipeline crossing structures at Prudhoe Bay, Alaska. Complet. Rept. to Alyeska Pipeline Serv. Co. by AK Coop. Wildlife Res. Unit, Univ. of AK, Fairbanks, 550 pp.

Curatolo, J.A. and S.M. Murphy. 1983. Caribou responses to the pipeline/road complex in the Kuparuk Oilfield, AK. 1982. Final Report to ARCO Alaska, Inc., Anchorage, by Alaska Biological Research, Fairbanks. 81 pp.

Davis, J.L., P. Valkenberg and R.D. Boertje. 1983. Disturbance and the Delta Caribou Herd In A.M. Martell and D.E. Russel, eds., Caribou and Human Activity, Proceedings of First North American Caribou Workshop, Whitehorse, Yukon, 1983.

Gilliam, J.K. and P.C. Lent (eds.). 1982. Proceedings of the National Petroleum Reserve in Alaska (NPR-A) Caribou/Waterbird impact analysis workshop. May 11-13, 1982, Anchorage, AK. (Final Report, Nov. 1983) USDOI, BLM, AK State Office, Anchorage, AK.

Hampton, P.D. and M.R. Joyce. 1984. Lisburne Development Environmental Studies: 1984, Birds, Report to ARCO Alaska, Inc., by Entrix, Inc., Anchorage, AK.

Johnson, S.R., 1984. Habitat use and behavior of nesting Common Eiders and moulting Old Squaws at Thetis Island, Alaska, during a period of industrial activity, Report to Sohio Alaska Petroleum Company by LGL Alaska Research Assoc., Anchorage, AK.

Martell, A.M., Canadian Wildlife Service, Personal Communication, March 1986.

Murphy, S.M. Alaska Biological Research, Fairbanks, Personal Communication, March 1986.

Russell, D.E., and A.M. Martell, 1983. Influence of the Dempster Highway on the activity of the Porcupine Caribou Herd. In A.M. Martell and D.E. Russell, eds., Caribou and Human Activity, Proc. of first North American Caribou Workshop, Whitehorse, Yukon, 1983.

Smith, W.T. and R.D. Cameron. 1983. Responses of caribou to industrial development on Alaska's Arctic Slope. Acta. Zool. Fennica 175:43-45.

U.S. Fish and Wildlife. 1985. 1984 Update report baseline study of the fish, wildlife and their habitats, Vols. I and II, Arctic National Wildlife Refuge Coastal Plan Resource Assessment, USF&W, Region 7, Anchorage, AK.

Valkenburg, P. and J.L. Davis. 1983. The reaction of caribou to aircraft: A comparison of two herds. In A.M. Martell and D.E. Russell, eds., Caribou and Human Activity, Proceedings of the First North American Caribou Workshop, Whitehorse, Yukon, 1983.

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PAPER 4

HISTORY AND CULTURE OF THE ARCTIC NATIONAL WILDLIFE REFUGE'S NATIVE INHABITANTS

Eskimo (Inupiat) and Indian (Gwich'in Athabaskan) have used the lands and adjoining Beaufort Sea waters of today's Arctic National Wildlife Refuge (ANWR) for millenia. Both peoples lived as nomadic hunting and fishing bands until the twentieth century when first commercial whaling and then fur trading and reindeer herding added important new dimensions to their economies and began a stimulus among them for occupying permanently settled places. Over the past two generations this movement toward permanent settlement has resulted in the creation of the village of Kaktovik on Barter Island, which lies wholly within ANWR's boundaries. The following discussion briefly traces the evolution of this process leading to today's ANWR Native peoples.

Prehistory and Archaeology

Known archaeological sites in ANWR number in the hundreds, but there are few remains of settlements and camps. Many sites have not been dated nor can they be fully interpreted from the paucity of surface scattered artifacts that are characteristic of ephemeral occupations or activities.

The earliest peoples of this northern province may have been those of the American Paleo-Arctic tradition. The cultural manifestation is undoubtedly richer than the few stone tools that are left from this period. Small and large blade cores, often wedge or boat-shaped, are reminiscent of a generalized sophistication in blade technology. Large bifacially-chipped pieces probably served as cutting implements or projectile points. These tools are not unlike those of the remainder of Alaska and those of northeastern Asia. Representing life some 10,000 years ago or earlier, this period was one of continental glaciation. Man existed as a hunter and gatherer in the grasslands of this colder, dryer, environment replete with large herbivores. Mammoth, horse, and bison comprised the majority of the game animals. Caribou in these times were relegated to small tundra communities. The large herds of caribou today are attributable to the demise of cold steppes and the rise of vast tundra.

Recent History

The Exploratory Period of the region began with the Franklin Expedition of 1826. The party descended the MacKenzie River and proceeded westward. They noted habitation and grave localities along the way and also remarked that many of the people met had trade goods that were not British in origin, but from Russian

ironworks. It would seem that many selected cultural items, such as metal and tobacco, preceeded direct contact, likely through established native trade systems.

Trade evolved with the later expeditions. The Simpson Expedition of 1837 followed the same course as did Franklin, but reached Point Barrow. Simpson traded with the people along the way and made note of many Russian goods.

A second northern expedition of John Franklin ended tragically. Collinson, who captained the H.M.S. Enterprise, wintered in Camden Bay in 1853-54. He gathered place-name information about many of the major geomorphic features of the north coast.

Capt. Stockton of the U.S.S. Thetis explored this coast in 1889 and reported that Barter Island was exactly that: a place for inland Indians and coastal Inupiat to trade. Harrison confirmed this name during his explorations of 1905-07. Stockton, however, did not note the presence of permanent settlements, although earlier explorers had found some. The effects of trade associated with commercial whaling farther west may have enticed the previous inhabitants away. Stockton also noted that the marine area just north of ANWR possessed nearly year-round ice. Commercial whaling did not produce much direct acculturation on the area.

The Whaling Period in general brought sweeping changes to North Alaska. It ushered in a quickening of trade in metal tools,

firearms, and European ways. Unfortunate side effects included alcohol and disease, such as influenza and tuberculosis, for which the indigenous coastal population had little immunity. Population restructuring took place in the 1880s and 1890s; the void left by the demise of most of the coastal people was filled by their mountain counterparts. Today, much of the present population may have come from the Brooks Range.

Periods and Themes in 20th Century ANWR Native History and Culture

The twentieth century historical development and cultural evolution of the Native societies which had traditionally occupied and used the Arctic National Wildlife Refuge and adjacent lands falls into four broadly defined periods. The era of fur trading extended from the abrupt end of commercial whaling in 1908 until the mid-1930's. It was accompanied by the effort to establish domestic reindeer herding. In the short decade and one half (1936 to 1950) that followed, Inupiat migrated in significant numbers to both Barrow and various Canadian MacKenzie Delta settlements where schools and other social services were available. The Athabaskan Indian populations south of the Brooks Range continued to occupy their traditional hunting and fishing grounds although they were locked in the grinding poverty which the termination of commercial fur trapping produced. The period of permanent resettlement within ANWR was stimulated by opportunities associated with the construction of DEW Line stations beginning in 1947 and continuing

to the year 1971 when, with the passage of the Alaska Native Claims Settlement Act, the contemporary period was ushered in.

Three over-riding themes serve to characterize both the fundamental continuities and profoundly disruptive changes which have shaped Native societies as they exist in the region today. First, the economic bases of life were shifted from exclusive reliance on wild game and fish resources by small, widely dispersed bands of hunters to a growing dependence on articles that could be bought with cash earned from wages or wild resources, such as furs, that bore a commercial value. Technological change went hand in hand with this shift as at first rifles and whale-catching weapons and later mechanized land and water transport replaced bow and arrow, spear, skin boat, canoe, and dog team. These fundamental shifts in the economic bases of Native economies occurred while many of the traditional cultural and social values surrounding older lifeways were either preserved or modified to meet the new circumstances.

The second main theme expresses these continuities and changes in Native social and cultural institutions and values. It has been obvious to all observers that family and kinship ties--the social, political, and economic cement that kept the traditional hunting bands together and regulated their relations one with the other--continue to play a central role in contemporary Native life at all levels. And yet the circumstances in which families and kinship groups now exist (as residents of permanent settlements from which many key members have migrated) bear little resemblance

to the pre-1950 situation. In the past families and kin groups were dispersed as far-flung hunting bands. Today it is the individual families and kin groups themselves which are dispersed. This new situation underlies the often expressed Native goal of restoring traditional social and cultural values in order to address problems which the breakdown of tight family and kin structures has produced.

The third over-riding theme--and certainly the one that has captured the greatest attention and imagination by all interested parties--is the consequence of the shift from the traditional Native usufruct (value based on use) conception of land to that of freehold ownership. Since the conveyance of lands under the Alaska Native Claims Settlement Act in 1971 definitively carried with it the obligation for Natives to organize all manner of political and economic institutions to manage and use what were for them extensively reduced domains of land ownership, a political consciousness was fostered that had no prior analog. So much has this been the case that the history of Native societies in the ANWR and adjacent regions (as elsewhere in Alaska and Canada) has been written largely over the past generation in terms of growth of regional and local governments, profit and nonprofit Native corporations, land use planning and regulation, relations both amiable and contentious with state and federal governments, and reactions to private capital development.

As this fascinating and internally complex story continues to unfold, the keen desire to maintain preferential Native rights in all the lands used for hunting and fishing rests at the core of the new political consciousness. For ANWR, this theme is both symbolically and practically expressed in the concern over the health and status of the Porcupine caribou herd and the Bowhead whales of the Beaufort Sea. Despite the fact that daily concerns deal with the same mundane topics faced by all the rest of us--employment, schools, housing, etc.--these two powerful political and cultural symbols are never far in the background.

The following brief treatments of twentieth century Native history and culture are intended to survey matters of particular importance in each period as measured against the three central themes suggested above.

When commercial whaling ended in 1908, Northeast Alaska's Native peoples who resided on or near the coast, along with their kinsmen in nearby Canada, were forced back to heavy reliance on their old patterns of nomadic hunting. While commercial whaling had never wholly displaced the old patterns, the benefits which it provided in the form of Western goods and occasional cash-earning opportunities were responsible for drawing to the coastal areas many groups whose earlier lifeways and places of seasonal occupation dispersed them widely throughout a huge arctic domain.

But it was no longer sufficient or even acceptable to the Native to return to his ancient uses of the land and sea. Native peoples, by their own desires as well as those of the Europeans who had remained to continue trading, proselytizing, and intermarrying among them, sought ways in which all the elements of new technologies and cultural innovations might be preserved.

During the 30 years stretching from World War I through the conclusion of World War II, two things happened that worked towards that preservation. The first was the growth of the fur trade in which Native hunters and trappers might agreeably blend their traditional food harvesting activities with opportunities to trade a portion of their take for the desired Western goods. The second was the introduction of domesticated reindeer which, it was hoped by the missionary and government officials who vigorously promoted the scheme, would create a stable, healthy and more modern life for those whose cultures had been so rudely jolted in the whaling era.

And so began in the decade of the world elsewhere at war what might reasonably be called modern times for the Inupiat and Indian populations who had for centuries lived in or near the Arctic National Wildlife Refuge. For many the fur trade in its halcyon years of the 1920s brought the desired results: furbearers were in adequate supply, prices were good if not lavish, trading posts were established whose managers extended credit in goods to the trappers. All this constituted a new system that satisfactorily married the basically peripatetic lifeway to a mechanism for

increasing its rewards. But the system was short-lived, and it broke down altogether when the market for furs collapsed during the Great Depression.

Reindeer herding never enjoyed the level of success attained by the fur trade. Actually getting breeding stock to this remote corner of the Arctic proved to be extraordinarily difficult. And, once herds were established there, profitably maintaining them seemed literally beyond the capacity of the small, widely dispersed Native groups who were the intended beneficiaries of the reindeer. By the 1940s it was clear to all that domesticated reindeer were not providing an answer to the growing impoverishment of Native societies which, with the demise of the fur trade, had yet again to face the stark reality of feeding, clothing, and housing themselves primarily from wild fish and game resources.

Timid actions were taken by both the American and Canadian governments as well as missionary organizations to meet this crisis. Schools and rudimentary health services were established at Barrow in Alaska and in some of the MacKenzie River Delta Inuit communities. To these centers all but a remnant few of the groups struggling to live out on the land migrated and temporarily settled. For the first time in many generations, human use and occupation of ANWR was virtually abandoned in the late 1930s and early 40s.

However, the abandonment was never complete. The period during which it occurred saw frequent seasonal use by its former occupants then residing in settlements far to the east and west. Rather, the period immediately preceeding and following World War II should be regarded as a brief hiatus in the extensive Native use and occupancy of ANWR. It was succeeded by one in which a new and compelling reason arose that caused many of the emigrants to Barrow and Canada to return. That reason was the construction of the DEW Line network of stations along the Beaufort Sea coast, an activity which held out the promise of working for cash. Barter Island, a site of considerable importance in both whaling and fur trading eras, became the chief location for this segment of the DEW Line, and to it a number of families who had moved to Barrow or Canada returned. Along with three families who had never left, the returnees established the nucleus of today's Kaktovik.

From roughly 1950 on, a new pattern of settled life for the Inupiat was laid out. Where a trading post had stood a town now grew. Jobs there, if not plentiful, were nonetheless available especially during the construction phases of the DEW Line sites. Housing, a school, a store, and better access to social services became available, too. But from the Inupiat point of view, of great importance was the fact that they, despite settling into town life, could still effectively pursue their traditional hunting and fishing activities. This represented no mere variation in the cycle of up-and-down opportunities of the whaling, trapping, and herding periods. This was something new. Permanent settlement

meant far greater access to the money required and means necessary for taking game and fish. As these wild resources continued to grace most family tables for most meals, the hunting lifeway had clearly taken on a new dimension.

The generation of the 1950s and 1960s witnessed the evolution of this new lifeway which blended permanent residential settlement, cash incomes, and enhanced hunting and fishing technologies with what many Native people regarded as their old, preferred way of life. In particular, it was the experience of all these things that became an important crucible in which the attitudes and outlook of today's leaders in the Native communities were forged. While they might hold wage-paying jobs, they still spoke mainly in their Inupiaq tongue; while a whole array of manufactured goods were to be had, their use was turned to traditional pursuits such as hunting and, by the 1960s, to the rather costly enterprise of whaling; while their children might be drawn into a school that stressed Western education and a separation from the language, values, and pursuits of the traditional hunting culture and economy, many felt that an adequate accommodation had been reached between the old and the new in their new lifeway.

The most recent generation of ANWR residents has seen the accommodation represented by this new lifeway changed in many and very substantial ways. It is represented by the rise of a Native political consciousness that speaks to the desire for protecting the new lifeway so painfully, and with so many setbacks, crafted

over the course of nearly eighty years. The impetus which began and continues to feed this political consciousness came not from one, but many sources.

The first was the need for defining both the role and rights of Natives in the new State of Alaska after 1957. The State had selected lands which many considered a part of their rightful traditional heritage. Beyond that, the State exercised regulatory authority over what Natives considered to be their wild resources. And, notably, the State's concurrence was required in the institutionalization of local government and its services. The second impetus to political awakening followed from the discovery of oil at Prudhoe Bay with all that discovery forebode for massive industrial development on the State lands lying not all that far from ANWR. The third was the challenge and response to competing claims for the land itself in which the old usufruct notion was jettisoned in favor of dividing the land on the basis of exclusive property ownership. This matter, of course, was definitely formalized with the passage of ANCSA in 1971. And finally, closest to home, the new political consciousness was directed toward the actions of the Federal government in its management of and plans for ANWR (created in 1960) itself. All these factors contributed to the perceived need to craft a political program that would protect the cherished, if relatively recent, lifeway which the Native communities had evolved.

It is surely too much to assert that the last twenty years of Native history and cultural development in ANWR and adjacent areas is wholly dominated by the search for answers to the pressing political issues which developed during them. Many other ingredients have gone into making up the brew of social, economic, and cultural change. Yet politics, political awareness, and the effort to build suitable political institutions and alliances to meet both the threats and opportunities prompted by the massive changes of recent years are clearly central to an understanding of contemporary Native culture and history in ANWR.

The Contemporary Subsistence Lifeway of ANWR's Native Peoples.

Of all the features which draw together the themes and threads discussed above, that which is called in the modern political vocabulary "subsistence" is central. Most would agree on careful inspection of the phenomenon that the present use of the term refers to two things: One, the capture of wild animal and fish resources for domestic (i.e., non-commercial) use as food and clothing regardless of the technologies employed in the taking (as for example, rifles, snow machines, motorized boats instead of bow and arrow, spear, skin boat, and dog team). And two, the distribution and exchange of such resources with other members of the Native community--usually family or kin no matter where they reside, and friends and neighbors--serves above all else to reinforce the social ties that bind the community together. As one can see, something more than strict dietary dependence on wild

resources is involved here. Many proponents of this lifeway would argue that the second, or socio-cultural, features of the subsistence lifeway have greater importance than the first.

However, the extent of the problem in developing an adequate description of subsistence goes far beyond the barebones elements suggested here. First, the subsistence species of first choice is caribou, a migratory beast whose range sweeps across numerous land jurisdictions, especially in the case of the Porcupine caribou herd which supplies the needs and requirements of ANWR Native residents. Consequently, subsistence in its present configuration seems to those residents a practice which also requires careful political management as well as biological and habitat protection. Indeed, their political energies are focused on ensuring just that: preferential access to caribou no matter who owns the lands they roam across. Here perhaps is the clearest demonstration of how usufruct land use concepts conflict squarely with present day circumstances of divided land ownership in which Native holdings represent but a fraction of the animal's total range. The physical and archeological evidence for caribou hunting in the pre-contact period has been discussed in the first part of this paper. Historical and documented land use in the twentieth century equally reveals a huge hunting range in the coastal area, river valley systems, and mountain foothills north and south of the Brooks Range that remain in use to the present day. This is discussed in great detail in many subsistence land use studies written over the last ten years or more. Among the very best of them is the volume

produced by Michael J. Jacobson and Cynthia Wentworth (1982). While the actual status of the Porcupine caribou herd is traced in technical detail in other portions of this report, the important conclusion to be drawn from this historical assessment is that the subsistence lifeway as it has evolved into the 1980s continues to depend upon not only the actual take in any given season, but also upon the political and cultural notions that access to this prime game resource must remain unfettered for its Native users.

The other great species of choice that undergirds and reinforces the contemporary subsistence lifeway is the Bowhead whale. The Inupiat of Northeast Alaska had never lost complete touch with the astonishingly complex and costly whaling enterprise; but it is true that vastly increased enthusiasm for pursuing it has occurred since the early 1960s when whaling captains once again found the means and willing crews to capture this great whale. Bowhead whaling in this region is a late summer/early fall activity in which the whole community is galvanized to action if a whale is taken so that it can be butchered and equitably distributed. It is hardly possible to overemphasize the importance attached to whaling by the Inupiat. Whaling captains are the most prestigious leaders of the community. Community festivals and celebrations are focused on the distribution and consumption of the catch. Those elements of Inupiat cultural values most prized are symbolically expressed in all that surrounds whaling. Here again the point is less one of dietary dependence on muktuk and whale meat as it is the contribution which whaling makes to the sense of community pride

and achievement, social and cultural solidarity, and reasons to engage in a political program to safeguard Native rights. Here is proof positive that subsistence in its modern expanded meaning is to its Native practitioners as much an act of serving cultural desires as it is the act of filling empty stomachs.

The final element of the subsistence equation is that it is limited to no one or two wild species, but includes all wild resources sought and taken according to season and availability. Whether it is the fish of the rivers and lagoons, the seals and polar bear of sea and ice cover, migratory waterfowl or land birds, bear, moose, smaller furbearers, or the prized sheep of the upper river valleys and ridges, each species in turn is regularly hunted or fished. Many favored places for accomplishing the seasonal rounds associated with these subsistence pursuits have been identified by researchers (again, a fine example is Jacobson and Wentworth, 1982), and their locations carefully mapped in traditional land use inventories. Documented hunting and fishing sites have been identified in virtually every corner of the refuge. As with caribou and Bowhead, the protagonists of the modern subsistence lifeway express their concerns for maintaining constant access to these various species regardless on whose land they may be found to occur or during what season.

The irony that arises from this discussion of historical land use and the contemporary practice of subsistence is that far from inhibiting "traditional" hunting and fishing activities, Native

settlement in modern villages has actually improved capabilities in those pursuits. The cash required to purchase the equipment necessary to locate and take fish and game is presently more available than at any other time in this century.

Social and Political Developments

Social change has not proceeded so evenly. The family and kin group were the bedrock of the traditional system. The kin group worked as a unit in economic enterprises, established communal relations with other groups based upon principles of kinship recruitment, and shared social values (or engaged in conflicts) with similar groups who spoke a common language. But with periods of migration and temporary resettlement after the collapse of fur trading and reindeer herding, many new factors appeared to disrupt the old kin unities. People were forced to forge new alliances within larger, mixed (non-kin) communities. Western schooling in the alien English language became a wedge driven between adults and their school age children. Pitiably small as they often were, wages in cash could be used to promote either individual upward economic movement or could be squandered on alcohol or high priced food from stores. Long distance travel, especially with the introduction of regular air service, revealed even more the distance between what was expected of an individual living in the rural countryside as contrasted to town life. Both paternalism expressed by one's white employers or teachers (not to speak of outright racialism on many occasions) and the obvious difference in

the values these outsiders held could and did cause psychological distress that too often lamentably ended in the destruction of the concept of self-worth. All these matters were ably surveyed by the anthropologist Norman Chance (1966 and 1984) for the Inupiat residing on the arctic coastal plain in the 1960s. Many of the problems he analyzed then persist in the present day.

Yet it may be superficial to write of ANWR's contemporary inhabitants as if they were no more than hapless victims of devastating social disruptions over which they held no control. To cite the most salient example, the adaptation of traditional hunting units to serve modern purposes has achieved success. Nowhere is this more apparent than in the reinvigoration of the whaling crew with its captain, the umialik. These persons have become leaders in their communities based upon achievement in traditional social terms (amassing the wealth necessary to recruit a crew, providing the equipment and knowledge to conduct the hunt, and distributing its provender to the wider community). Whether whales are captured or not in any given season, the institution retains its vigor and appears to be ever growing in its popularity.

But perhaps most importantly, a new political consciousness and the leaders to foster, guide, and sustain it are revealed in a sequence of developments which led to a set of formal institutions created virtually from scratch in the 1970's.

Kaktovik

The City of Kaktovik serves to illustrate how these institutions have developed. It is the only settled Native community wholly within ANWR's boundaries and possesses a corporate history dating back to 1923 when a trading post was established on Barter Island. Tom Gordon and his wife Agiak, Barrow residents, along with Andrew Akootchook, head of a local hunting family, opened a fur trading post in that year. It served the needs of hunter/trappers who moved between sites east and west along the coast as well as to some of the barrier islands. While two other families encamped near the trading post, most traveled to the post only for trade and holiday celebrations. Up through the 1930s the place retained this character until, at the end of the decade, the migration of many to Canada and to Barrow occurred. Three reindeer herds were also kept in neighboring areas until that enterprise also collapsed contemporaneously with that of the fur trade.

At the end of World War II the United States government focused its attention on Barter Island. A Coast and Geodetic Survey team appeared in 1945 and hired a few of the remaining residents to work for its coastal mapping survey. And then, in 1947, the U.S. Air Force constructed an airfield and soon after, the DEW Line station. As these establishments grew in size, more Inupiat arrived to take jobs with the construction contractors. Most stayed on to build houses and become permanent residents. The original site occupied an area on the sand spit where the airfield was built, and so the

residents were forced to relocate toward its west end. In 1951 the Air Force laid claim to more land which caused yet another relocation. AS the population continued to grow with the arrival of still more job-seeking Native people, the Air Force demanded yet a third move, in 1964, to a location where the present town now stands. These upheavals forced by relocation may date the beginnings of a local Inupiat political consciousness in dealings with larger governments.

The town grew from a nucleus of only three families in the early 1940s to 46 souls by 1950 and nearly 145 by the spring of 1953. Clearly, the old informal ways of conducting business between a handful of families would not be suitable for managing this mushrooming settlement. The instruments available for governing such new English-speaking communities at that time were based upon various types of traditional councils which had been promoted among Indian tribes of the Lower 48. Kaktovik likely had a Council along those lines. But for a long time the leaders of the founding families still operated as the functional town officials (Beaufort Sea Region Socio-Cultural Systems: n.d.: 63) of a traditional council.

In the early 1970s Kaktovik was incorporated as a second class city under Alaska state laws. By that time, however, the tidal wave of political and economic change that ANCSA set in motion had swept Kaktovik along with it. The Kaktovik Village Corporation was created and received over 92,000 acres of land as its share, almost

all within the boundaries of ANWR. At the same time, Kaktovik residents became shareholders in the regionwide Arctic Slope Regional Corporation. Money from both the Federal and State governments was conveyed along with the lands. Both corporations were expressly designed to seek out profit-making enterprises. The transformation from the traditional Inupiat concept of usufruct lands to the problems of managing those same lands as owned real estate was thus forced in a single stroke. The tension between the two concepts--despite the irrevocable change--remains to this day.

The crowning development of new political institutions which require an increased political consciousness followed from the establishment of the North Slope Borough government in 1972. Kaktovik along with seven other North Slope villages was by this act directly tied to Barrow, the capital, from which the largest range of services was supplied: direction of the schools and health services, police and firefighting, public works and utilities. All these services opened the way for a vastly increased number of wage-paying jobs. And, when property tax funds levied against petroleum companies operating at Prudhoe became available, the Borough instituted a massive Capital Improvements Program which further enhanced the local Kaktovik economy through various construction projects that provided employment on modern housing and public facilities.

Native corporations on the one hand and local and regional governments on the other have become the twin poles of contemporary political life and action. Other organizations, such as the ad hoc whaling and caribou commissions, traditional councils, boards and committees, form complementary organizations through which the Native voice is also expressed. But the basic sources of contemporary incomes and the places where decisions must be made rest largely within these new, large, formal institutions.

While this pattern differs little in outward appearance from that to be found in other small communities in Native Alaska, it does possess several features that owe their origins to the unique historical and cultural development of Kaktovik. Th first of these is that for most discussions of public policy, subsistence uses of all the lands and resources of the region (not just the corporate lands) are the primary goal.

Second, the collective biography of the town still reveals the important role played by the handful of families who originally founded the settlement. Village leaders tend to be from among the more assertive members of these original families. The families themselves have taken pains to recruit to their numbers the various returnees from Canada and Barrow who swelled its population beginning with the DEW Line construction period. While this does not necessarily mean that Kaktovik always acts as a community of one voice, on such issues as how the town feels its newly founded

political instruments should be used, the song is clearly harmonious: preservation of the hard-won subsistence lifeway which is composed of modern development and the benefits that development (employment, corporate profit-making activities, and the like) make possible in hunting and fishing pursuits.

ANWR's Neighbors

Much of what has been described above concerns the Inupiat who physically occupy and use the lands of the refuge. However, two other groupings of Native people must be mentioned as having very strong interests in the area's resources, particularly the caribou which range far beyond refuge borders, and the whales which pass near its shores in late summer. The first of these groups consists of the Canadian Inuit populations of the MacKenzie Delta. The ties are particularly strong here inasmuch as the Kaktovik Inupiat and the Canadian Inuit became strongly intertwined through intermarriage in the 1936-1950 period. Nearly every Kaktovik resident has close family relations living today east of the international border. The second group consists of the Athabaskan Indians who live along or near the Yukon Flats and Porcupine River. These Kutchin (Gwcih'in) settlements such as Arctic Village, Fort Yukon, and Old Crow (Canada), to name but a few, are also international in their composition. Their history since the 19th century up until the late 1930's was deeply enmeshed in the fur trade of the Hudson's Bay Company. They, too, have demonstrated a high preference for the taking of caribou and are today among the

more outspoken communities on issues which revolve about the proposed international management agreements covering the Porcupine herd.

SOURCES

Alaska Consultants (1983). Background for Planning - City of Kaktovik. Report prepared for the North Slope Borough. The most recent and thorough detailed description of population, land use, facilities.

Anderson, D. (1970). "Microblade traditions in northwestern Alaska," Arctic Anthropology. 7(2):2-16.

Bandi, H. (1969). Eskimo Prehistory. University of Alaska Press, Fairbanks.

Campbell, J. (1962). "Cultural succession at Anaktuvik Pass, Arctic Alaska." In Prehistoric Cultural Relations Between the Arctic and Temperate Zones of North America. ed. by J. Campbell. Arctic Institute of North America Technical Paper (11).

Chance, N.A. (1966). The Eskimo of North Alaska. (Holt, Rinehart and Winston, New York). A study of social change by an anthropologist who based his field study on Kaktovik.

Chance, N.A. (1984). "Alaska Eskimo Modernization," in Handbook of North American Indians, Volume V: Arctic (Smithsonian Institution, Washington), pp.646-656).

Dixon, E.J. (1975). "The Gallagher Flint Station, an Early Man site on the North Slope, Arctic Alaska, and its role in relations to the Bering Land Bridge," Arctic Anthropology. 12(1):68-75.

Gal, R. and Hall, E. (1982). "A provisional view of North Alaskan cultural history." Anthropological Papers of the University of Alaska. 20(1-2):3-5.

Giddings, J.L. (1957). "The tenuous Beaufort Sea archeology." In Science in Alaska, 1957; Proceedings of the Alaskan Science Conferences, 5th Conference, Fairbanks.

Giddings, J.L. (1971). Ancient Men of the Arctic. Alfred A. Knopf, New York.

Hall, E. (1983). Preliminary archaeological and historic resource reconnaissance of the Coastal Plain area of the Arctic National Wildlife Refuge, Alaska. U.S. Fish and Wildlife Service.

Hutchinson, I.W. (1937). North to the rime-ringed sun: an Alaskan Journey. (Hillman-Curl, Inc., New York). Account by a naturalist who resided at Barter Island in 1933.

Kaveolook, H. (1977). Kaktovik on Barter Island: A Brief History of Kaktovik and Its Schools. North Slope Borough School District. Prepared for the Education Hearings during the First Inuit Circumpolar Conference, held in Barrow, June 1977.

Klerekoper, F. (1937). Diary of Fred Klerekoper: dogsled trip from Barrow to Demarcation Point, April 1937. North Slope Borough Commission on History and Culture (Barrow).

Leffingwell, E.K. (1919). The Canning River Region, northern Alaska. USGS Professional Paper #109 (Washington, D.C.). The first systematic geological survey of an area near and in ANWR. Contains important section on explorers' activities.

Libbey, D. (1981). "Cultural Resource Site Identification," in Cultural Resources in the Mid-Beaufort Sea Region. A Report for the North Slope Borough's Coastal Zone Management Plan (Barrow). Contains important site locations for ANWR area.

Lobdell, J. (1985). The Putuligayuk River Delta Overlook Site: Fragile Traces of Ancient Man at Prudhoe Bay, Beaufort Sea, Alaska (Second Edition). ARCO Alaska, Inc., Anchorage.

MacNeish, R. (1956). The Engigstciak site on the Yukon Arctic Coast. Anthropological Papers of the University of Alaska. 4(2):91-104.

Neilson, J.M. (1977a). Beaufort Sea Study. Historic and Subsistence Site Inventory. North Slope Borough (Barrow).

Neilson, J.M. (1977b). Kaktovik Alaska: an overview of relocations. North Slope Borough (Barrow).

Nelson, R.K. (1973). Hunters of the Northern Forest (University of Chicago Press, Chicago). Includes synopsis of Kutchin (Gwich'in) Athbaskan history.

North Slope Borough Commission on History and Culture (1980). Qiniqtuaqaksrat Utuqqanaat Inuuiaqninisiqun. The Traditional Land Use Inventory for the Mid-Beaufort Sea. (Barrow). An excellent volume which contain in addition to site locations a large number of first hand accounts by Kaktovik residents.

Oswalt, W. (1979). Eskimos and Explorers. Chandler & Sharp Publishers, Inc., Novato, California.

Pedersen, S. (1979). Regional Subsistence Land Use, North Slope Borough, Alaska. Cooperative Park Studies Unit, University of Alaska, and Environmental Protection, North Slope Borough. Occasional Paper No. 21 (Barrow).

Solecki, R., Salwen, B. and Jacobsen, J. (1973). Archaeological reconnaissance north of the Brooks Range in northeastern Alaska. Occasional Paper (11), Department of Anthropology, University of Calgary.

Stefansson, V. (1913). My Life with the Eskimo. (Macmillan Co., New York). Account by the famed arctic explorer/ethnographer which includes accounts of time spent with groups along the arctic coastal plain and the Inuit of the MacKenzie region.

Wentworth, C. and Jacobson, M.J. (1982). Kaktovik Subsistence: Land Use Values through Time in the Arctic National Wildlife Refuge Area. U. S. Fish and Wildlife Service, Northern Alaska Ecological Services (Fairbanks). The best single account of the subsistence lifeway, areas used, and resources taken by ANWR's resident Inupiat population.

Wentworth, C. (1979). "Kaktovik Synopsis," in Native Livelihood and Dependence: A Study of Land Use Values through Time. National Petroleum Reserve in Alaska. 105c Land Use Study. Field Study 1. (U. S. Department of Interior, Anchorage).

Worl, R.F. and McMillan, P.O. (1982). Sociocultural Assessment of Proposed Arctic National Wildlife Refuge Oil and Gas Exploration. Arctic Environmental Information and Data Center (Anchorage). Available on microfiche.

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PAPER 5

RESOURCE EXPLORATION AND AESTHETIC VALUES IN THE ARCTIC NATIONAL WILDLIFE REFUGE

One of the central questions facing all those concerned with the future status and use of the Arctic National Wildlife Refuge (ANWR) is whether or not continued human exploitation of its resources will diminish its aesthetic and wilderness values.

Many whose personal values are linked to the establishment of wilderness areas have worked with singular dedication to insure that the physical integrity and wildlife resources of ANWR are maintained in what they regard as a virtually untouched landscape. From this perspective, human uses of any but the most severely limited kind evoke images of a pristine wilderness lost.

To the Inupiat and Indian populations who have for centuries depended on ANWR's animal and other natural resources to sustain their lives, the aesthetic values attached to the land are inextricably bound up in the exploitation of those resources: by fishing and hunting, constructing habitations, and other human activity.

For the majority of contemporary explorers and resource-users, the compelling attraction is that these scenic lands can continue to satisfy human needs of both an aesthetic and consumptive nature as they have done for their Native occupants for centuries without suffering destruction or serious alterations. Indeed, an important aspect of the aesthetic value is deeply embedded in consumptive uses that enhance the quality of human life.

To argue as some do that human use of ANWR will inevitably destroy its aesthetic and productive values is to argue against what has historically taken place there. The residents of Kaktovik, Arctic Village, and other Native settlements have, along with transient hunters and fishermen, exploited the wild resources in a fashion consonant with that of their forebearers. Evidence of these uses both ancient and modern are to be found in the cultural sites and archeological assemblages which dot the landscape and in themselves constitute major elements to be both preserved and appreciated by contemporary visitors. Earlier in this century, large areas of the coastal plain and foothills were intensively used for the breeding and pasturing of domesticated reindeer herds. Prospectors, trappers, surveyors, miners, and scientists have poked into most nooks and crannies of ANWR's mountainous reaches, river courses, foothills, and tundra plains without scarring the landscape in ways from which there was no hope of natural recovery. Recreational visitors continue to seek wilderness experiences as hikers, boaters, flyers, and photographers. Since, in recent years, all these users have conducted their activities under the watchful eyes

of federal and state managers, human use has contributed to rather than detracted from the appreciation and conservation of refuge lands and their multiple resources.

It cannot be said, therefore, that human use--even intensive use such as occurred during the reindeer-herding era--has irrevocably damaged aesthetic and recreational values which we all share. Most of us gladly accept the stewardship obligation to conserve the scenic beauties, cultural and natural resources of this magnificent arctic reserve. But stewardship implies wise use as well as conservation.

The question is, will continued human uses--such as geophysical and petroleum exploration of the coastal plain portion of the refuge--represent such a departure from historical use as to permanently scar the refuge's wild character or to limit opportunities for the pursuit of aesthetic satisfaction?

In answer to this question we should be mindful of Spinoza's reflection that beauty and aesthetics should be looked for in the works of man as well as the magnificence of wild nature. To many there is also beauty in the act of man using nature's bounty to insure not only his bare survival, but his progress as well. When this creates widely used material benefits (and who would deny that the use of petroleum provides material benefit) to one's fellow man while still preserving the character of the landscape from which they are extracted, then the human experience is enhanced rather than degraded.

This precept applies not only to places designated as refuges, but to all natural areas where development takes place. Admittedly, mistakes have been made in the past. Happily, not many have occurred in the vast and sparsely populated area that constitutes Alaska's arctic coastal plain. The effects of the early years of exploration on the National Petroleum Reserve have been followed by effective recovery of the natural habitats used by its wild animal populations. It is certain that mistakes made during early exploration will not be repeated elsewhere in the Arctic. In the developed North Slope oilfields themselves, a pronounced and heightened environmental consciousness has been present from the very beginning. This has resulted in the maintenance of productive wildlife habitats for the caribou, bird, and fish populations.

The important lessons learned from the early mistakes and, more to the point, from the later years of environmentally informed exploration and development activity in the oilfields of northern Alaska, will undoubtly be applied fully to any frontier areas, especially in conservation units. It surely can be argued that carefully planned human uses of ANWR, including exploration and development, are really a continuation of, rather than a departure from the ability of all future visitors and permanent residents to enjoy in perpetuity both the features and the vital renewable resources of this place.

Most explorers, including those who search for hydrocarbons, share a conservationist viewpoint with those who wish to see the natural environment preserved. What is not shared is the view of those who would limit the use of such areas to the very few and in so doing forever exclude the extraction of materially beneficial resources even if visible evidence of such activities will be transient.

The traditional Inupiat and Indian occupants of ANWR's lands clearly understood that careful and responsible resource exploitation was fundamentally a part of the aesthetic experience as well as the means to sustain human life. Their modern descendants share that view. Profiting from their experience, we, too, might wisely choose the same path. As an industrial society we have proved that it is within our abilities to use the land without seriously altering its natural features.

Visual impacts from oil and gas exploration are extremely limited and transitory in nature. Should any development occur, less than 1 percent of ANWR would be affected and only as a relatively temporary use of the land. The ANWR of the future would show little evidence of the activity.

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PAPER 6

COMPATIBILITY OF OIL AND GAS OPERATIONS IN AND ADJACENT TO WILDLIFE REFUGES AND CONSERVATION UNITS

The coastal plain of the North Slope of Alaska including that of ANWR has a long history of human use and access. Today multiple use of the coastal plain can be continued. The oil and gas industry, with its long history of operations in wildlife refuges and other sensitive areas, continued concern for the environment and strict compliance with regulations can safely explore and develop the resources of ANWR to the benefit of the State of Alaska and the Nation.

There have been many instances of compatibility of oil and gas operations in wildlife refuges and conservation units in Alaska and in the Lower 48 states. The National Institute of Urban Wildlife prepared a report for the American Petroleum Institute entitled "Environmental Conservation and the Petroleum Industry" which documents a variety of examples which show that environmental conservation and oil and gas operations are compatible. Chapter 2 of the report, "Compatibility of Onshore Oil and Gas Development and the Environment" in particular is pertinent to the

issue of opening the ANWR Coastal Plain to oil and gas exploration, since it discusses some of the following examples of successfully conducted oil and gas operations in conservation units.

- Kenai National Wildlife Refuge, Alaska - Major concern was the possible adverse effect on the moose population. Oil and gas were discovered in 1957 developing into the Swanson River field covering 8,000 acres (.004+%) of the 1.97 million acre Refuge. The moose population has now increased today to approximately 5,000 from 3,000 prior to operations.

- Coastal Marsh Land in Southern Louisiana - Major concern was erosion caused by the uncontrolled ebb and flow of the tides through the canals. The Louisiana Land and Exploration Company developed water control structures in conjunction with its oil and gas operations to retard the erosion, and those areas protected by the structures have become nursery grounds for fish and other marine life, homes for fur animals, wintering grounds for waterfowl and sanctuaries for a variety of birds.

- Aransas National Wildlife Refuge, Texas - Major concern was threatened or endangered wildlife species, one being the endangered whooping crane. Conoco, Inc. designed its operations so as not to impact the whooping crane population which now numbers over 80 from the previous 29 before operations.

- Pigeon River County State Forest, Michigan - Major concern was the impact of oil and gas development on the elk population. After extensive studies were conducted, operations were designed to lessen impact on the elk. Current studies since operations have been conducted show no adverse effect on the elk population.

The Arctic National Wildlife Refuge (ANWR) is undeniably a sensitive environment. The petroleum industry has demonstrated it can operate in and protect such an environment. Contrary to information put forth by opponents that the petroleum industry only takes those measures for environmental protection that are required by law, the facts show otherwise. Many petroleum companies operated under their own strict environmental standards prior to passage of the National Environmental Policy Act of 1969. We believe the development of the Prudhoe Bay oil and gas field shows we can safely operate in ANWR.

The Prudhoe Bay field and the northern portion of the Trans-Alaska Pipeline system are located on the Arctic coastal plain some 65 miles west of ANWR. Major concerns were the sensitive environment with permafrost and fragile tundra vegetation, and impacts on wildlife populations. The Prudhoe Bay oil field was developed to lessen any impact by 1) unitization of the field and consolidation of facilities, 2) cross-tundra travel by helicopter or Rolligon, 3) minimize road building and 4) drill well clusters from central gravel pads. The Central Arctic Caribou herd which utilizes the area around the oilfield and pipeline has continued to proliferate and is now at its highest numbers since the Prudhoe Bay discovery.

Other oil and gas activity also illustrates good environmental record. In recent years, prudent drilling programs have been carried out on lands immediately adjacent to the ANWR. In the Point Thomson Unit and surrounding area located near the Canning River or west boundary of the ANWR, Exxon and others have drilled some fifteen wells, beginning with Alaska State A-1 on Flaxman Island No. 1 in 1975. Union's E. de K. Leffingwell No. 1 well was drilled on a State lease just west of the western boundary of the ANWR and south of Exxon's Point Thomson Unit. Chevron U.S.A. Inc.,

recently completed the drilling of the KIC exploratory well located fourteen miles east of the Village of Kaktovik on native land within the boundary of ANWR.

The drilling activities mentioned above were conducted by separate operators, but the plans of operations reveal a consistency of concern for the environment through regulatory provisions and company expertise. The plans of operation presented to the Federal and State regulatory agencies for approval prior to drilling satisified the following concerns:

a. Archaeological and cultural resources.
b. Access roads to location.
c. Construction of drilling pad.
d. Air strip construction.
e. Type of drilling rig, equipment design and layout.
f. Down hole operations, (drilling fluids, coring and cementing, and testing).
g. Water supply.
h. Liquid waste, sewage, solid waste.
i. Contingency plans in case of spills, leaks, or other accidents.

j. Wildlife protection.

k. Air pollution.

l. Plans regarding operations if there is a hydrocarbon discovery.

m. Reclamation plans if operations were to cease.

Recent drilling activity near the boundary of ANWR has demonstrated safe operations and compatibility with environment. The petroleum industry has demonstrated that new areas of exploration and sensitive areas such as the ANWR can be explored and developed through joint operation during exploration phase and through a cooperative unit plan with one operator during the development phase; thereby creating an even lesser impact on the environment.

NS1:6.1

07/02/86

PETROLEUM POTENTIAL IN THE ARCTIC NATIONAL WILDLIFE REFUGE

BRIEFING PAPER 1

Rapidly depleting domestic oil reserves need replacing

- The U.S. is rapidly depleting its domestic reserves of oil and gas so that production from existing fields will decline from the current 8.8 million barrels per day to less than 3 million barrels per day in the year 2000. To supply U.S. demand in the year 2000 an additional 12 million barrels per day will be required either from new domestic discoveries and/or imports. The U.S. will, therefore, be very vulnerable to serious supply disruptions in the 1990's unless significant new domestic oil discoveries are made.

The ANWR Coastal Plain has the highest oil potential of unexplored onshore areas in the U.S.

- The coastal plain of ANWR has been recognized by geologists as having the greatest potential for major discoveries of oil and gas of any unexplored onshore area in the United States. All the geologic ingredients for oil and gas exist in ANWR including thick sequences of rocks that can contain oil and rocks that have generated oil as well as large geologic structures to pool oil. At the surface this potential is

indicated by oil seeps and oil stained rocks. The rock types that lie below ANWR are those in which the giant Prudhoe Bay and Kuparuk fields occur less than 100 miles west of ANWR and in which numerous discoveries have been made in the Canadian Beaufort Sea to the east.

Estimates of ANWR's oil potential are on the order of billions of barrels

- Estimates of the oil potential are in the billions of barrels rivaling or exceeding the reserves at Prudhoe Bay (9.6 billion barrels), America's largest oil field. The U.S. Geological Survey in 1980 estimated that the mean oil field would contain 890 million barrels which is classified as a super giant field. To determine the oil and gas potential of ANWR requires exploratory drilling to confirm all the other favorable geologic indicators.

NS1:1.1

07/02/86 PROTECTING THE NATURAL ENVIRONMENT

MINIMIZING IMPACTS TO ARCTIC COASTAL PLAIN VEGETATION, SOILS, WATER BODIES AND STREAMS IN THE COURSE OF OIL AND GAS EXPLORATION AND DEVELOPMENT

BRIEFING PAPER 2

Impacts to the environment in general can be minimized

- Engineering technology has advanced during 40 years of oil and gas exploration and development in the Alaskan Arctic. New facilities will be considerably smaller than existing ones.

- Temporary facilities such as ice roads and pads will be used when prudent.

- Directional drilling techniques will be applied to further consolidate facilities.

- Common access roads and pipelines will be used.

- Facilities will be used sequentially to reduce overall impacts of development (for example, deep mining of gravel followed by use of resulting pit as a deep water reservoir for domestic and industrial use).

- If exploration does not yield discoveries, then there will be virtually no impacts.

Permafrost underlying the Coastal Plain will be protected in the course of exploration and production activities

- Disturbance to the insulating active layer will be minimized in using low ground pressure vehicles, limitation of off road travel by tracked vehicles to times when the ground is frozen, and careful selection of routes to avoid particularly sensitive areas.

- Elevated pipelines and buildings will be constructed to minimize thaw of underlying permafrost.

- Gravel and other insulating materials will be used to prevent thaw and subsidence of frozen soils under roads and pads.

- Success of these techniques has been shown by use at Prudhoe and Kuparuk

Tundra vegetation will be protected during oil and gas exploration and production

- Surface area impacted by exploration or development facilities will be minimized by consolidating facilities.

- Exploration and development sites will be selected to minimize impacts to important vegetation communities and habitats.

- Climatic conditions provide additional protection. For example, construction and seismic work will be conducted during the winter months when there is adequate snow cover and the ground is frozen; an exploratory well that requires less than about five months to drill and test can be completed during the winter months.

- Preparation of botanical maps for areas where development is to occur.

- Maintenance of drainage around gravel work pads and across roadways to minimize changes to hydrological regime.

- Application of dust palliatives to roads and pads as appropriate.

Water quality in lakes and streams will be protected in the course of exploration and production activities

- Secondary treatment of sewage before discharge: implementation of stringent quality control for all discharges.

- Design of stream crossings to maintain stream flow and prevent siltation.

- Construction of secondary containment around oil storage areas and other potential sources of pollution.

07/02/86 WILDLIFE AND HABITAT PROTECTION DURING PETROLEUM EXPLORATION AND DEVELOPMENT

ANWR BRIEFING PAPER 3

Modern petroleum exploration and development activities are compatible with environmental objectives for refuges and other sensitive lands.

- Special care is taken to protect all living resources, minimize disturbance of the land, reduce air and water pollution and protect archaeological and cultural resources. Millions of barrels of oil are produced safely in the U.S. every day in sensitive environments, including wells in wildlife refuges on the Gulf Coast and in the extremely fragile tundra of the North Slope of Alaska. Alaskan Petroleum industry activities are usually temporary in nature and conducted in a manner that protects environmental values. Petroleum operations today are carried out conscientiously, mindful of environmental goals and in compliance with the comprehensive body of laws enacted to further these goals.

Discovery and development of a major oil field equal in size to the Prudhoe Bay Unit would affect only 1% of the total ANWR acreage.

- The Arctic National Wildlife Refuge (ANWR) comprises 18 million acres in northeast Alaska, largely uplands and mountainous terrain of the Eastern Brooks Range. Of this, approximately 1.5 million acres, or 8%, is coastal plain. It is beneath this coastal plain that oil and gas potential exists. Should oil and gas be found in commercial quantities and developed, only a small portion of this coastal plain would be affected. As a comparison, the giant Prudhoe Bay oil field, largest in North America, is developed from a combined operating area of 212,000 acres. This is approximately 1% of the surface area of ANWR, and 14% of the area of the coastal plain. The Kuparuk oil field, probably more likely to be the size of a developed field in ANWR, would comprise less than 10% of the coastal plain, or 0.8% of ANWR. Only an extremely small surface area would actually be impacted from roads, pads, etc.

A recent survey concluded that oil and gas lease activities in wildlife refuges "have had little or no adverse effect on wildlife in most refuges...and have often enhanced other economic and recreational uses which occur on the refuges..."

° The extensive measures undertaken by industry on the North Slope and along the Trans-Alaska pipeline system (TAPS) are outstanding examples of the compatibility of oil operations and the environment. Oil companies operating in this area cross the tundra by Rolligons with huge soft tires, minimize building of permanent roads by building temporary ice roads to protect the tundra, use insulated casing for wells, lower noise levels by muffling engines and install redundant safety systems. Drilling pads, roadways, building sites and pipelines are insulated from the tundra by thick layers of gravel or other methods to prevent the underlying soil from thawing.

Caribou: Recent data clearly indicate that during the period of maximum developmental growth at Prudhoe and Kuparuk, the Central Arctic Herd has continued to proliferate at rates rivaling and even exceeding those observed for herds existing in areas where no development has occurred.

° Census figures produced by the Alaska Department of Fish and Game show that between 1973 and 1982 the Central Arctic Herd has increased at an average annual rate of 13%. More recent estimates are even higher, between 14-20%. All indicators show a healthy and expanding herd, despite the pipeline and Dalton Highway bisecting their range and the growth of oil field activities in the summer range. One of the conclusions from the NPR-A Caribou/Waterbird workshop conducted by the

BLM in May, 1982, was that "winter seismic and exploratory drilling operations have had little impact on caribou to date." Further, "these activities would be unlikely to have significant impacts in the future given current standard operating permits and procedures.

Caribou habituate to stimuli that do not present a threat to their survival.

- The adaptability of the species to human presence is underscored by the fact that the species (reindeer) is semi-domesticated throughout much of its Scandinavian range. The Dempster Highway, initiated in 1959 and completed in 1979, bisects the winter range of the Porcupine Caribou Herd in Canada. At the low levels of traffic this highway supports (10 vehicles per day), there have been no significant effects on the daily activity budgets of caribou using the road corridor or their migration success. A pipeline elevated sufficiently to allow caribou to pass underneath (current regulations require 1.5 m) is generally not a barrier to most caribou, dependent on the intensity of insect harassment, the sex/age composition of the group and the groups size. Pipelines next to heavily traveled roads do present an impediment to movement, but studies have shown that these effects can be effectively mitigated by increasing the road-pipeline separation and/or imposing traffic restriction.

Bird Populations: Although there are large differences from species to species on how birds will accommodate disturbance by oilfield activities, generally most species can and do successfully adapt.

Since most of these species winter in the continental U.S. and Mexico, they come into contact with development activities regularly throughout their lifecycle. No differences in responses of birds, species composition, community structure, abundance and nest density were found between a Pt. Thomson exploratory drill site and an undisturbed control site during an extensive 1980 field study. Snow geese and Brant displayed accommodation to the Lisburne oil field activities and were not significantly disturbed. The activity budgets of Canada and Greater White-Front Geese, on the other hand, did appear to be altered by oil field activity; but these affects apparently were not detrimental. During spring/summer of 1983, Thetis Island (Mukluk Island Project) was used as a staging area for over 1 million cubic meters of gravel used to build an artificial island. A study conducted that season concluded that the industrial activity did not have a measurable effect on the number and distribution of nests and the nesting success of common Eiders and Oldsquaw Ducks.

07/02/86

HISTORY AND CULTURE OF THE ARCTIC NATIONAL WILDLIFE REFUGE'S NATIVE INHABITANTS

BRIEFING PAPER 4

Prehistory of ANWR

- The area has been inhabited for at least 10,000 years.

- There are few remains of early settlements and camps. People were nomadic and seminomadic hunter/gatherers who had little or no access to permanent construction materials.

Highlights of recent history of Kaktovik and ANWR

- 1890-1910 Barter Island was a key trading point during the commercial whaling era. When whaling ceased about 1910, trade with the outside ended.

- 1920-1930 Fox fur prices were high and trading posts sprang up along the coast. During this same time several herds of reindeer were established in the ANWR area.

- 1923 — Tom Gordon established a trading post again at Barter Island representing the H. B. Liebes Company of San Francisco.

- 1935-1940 — Fox fur market collapsed, resulting in closure of trading posts.

- 1936-1937 — Severe winters resulted in loss of most of the reindeer to starvation.

- 1936 — Bureau of Indian Affairs (BIA) Survey indicated that most of the residents in the Kaktovik area were near starvation.

- 1937 — BIA attempt to drive reindeer from Barrow to Barter Island failed.

- 1938 — Tom Gordon died and H. B. Liebes closed the trading post.

- 1945 — U.S. Coast and Geodetic Survey began mapping the Beaufort Sea Coastline, bringing some wage employment to the area.

- 1947 — Air Force constructed a runway and hangar at Kaktovik. A Distant Early Warning (DEW) System facility was later constructed there.

- 1971 — The Alaska Native Claims Settlement (ANCSA) provides for native selection of Alaska lands.

- 1980 — The Alaska National Interest Lands Conservation Act (ANILCA) expands the refuge; calls for assessment of oil and gas potential and a report to Congress with recommendations on whether to allow leasing and exploration of the ANWR Coastal Plain.

- 1985 — The KIC exploratory well commenced.

Subsistence activities will continue without disruption if the Coastal Plain is opened to oil and gas exploration and production

- Subsistence activities in the region require inputs of cash for hunting equipment (fuel, ammunition, overland vehicles, boats, motors, etc.).

- Despite commercial whalers, the Bureau of Indian Affairs, the Department of Defense, and others who have occupied or passed through the region, Alaska Natives have continued to use subsistence resources and to share their kills with their neighbors. There is no reason to believe that oil and gas exploration and production would have more impact on North Slope residents.

- Archeological Surveys conducted prior to construction of any facilities will prevent loss of archeological sites.

- Scheduling of oil and gas activities to avoid seasonal hunts when possible will minimize disruption to subsistence.

- So long as animals are not displaced or access by Alaska Natives denied, subsistence utilization can continue at the same time that exploration and oil and gas extraction occurs.

NS1:4.1

07/02/86

AESTHETICS AND HUMAN USE

BRIEFING PAPER 5

Human Activity has continued for hundreds of years in ANWR

- ANWR has been subject to human activity for hundreds of years. Reindeer herding, mining, and settlement, have not diminished the aesthetic value of this area. With reasonable planning, petroleum development can come and go without compromising the wild and scenic values of ANWR. Even during the period when the petroleum industry is active, only a small part of ANWR would be affected.

- Subsistence culture is supported by cash economy provided by resource development.

Aesthetic values are considered in development of oil fields

- Oil companies are sensitive to environmental and cultural values, and the strong regulatory presence of government will ensure that the natural and scenic assets of ANWR will not be permanently diminished.

- Limited land use results from petroleum development

Careful planning and design of facilities which blend with natural features will minimize visual impacts and enhance long-term rehabilitation.

Only a small percentage of Alaskan wilderness would be affected by exploration and development in the ANWR Coastal Plain

- 55 million acres of land in Alaska are now classified as wilderness.

- ANWR area of major scenic and wilderness values lies outside the Coastal Plain; 50% of the Refuge is already classified as wilderness.

NS1:5.1

07/02/86

COMPATIBILITY OF OIL AND GAS OPERATIONS IN AND ADJACENT TO WILDLIFE REFUGES AND CONSERVATION UNITS

ANWR BRIEFING PAPER 6

<u>Oil and gas leasing, exploration and production has been permitted in wildlife refuges in the lower 48 states and Alaska</u>

- The Kenai National Wildlife Refuge (formerly the Kenai National Moose Range) represents a notable success story of the successful coexistence of important fish and wildlife populations, notably salmon and moose (caribou have recently been reintroduced to the southern part of the refuge), with oil and gas development.

  - Leasing was permitted in the lowlands of the northern portion of the refuge in the mid-1950's and oil was discovered in Swanson River in 1957.

  - The Swanson River field is a giant field with initial reserves of over 200 million barrels of recoverable oil; production commenced in 1962 and oil was shipped via a 16 mile pipeline to tidewater at Nikiski on Cook Inlet.

- Over 100 production and exploration wells have been drilled in the Refuge.

- Under the direction of the refuge manager and in cooperation with the field operator (Chevron), a set of environmental protection measures were introduced to minimize or avoid adverse impacts to fish and wildlife.

- The environmental management program and oil industry operations are generally agreed to have been successful in the Kenai National Wildlife Refuge with no significant long term adverse impacts. The moose have thrived during the period of oil development and healthy populations of salmon annually migrate up and spawn in the Swanson River and its tributaries that runs through the middle of the oil field.

° In the lower contiguous states, the Aransas National Wildlife Refuge in Texas provides another excellent example of compatible coexistence of oil and gas and important wildlife resources. The population of endangered whooping cranes today has increased from 29 worldwide in 1939 to over 80 today, in large measure due to careful management in the Aransas refuge and the efforts of Conoco, who has operated the oil field since 1941.

There are many other examples where oil and gas operations have successfully been conducted adjacent to ANWR and in or adjacent to other refuges/conservation units in the United States.

Oil and gas exploration and development in compatible with wildlife refuge management

- Current regulations governing the management of wildlife refuges administered by the U.S. Fish and Wildlife Service permits leasing within Alaskan refuges after a classification procedure involving an assessment of compatibility of oil development with the protection of fish and wildlife resources.

- Multiple use of refuges with innovative and careful mitigation measures to protect fish and wildlife is attainable to the benefit of wildlife and economic development.

- Success of oil and gas operations in wildlife refuges has been further enhanced by the cooperative efforts of U.S. Fish and Wildlife Service refuge managers and oil industry personnel.

NS1:6

Ron Zobel

my opinion that the US Congress cd auth'z a res. hire provin that the State can auth'z + cd put into any ANILK [illegible] [illegible] [illegible] 1997 – might even be able to auth'z the state to [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] applies [illegible] [illegible]

Congress is [illegible] to auth'z [illegible] [illegible] [illegible] [illegible] [illegible]

there [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] What [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] by courts –

[illegible] [illegible] [illegible] likely a court [illegible] [illegible] – fed [illegible]

~~[illegible]~~

best case is in spending [illegible] – [illegible] same w/ State – strongest argument –

hard times - a case to be made pol'ly -
non contiguity of the state -

Pam Zackel -
[illegible]
Suite 300
Anchorage AK [illegible]

3/12 ANWR - villages

HJR 1 →

Arctic Village - opposed to devt of 1002 area bec. it is "lifeline" -
dep. on caribou the way coastal people dep. on fish -
most reliable source of food -
→ elders dep. on caribou - in Arc'g hospital one elder recly wdn't eat the hosp'l food -
imp't part of the cultural history
anything happening to caribou herd will hv extreme impact on the villagers -
HJR 9 → whatever happens on Arctic Wildlife Refuge, Venetie + Arctic Village shd get 1° consideration

Moses Sam Sr. -
(1st) worry for the caribou herd -
calving probs -
fluctuations in herd

Lillian Garnett?
confused -
ANWR - thought land was set aside for wildlife
people of Arctic Village are against oil exploration
hi cost of living - few jobs - (need caribou)
culture - clothing, arts + crafts - no jobs
if go destroy the caribou you get rid of part of the villagers' self-concept
want Arctic Village to be part of the planning, shd hv. hrgs; support Casper on 10-year delay - calving area in coastal plain -
elders can't change their diets. -

= Peter Sr.
game hasn't bn in good shape since TAPS constrn -
can't spoil water, harm fish + game -
village is looking good these days but still dep. on the game
no ag. -

2/19 HJR 9 - environmental

Grogan - num. opening of ANWR
leg for core calving area def'd for 10 yrs.
allow for 7 year study, rec'n at end.
State auth's + resp's - viable role for Govt to partic. in final leg decn for core calving area

Cohen - caribou
water use
gravel
alt'v transp'n scenarios

Sam: Yukon gov't had diff't idea about caribou calving grounds etc. Norman: everybody participated in 1002 research but don't know if Yukon gov't participated - satellite tagging - USFWS/ADF&G agree on the core calving area locations

Ad: Sec'l discr'n for core calving leg? Grogan: allow Congress to decide, then Secy/Govt cd rule recins take effect if Congress fails to act -

Springer: definite bdries of calving area? Norman: calving Mtns that, 5

Amy Kyle: 1002 did not inc. level of detail on OCC issues -
id'y areas that need to be addressed -
major waste streams - air, water, solid -
hv not yet id'd a process that will treat OCC issues -
aq. mon'g - subst'l emissions of nitrogen oxides - impact on ambient air qual. - NS studies. Flaring w/ startup
solid waste mgmt - bttr mgmt of drilling muds - want to prov. for containment of wastes - need to separate solids fr. liquids - don't hv regs yet but want to be sure these are in place — metal waste regulations fr. dev't - need method to dispose -
liq. wastes - sewage, brine etc. - need to prepare a disp'l pl. etc.
hag's waste - OTG int'y wastes are excluded under

resp -
oil spill planning -

Eason: share some DEC/DFG concerns.
also concd re state acreage, benefits of dev't to state
access to offshore state acrj -
restrictns on onshore dev't -
min. disruption
wd feel safe if EO1 responded adeq ly to state concerns

Oregon: geology + wildlife

✓ Mark Fraker -
✓ Mike Matz -
✓ Randy Rogers -
✓ Dave Cline -
✓ Bob Adler -

WEP see ~~him~~ me if you need help translating these notes.

7/5/87

Sound

Entitlement

(1) What are the scenarios if the land ~~[illegible]~~ and subsurface mineral rights are ~~is~~ owned by

Feds :

State :

Natives :

The terms of

(1) Revenue to the (2) state / (1) Federal / (2) Oil Bus / (1) Natives

~~(2) local hire (Native hire)~~

~~(3) environmental control~~

~~(3) Revenue to Fed~~ native

State Tax structure on ~~native~~ corporations : State / Federal

Land trades

What is the general discussion outline?

(1) What lands (inholdings)
where are they
how are the land values being developed

(2) who is negotiating the trades

(3) are the traded lands subject to 7(i) distribution of subsurface revenues

(4) Is the ~~state~~ involved in the land trade negotiations
.1 what lands

Sind

2/5/89

Environmental issues:

~~Caribou~~ -

1. Water
2. Land
3. Air

4. Animals
   - Caribou
   -

Issues:

Alaskan Hire / Local Hire

Fed →

~~State~~ →

Natives →

Past Experience on North Slope
- Union hire
- Non-union hire

Tom Roberts -

OCS lease language -

req's Sec Int to consider local/state needs

not very enforceable but const'ly OK w/ some precedent.

revenue paper : 90/10
NPRA
compacts

Send – solid waste disposal

Local hire

→ Ron Zobel – Ch of Comm speech
what is possible – 3 steps
est. of prev'ly wage

Mans Fray
voluntary req's [illegible] adop. –
→ The laborers hv. right [illegible] agents req'y Alaska hire
intent of the [illegible] is to ensure local hire –

Send – ARS [illegible] / 90/10 /
[illegible] [illegible] on rev's –
Springer – [illegible]
Davidson – [illegible] –
[illegible] [illegible] [illegible] on 90/10 – what do we get?
[illegible] [illegible] [illegible] [illegible] jurisdiction?
"understand through compact that they aren't going
to do anything to us"
Dave – land trades –
Davidson – energy, security – nat'l issues –
"stampede effort on part of a few
→ Sam – national interest –
packet –
timing – final results [illegible]
consensus points –

Rod for ~~Alcoa~~ Fri 13th

state's position: as much as poss.

state's participation:
- which lands?
- what probs in agmts/process? app'ls?
- timeline?

legal analysis:
- wd exchange be legal?
- can dev't occur w/o Corp'l aven?
- what regly authy will Feds lose in exchange?
- 7(.) issue
- reverter clauses
- want to amend 38.50

need maps. disc'n of state lands offered.

---

revenue scenarios in a.a.?

INTERIOR

brfg: trades under consid'n - outline
maps - tracts in ANWR
appraisals
values of trade lands
§7(i)
reverter clause
state involvement
why no Parks?
legal authy

STATE:

role/position
legal view
what regy authy wd be lost? in an exchange.

ANCSA corpns

CIRI
Koniag

Transp'n

[redacted]-300 8:00 [redacted]

called

1. Sund ✓ pref. 1:30 ✓ Kantag Frank Pagano
Pearce Transp'n 1:30 ✓ CIRI ✓
Hoffmann ✓ Doyon left msg
Navarre ✓ vlg copies:
Cotten ✓ ✓
Herrmann ✓ ✓
Shultz ✓ ✓ AFN
Spraker ~~away.~~ BNC 5432124
Davidson ✓

2. USDOI –

3. Murkowski – Tom Roberts.

4. ANCSA corp'ns - Kantag / CIRI / Doyon / [redacted] / Kantag area v/p.
N

5. env'l org'ns –

got 1002 ltr ASAP + distrib.

2/5 HJR 7 - HJR 9

Somerville:

Zawacki:

Sund: U.S. v Ak interests
lakes
land trades
royalty
on env't / coastal plain
want to assure pos'v benefit to the state

→ NF to Ct. → Ad: wd like > info on resident here
mentions Murki's lang.

Sam: will hv. to rely on the deleg'n

Lyman: affected communities? caribou / subsis - shd hear fr. the local people -

Sam: Lyman help get the local people on

Springer: env'l data / concerns - EIS - Admin'n views - timing, modes of oper'n - comp'v model drawing tog'r geol'y, ecol'y, timeframe of dev't / research - when wd prodn begin

Sam: no drilling until Congress opens, calls on Denny

Denny: intros Larry Dietrich

[illegible] draft 1002 report is seriously inadequate w/ reg. to env't
state to maintain a credible position must prep. on all poss env'l q's, field program, monitoring - Gov has prop'd a supp'l budget item - NS history -
Phase I - 12 mos. NS dev't hist'y - Phase II - consultants etc. look @ issue areas spec'ly, don't know how much or how long yet.
want to hv. state ready as soon as Congress moves

Dietrich - can design Phase II when DOI / congress action occur.

Springer - econx / timing / knowledge

Dietrich - dev. steps on basis
a/or qual techn'g / practices exist to address pot'l prob

2/5 HJR 9

Springer = lead agcy?

Andrews = same as other NS dev't - coord'n among agcies -

Springer: caribou a big issue, 1° concern -

long-range data on larger mammals

Norman: data in the report coll'd over past 14 yrs

AHFG → Springer: wants to know whether that's enough to be able to tell if info is OK

seasonal dirly?

AHFG → muskoxen - are they resilient in response to human dev't

avifauna - unique/endemic? Norman: no

Pearce: concern in HJR 9

land trades - need to know more about them -

also taken aback by tone of Huhndorf's telegram, Katz on line - Muni in town on 13th? - will his staff be along?

NF/Pearce → public hrgs on 1002 report -

local hire - Muni -

Sam: 7(i) - re trades.

Katz sez may not be decided until protest occurs

Sund: 1) entitlement issues re scenarios under state/ANCSA/Fed'l ownership → rev. impact

DOR? → 2) land trades - what/where? value-based det'n?

3) resident hire -

4) env'l issues -

NF get for Cr → Sam: brief-plate/tracts/draft stips

master pocket file of info/notebook

Yukon gov't info

Barrow. Charlie Edwardsen: oppose ASRC/state dev't - enough o/g leases are avail. -

3/4 HJR 9 -

Sam: introd 9

Terry:

Rob Swope:

Hansen:

Cohen:

Kelso: 1002 comments due Fri -
nec values are id'd, but env'l problems are not or inad'q
discussed: w/q, haz wastes, a/q, building and solid waste -
1) USDOI needs to do more work before Congress will agree: resol'n of probs, coord'n of state + fed'l agcies wh. hv. auth'y in constr'n -
2) imprmts of the study - special areas needing spec. mgmt + attention -
state needs to address q's that will be raised in Congress - Prudhoe/other NS dev't history, other issues needing exam'n - info nec'y to address the problems - site-spec. stips/plans/oper'g programs -

call Sharman → Phil Holdsworth for RDC - credit Sharman's report
RDC has adopted a draft resol'n like HJR 7, but there hv been some add'l concerns wh. are enc'd in HJR 9 -
RDC's basic feeling is that the most impt issue is the 1st resolve - give Congress auth'y to open all, DOI hv auth'y to postpone leasing.
RDC also believes land trades shd be delayed - desist fr. discussion

[redacted]

April Crosby - Arctic Audubon
Alaska's posn needs to be ec'ly, ecol'ly, esthetically defensible - ∴ data are very imp't -
the resolutions don't reflect enough of the data - even HJR 9 is premature - The comparative in 1980 - 80% of arctic plain is open -

The state isn't recg protection of any coastal acrg -
NPRA is avail.
other ways to get energy - consvn -
the legal arrangements for making $ aren't in place
drilling explg wells wd be a good idea bef. deciding
whether to open -
fs. 1002 - p. 54 - Prud/Kup Eskimoan seq., also
if Eskimoan aren't present wd need ANWR pot'l -
p. 67 -
p. 166 - actual explr'n needed
prudent choice wd be not to drill until oil is needed
we don't understand enough
Unalakleet
snowy owl
snow geese
tundra swan
caribou - insect relief
Indn is exempt fr. haz's waste law -
prob'y supp. no-action alt'v

Richard Hellard - Juneau S/C

good arguments for not dvlg -
Porcupine herd
wastes
subsic
nat'l issues: energy consvn -
oppose HJR 7/HJR 9 -
wd prod. only a brief supply of oil -

Joe Thomas - labor.

ag. w/ Terry Martin re golden opp'y
relate ANWR to Prudhoe -
jobs -
Seas Mark'g/Stevens have ensured local hire on
dev't proj's in Pbr
resident hire shd be part of any resol'n -

THE FOLLOWING DOCUMENT HAS

NOT BEEN FILMED BUT IS

AVAILABLE IN THE ORIGINAL

FILE

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

In This Issue:

Arctic National Wildlife Refuge (ANWR):

Congress will consider opening coastal plain for exploration

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

By Tim Bradner

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

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

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

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

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

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

Congress Ordered Assessment

When Congress passed the Alaska National Interest

The Alaska *Great Opportunities* Conference

and

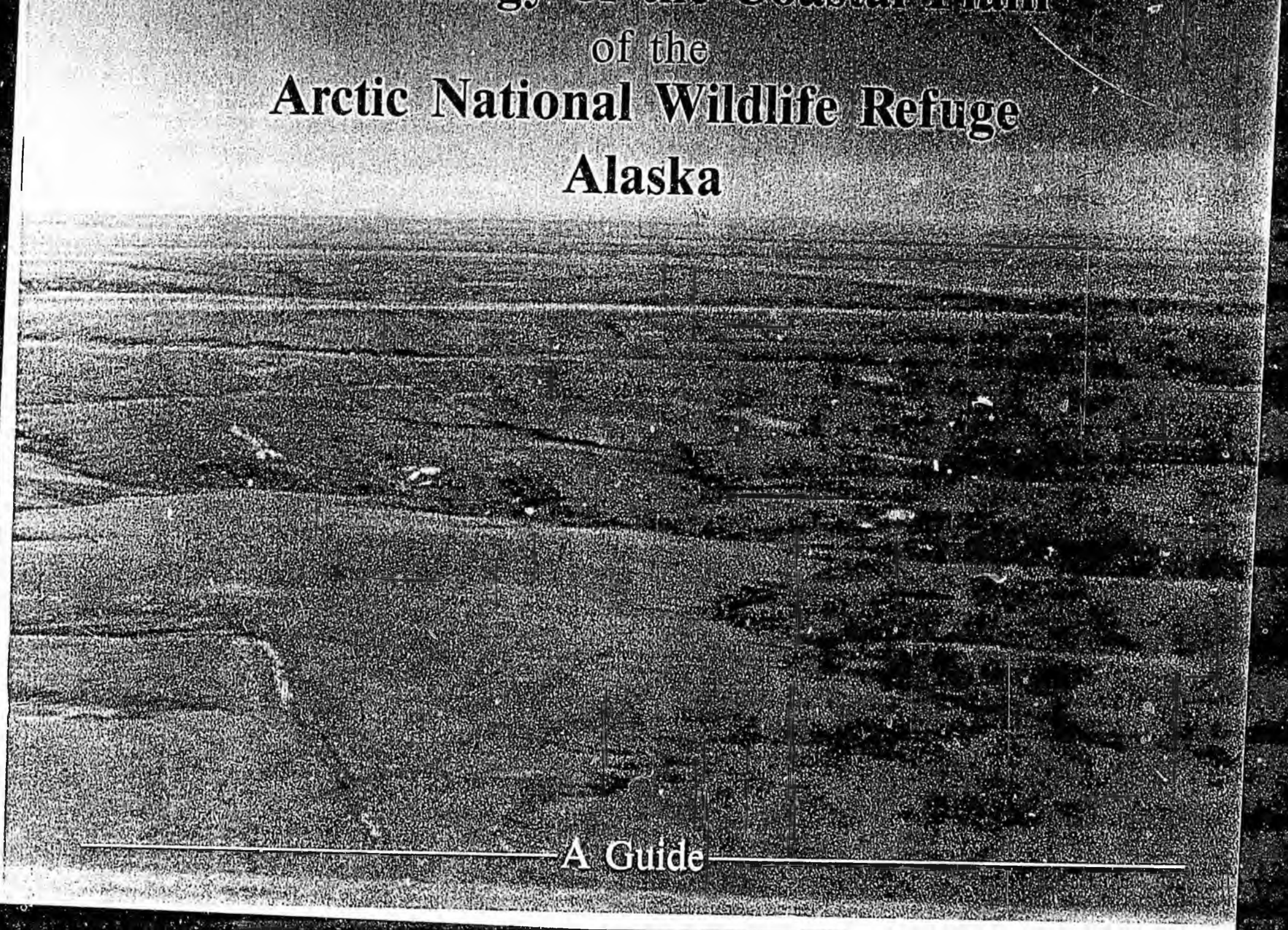
All-Alaska Exposition
April 2-3, 1987

Community Leadership Workshops
April 4, 1987

Sheraton Anchorage Hotel
Anchorage, Alaska

A Dynamic Policy Forum...to tap Alaskans' creative energy...to examine new knowledge and techniques...to realize the state's *Great Opportunities*

Geology of the Coastal Plain
of the
Arctic National Wildlife Refuge
Alaska



A Guide

PUBLIC-DATA FILE 87-1
Hansen, Kornbrath, Meyer, Robinson, Smith, Sheet 1 of 1

INTRODUCTION

This is a nontechnical report utilizing nonconfidential data to show that the coastal plain of the Arctic National Wildlife Refuge (ANWR) has high potential for containing large deposits of oil and gas.

Geographical Location

ANWR lies in the northeastern corner of Alaska and is bounded by Canada on the east, the Canning River on the west and the Beaufort Sea on the north. Its 19 million acres of land range from coastal-plain tundra to the high mountainous regions of the Brooks Range, which comprise approximately 73 percent of ANWR. The remaining relatively flat coastal plain extends 15 to 50 mi inland from the Beaufort Sea. Approximately 1.5 million acres of this area -- the 1002 area -- may be opened to leasing and drilling.

History of ANWR

1960 Arctic National Wildlife Range (8.9 million acres) was established.
1980 Arctic National Wildlife Range was assigned refuge status under the Alaska National Interest Lands Conservation Act (ANILCA); size was increased to 19 million acres.
1987 U.S. Department of the Interior reports its findings to the U.S. Congress concerning the oil and gas potential of the 1002 area along with its recommendations regarding leasing. Congress will decide whether to allow oil and gas exploration in this area.

Alaska Interest

If the 1002 area is made available for oil exploration under federal law, the State of Alaska currently would receive a 90 percent statutory share of all royalties, bonuses, and rentals derived from oil and gas leasing. The submerged lands within 3 mi of the coastal plain and the barrier islands belong to the State. Oil and gas lease sales 50 (Camden Bay) and 55 (Demarcation Point) are scheduled for this area during June 1987 and June 1988, respectively. Ownership of the lagoonal areas is in litigation between the state and federal governments and will be decided by the U.S. Supreme Court.

Native Corporation Interests

The Kaktovik Inupiat Corporation (KIC) and the Arctic Slope Regional Corporation (ASRC) own the rights for 110,000 acres of the coastal plain. The subsurface rights were conveyed to ASRC by the U.S. Department of the Interior in exchange for inholdings in Gates of the Arctic National Park. The State of Alaska is no longer entitled to the 90 percent revenue share for these Native Corporation Lands, nor would the State receive such revenue from any ANWR lands for which federal title is relinquished in the future. Further land exchanges in the ANWR coastal plain between the U.S. Department of the Interior and various Native Corporations are being planned.

Data Available

Geologists and geophysicists in the Alaska Division of Mining and Geological and Geophysical Surveys have conducted subsurface and surface studies in and adjacent to ANWR. The database for these studies includes the following:

- Surface outcrop studies consisting of stratigraphic, structural, rock-property, age, geothermal, and lithologic analyses.
- Exploratory well information including logs, tests, and sample analyses for geochemistry, age, lithology, and rock properties.
- Seismic and gravity surveys.

The State is planning to conduct additional field studies for the 1987 and 1988 field seasons. New data will be integrated as they become available. Critical data not available to the State include seismic surveys and exploratory well data on KIC lands.

Gravity and aeromagnetic data in and adjacent to ANWR are the only nonconfidential geophysical data available for public release. These data were collected by the U.S. Geological Survey and several universities. State geophysicists have interpreted the gravity data to determine the regional basement configuration.

The U.S. Geological Survey reprocessed a portion of the 1300 mi of proprietary seismic data collected by Geophysical Service Inc. during 1984-85. Some lines are included in the U.S. Department of the Interior's draft report on ANWR (Patton and Christiansen, 1986), but the seismic data are not yet available to the general public.

HYDROCARBON FORMATION AND ACCUMULATION

Ned
Ron Zaebel
272-3597 (?)

---

says "he will not draft or participate in drafting any residency laws."

But is willing to offer alternate suggestions. prevailing wage.

likes Donnelly proposal.

(says he is hard to reach - like us)

THE ALLIANCE
P.O. Box 100100 / Anchorage, Alaska 99510 / (907) 278-4444

January 26, 1987

Representative Cotten
P.O. Box V
Juneau, AK 99811

Re: Arctic National Wildlife Refuge

Dear Representative Cotten,

I have taken the liberty of compiling some information on the Arctic National Wildlife Refuge (ANWR) which may be of interest to you. I understand that resolutions have been introduced both in the House and the Senate favoring the opening of ANWR to oil and gas exploration and development. The enclosed documents contain information, statistics, and research concerning the Arctic National Wildlife refuge. I hope the attached documents will help you in your deliberations on this very important issue.

Kindest personal regards.

Sincerely,

James D. Linxwiler
Chairman
Alliance ANWR Committee

JDL:kdw
Enclosure
1672L