ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990

5963 HOUSE RESOURCES

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revoked is punishable by a fine of not more than $50,000 or by imprisonment for not more than three years.

A person who is convicted of an act set out in this section may also be subject to revocation of the person's license to provide guide-outfitter and transportation services for not more than five years and forfeiture of guns, boats, aircraft, and other equipment used in committing the act.

A court may not suspend imposition of sentence, if a person is convicted of an act set out in this section.

Sec. 08.54.530 provides that the Board may obtain an injunction to stop a person from violating certain provisions of this chapter.

Sec. 08.54.540 provides that a guide-outfitter is subject to discipline by the Board under AS 08.54.500 for violations of certain state and federal laws committed during the course of employment by a class-A guide-outfitter or assistant guide who is employed by the guide-outfitter.

ARTICLE 7. GENERAL PROVISIONS.

Sec. 08.54.550 provides for the collection of certain information and reports from guide-outfitters, marine mammal guides, and transporters by the department. This information is confidential except that aggregated information may be released in reports by the department.

Sec. 08.54.590 established definitions for "big game", "board", "department", "guide-outfit", "field", "transportation services", and "unethical activity".

Section 4 of the bill amends AS 16.05. by adding a new section.

Sec. 16.05.344 establishes a big game conservation fee to be paid by guide-outfitters, marine mammal guide-outfitters, and transporters for certain big game animals taken by their clients. The amount of the fee is equal to 25 percent of the big game tag paid by the client under AS 16.05.340. The fee shall be paid to the Department of Commerce and Economic Development at the time that the guide-outfitter, marine mammal guide-outfitter, or transporter apply for renewal of their licenses. If the person who owes the fee to the department does not review the person's license, then the

fee must be paid by the end of the calendar year in which the animal was taken.

The commissioner of administration shall separately account for big game conservation fees deposited in the general fund. The funds in the account may be appropriated by the legislature to fund the game management activities of the Department of Fish and Game and the game law enforcement activities of the Department of Public Safety.

Section 5 of the bill amends AS 16.05.407(a) by adding mountain goat to the list of species for which a nonresident hunter is required to utilize the services of a guide-outfitter and by making certain technical changes that are necessary to conform with the remainder of the bill.

Section 6 of the bill amends AS 16.05.407(d) by making a technical change that is necessary to conform to the repeal of AS 16.05.407(e).

Section 7 of the bill amends AS 16.05.4[illegible]a) by making a technical change that is necessary to conform with Section 3 of the bill.

Section 8 of the bill amends AS 16.05 by adding a new section.

Sec. 16.05.783 prohibits hunting clubs from supporting big game hunting activities or providing facilities or services for big game hunting.

"Hunting club" is defined.

Section 9 of the bill amends AS 39.50.200(b)(48) in order that the members of the Big Game Commercial Services Board are subject to the conflict of interest law.

Section 10 of the bill amends AS 41.23.420(d) by making a technical change that is necessary to conform to section 3 of the bill.

Section 11 of the bill amends AS 44.62.330(a)(35) to provide that the Big Game Commercial Services Board is subject to certain provisions of the Administrative Procedure Act.

Section 12 of the bill provides for the transition from the existing classes of guide licenses to the new classes of guide-outfitter licenses.

All classes of guide licenses that are in effect on the effective date of this bill continue to be valid for the period for which the licenses were originally issued.

Persons who currently hold master guide or registered guide licenses shall be issued guide-outfitter licenses. Persons who currently hold class-A assistant guide licenses shall be issued class-A guide-outfitter licenses. Persons who currently hold assistant guide licenses shall receive an assistant guide-outfitter license. The new licenses shall be issued to the current licensee at the time of the next license renewal following the effective date of this bill, if the person is in good standing at the time of issuance and pays the appropriate fees.

If the Department of Commerce and Economic Development can issue new licenses sooner than is required by this section, the department may do so without charge to the licensee.

Section 13 of this bill provides that natural persons who have provided big game outfitting services in the past may qualify for a guide-outfitter license.

In order to qualify for a guide-outfitter license under this section, the person must have registered a camp, cabin, or lodge under AS 16.05.787 during 1988, engaged in the business of big game outfitting in 1986, 1987, and 1988, passed the guide-outfitter examination, and satisfied other requirements.

A person who provides sufficient proof of past history as a big game outfitter may receive an interim outfitter license that is valid for a period not to exceed a year from the effective date of this bill.

A person who holds an interim outfitter license may provide transportation and other big game commercial services to hunters in the field, except that the person may not provide big game guiding services.

A person who holds an interim outfitter license must promptly report violations of certain laws committed by a client or employee of the person.

A person who holds an interim outfitter license must register base camps, cabins, and lodges that the person uses in providing big game outfitting services. The person must report the amount and kinds of big game taken by each hunter who uses the registered camp, cabin, or lodge.

A person who holds an interim outfitter license and who fails to report violations of certain laws by clients and employees is punishable by a fine of not more than $2,000 or imprisonment for up to one year or both. Falsification of an affidavit of registration for a base camp, cabin, or lodge constitutes perjury.

The terms "base camp", "big game", "field", "guiding", and "outfitting" are defined.

Section 14 of the bill allows certain extraordinary appointments to fill the initial vacancies on the Big Game Commercial Services Board.

The guide-outfitter and class-A guide-outfitter seats on the board may initially be filled by persons who are either a master guide, registered guide, or a class-A assistant guide under current law or who registered a camp, cabin, or lodge under AS 16.05.787 during 1988 and engaged in the business of big game outfitting in 1986, 1987, and 1988.

The transporter seat on the board may initially be filled by persons who engaged in the business of providing transportation to big game hunters in 1986, 1987, and 1988.

Section 15 of the bill provides for the continuance of legal proceedings, hearings, investigations, and regulations during the transition from the current guide statutes (AS 08.54.010 - 08.54.240) to the guide-outfitter statutes contained in this bill.

Section 16 of the bill provides for the repeal of the current guide statutes (AS 08.54.010 - 08.54.240); the requirement for big game tag harvest reports and big game transporter reports (AS 16.05.370(b) and (c)); the requirement that nonresident hunters provide information on big game hunting services used in taking moose and caribou (AS 16.05.407(e)); provisions relating to the duty of big game transporters to report violations of certain state law (AS 16.05.786); and the requirement for registration of big game hunting base camps, cabins, and lodges (AS 16.05.787).

Section 17 of the bill provides for the repeal of certain amendments to AS 08.54 and AS 16.05 that are scheduled to take effect on July 1, 1989.

Section 18 of the bill provides that the bill takes effect immediately.

GU:gc
W6/082

Alaska State Legislature

Senate Resources Committee

Senator Bettye Fahrenkamp, Chairman

Senator Jay Kertula, Vice Chairman
Senator Dick Eliason
Senator Steve Frank
Senator Rick Halford
Senator Arliss Sturgulewski
Senator Fred Zharoff

P.O. Box V
Juneau, Alaska 99811
(907) 465-4907

MEMORANDUM

TO: Committee Members, House Resources Committee

FROM: Committee Staff

RE: Committee Meeting, February 6

Date: February 4, 1989

On Monday, February 6, 1989, the Senate and House Resources Committee will meet jointly at 1:30 p.m. in the Butrovich Room to consider SB 139, Relating to the Extension of the Task Force on Guiding and Game, and SB 140, Relating to big game hunting and to the regulation of big game and marine mammal guide-outfitting, transportation, and other commercial services for big game hunters, guide-outfitting and other commercial services providers.

Heinrich Springer, who was chairman of the interim Task Force on Guiding and Game, will brief members on the recommendations and the legislation developed by the Task Force. That proposed legislation was introduced by both the House and Senate Resources Committees as House Bills 112 and 113, and Senate Bills 139 and 140.

HB 113 and SB 139 would extend the Interim Task Force on Guiding and Game to continue to work on the complex issue of developing a management system for allocating rights of access to big game among guides (or guide-outfitters under SB 140). It would create a licensing system for commercial services providers for big game hunters.

HB 112 and SB 140 would sunset the existing Guide Board and create an expanded regulatory board whose powers would include those previously charged to the Guide Board. It would allow the board to provide for registration of hunting camps and facilities, and would establish, in consultation with the Departments of Fish and Game or Natural Resources, a resource-based management system for allocating access to big game hunting opportunities among guide-outfitters. Further, the board has authority to establish the level of supervision that guide-outfitters provide to class-A guide-outfitters and assistant guide-outfitters under their employ.

Other provisions in the bill delineate the structure whereby all persons who directly or indirectly receive compensation from the commercial harvest of Alaska's big game would be required to obtain a permit or license. That big game resource belongs to all Alaskans, who value that resource to the extent that a "common use" of game provision is specified in Alaska's constitution.

Several provisions of SB 140 would allow for transition measures for those currently operating as "outfitters" to become licensed as "guide-outfitters".

Among fees established would be a commercial use permit fee, to be paid by all commercial services providers, and a big game conservation fee (head tax). Both fees would be separately accounted for and may be used by the legislature to fund game management and enforcement of game resources.

The bill would provide for disciplinary procedures and penalty provisions for commercial service providers to big game hunters. It adds "mountain goats" to the current species list, brown/grizzly bears and dall sheep, requiring a guide (non-residents and non-resident aliens). The bill defines "guide-outfit" and "field". The bill prohibits "hunting clubs", and provides for confidentiality of hunt records and reports.

A sectional analysis has been prepared by legal services and will explain more fully the provisions in HB 112 and SB 140.

OVERVIEW - OIL AND GAS CONSERVATION COMMISSION

BUDGET REQUEST UNIT (BRU):
Alaska Oil and Gas Conservation Commission

NAME/POSITION OF BRU MANAGER:	PHONE:
C. V. Chatterton, Commissioner/Chairman	(907) 279-1433
NAME/POSITION OF AGENCY CONTACT:	PHONE:
Pat Oldenburg, Administrative Assistant	(907) 279-1433

LIST STATUTORY/REGULATORY BASIS FOR SERVICES PROVIDED (I.E., ALASKA STATUTE, ALASKA ADMINISTRATIVE CODE, OR FEDERAL REGISTER):

Statutory/Regulatory Citation	Component/Programs, Services	Statutory/Regulatory Citation	Component/Programs, Services
AS 31.05/20 AAC 25.	Operations		

DESCRIPTION OF THE BRU SERVICES AND RESPONSIBILITIES: The Alaska Oil and Gas Conservation Commission is an independent quasi-judicial agency established within the Executive Branch by the Legislature to ensure that oil and gas drilling, production, reservoir depletion and metering operations comply with the Alaska Oil and Gas Conservation Act (AS 31.05). The Act prohibits the physical waste of crude oil and natural gas, protects correlative rights, and provides for obtaining the maximum ultimate recovery of oil and gas that is prudently feasible. The Act empowers the Commission to cite and levy fines for violations of the Act, regulation or order of the Commission, and seek injunctive relief to prevent continuance of a violation. Severance and oil and gas conservation taxes are levied on all production. Revenue also accrues from royalty production on state leases. The prevention of waste enhances these income sources and serves the public good by providing increased funds to meet the public need.

Further, the BRU provides funding for the following activities (1) acting as the Alaska jurisdictional agency to determine well categories for meeting the maximum lawful price for gas under the Natural Gas Policy Act of 1978, (2) discharging primary enforcement responsibilities for Class II injection wells under the Safe Drinking Water Act of 1974 as amended and (3) Acting as Alaska jurisdictional agency for the U.S. Dept. of Treasury in approving applications as meeting requirements for certification as a qualified tertiary recovery project.

SIGNATURE OF BRU MANAGER:	DATE:
C. V. Chatterton	9/20/88

B1 BRU COVER PAGE

AGENCY: Department of Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

Page 1 of 1

Revised Date:

FY 90

(7/88)-b1

The priority issue for FY'90 is to maintain the funding necessary to provide for a degree of agency effectiveness in prohibiting waste of crude oil and natural gas, protecting correlative rights of hydrocarbon owners, and insuring that all hydrocarbon production is measured accurately.

The Oil & Gas Conservation Commission is an independent quasi-judicial agency, responsible for the administration of AS 31.05, The Alaska Oil & Gas Conservation Act. In this role, the Commission provides three distinct services. First, a service to the people by enforcing the act, thus ensuring that oil and gas accumulations beneath lands subject to the State's police powers are developed, produced and managed without waste in a manner that will achieve the maximum ultimate hydrocarbon recovery prudently possible.

Second, receives, maintains and acts as curator for all production and exploration data required by law. Provides information pertaining to these activities to the public and industry.

Third, a service to the oil and gas industry by providing an adjudicatory forum for the resolution by Commission order of intra-industry disputes.

Agency effectiveness is directly a function of the experience and expertise of its professional staff. Reduction in appropriations, from $2,514.3 for FY'83 to $1,536.2 for FY'89 and ensuing staff reduction from 27 FTE to the FY'89 authorized staff of 23 FTE has seriously impacted commission performance. Lacking the funding and staff, the agency is increasingly hard-pressed to effectively challenge industry reservoir management programs and ensure that waste is prohibited.

Proceeds from the Oil and Gas Conservation Tax (AS 43.57) for FY'90 will approximate $3,000,000. Historically, the reason and intent of the conservation tax is to provide funding for maintaining a viable oil and gas conservation agency.

OBJECTIVES AND PERFORMANCE MEASURES	PRIOR YEAR FY 88		CURRENT YEAR PLAN FY 89	BUDGET YEAR FY 90		
	PLAN	ACTUAL		ADJUSTED BASE	INCREMENT/ DECREMENT	REQUEST
1. To ensure that operations involving the drilling or re-entry and completion, recompletion, or abandonment of any oil or gas well within Alaska is conducted in a manner that prevents underground waste of the resource, protects correlative rights and does not endanger freshwater. The number of applications processed.	750	1294	500	500		500
2. To ensure that no uncontrolled flow of oil and gas occurs from any well within Alaska. The number of on-site inspections.	4000	5842	3500	3500		3500
3. To ensure that all oil and gas produced within Alaska is measured accurately for quality and quantity and appropriately allocated. The number of inspections performed.	160	87	160	100		100
4. a) Continue surveillance of all reservoir management operations to ensure that the maximum feasible resource recovery will be obtained. Number of pools reviewed.	0	0	0	0		0
b.) Number of new reservoir studies initiated.	1	0	1	0		0
5. To reduce the volume of gas lost from operational upsets. The percent reduction in amount of gas lost by operational upsets.	1%	1%	1%	1%		1%

B3/B4 BRU STRATEGY/ PERFORMANCE PLANS

AGENCY Department of Commerce and Economic Development

BRU Oil and Gas Conservation Commission

Revised Date:

FY 90

(7/88)-b3/b4

OBJECTIVES AND PERFORMANCE MEASURES	PRIOR YEAR FY 88		CURRENT YEAR PLAN FY 89	BUDGET YEAR FY 90		
	PLAN	ACTUAL		ADJUSTED BASE	INCREMENT/ DECREMENT	REQUEST
6. To provide informational services to the public in an expeditious and accessible manner. The number of requests for information	200	147	100	125		125
7. To maintain a high level of administrative and support service efficiency in order to handle the increasing work load without a need for additional personnel.	10%	5%	10%	3%		3%
8. As primary enforcement agency within the State for the Safe Drinking Water Act of 1974 as amended, ensure that the underground injection of fluids related to the recovery and production of oil and gas does not occur unless permitted and the mechanical integrity of permitted injection wells is maintained in a manner to protect freshwater aquifers. The number of:						
a) Applications processed.	60	33	60	25		25
b) On-site inspections made.	100	178	100	100		100
c) Files reviewed.	24	210	74	75		75
d) Public hearings held.	1	1	1	1		1
e) Reports made to EPA.	10	35	10	15		15

OBJECTIVES AND PERFORMANCE MEASURES	PRIOR YEAR FY 88		CURRENT YEAR PLAN FY 89	BUDGET YEAR FY 90		
	PLAN	ACTUAL		ADJUSTED BASE	INCREMENT/ DECREMENT	REQUEST
9. Perform duties as the jurisdictional agency for Alaska by processing applications for establishment of the maximum lawful price for natural gas produced from a well. The number of dterminations submitted to FERC.	100	25	100	50		50
10. Perform duties of jurisdictional agency for the U S Treasury Department in processing applications for tertiary recovery. The number of applications processed.	1	2	1	1		1

B3/B4 BRU STRATEGY/ PERFORMANCE PLANS

AGENCY Department of Commerce and Economic Development

BRU Oil and Gas Conservation Commission

Revised Date:

FY 90

0340

(7/88)-b3/b4

STATE OF ALASKA
OFFICE OF MANAGEMENT & BUDGET
DIVISION OF BUDGET REVIEW

DATE: 12/19/88
TIME: 16:03:01
PROG: FORMC1D

FY '90 BUDGET CYCLE BENCHMARK LEVEL COMPARISONS

AGENCY: DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT
BRU: OIL & GAS CONSERVATION
COMPONENT: OPERATIONS (SER #: 368)

ITEM	FY '88 AUTHORIZED	FY '88 FINAL AUTH	FY '88 ACTUAL	FY '89 AUTHORIZED	FY '90 ADJ BASE	FY '90 AGENCY	FY '90 GOVERNOR
* * * COMPONENT TOTAL * * *	1,424.4	1,410.1	1,400.0	1,536.2	1,572.2	1,592.2	1,592.2
EXPENDITURES							
Personal Services	1,202.6	1,188.3	1,182.2	1,307.7	1,343.7	1,343.7	1,343.7
Travel	98.0	49.8	49.0	88.0	88.0	88.0	88.0
Contractual Services	112.4	154.6	152.7	127.4	127.4	147.4	147.4
Commodities	11.4	17.4	16.1	13.1	13.1	13.1	13.1
Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Land/Buildings	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grants/Claims	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Misc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FUNDING							
1002 Fed Rcpts	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1004 Gen Fund	1,324.4	1,310.1	1,300.0	1,436.2	1,472.2	1,492.2	1,492.2
STAFFING							
Full-time	22.0	22.0	22.0	23.0	23.0	23.0	22.0
Part-time	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Temporary	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Staff-months	264.0	264.0	264.0	276.0	276.0	276.0	264.0

ALERTS #: 6-08-14-06-00
COMP SER #: 368

STATE OF ALASKA
OFFICE OF MANAGEMENT & BUDGET
DIVISION OF BUDGET REVIEW

DATE: 12/19/88
TIME: 14:58:46
PROG: CDETAILS

FY '90 DRAFT OPERATING BUDGET (DEC. 15, 1988 RELEASE)

AGENCY: DEPARTMENT OF COMMERCE & ECONOMIC DEVELOPMENT
BUDGET REQUEST UNIT: OIL & GAS CONSERVATION
COMPONENT: OPERATIONS

***** COMPARISON OF AGENCY SUBMISSION TO GOVERNOR'S PROPOSAL *****

DESCRIPTION	REF NUM	TRANS TYPE	PROPOSED BY	AGENCY SUBMISSION PFT	AGENCY SUBMISSION PPT	AGENCY SUBMISSION TOTAL	AGENCY SUBMISSION GEN FUND	AGENCY SUBMISSION OTH FUNDS	GOVERNOR'S PROPOSAL PFT	GOVERNOR'S PROPOSAL PPT	GOVERNOR'S PROPOSAL TOTAL	GOVERNOR'S PROPOSAL GEN FUND	GOVERNOR'S PROPOSAL OTH FUNDS
FY '89 LEGISLATIVE CONFERENCE COMMITTEE				23.0	0.0	1,536.2	1,436.2	100.0	23.0	0.0	1,536.2	1,436.2	100.0
Projected FY '90 Health Benefit Adjustment ($36.7)	2378	MISADJ	OMB	0.0	0.0	36.0	36.0	0.0	0.0	0.0	36.0	36.0	0.0
Increase in Annual Assessment Levied on Alaska by the Interstate Oil Compact Commission	4043	INC	AGENCY	0.0	0.0	20.0	20.0	0.0	0.0	0.0	20.0	20.0	0.0
Adjust Position Count to Match Available Funding	4070	DEC	OMB	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0
*** COMPONENT TOTALS ***				23.0	0.0	1,592.2	1,492.2	100.0	22.0	0.0	1,592.2	1,492.2	100.0

***** DERIVATION OF FY '90 PROPOSAL, BY IMPACT AND LINE ITEM *****

DESCRIPTION	REF NUM	PERSONAL SERVICES	TRAVEL	CONTRACTUAL SERVICES	COMMODITIES	EQUIPMENT	LAND/ BUILDINGS	GRANTS/ CLAIMS	MISC.	TOTALS
FY '88 ACTUAL EXPENDITURES (NON-ADD)		1,182.2	49.0	152.7	16.1	0.0	0.0	0.0	0.0	1,400.0
FY '89 LEGISLATIVE CONFERENCE COMMITTEE		1,307.7	88.0	127.4	13.1	0.0	0.0	0.0	0.0	1,536.2
Projected FY '90 Health Benefit Adjustment ($36.7)	2378	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0
Increase in Annual Assessment Levied on Alaska by the Interstate Oil Compact Commission	4043	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	20.0
Adjust Position Count to Match Available Funding	4070	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
*** COMPONENT TOTALS ***		1,343.7	88.0	147.4	13.1	0.0	0.0	0.0	0.0	1,592.2

ITEM AND EXPLANATION	AMOUNT	FUNDING SOURCES		POSITIONS	100 PERSONAL SERVICES	200 TRAVEL	300 CONTRACTUAL SERVICES	400 SUPPLIES	500 EQUIPMENT	OTHER
1. FY 89 Conference Committee Report	1536.2	1002 1004	100.0 1436.2	PFT 23.0 PPT	1307.7	88.0	127.4	13.1		
2. Fiscal Notes/Other Appropriation Bills				PFT PPT						
3. Vetoes	( )	( )		PFT PPT	( )	( )	( )	( )	( )	( )
4. Position Adjustment				PFT PPT						
5. FY 89 Authorized	1536.2	1002 1004	100.0 1436.2	PFT 23.0 PPT	1307.7	88.0	127.4	13.1		
6. Health Benefit Adjustment	36.0	1004	36.0	PFT PPT	36.0					
7. One-Time Items	( )	( )		PFT PPT	( )	( )	( )	( )	( )	( )
8. Other Adjustments				PFT PPT						
9. FY 90 Base	1572.2	1002 1004	100.0 1472.2	PFT 23.0 PPT	1343.7	88.0	127.4	13.1		
10. Transfers				PFT PPT						
11. FY 90 Adjusted Base	1572.2	1002 1004	100.0 1472.2	PFT 23.0 PPT	1343.7	88.0	127.4	13.1		

C2 ADJUSTED BASE CALCULATION

AGENCY Commerce & Economic Development

BRU Alaska Oil & Gas Conservation Commission

COMPONENT Operations

Revised Date:

FY 90

INCREMENT/DECREMENT DESCRIPTION (Limit to 98 characters)
Increase in annual accessment levied on Alaska by the Interstate Oil Compact Commission

AGENCY CONTACT/PHONE NUMBER:

Chat Chatterton 279-1433

DESCRIBE WHY THIS INCREMENT/DECREMENT IS NEEDED AND WHAT IT PURCHASES:

At the July 2, 1986 Business Session in Anchorage, the Interstate Oil Compact Commission (IOCC) adopted a new allocation schedule for individual member state assessments for the Commission's General Fund. As a result of this action, the calendar year assessment for Alaska was revised upward from $19,000 to $39,000; a net increase of $20,000. This increment is needed to maintain the State of Alaska's membership in the Compact in good standing. The Governor serves as Alaska's member, and is current chairman of the Interstate Oil Compact Commission.

The Commission was able to meet Alaska's obligation for the calendar years of 1986, 1987 and 1988 by implementing a 20 percent cut-back in the number and frequency of field inspections. With the increasing field inspection workload imposed by the Underground Injection Control Program, a continuation of the cut-back is no longer a viable option. Our problem is exacerbated by a cut in authorized FY'89 travel funds; a $10,000 reduction of the funds requested for FY'89.

CODE	EXPENDITURE BY OBJECT	AGENCY REQ.	GOV'S REQ.
100	Personal Services		
200	Travel		
300	Contractual Services	20.0	20.0
400	Supplies		
500	Equipment		
600	Lands, Buildings, Etc.		
700	Grants, Claims, Etc.		
800	Miscellaneous		
	TOTAL	20.0	20.0
	I-A Transfer (NON-ADD)		
1002	Federal Receipts		
1003	General Fund Match		
1004	General Fund	20.0	20.0
1005	GF/Program Receipts		
1007	I-A Receipts		

POSITION INFORMATION			
	PFT		
	PPT		
	Non Permanent		
	Staff Months		

/ / Enhance Existing Service Compared to FY 89

/ / New Service Compared to FY 89

/X/ Continuation of FY 89 Service Level

/ / Formula Program

/ / New Facility Oper.

IMPACT FROM CAPITAL PROJECT (NAME)
N/A

Chapter _____ SLA _____ Page/Line _____

C5 INCREMENT/ DECREMENT REQUEST

Agency Priority 1 of 1

(7/88)-c5

AGENCY Department of Commerce and Economic Development

BRU Oil & Gas Conservation Commission

COMPONENT Operations

PROJECT

FY 90 4043

Page 1 of 1

Revised Date:

0001344

10/06/88 PERSONAL SERVICES EXPENDITURES SUMMARY REPORT PAGE: 1

DEPT. OF COMMERCE & ECONOMIC DEVELOPMENT SCENARIOS 30 AND 1

BRU: OIL & GAS CONSERVATION COMMISS COMP: AO&GCC ADMINISTRATION

	FY88 ACTUAL	FY89 AUTH	FY90 REQUEST
COSTS			
REG. DUTY COSTS	969331.91	1053636.00	1053636.00
PREMIUM PAY	0.00	0.00	0.00
BENEFITS	263166.82	308541.94	345785.86
LUMP SUM PREM PAY	0.00	0.00	0.00
TOTAL PERSONAL SVCS	1232498.73	1362177.94	1399421.86
FUNDING SOURCES			
GENERAL FUND	1232498.73	1362177.94	1399421.86
OTHER FUNDING	0.00	0.00	0.00
TOTAL FUNDING	[illegible]	1362177.94	1399421.86
PFT POSITIONS	23	23	23
PPT POSITIONS		0	0
TEMP POSITIONS		0	0
STAFF MONTHS	[illegible]	276.00	276.00
VACANCY FACTOR		54477.95 (3.99933%)	55721.02 (3.98172%)
LINE 100	[illegible]	1307699.99	1343700.84

B201DETR 10/06/88 10:30:57.9 PERSONAL SERVICES EXPENDITURES DETAIL REPORT PAGE:

DEPT. OF COMMERCE & ECONOMIC DEVELOPMENT SCENARIO: 1 (FY90 AGENCY SCENARIO 1)

COMPONENT #: 08 4602500100 NAME: AO&GCC ADMINISTRATION BRU NAME: OIL & GAS CONSERVATION COMMISSION

PCN	JOB CLASS TITLE	T S	LOCATION NAME	R C	B U	S	R&S	MOS BUDG	ANNUAL SALARY	PREMIUM PAY	ANNUAL BENEFITS	TOTAL PERS. SVCS	GEN. FU AMOUI
0100	STATISTICAL TECHNICIAN I	F	ANCHORAGE	A	G	A	12L	12.00	32424	0	12553	44977.10	44977
0101	STATISTICAL TECHNICIAN I	F	ANCHORAGE	A	G	A	12F	12.00	29196	0	11838	41034.42	41034
0102	ADMINISTRATIVE ASST I	F	ANCHORAGE	A	G	A	12F	12.00	29196	0	11838	41034.42	41034
0103	CLERK TYPIST III	F	ANCHORAGE	A	G	A	08D	12.00	21420	0	10116	31536.82	31536
0104	MICROFILM EQUIP OP II	F	ANCHORAGE	A	G	A	12D	12.00	27288	0	11415	38703.99	38703
0105	CLERK TYPIST II	F	ANCHORAGE	A	G	A	07B	12.00	19032	0	9588	28620.11	28620
0106	MICROFILM EQUIP OP I	F	ANCHORAGE	A	G	A	10F	12.00	25620	0	11046	36666.70	36666
0150	COMMISSIONER O & GCC	F	ANCHORAGE	A	X	A	27E	12.00	74472	0	20154	94626.19	94626
0151	COMMISSIONER O & GCC	F	ANCHORAGE	A	X	A	27D	12.00	71880	0	19748	91628.03	91628
0152	COMMISSIONER O & GCC	F	ANCHORAGE	A	X	A	27D	12.00	71880	0	19748	91628.03	91628
0153	Petro Geol Assistant	F	ANCHORAGE	A	X	A	16B	12.00	33816	0	12801	46617.29	46617
0155	SR PETRO GEOLOGIST	F	ANCHORAGE	A	X	A	24F	12.00	66816	0	18954	85770.50	85770
0156	SR PETRO ENGINEER	F	ANCHORAGE	A	X	A	24F	12.00	66816	0	18954	85770.50	85770
0158	SR PETRO ENGINEER	F	ANCHORAGE	A	X	A	24F	12.00	66816	0	18954	85770.50	85770
0160	SR PETRO RES ENGINEER	F	ANCHORAGE	A	X	A	24F	12.00	66816	0	18954	85770.50	85770
0161	PETROLEUM INSPECTOR	F	ANCHORAGE	A	X	A	21E	12.00	52548	0	16718	69266.70	69266
0162	PETROLEUM ENGINEER ASST	F	ANCHORAGE	A	X	A	16B	12.00	33816	0	12801	46617.29	46617
0163	PETROLEUM INSPECTOR	F	ANCHORAGE	A	X	A	21E	12.00	52548	0	16718	69266.70	69266
0164	PETROLEUM INSPECTOR	F	ANCHORAGE	A	X	A	21E	12.00	52548	0	16718	69266.70	69266
0165	Petro Research Analyst Asst	F	ANCHORAGE	A	X	A	18E	12.00	42984	0	14831	57815.08	57815
0167	EXECUTIVE SECRETARY	F	ANCHORAGE	A	X	A	12F	12.00	29340	0	11810	41150.30	41150
0169	Petro Geol Assistant	F	ANCHORAGE	A	X	A	16B	12.00	33816	0	12801	46617.29	46617
0170	PETROLEUM INSPECTOR	F	ANCHORAGE	A	X	A	21E	12.00	52548	0	16718	69266.70	69266
				COLUMN TOTALS:					1053636	0	345785	1399421.86	

FULL TIME POSITIONS	23
PART TIME/SEASONAL POSITIONS	0
NON PERMANENT POSITIONS	0
OTHER.....	0
	====

TOTAL PERSONAL SERVICES	1399421.86
PLUS LUMP SUM PREMIUM PAY	0.00
SUB-TOTAL	1399421.86
MINUS 3.98172 % VACANCY ADJUSTMENT	55721.06
	==========
PERSONAL SERVICES, LINE 100	1343700.80

NUMBER OF POSITIONS IN COMPONENT 4602500100 = 23
(INCLUDES 0 BUDGETED NEW POSITIONS)

STAFF MONTHS: 276.00

FUNDING DATA:

1004 (GENERAL FUND)	1399421.86
	==========
TOTAL FUNDING:	1399421.86

0.0340

C-100

Pg 1 of 1

CODE	TRAVEL AND MOVING CLASSIFICATION	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	BUDGET YEAR - FY 90		
				ADJUSTED BASE	INCREMENT/ DECREMENT	AGENCY REQUEST
72240	Field Travel	23.8	40.0	40.0		40.0
72270	Administrative Travel		2.0	2.0		2.0
72300	Conventions and Meeting Travel		3.0	3.0		3.0
72330	Boards, Commissions and Legislators Travel					
72360	Moving or Relocation Expense					
72390	Non-Employee Travel					
72500	Per Diem	25.2	43.0	43.0		43.0
72800	Honorarium/Stipends					
72000	TOTAL TRAVEL AND MOVING	49.0	88.0	88.0		88.0
	INTER-AGENCY TRANSFERS (NON-ADD)					

CODE	EXPLANATION	ADJUSTED BASE	INCREMENT/ DECREMENT
72240	Provides funding for field inspections of drilling, production, injection and metering operations to ensure compliance with regulations.	40.0	
72270	Provides funding for travel to Juneau for Legislative hearings etc.	2.0	
72300	Provides funding for out-of-state travel to represent Alaska at Interstate Oil Compact Commission (IOCC) and Underground Injection Practices Council (UIPC) meetings.	3.0	
72500	Provides per diem for field inspections, administrative and meeting travels.	43.0	
72000	TOTAL	88.0	

C200 TRAVEL AND MOVING

AGENCY: Department of Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

COMPONENT: Operations

Revised Date:

FY 90

CODE	CONTRACTUAL SERVICES CLASSIFICATION	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	BUDGET YEAR - FY 90		
				ADJUSTED BASE	INCREMENT/ DECREMENT	AGENCY REQUEST
73100	Professional Services	1.1	5.0	5.0		5.0
73253	DP Chargeback (DOA)					
73300	Communication	18.1	13.0	13.0		13.0
73400	Transportation					
73420	Transportation - State Equipment Fleet Fees	26.3	26.0	26.0		26.0
73500	Advertising, Printing and Binding	10.7	5.0	5.0		5.0
73600	Public Utilities Services	15.9	18.0	18.0		18.0
73700	Minor Repair and Maintenance	29.7	24.3	24.3		24.3
73800	Rental for Land, Buildings and Space	1.8	5.0	5.0		5.0
73860	Rental for Machinery and Equipment	2.5	9.0	9.0		9.0
73900	Other Expenditures and Services	60.7	22.1	22.1	20.0	42.1
73000	TOTAL CONTRACTUAL	167.5	127.4	127.4	20.0	147.4
	INTER-AGENCY TRANSFERS (NON-ADD)	13.7	13.7	13.7		13.7

CODE	EXPLANATION	ADJUSTED BASE	INCREMENT/ DECREMENT
73100	Professional Services: Provide funding for Software analysis and improvement	5.0	
73300	Communications: Provides funding for telephone, telegraph, data communication, paging and answering services. Also includes funding for postage.	13.0	
73420	State Equipment Fleet Fees: Provides funding for one Class IIID stationwagon for Anchorage office support and one pick-up rental at Deadhorse for ground transportation inspection needs.	26.0	
73500	Advertising, Printing and Binding: Provides funding for legal notices, court reporting services for commission hearings, photo processing, subscriptions, and reproduction of forms, regulations, drawings and maps.	5.0	
73600	Public Utilities Services: Telephone, electricity, heat.	18.0	

C300 CONTRACTUAL SERVICES

AGENCY: Department of Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

COMPONENT: Operations

Revised Date:

FY 90

(7/88)-c300

CODE	EXPLANATION	ADJUSTED BASE	INCREMENT/ DECREMENT
73700	Minor Repair and Maintenance: Provides funding for maintenance contracts covering data and word processing equipment including modems and terminals as well as microfilm camera, copiers, and postage meter. Also provides funds for repair and maintenance of telephone system, furniture and office equipment.	24.3	
73800	Rental for Land, Buildings and Space: Provides funding for all utility services, repair and upkeep, janitorial and caretaker service, etc. for State Office Building #106654 including maintenance of the building's mechanical equipment and the grounds.	5.0	
73860	Rental for Machinery and Equipment: Provides funding for lease of Ricoh Copiers, postage meter, Displaywriters and telecopier. Also funds occassional charters of fixed and rotor wing aircraft for required well inspections at remote locations.	9.0	
73900	Other Expenditures and Services: Provides funding for State's annual Interstate Oil Compact Commission (IOCC) and Underground Injection Practices Council (UIPC) assessments, risk management, training conference and registration fees.	22.1	20.0
73000	TOTAL Contractual	127.4	20.0

300 ADDITIONAL EXPLANATION FORM

AGENCY: Department of Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

COMPONENT: Operations

Revised Date:

FY 90

(7/88)-ael

CODE	SUPPLIES AND MATERIALS CLASSIFICATION	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	BUDGET YEAR - FY 90		
				ADJUSTED BASE	INCREMENT/ DECREMENT	AGENCY REQUEST
74220	Office and Library Supplies	10.6	10.7	10.7		10.7
74440	Agricultural Supplies	0.4				
74480	Household and Institutional Supplies	0.1				
74520	Professional and Scientific Supplies	0.3				
74560	Data Processing Supplies	0.3				
74600	Other Operating Supplies	3.6				
74650	Repair and Maintenance Supplies	0.8	2.4	2.4		2.4
74000	TOTAL SUPPLIES AND MATERIALS	16.1	13.1	13.1		13.1
	INTER-AGENCY TRANSFERS (NON-ADD)					

CODE	EXPLANATION	ADJUSTED BASE	INCREMENT/ DECREMENT
74220	Office and Library Supplies: Provides funding for general office and library supplies, commodities, photographic, books, maps, and training material.	10.7	
74650	Provides funding for maintenance supplies and minor repairs to Building #106654.	2.4	
74000	TOTAL	13.1	

C400 SUPPLIES AND MATERIALS

AGENCY: Department of Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

COMPONENT: Operations

Page 1 of 1

Revised Date:

FY 90

0350

(7/88)-c400

TYPE OF REVENUE	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	CURRENT YEAR FY 89 CASH ESTIMATE	FY 90 BUDGET YEAR			FY 91 ESTIMATE
				ADJUSTED BASE	INCREMENT/ DECREMENT	AGENCY REQUEST	
RESTRICTED - FEDERAL RECEIPTS	100.0	100.0	100.0	100.0		100.0	100.0
RESTRICTED - INTER-AGENCY RECEIPTS							
RESTRICTED - CIP RECEIPTS							
RESTRICTED - OTHER							
RESTRICTED - OTHER							
RESTRICTED RECEIPTS TOTAL	100.0	100.0	100.0	100.0		100.0	100.0
UNRESTRICTED RECEIPTS	15.6	24.1	14.5	16.1		16.1	16.1
TOTAL RECEIPTS	115.6	124.1	114.5	116.1		116.1	116.1

C20 REVENUE SUMMARY

AGENCY Department of Commerce and Economic Development

BRU Oil and Gas Conservation Commission

COMPONENT Operations

FY 90

Page 1 of 1

Revised Date:

(7/88)-c20

TYPE OF REVENUE:	NAME AND TELEPHONE NUMBER OF AGENCY CONTACT:
Unrestricted	C. V. Chatterton, Commissioner/Chairman (907) 279-1433

FUNDING SOURCE	FUND	REVENUE ACCOUNT	COLLOCATION CODE	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	CURRENT YEAR FY 89 CASH ESTIMATE	BUDGET YEAR FY 90 ADJUSTED BASE	BUDGET YEAR FY 90 INCREMENT/ DECREMENT	BUDGET YEAR FY 90 AGENCY REQUEST	FY 91 ESTIMATE
1004	11100	61500	08462001	14.5	22.5	14.5	14.5		14.5	14.5
1004	11100	64020	08462001	1.1	1.6	1.6	1.6		1.6	1.6
			TOTAL	15.6	24.1	16.1	16.1		16.1	16.1

EXPLANATION (SEE INSTRUCTIONS):

(61500) AS 31.05.080 provides that any person desiring to drill a well in search of oil or gas shall pay a fee of $100.00. We now estimate that 145 applications will be forthcoming in FY 89 and 145 applications in FY 90. Checks are made payable to the Department of Revenue by the applicant and are forwarded to the department for deposit to the General Fund. These receipts are unrestricted and not a funding source for the agency budget.

(64020) 6 AAC 95.130(a) requires members of the public to pay 25 cents per sheet for copies of public documents. Historically, revenue from this source approximates the above estimate. Funds collected are transferred to the Department of Revenue for deposit to the General Fund. These receipts are unrestricted and not a funding source for the agency budget.

6065M

C21a UNRESTRICTED REVENUE DETAIL

AGENCY: Commerce and Economic Development

BRU: Oil and Gas Conservation Commission

COMPONENT: Operations

Revised Date:

FY 90

0352

(7/88)-c21a

TYPE OF REVENUE:	NAME AND TELEPHONE NUMBER OF AGENCY CONTACT:
Restricted	C. V. Chatterton, Commissioner/Chairman (907) 279-1433

FUNDING SOURCE	FUND	REVENUE ACCOUNT	COLLOCATION CODE	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	CURRENT YEAR FY 89 CASH ESTIMATE	BUDGET YEAR FY 90 ADJUSTED BASE	BUDGET YEAR FY 90 INCREMENT/ DECREMENT	BUDGET YEAR FY 90 AGENCY REQUEST	FY 91 ESTIMATE
1002	11100	51010	08462003	100.0	100.0	100.0	100.0		100.0	80.0
			TOTAL	100.0	100.0	100.0	100.0		100.0	80.0

EXPLANATION (SEE INSTRUCTIONS):

(51010) E.P.A. Federal Grant to administer Underground Injection Control Program.

6065M-2

C21b RESTRICTED REVENUE DETAIL

AGENCY Commerce and Economic Development

BRU Oil and Gas Conservation Commission

COMPONENT Operations

Revised Date:

FY 90

EXPENDITURE ACCOUNT	NAME OF EXPENDITURE ACCOUNT	PRIOR YEAR FY 88 ACTUAL	CURRENT YEAR FY 89 AUTHORIZED	BUDGET YEAR - FY 90		
				ADJUSTED BASE	INCREMENT/ DECREMENT	AGENCY REQUEST
73420	Highway Working Capitol Fund	3.2	3.0	3.0		3.0
73500	Printing and Binding	1.1	1.0	1.9		1.9
73700	Repair and Maintenance	2.5	5.0	5.0		5.0
73900	Other Expenditures and Services	3.5	4.7	3.8		3.8
	TOTAL INTER-AGENCY TRANSFERS	10.3	13.7	13.7		13.7

EXPLANATION		ADJUSTED BASE	INCREMENT/ DECREMENT
73420	Department of Transportation -- Fixed and mileage costs for Class IIID vehicle.	3.0	
73500	Department of Administration - Central Duplicatimg -- miscellaneous printing.	1.9	
73700	Department of Transportation - Division of Buildings -- Building #106654 rental and repairs.	5.0	
73900	Department of Education - Seward Skill Center -- Tuition for Blowout Prevention (BOP) refresher course.	3.3	
73900	Department of Administration - Risk Management and clerical clearinghouse	0.5	
	TOTAL	13.7	

C22 INTER-AGENCY TRANSFERS

AGENCY Department of Commerce and omic Development

BU and Gas Conservation Commission

COMPONENT Operations

Page 1 of 1

Revised Date:

FY 90

0354

(7/88)-c22

3/10/89 LCS

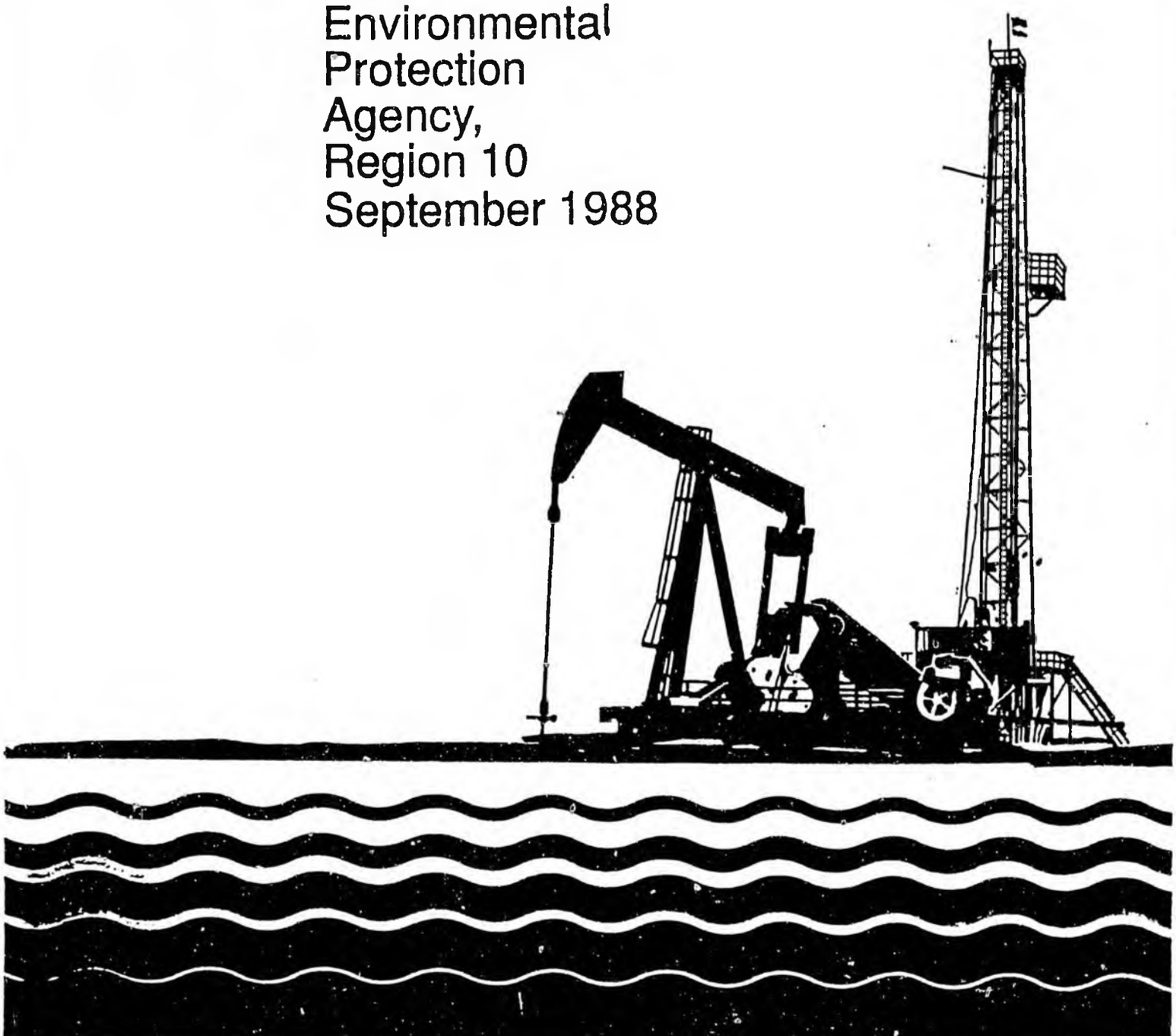
United States Environmental Protection Agency | Region 10 1200 Sixth Avenue Seattle WA 98101 | Alaska Idaho Oregon Washington

Water Division | Drinking Water

EPA

Evaluation of the Alaska Oil & Gas Conservation Commission Underground Injection Control Program

U.S. Environmental Protection Agency, Region 10
September 1988



Evaluation of the Alaska Oil and Gas Conservation Commission
Underground Injection Control Program

Executive Summary

On June 19, 1986, the Alaska Oil and Gas Conservation Commission (AOGCC) was delegated primacy for the Class II Underground Injection Control (UIC) Program as authorized under Section 1425 of the Safe Drinking Water Act. The remainder of the UIC Program for Class I, III, IV, and V injection wells continues to be administered by the U.S. Environmental Protection Agency (EPA) Region 10.

A representative of the EPA conducted an in-depth performance audit of the AOGCC Class II UIC Program on September 12-19, 1988. Three days were used for office review and four days for inspections and field review of Class II wells on the North Slope. This audit is an expanded version of the routine Region 10 Mid-Year review. The purpose was to evaluate the overall implementation of the AOGCC UIC primacy program since its approval in June of 1986.

The evaluation of the AOGCC UIC Program focused on the following major elements:

I. Administration
II. Public Outreach
III. Inventory/Data Management
IV. Permitting/File Reviews/Aquifer Exemptions
V. Mechanical Integrity Testing
VI. Financial Assurance
VII. Plugging and Abandonment
IX. Compliance/Enforcement

Discussions on each of these elements is contained in the body of this report. In general, the Alaska Section 1425 UIC Program is a well implemented and well staffed operation. The AOGCC staff is technically competent; environmentally sensitive; and responsive to the public, the regulated community, and EPA. However, there are some areas of concern where program changes are recommended. Discussed below is a brief summary of the audit team's findings.

Highlights

1. The AOGCC maintains a trained technical staff sufficient to manage the UIC Program.

2. AOGCC has completed and maintains an accurate inventory for all Class II wells.

3. All injection wells are regulated under AOGCC Area Injection Orders or Disposal Injection Orders.

4. The AOGCC continues to make environmentally sound permit determinations for Class II injection wells, which afford protection of underground sources of drinking water (USDWs).

5. The AOGCC maintains a close working relationship with EPA for processing aquifer exemptions.

6. The AOGCC has effectively utilized federal grant dollars to meet national and regional priorities as defined in the state specific guidance.

7. Widespread public involvement is obtained by publication of public notices in the states' largest newspaper; sending copies of notices to those people on the mailing list; and requiring applicants to provide a copy of their permit application to operators and surface owners within a 1/4 mile radius of the injection project.

8. The Mechanical Integrity Test (MIT) requirement of an initial baseline pressure test and a repeat of the pressure test at least every four years, coupled with annulus monitoring, provide good assurance that USDWs are being protected.

9. The quarterly and annual reports, program plans, grant applications, and Financial Status Reports have been submitted to EPA on schedule.

10. The commitment to an effective field inspection effort is a strong point.

11. The Commission's UIC Program Manager continues to maintain a strong commitment to meeting UIC program requirements and working with EPA.

Findings and Recommendations

1. EPA is concerned that the public notification effort does not include publication of notices in local newspapers and the holding of hearings in the local area where the injection operation is located. It is recommended that local newspapers be used and hearings be held closer to the injection well operation. In lieu of local hearings a television or telephone hookup could be used.

2. Financial assurance requirements may not be adequate to assure proper plugging and abandonment of wells if economic conditions worsen. Financial responsibility should be increased.

3. Using two inspectors on the North Slope during periods of increased MIT testing would preclude the current need to occasionally waive important inspections.

4. Permit applications do not consistently demonstrate or document the requirements of state regulations. A closer review of the permit applications and permits would ensure the state regulations are met.

5. Other recommendations are noted in the report.

EPA Review Team

Harold Scott, Alaska UIC Coordinator - Region 10

AOGCC Participants

C.V. Chatterton, Chairman
Lonnie Smith, Commissioner
Blair Wondzell, Senior Petroleum Engineer
Mike Mender, Senior Petroleum Engineer
Bob Crandall, Geologist
Harold Hawkins, Petroleum Inspector

Agency Overview Format

A. Discussion of Functions

1. The Commission is created by AS 31.05.005.

2. Duties of the commission are set forth by AS 31.05.030. Briefly, the Commission is charged with administration of AS 31.05, "The Alaska Oil and Gas Conservation Act" which provides for regulation of in-State Subsurface oil and gas operations to ensure that physical waste of the resource does not occur.

3. The Commissioners and staff are located at 3001 Porcupine Drive in Anchorage. Currently (FY'89"), three Commissioners and a staff of 20, as detailed by attached organizational chart are authorized. Two vacancies exists, a Commissioner and a Petroleum Inspector. The proposed FY'90 deletes the vacant Petroleum Inspector position.

B. Funding History

1. The agency's annual appropriations dropped steeply (32%) from FY'85 thru FY'88. Since FY'88 and thru FY'90 request, a slight upward creep (less than 5%) has occurred. Agency appropriations and compliment are tabulated as follows:

Fiscal Year	$ in 1000's	Personal
FY'85	2231.0	26
FY'86	2140.9	26
FY'87	1613.9	25
FY'88	1518.7	23
FY'89	1536.2	23
FY'90 (Request)	1592.2	22

2. The agency was instrumental in gaining enactment of Chapter 56 SLA 1987 which amended AS 43.57.010, the Oil and Gas Conservation Tax, to provide for a separate account within the General Fund for deposit of tax proceeds. Annual Tax proceeds now approximate $3,000,000, thus offsetting agency appropriations.

C. Changes to FY'90 Appropriation Request.

Our FY'90 request includes a $20,000 increment to offset the Interstate Oil Compact Commission (IOCC) increase in annual assessment for Alaska and a reduction in staff of one Petroleum Inspector.

D. Highlights of budget request

1. No reduction or deletion of projects/programs is contemplated.

2. New projects or expanded programs are not planned.

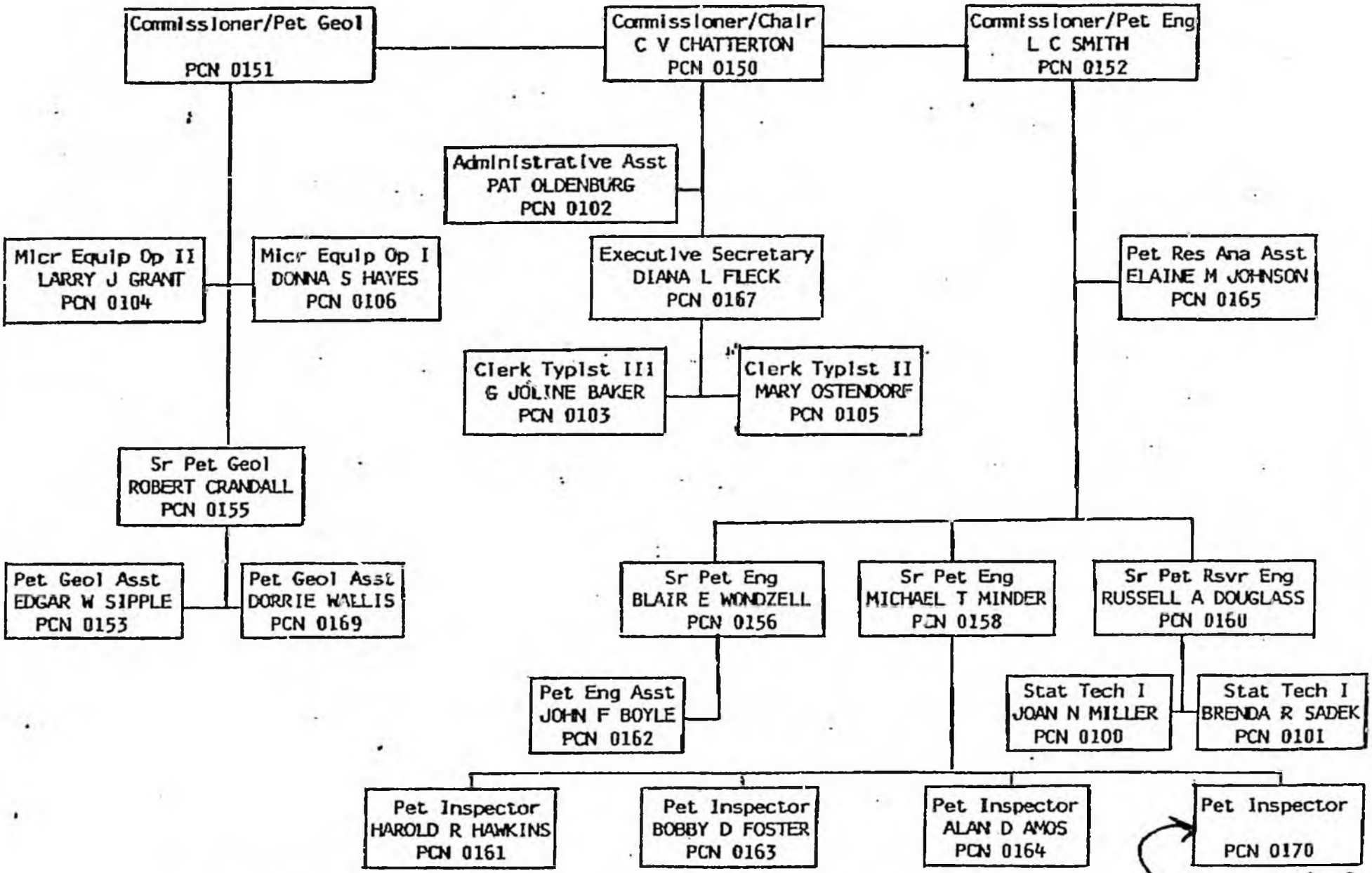
E. Major Issues.

1. The agency currently has no unfunded increments, capital requests or other comments.

2. The Commission urges introduction and passage of the "underground injection bill". The bill calls for amendments to AS 31.05 that the Commission is obligated by a memorandum of agreement with the U. S. Environmental Protection Agency (EPA) to seek. Failure to enact these amendments jeopardizes receipt of $100,000 in FY'90 federal funds and retention of Administrative responsibilities for EPA's Class II underground injection program for Alaska.

HB 55

ORGANIZATION CHART



ALASKA OIL AND GAS CONSERVATION COMMISSION

Dropped for FY90 BRU

rev 08/15/88 [D]

OVERVIEW - RAILROAD MOOSE KILLS

Alaska State Legislature

REPRESENTATIVE DICK SHULTZ

Member
Finance Committee

PO Box V
Juneau, Alaska 99811
(907) 465-4940
Home: PO Box 487
Tok, Alaska 99780

January 30, 1990

All Legislators
P.O. Box V
Juneau, Alaska 99811

Dear Colleagues;

The slaughter of moose along the Alaska Railroad has got to stop. Not only do we lose significant portions of our moose populations, the meat is often rendered unfit for human consumption as the moose are literally exploded on impact by A.R.R. locomotives.

I have attached for your review a proposal by Mr. Nick Colombo from Delta Jct.. Mr. Colombo has travelled to Juneau and has presented his plan to the Legislature and Department of Fish and Game on several occasions. Presently Mr. Colombo has retained two defunct tracts of Delta Ag. land. He has spent many thousands of dollars of his own money to put up chain link fence and has created prime buffalo range. Presently Mr. Colombo has a herd of some thirty buffalo which are doing very well. He has spent extensive time researching game ranches and has corresponded with researchers, biologists and Canadian University research groups. In short Mr. Colombo is very serious about his endeavors. His obvious success with buffalo ranching can be repeated with moose if he is allowed to capture and transport them to Delta. To personally witness what Mr. Colombo has in mind, one need only travel to Whitehorse and view one of the most successful game ranches in North America. The Canadians once again have out distanced us in dealing with natural resource development.

I, and Mr. Colombo have met with Fish and Game officials and have proposed a joint venture in which moose would be removed from the railroad, placed on his Ag. tracts, and they would be kept and studied. Here is an example where a private person will fund a substantial portion of a project, provide a place for the endangered moose, and allow Fish and Game to conduct research. The response to date from the Department has been cool. Even though they promised to visit Mr. Colombo's operation this summer, they failed to do this.

I enlist your support for this project for several reasons.

1. We will reduce the moose slaughter.

2. We will make good use of Ag. land which otherwise would grow back to scrub.

3. Mr. Colombo has the financial and physical resources to make this project work.

4. There is little expense to the state when one considers the cost of the present carnage which continues year after year. (Figure each moose to be worth in excess of $ 2000.00)

5. Fish and Game would have a moose research station at little public expense.

6. Tourists will have great viewing opportunities.

7. Last, but not least, I have not heard of any better solutions, have you?

Thank you for taking the time to review Mr. Colombo's proposal. It is time we attempt a solution with action instead of words and studies. We have everything to gain and absolutely nothing to lose.

Sincerely,

Dick

Dick Shultz

Alaska Railroad Corporation
Moose/Train Contact Report

Total Number of Railroad Moose Mortality since State Ownership
(for the period October 1 through March 31)

1988-89	239
1987-88	329
1986-87	120
1985-86	21
1984-85	316

Total # Killed on Railbelt Highways (from Dept. of Transportation)

1988	not known
1987	321
1986	308
1985	362
1984	342

Railroad Moose Mortality Under Federal Ownership*

Year	Number
1978-1979	163
1979-1980	54
1980-1981	24
1981-1982	50
1982-1983	144
1983-1984	63

*Statistics compiled by Alaska Dept. of Fish and Game for full calendar year

Table 1. Numbers of moose killed by collisions with trains in the Alaska Railroad right-of-way between Seward and Fairbanks during winter (October through April) and summer (May through September) periods, 1963-86.

Year[a]	Period		Total
	Summer	Winter	
1963-64	-	45	45
1964-65	7	37	44
1965-66	4	34	38
1966-67	5	49	54
1967-68	2	30	32
1968-69	2	9	11
1969-70	2	7	9
1970-71	3	149	152
1971-72	2	87	89
1972-73	5	23	28
1973-74	2	16	18
1974-75	1	69	70
1975-76	7	30	37
1976-77	4	23	27
1977-78	9	14	23
1978-79	2	162	164
1979-80	1	52	53
1980-81	4	16	20
1981-82	9	37	46
1982-83	18	130	148
1983-84	8	57	65
1984-85	7	375	382
1985-86	20	15	35

[a] Data obtained from Alaska Railroad (Department of Transportation) dispatch files. Many moose hit and killed by trains are not reported (Rausch 1956).

Giants star gets $15 million deal

Sports, B-1

ge Daily News

)RAGE, ALASKA, TUESDAY, JANUARY 23, 1990 PRICE 25 CENTS

The Associated Press photos

Soviet army tanks.

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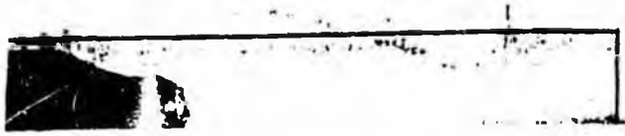

Moose dying at record rate along railway

By CRAIG MEDRED
Daily News reporter

The trains of the Alaska Railroad in the last month have been killing an average of almost 10 moose per day on the stretch of tracks between Palmer and Denali National Park and Preserve, according to officials of the railroad and the Alaska Department of Fish and Game.

Almost 50 of the animals died over the weekend, the railroad reported Monday. The total death toll for January has reached 204.

State wildlife biologist Carl Grauvogel said that is a record for the month. November and December kills bring the total death toll to almost 300 moose so far this winter.

It appears certain the railroad will set a new winter record for moose kills. The existing record is 360 dead, and records show that most moose die in the spring as snows deepen along the rails and winter-weary animals search for easy walking.

Deep snow is already being blamed for this year's carnage. Moose that stray onto tracks banked with 5-foot or higher snow berms are unwilling to jump back into the snow to get out of the way of oncoming trains, Grauvogel said.

"There are solutions to the problem, but they're going to cost money," he said. "There are not solutions that are cost effective from the railroad's standpoint."

"I don't know the answer to it," said railroad spokeswoman Vivian Hamilton. "I really don't."

Some Alaskans are saying the answer might rest in making the state-run railroad pay.

"Public pressure made Exxon spend billions of dollars," said Jean Lee, who has a cabin along the tracks north of Anchorage. "The public has got to do some-

Please see Back Page, MOOSE

MOOSE KILLS

- SUNDAY: 30
- JANUARY: 204
- WINTER: Almost 300
- RECORD: 360

Sources: Alaska Railroad and state Department of Fish and Game

towns and cities in Azerbaijan, which has a population of more than 7 million. It has set suspending the state of emergency imposed on Baku Friday by Gorbachev.

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MOOSE: Trains killing at record pace

Continued from Page A-1

thing about this. The public has to be aware.

"We were up there over the weekend ... and my husband had a scanner, and we were listening to the railroad. Even the train men were getting upset (about the number of dead moose)."

Thirty of the big animals were run down on Sunday, Hamilton said.

"Our crews are not happy about it," she said. "It's not a pleasant thing for them to do."

The railroad has tried tactics to minimize the kill, Hamilton added. Efforts have been made to plow wider than the tracks to give the moose a shallow-snow area toward which to flee, and trains have been slowing down, even stopping at times, to give moose an opportunity to get off the tracks.

"Other than stopping trains altogether, I don't know what else we could do," Hamilton said, and the trains can't be stopped.

"We have a lot of customers," she said. "A lot of customers would be without freight."

She also questioned why the railroad should be charged for the moose it kills.

"Are they going to do the same thing for motorists?" Hamilton asked. Motor vehicles collide with an kill an estimated 800 moose in Alaska in deep-snow winters.

"We don't have the funds to pay that," Hamilton added. "It would increase the cost of doing business."

And it isn't like the railroad is intentionally killing moose, she said.

But some are concerned that the willows that grow in the railroad right of way create an attractive nuisance that lures moose near the tracks.

Grauvogel was reluctant to talk about this issue because of fears he could damage what he considers a good working relationship with the railroad; but he noted that moose kills have declined in areas where the railroad has cleared large areas on either side of the tracks.

"The areas they brushed out last year, they did an excellent job," Grauvogel said. "They took the food back to the tree line," and most of the moose stayed back there, too.

Brushing more areas won't save all the moose, Grauvogel added, but it could help save some. The big problem, he said, is that brushing should have been done over the summer.

"You can't do much in the winter," Grauvogel said.

Snow in the Talkeetna area is now about 6 feet deep, and it just keeps coming. Train crews have had a tough time keeping the tracks clear of snow. Moose are a secondary priority. Lee said that has to change.

"All anyone says is, 'There's nothing we can do,' " Lee said. "That's what everybody says: 'There's nothing we can do.' I just get angrier and angrier."

Train crews are trying, Hamilton said. Some have slowed so much in the effort to avoid killing moose that they have been unable to make the Anchorage to Fairbanks run in under 12 hours, Hamilton said, forcing the railroad to make emergency crew changes to comply with federal laws on train operations.

Section crews have also been working hard to retrieve all the moose carcasses. Edible portions are donated to charity. Inedible portions are saved for a state project to feed wolves in the Tok area this spring.

Still it is not enough, Lee said. A 50-year-old, who has been visiting the family cabin along the tracks 190 miles north of Anchorage for 36 years, she has never witnessed anything like the carnage this year.

"My husband works for the labor union, and he's not an environmentalist," she said. "But he agrees something's got to be done."

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Some help for the moose

This is in regard to the slaughter of moose by the Alaska Railroad.

Something must be done to slow or stop this wasteful slaughter. Following are some suggestions:

- Fine the railroad $500 or more per animal.
- Make the railroad slow down in known high-impact areas.
- Plow a larger area along tracks for moose to get off to one side.
- Plow areas away from the tracks so that the moose have a snowless area and are not tempted to go on the track.
- Increase moose kill for cows, calves and bulls during hunting season in railroad corridor.
- Install a laser light that would warn engineer of impending collision.
- Wolf or bear howl on tape instead of a horn. These predator sounds should scare them off.
- Spray a strong repellant on tracks.
- Fence or tunnel high impact areas.
- Have a man ride shotgun with rubber bullets; scare them off.
- The vast majority of moose are killed at night in the winter. Make the railroad use daylight hours as much as possible.
- Report kills and give salvageable meat to charitable organizations.

There is no one way to stop this "wanton waste," "poaching," or whatever the Department of Fish and Game might call it. The railroad killed over 300 moose last year. With a $500 fine per animal, the railroad would soon have new ideas.

What happened to Yankee ingenuity? Is it that no one cares?

The railroad made a lot of money last year. Let's see some of it go to a good cause. Help stop the slaughter.

— *Bill Samuelson*
William Hyter

OUTDOORS

Record moose suffering deadly winter

By DELIA DORRAN
Frontiersman staff

An average of 10 moose nightly are being hit by trains due to deep snow and no escape pathways, according to game biologists and Alaska Railroad officials.

"Railroad kills are going to set a record," said state game biologist Carl Grauvogal. As of 5 a.m. Wednesday, approximately 360 moose had fallen victim to trains. Of those collisions, 250 occurred since Jan. 1.

Vehicle collisions with moose don't number as high, with around 150 reported so far this year.

The trains are a reluctant weapon of a villainous winter with deep snow and unforgiving pathways. Grauvogal related several officials receiving reports of starving calves and moose lingering near homes. Area residents want to do something about the situation and Grauvogal hopes to provide opportunities soon.

"Usually we don't get a rash of those calls until March or late March," explained Grauveogal.

A growing number of starving calves have officials and the public alarmed and working on possible action. We're definitely working on the department (Fish and Game) coming out with options for involvement," he said.

"We might only save a few hundred, but that's very important," added Grauvogal.

Along the Parks Highway through Willow, a moose calf has wandered near mile 68 for over a week and is being fed hay by concerned residents.

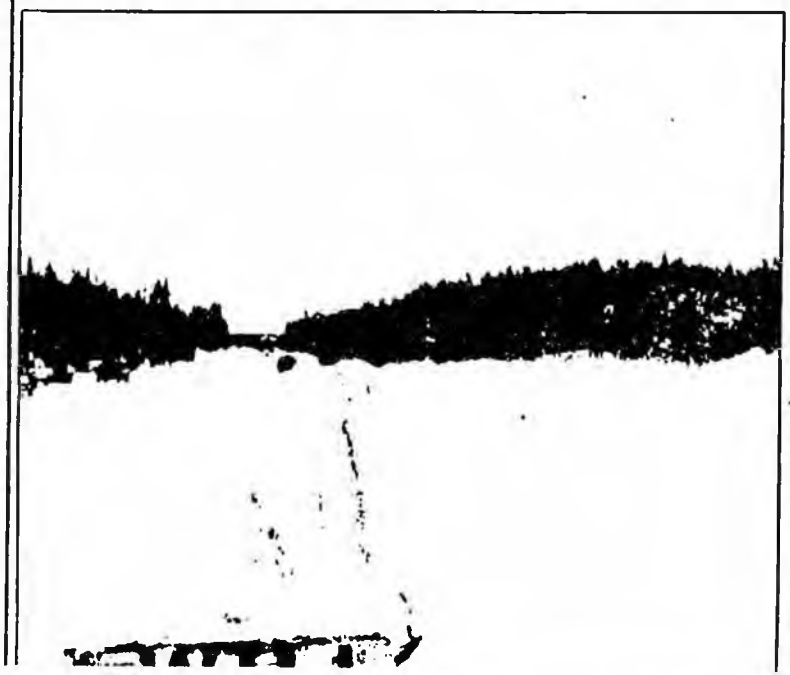
Gene Newman, owner of Newman's Hilltop Service, notes the severity of the moose/snow problem. "It's a concern shared by everyone. "They've definitely been a problem," said Newman.

Grauvogal expects the calf survival rate to be below 50 percent in areas north of Willow, and, "only so-so in the Palmer-Wasilla area."

Two containers full of dead moose sit by the railroad tracks in Willow. The moose were hit by trains but were unsalvageable for human consumption, according to Vivian Hamilton of the Alaska Railroad Corp.

Hamilton explained the moose will be stockpiled until spring when they will be used for predator research by the Dept. of Fish and Game. Game researchers are trying to develop a solution, using the dead moose, to increase calf survival rates.

Rep. Curt Menard has called an emergency meeting of the House Resources Committee to address the record number of train-killed moose. Scheduled for Jan. 30 at 7 p.m. the meeting will be teleconferenced and public testimoney will be taken at the Legislative Information Office in Wasilla.



Frontiersman

Duncan Frazier
Publisher
Sean Hanlon
Managing Editor
Susan Morgan Howk
Associate Editor

The Valley's killing fields

The daily carnage taking place on Southcentral's roads and railways has reached devastating proportions. The combination of heavy snowfall and heavy machinery is decimating our area's moose herd this winter, and everyone with the least bit of compassion for struggling symbols of Alaska is feeling the pain.

The wintertime tragedy is taking place in three zones. Certainly the Alaska Railroad right-of-way is the bloodiest, where locomotives are mowing down dozens of animals each day as moose seek a snow-free path. Additional destruction is taking place on the roadways where moose seeking easy walking are endangering themselves and motorists alike. Finally, some of the worst, but least-visible, death is taking place in the woods where deep snow is exhausting the moose who must struggle through it for their food. Yearling calves are especially susceptible, expending more energy to move through shoulder-deep snow than they can take in by browsing.

It's easy, if unpleasant, to chalk up the carnage to Mother Nature, who periodically decides that a certain species of plant or animal needs thinning. But man has an equal role in this tragedy and an equal responsibility to do something about it. Unfortunately, man's options are limited.

Stopping car and train traffic in the moose belt is an unlikely measure, as is clearing alternative pathways through the drifts. Food drops to starving moose are doomed to go unsponsored. But we must try something, anything.

Even if the only thing we do is schedule an emergency subsistence hunt along the railroad's right-of-way, at least the animals won't suffer the pain of maiming and death at the hands of a multi-ton locomotive and half of their meat won't be wasted.

We feel extremely powerless in this situation, and we can only imagine how the railroad engineers must feel. Alaskans everywhere are grieving over this slaughter; Valley residents have been especially

Method sought to reduce kills

By BILL KELDER
Times Valley Bureau

WASILLA — Over the past five years, the Alaska Railroad Corp. has tried everything from guns with blanks to ultrasonic whistles to get moose off the railroad's tracks before an oncoming train hits and kills them.

"We do not like being printed up every winter as moose killers, and have been working with the state Department of Fish and Game and the University of Alaska to develop a technique that will keep moose off the railroad tracks before they get hit by an oncoming train," said Vivian Hamilton, the railroad's director of communciations.

"Unfortunately, nothing we have tried thus far has worked," she said. "We are open to suggestions, but we recommend that people with ideas they think will work first run them by the Department of Fish and Game. We cannot use any method the department has not first approved," Hamilton said.

Among the methods tried:

- The railroad invested $15,000 through the University of Alaska Fairbanks to develop ultrasonic, or high pitched, whistles to try to get moose off the tracks. The effort was fruitless as the moose never responded to the ultrasonic whistles.
- Sirens, like those on fire trucks, were used on trains to try to scare the moose off the tracks. The moose were scared alright, but ran down the tracks instead of getting off them.
- Guns with blanks were fired from trains approaching moose on the tracks. The results were the same as in the siren tests.
- The Fish and Game Department, using a locomotive loaned by the railroad, tried using slower speeds as a way to avoid moose kills. When the engine's normal 50 mph speed was cut in half, there was no appreciable difference in kills.

"I think there were 19 'paper' kills at 50 mph and 18 kills at 25 mph, or maybe it was vice versa," said Fish and Game wildlife biologist Carl Grauvogel.

Grauvogel said department personnel have been meeting regularly with railroad officials for the past five years to try to find a workable solution to the moose problem.

Hamilton said some suggestions received by the railroad just are not practical.

"One group of school children in Fairbanks suggested running a helicopter in front of every train to scare the moose off the tracks," she said. "But the cost of contracting for helicopters makes that proposal unfeasible."

Other suggestions included running the trains only in daylight hours.

"First, in the winter it takes longer to run a train from Anchorage to Fairbanks than there is daylight. Second, moose get killed in the daylight and in the summer just as in the winter, though they are more prone to get off the tracks in the summer months, so the number of incidents are fewer," Hamilton said.

A suggestion to mount a water cannon on the locomotive to squirt at moose to get them to move proved technically and financially unfeasible, she said.

Another idea is to use rubber bullets to scare the moose off the track, but there is no guarantee that a moose scared by a rubber bullet in the winter will do anything other than run down the center of the tracks as it does when blanks are

ing works

ed.

DF&G's Grauvogel said one idea is to run an electrified wire mesh down the center of the tracks between the rails. The wire would be low amperage but high voltage to possibly train the moose to avoid the tracks altogether.

"The problems would be breakage of the wires, causing a break in the current, and keeping the wires uncovered during the winter so the moose would feel the shock," he said.

"Other countries with similar winter problems, such as Canada and Sweden, have tried a number of techniques that also failed," Grauvogel said. "They finally concluded that the only effective method that would work is to put up a fence along each side of the railroad right-of-way in areas of heavy moose population. That is probably the best solution, but it, too, has drawbacks," he said.

Grauvogel said his department estimated the cost of building an electric fence along the 60-mile stretch from Willow to Chase was $3.5 million, including an $863 per mile maintenance cost for the first three years of operation.

He said such a fence would not be continuous for 60 straight miles, and would have guided openings through which moose would be "ushered" out if they wandered into a fenced area by following the railroad tracks.

One problem with the electric fence idea is people — snowmobilers, cross-country skiers, trappers and others who come across a barrier are not going to be pleased, Hamilton said.

She said other problems with the fence idea are jurisdictional.

"Who pays for the fence, its maintenance and the power needed for the electricity," she asked. "There is also a big question of liability. Who is responsible if a person or their pet gets shocked by the fence? How high could the cost of damages go in the case of a lawsuit?"

Grauvogel said one long-term solution might be to develop moose habitat areas away from the railroad's right-of-way, gradually training the moose to winter in the habitat areas. That might be done in conjunction with planned timber harvests, he said.

"It is important to point out that no economically feasible method or technique to keep moose off the railroad tracks is going to be 100 percent effective," Gravaugel said. "Some moose, winter or summer, are simply going to be walking down the tracks when a train comes and get hit and killed."

1-28-90 Anc Times

Railroad takes toll on moose

By BILL KELDER
Times Valley Bureau

WASILLA — More than 360 moose have been hit by Alaska Railroad trains this winter. Heavy snowfall between Willow and Hurricane Gulch could lead to record moose kills along the Railbelt, according to railroad, state and legislative officials.

Snowfall of five to eight feet in the 60-mile stretch along the rail line from Willow to Hurricane is causing more and more moose to seek lower ground and easier walking and feeding, according to Carl Grauvogel, wildlife biologist with the state Fish and Game Department's Matanuska-Susitna office.

"As of 5 a.m. (Friday), railroad officials have reported 257 to 277 moose struck by trains for the month of January," Grauvogel said. "Another 104 hits were recorded in November and December of this winter."

Grauvogel said railroad officials report moose hits to his department regularly during the winter months, and then send personnel out to confirm whether a moose was actually killed.

"I would say approximately 95 percent of the hits are confirmed," Grauvogel said, adding the 361 reported kills thus far this winter should mean a record number of moose will be killed by trains this year.

Rep. Curt Menard, co-chairman of the House Resources Committee, has called an emergency committee meeting to discuss possible solutions to the problem of moose being killed by trains. The meeting is set for 7 p.m. Tuesday in Juneau, but will be teleconferenced to communities along the Railbelt, which stretches from Seward to Fairbanks along the Parks Highway.

Menard, D-Wasilla, said Fish and Game and railroad officials will brief legislators on the situation. Public testimony also will be taken.

"A valuable wildlife resource is being destroyed at an astounding rate," Menard said in a statement issued by his office this week. He said he hopes the meeting will lay the groundwork for solutions.

Though Grauvogel feels this winter's kills will set a new record, he said the department has only been keeping accurate records of moose killed by trains since the early 1980s. Since that time, the record was set in 1984-85 when 382 moose were killed by trains.

"There were probably some heavier moose fatalities in earlier years, but no one was keeping accurate records at the time," Grauvogel said.

Railroad officials have been working with the state for five years to come up with a viable solution, according to ARR spokeswoman Vivian Hamilton.

"We do not like this situation any more than anyone else in the state. And we have tried a number of solutions over the years but, to date, none of them have worked," Hamilton said Wednesday afternoon.

She said 242 moose were killed last winter, a number already exceeded in this month's first 24 days.

Grauvogel said heavy snowfall drives the moose down from higher to lower ground in search of food and to avoid the deep snow. But this year's record snowfall makes even lower ground travel difficult [illegible] the moose go they seek food. Some moose

rate of kills

[illegible]ase," Grauvogel said. "In some areas the snow [illegible] five feet deep and up the moose's belly or shoulder. Where the snow is eight feet deep, it is up their noses," he said.

Moose that wander onto the railroad tracks, which are kept relatively clear by the daily passage of freight trains between Anchorage, Healy and Fairbanks, tend to stay on the tracks for the easier traveling.

"The moose probably do not really see the trains as trains," Grauvogel said. "To them, this is a large predator roaring down the tracks at them, shaking the ground and whistling as it comes."

He said 2 million years of moose evolution have taught the animals to run to avoid predators.

"In the summer, the moose will more often than not, get off the tracks and run into the woods," Grauvogel said. "But in the winter, particularly after they have just walked through snow up to their bellies, they will prefer to run down the tracks rather than get back into the deep snow where behavior and experience have taught them they will have less chance of surviving."

The problem is that moose run 12 to 15 mph, and trains at half-speed move at about 25 mph.

"So no matter how far the moose runs, the train evenutally catches up to it and hits it," Grauvogel said.

He said there are several thousand moose in the Parks Highway corridor that includes the rail line, according to the latest DF&G counts.

"Not all of these moose will use the Susitna River basin or wander onto the railroad tracks, but some of them will and that is when the problems begin," Grauvogel said.

Hamilton said railroad engineers try to slow down when they see a moose in the hope the moose will get off the track before the train reaches it. But the plan does not always work.

"Five locomotives pulling 45 rail cars take about [illegible] a mile to a [illegible] stretch of track," Hamilton said. "But frequently a train will come around a bend and, suddenly there is the moose with no time to slow down, let alone stop."

Hamilton said one railroad employee in a hi-rail car — a pick-up truck fitted to run on railroad tracks — once followed a moose for 40 miles before the moose finally made up its mind to get off the tracks.

"We are not killing moose intentionally," she

1-27-90 ane tenies

Moose grow weary, hungry as heavy snow buries foo

By JOSEPH DITS
Times Writer

Moose in Cantwell and Trapper Creek are giving up. Many of them are kneeling down on the roads and dying from starvation.

Heavy snowfalls a week and a half ago buried most of the edible foliage, forcing moose into some of the biggest herds seen in years along the roadways and railroad tracks, say Alaska State Troopers.

Radio dispatchers for the area say they have been fielding twice as many moose calls as last winter.

And troopers issued warnings about the fatigued wildlife and icy snow-packed roads last week to drivers on roads north of Trapper Creek. They suggest traveling 45 mph or slower.

"Citizens have been up here 21 years and say they've never seen it like this," said Trooper Roger Ellis of Cantwell, who said he was counting 15 to 20 moose per mile last week.

But Roberta Winfield, a clerk with Fish and Wildlife Protection, said the office has had no chance to tally the casualties.

"I'm spending my entire day going from one moose kill to the other, and I haven't had time to count them up," she said.

Several groups are working on possible solutions to the moose herds, said state wildlife biologist Carl Grauvogel. Thursday, road crews began to plow openings so wildlife may have "escape routes" through the high snow berms along the roads.

State and Matanuska-Susitna Borough officials are meeting with railroad officials on more extensive plans that Grauvogel said would be announced within two weeks.

A guide and pilot counted about 90 moose and 40 caribou last week on an eight-mile stretch of the George Parks Highway centered at Cantwell. Ray Atkins, a 25-year Alaskan, said he saw about 200 moose within a couple of hundred feet of the road when he drove from Cantwell to Willow last week.

Ellis said from his Cantwell office he could see as many as 100 caribou on a nearby hill.

Palmer police Chief Ron Otte said moose-related calls hit a "frustrating" level for his dispatchers, who handle Matanuska-Susitna Borough calls north of Willow.

Palmer dispatcher Jackie Smith said the department was answering about 20 to 30 calls a day, twice as many as last winter.

In the Talkeetna area, troopers reported 20 moose shot in four days while people were defending lives and property. Compare that with the usual two or three a month.

Dispatcher Brad Ault in Talkeetna said the moose have lost their patience with humans trying to shoo them away. "They flat lay their ears down and charge you," Ault said.

The moose have become so tired, many have given up their search for new ground.

Many calves have exhausted more calories clamoring through the high snow and seeking food than they've been able to eat. Ault said three-fourths of the calls lately have regarded moose calves.

"It's breaking my heart," A
"I'll frankly be surprised if a s
of them survives."

About 25 moose were
starved in one week, he said.

Reports of large numbers o
began pouring in Jan. 16, when
conditions blew in several feet
Ault said. Similar conditions p
during the winters of 1970-71 an
he said.

No significant snowfall was
for this week but sub-zero temp
were, the National Weather
said. It got to a low of minus-30
twell Friday.

Both Ellis and Ault are uns
the moose will survive the freez

Ellis said the moose maint
body heat by eating more. "A
the cold eats up all their energy.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

STEVE COWPER, GOVERNOR

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4100

July 19, 1989

The Honorable Kay Brown
Alaska State Representative
P.O. Box 20-2661
Anchorage, AK 99520

Dear Representative Brown:

In the past you have expressed an interest in the railroad moose kill problem. This letter is to bring you up-to-date on our efforts to reduce this loss of moose and to suggest an option that could be tested should the Legislature wish to provide the funding. This letter has been sent to several other legislators in the Anchorage-Matanuska Valley area.

Every winter moose are killed by trains operating between Seward and Fairbanks. The average annual kill reported since 1980 has been 153 moose. Losses have been as high as 382 moose in winters with deep snow, and far fewer in mild winters. Such losses adversely affect the moose population and significantly reduce public use opportunities and associated local economic benefits. This possibly avoidable loss of moose is of concern to many Alaskans, partially because many of the moose struck by trains are unfit for human consumption. You and our department have received many public inquiries and requests to "do something" about reducing the number of train killed moose.

Since the winter of 1984-85, the department and the Alaska Railroad have been working together on methods to reduce moose kills. The railroad has improved its documentation of train/moose collisions to identify sections of track where remedial actions would be most effective, and the salvage and distribution of moose meat to qualifying families has been much improved. A number of devices (lights, horns and other sonic devices, a cushion bumper, and a water cannon) have been considered or tested for moving moose from the tracks. However, moose habitually stay on the railbed and attempt to outrun approaching trains rather than move off into deeper snow. Plowing snow on both sides of the tracks has not altered this behavior, probably because moose prefer to stay on the higher flat surface of the railbed rather than negotiate the deeper snow and sloping sides of the railbed apron. Most recently, brush has been removed near

the track in areas of especially high moose kill, and we believe this will reduce some mortality. We are also investigating a chemical repellent, but we believe that this option holds little hope.

We have also considered and tested changes in train speed, schedules, and other operational aspects, but such options are very limited if the basic services provided by the railroad, as well as safety and cost-effective operations, are not to be unduly compromised. Last winter we conducted a statistically designed field test to determine if slower train speeds would reduce the moose kill. Unfortunately, slowing the test train to the lowest economically operable speed (25 mph) did not reduce the number of moose struck.

We believe that the best way to significantly reduce the killing of moose is to keep them from getting on or lingering on the railroad tracks. This also has been the conclusion of other states, provinces, and countries with similar problems. Moose-proof fencing appears to be the most effective solution available. For example, fencing along a portion of the Glenn Highway has dramatically reduced the incidence of moose-vehicle accidents in that area. However, the fence was costly to construct, about $100,000 per mile. Building the same kind of fence along the railroad would be even more costly due to the added expense of clearing the fence right-of-way and working in more difficult and remote areas. However, a less expensive option is available in the form of an electrified fence.

We have investigated the feasibility of a moose-proof electrified fence, available in Alaska through a Homer vendor, at a constructed cost of approximately $50,000 per mile of track. Preliminary investigations of this fencing at the department's Moose Research Center on the Kenai Peninsula were promising, but a complete field testing along the railroad is needed. If an electrified fence is effective in keeping moose off the tracks, fencing could be considered for sections of track where the moose kill has been historically high. For example, on the average about 60 percent of the annual railroad moose kill occurs in a 60-mile section of track between Houston and Chase (ARR mileposts 180-240).

The cost of construction for a 60-mile fence is estimated at about 3.5 million dollars. Fencing is an expensive solution and may or may not be an appropriate use of public funds at this time. That is a decision for the Legislature to make. Because many interested parties have asked us for an immediate solution to the railroad/moose mortality problem, we are providing the electrified fence as the only option which we currently believe would significantly reduce mortality.

Should you and other legislators decide to seek funding for a limited railroad fencing project, the enclosed project description provides details on project location, costs, and construction/monitoring schedule. Test fencing on both sides of a 5-mile section of track should be built and its effectiveness carefully evaluated and verified before construction of a fence along the entire 60-mile section of track. The findings of such a test would also have substantial value in considering use of electrified fencing to exclude moose or other wildlife species in other situations. The Alaska Railroad will allow construction of a fence on the railroad right-of-way, but is not interested in constructing or maintaining an electrical fence, nor in administering contracts to accomplish the project. A suitable agency would have to be designated to oversee construction and maintenance. The Department of Fish and Game is not staffed to administer such a major construction project, except for the initial 5-mile test fence.

Whether or not electrified fencing is tested/constructed, we will continue to seek other means of reducing the railroad moose kill. However, there are relatively few options that hold promise. If you would like additional information about the proposed fencing project or any other aspect of the railroad moose kill problem we would be pleased to provide it. Questions relating to railroad operations and salvage procedures should be directed to Vivian Hamilton at the Alaska Railroad (265-2675). For information on the moose population or public use of moose, historical railroad moose kills, options we have considered for reducing moose losses, and the proposed fencing project, please contact the following Division of Wildlife Conservation staff: Carl Grauvogel, Palmer Area Biologist (745-5015); Greg Bos, Management Coordinator (267-2200); or Dan Timm, Regional Supervisor (267-2193).

Thank you for your interest in wildlife conservation issues.

Sincerely,

Don W. Collinsworth
Commissioner

Enclosure

cc: Greg Bos, ADF&G
Carl Grauvogel, ADF&G
Lew Pamplin, ADF&G
Dan Timm, ADF&G
Vivian Hamilton, Alaska Railroad Corporation
Frank Turpin, Alaska Railroad Corporation

CONSTRUCTION AND EVALUATION OF AN ELECTRIFIED FENCE TO REDUCE MOOSE MORTALITY ALONG THE ALASKA RAILROAD (ARR)
1989

Description of Project

The Alaska Department of Fish and Game (ADF&G) believes an 8-foot electrified fence would prevent moose from gaining access to railroad tracks. Trains run predominantly between the port of Seward and Fairbanks, a distance of 470 miles. In the past eight years, an average of 153 moose have been killed annually, and in two of the past five winters the kill has exceeded 370 moose. Fencing appears to be the best long-term solution for keeping moose off the tracks, but construction along the entire 470-mile rail line would be extremely costly and in some areas virtually impossible. A more economical and reasonable approach is to construct fencing only in areas where moose mortality has been consistently high. Approximately 60 percent of the annual moose kill occurs within a 60-mile section between the communities of Houston and Chase (ARR mileposts 180 to 240). This project description identifies the principal elements (including costs) of constructing an electrified fence in this area.

The project could be accomplished in two phases: 1) a two-year test phase involving five miles of track (fence on both sides); and 2) final fence construction along the remaining 55 miles of track. If results from Phase I (outlined below) indicate that the project will not be effective or has adverse and unsolvable effects that outweigh potential benefits, the project would be terminated. For example, people using the railroad right-of-way may not accept the fence. It could however, be built to accommodate human passage.

Phase I

Five miles of test fence would be constructed on each side of the track in an area where moose mortality has been high and where a mix of environmental conditions occur, such as stream crossings and moose migration routes (mileposts 197 to 202 are initially selected). The fence would be tested for two years to determine:

a) Effectiveness in keeping moose from gaining access to the railroad bed;

b) Reliability of operation and maintenance costs;

c) The best fence configuration for stream and trail crossings;

d) Whether the fence is compatible with ARR operating procedures;

e) Public reaction to the fence;

f) Whether one-way exit gates will be needed (how often do moose become trapped between fences), and if one-way gates are needed, what is the best functional and economical design: and

g) Whether moose will pass under railroad bridges during migration (we believe they will).

Phase II

If the results from the Phase I test fence indicate that an electrified fence is an effective and practical means to reduce moose mortality, then funding would be requested for an additional 55 miles of fence to be constructed on each side of the railroad track between mileposts 180 and 240.

The ARR has told us that because an electrified fence requires specialized operational and maintenance skills, and because ARR personnel do not now have these skills, fence maintenance and operation would be contracted for at least three years after construction.

Administration and Costs

Projected cost of the entire 60-mile project is $3,497,052 (FY 89 dollars). The cost to determine whether an electrified fence is a viable option to reduce moose mortality (Phase I) would be $436,372, or 12 percent of the total project.

Phase I fence construction and maintenance would be accomplished under contracts administered by ADF&G. The Division of Wildlife Conservation would evaluate the effectiveness of the test fence. Phase II construction and maintenance would be accomplished under contracts administered by, as yet, an unidentified entity (perhaps the borough or a regional corporation). The following is an itemized summary of estimated costs of each project phase.

Phase I

1. Contractor

Construction and initial maintenance costs for test fence for 5 miles of track (mileposts 197-202)

Surveying, clearing and right-of-way preparation for fence construction at $12,000 per track mile, clearing both sides of track:	$ 60,000
Materials and labor for fence installation at $38,000 per track mile, both sides of track, assuming some transportation support from ARR:	$ 190,000
Maintenance of 10 linear miles of fence at $8,630 annually ($863.00/mile) for 2 years:	$ 17,260

Construction of one-way gates and different types of stream and road crossing designs:	$ 60,000
Subtotal	$ 327,260

2. Evaluation Costs

ADF&G--Division of Wildlife Conservation

Wildlife Biologist II, 8 months per year (November-June), 16 months total at $3,782.00 per month (includes salary and benefits):	$ 60,512
Transportation and equipment:	$ 5,000
Temporary housing, food, and miscellaneous field living costs $800/month (12 months total):	$ 9,600
Radio-collar 20 moose in test area during winter (10 east of tracks and 10 west of tracks):	$ 10,000
Monitor moose movements on ground and at least twice monthly with aircraft:	$ 24,000
Subtotal	$ 109,112
TOTAL PHASE I	$ 436,372

Phase II

Contractor

Fence construction and maintenance costs for 55 miles of track (mileposts 180-240)

Clearing and right-of-way preparation for fence construction at $12,000 per track mile (clearing both sides of track):	$ 660,000
Materials and labor for fence installation at $38,000 per track mile (both sides of track):	$2,090,000
Maintenance of 120 linear miles of fence at $103,560 annually ($863.00/mile) for 3 years:	$ 310,680
TOTAL PHASE II	$3,060,680
TOTAL PHASE I AND PHASE II	$3,497,052

file

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O. BOX 3-2000
JUNEAU, ALASKA 99802-2000
PHONE: (907) 465-4100

February 2, 1987

The Honorable Kay Brown
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Representative Brown:

You recently requested information about moose mortality on the Alaska Railroad (ARR) and the guiding industry. In your discussion with Regional Game Supervisor Dan Timm he said that the department would provide more information on these subjects. This letter responds to your letter to Dan Timm of January 19 regarding the issue of moose mortality. I will follow-up with a letter on the guiding industry shortly.

With respect to moose mortality on the ARR, I have enclosed several documents which summarize the problem, actions we have suggested that the railroad take to help reduce mortality, and the railroad's response. I have also included information about road kills in the Matanuska/Susitna Valley.

Prior to state ownership of the ARR, moose mortality was notably under reported. As you can see from the enclosures, July 1, 1984 - June 30, 1985, was the worst year on record with 382 moose killed. The great majority of animals were killed between Houston and Chase between late-January and late-March. When the packed snow depth is 30 to 35 inches, the mortality rate increases markedly. At that point, moose are primarily looking for areas of minimal snow depth to conserve energy; because they are plowed, railroad and highway rights-of-way are highly attractive.

Many moose-railroad collisions result in unsalvageable meat. However, moose meat fit for human consumption is taken by ARR personnel to the nearest crossing and the location is reported to Fish and Wildlife Protection (FWP) officers. A list of needy families in the Matanuska/Susitna Valley is maintained by FWP, and when salvageable moose meat becomes available, a family is called. Other animals probably are picked up and used by residents living near the track. When

animals are unfit for salvage, the ARR removes the carcasses from the immediate right-of-way and puts them in heavy brush, ravines, or similar locations. Although we do not have records on the proportion of moose salvaged in prior years, as of January 3, 44 moose had been killed by train this winter and 10 were reported for salvage to FWP.

It is possible that some of the 34 unreported animals were utilized by local residents, but most were unfit for salvage. As of January 3, 60 moose have been killed by cars in the same area, and nearly all of these animals were salvaged.

Our interpretation of current regulations is that the ARR is not required to notify FWP when an animal is killed. You asked whether legislation should be introduced to require salvage. In our view the ARR, under state ownership, is being sufficiently cooperative in the salvage of most moose fit for human consumption, particularly considering the remoteness of the area, winter weather conditions, the relatively few workers on the line during winter months, and the relatively high cost of salvaging meat. With continuing public interest and concern for train-caused moose mortality, the ARR should remain very cooperative.

You also asked if the ARR has been cooperative in trying to reduce moose collisions. As you will see from the enclosed letters, the department has made a number of suggestions to reduce collisions, and we will make additional suggestions to the ARR after we have analyzed currently available data. Unlike the situation which existed when the railroad was federally owned, ARR officials have been very cooperative in letting us see their daily records and in openly discussing the problem.

Some of our suggestions have been adopted and likely reduced moose mortality in the latter part of the 1984-85 winter. Others have not been adopted because of federal regulations governing railroad operations, high monetary cost, or other reasons.

Nothing short of complete fencing on both sides of at least 65 miles of track with over- or underpasses to facilitate moose movements will reduce moose mortality to a bare minimum. However, fencing and maintenance of moose passage structures would cost several million dollars and even then would not eliminate mortality. Sweden, British Columbia, and other areas have problems such as ours, but they too have not found an adequate solution.

Following the high moose mortality in the winter of 1984-85 on the railroad and highways, the Board of Game acted to reduce hunter harvest in the affected area. The moose population has responded well. It is preferable that

hunters take moose during severe winters than for trains to kill them. However, hunting along the ARR right-of-way can also create problems because the ARR has concerns with people being on or near the right-of-way, or using the railroad right-of-way for access.

Thank you for the opportunity to provide you with background information and suggestions regarding moose mortality. If you have any questions on this material, please do not hesitate to contact us. Best wishes for success in your new role as state representative.

Sincerely,

Don W. Collinsworth
Commissioner

Enclosures

cc: William Nix, Acting Commissioner
Department of Public Safety

Lew Pamplin, Director
Game Division, Department of Fish and Game

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF FISH AND GAME

D I V I S I O N O F G A M E

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99502

344-0541

March 7, 1985

Mr. Frank G. Turpin
President & Chief Executive Officer
Alaska Railroad Corporation
Pouch 7-2111
Anchorage, AK 99510-7069

Dear Mr. Turpin:

The recent high rate of moose/train collisions prompted us to investigate the problem and to recommend possible solutions. We appreciate your cooperation in this matter and your concern for the animals has been apparent.

The following discussion and recommendations would result in fewer moose mortalities on the railroad. Some of these actions have already been taken by the railroad and some may not be feasible. Obviously, our expertise is not in running a railroad! The recommendations are based on a graduate student's study of moose on the railroad in the late 1950s, our area biologist's (Jack Didrickson) past experience with this chronic problem, and two recent trips by Jack between Wasilla and Fairbanks in a lead engine's cab. Mr. Didrickson has been the area game biologist at Palmer for nearly 20 years, and his area of responsibility includes the Willow to Talkeetna track which has been the area of greatest moose mortality for many years.

IMMEDIATE ACTIONS

1. <u>Accurate reporting of milepost locations on moose/train encounters should be required daily</u>.

   We have had difficulty acquiring accurate information in the past concerning specific collision sites and annual total moose mortality on the railroad. We request that you develop a system to provide us with daily records of moose collisions by milepost location. This will provide a firm basis on which to implement other recommended actions, and it will help us in

management of the moose population. In some winters, such as this one, mortality is significant and accurate mortality reporting will assist in setting annual hunting regulations and evaluating overall population mortality. Expedient reporting by milepost will also aid in the efficient salvage of moose meat. We would appreciate receiving any records you may have regarding moose/train collisions in previous years. It would also be helpful to us if you could supply a "track chart" from Wasilla to Chase. Finally, we should exchange information about moose concentrations this winter and in subsequent winters.

2. Train speed should be reduced in problem areas.

Your orders to reduce train speed to 20 to 30 mph from Willow to Talkeetna were well placed and have already resulted in fewer collisions. Without the benefit of precise locations of collisions, we recommend an expansion of the slow order to include the area between Wasilla and Chase. As information is compiled for the rest of this winter and in subsequent winters, slow orders can undoubtedly be modified to allow increased train speeds between moose concentration areas. There will be some winters (and portions of others) when slow orders are not necessary. As you know, the slower a train is going the more time a moose has to get out of the way (if it is so inclined), and the more time the engineer has to further slow the train. We realize that it may take a mile or more for a train to stop, depending on speed, train weight and track grade. It may not be feasible to stop when moose are encountered, but any extra slowing by the train should help. Moose will quickly disperse from the tracks when temperatures warm and snow settling and thawing occurs. Slow orders should remain in effect until snow depths decrease and moose disperse.

3. Maximum distance of snow removal should be continued in problem areas.

The removal of snow with a spreader or wing blade from up to 20' from the tracks was a positive action on your part. A narrow tunnel or sidewalls of snow leaves the animals no escape route. As specific chronic locations are identified, the wing blade can be used only in those areas. For the remainder of this winter, we recommend continued use of the wing blade where terrain permits between Willow and Talkeetna and expand this to include the area between Wasilla and Chase. New snow should be removed as soon as possible because moose increase their movements from place to place immediately after a snow.

4. Adjust timing of train runs.

During winters of heavy snow when moose are concentrated near the right-of-way, we believe that running trains during daylight hours would substantially reduce collisions. Moose and other wildlife are more easily approached and less wary during the night and increase their activity during early morning and late evening hours. Based on limited observations, it appears that one train closely following another by an hour or less difference would be desirable. Moose are oftentimes scared from the tracks by a train and they may not move back on the tracks until a second train has passed. This behavior was observed the night that Mr. Didrickson was on a train immediately behind another one. Future observations by railroad personnel and our biologists would test the validity of this recommendation.

5. Adjust engine headlight.

An upward adjustment of at least one of the two or four headlights on each engine would allow the crew to see moose at a greater distance. The train could thus be slowed more, giving an animal increased time to clear the tracks. We endorse the engineers' "tactics" of turning off the lights once a moose is seen, and then flashing the lights and using the whistle. Constant bright lights at night disorient and "mesmerize" wildlife, so the animals should not be fixed with a steady beam.

6. Continue experiment with ultrasonic scare device.

The initial test of the effectiveness of an ultrasonic scare device was inconclusive. The devices were attached to the lead engine on one run to Fairbanks and moose behavior was observed. One moose was killed on that run. The devices were removed on the return run, but moose behavior was similar and no moose were killed. We put the devices back on engine #3008 and have asked your personnel to keep track of moose collisions by #3008 versus other lead engines. Even if ultrasonic sound can reach animals over the train noise, placement of such devices on the engine is a problem. The devices are easily plugged with snow, rain or other matter, and the manufacturer says they are not wind-activated until speeds reach 30 mph. In this regard, we were pleased to hear of your efforts to develop an electronically activated ultrasonic scare device. Hopefully, it will prove effective in conjunction with other preventative measures.

LONG-TERM SOLUTIONS

Moose/train collisions are a chronic problem which become acute in winters of deep snow accumulation such as this year. The moose population using the Wasilla to Talkeetna right-of-way has been increasing since the severe winters of the early 1970s and this increase undoubtedly has contributed to the present high collision rate. There are, however, actions which can be taken to reduce moose mortality in future years; complete elimination of the problem is not, unfortunately, a realistic goal. In addition to the proposed actions discussed above, the following recommendations may assist in developing long-term solutions to this problem.

1. Replace walkways on bridges.

We understand that metal walkways between rails on bridges were removed sometime ago when electronic sensors on the underside of trains were installed. The metal walkways caused the sensors to be inoperative. If waterproof plywood were placed between rails, the animals would once again have a safe travel lane across bridges. This becomes especially important when a moose is running ahead of a train at night and the animal tries to cross a bridge. Furthermore, without this modification, an animal that drops between the ties and is hit by a train is reportedly more apt to damage the traction motors located on the underside of the engines.

2. Create "artificial" rights-of-way.

Moose frequent the railroad right-of-way for two main reasons: the area is comparatively snow free and it provides a good source of food. Large numbers of moose are driven from the high country by deep snow and they encounter the railroad during their migration to lowlands. Some moose continue westward and winter near the Parks Highway and along the Susitna River. Other moose come from west of the Susitna River and also winter in the river bottom and east to the railroad. In total, moose in the river-highway-railroad corridor from Willow to Talkeetna probably now number at least 3,000.

The growth of moose food or browse (small trees and brush) has been stimulated in the right-of-way from, as we understand, two main factors: tree-clearing by dozers, particularly near crossings to enhance visibility; and the termination of brush control by spraying for environmental reasons.

After a system of accurate moose/train collision reporting has been established and the more serious problem sections of track identified, mechanical means of brush control in the right-of-way should be implemented. Depending on terrain, permafrost conditions, and land ownership, dozers or other suitable machinery could create and maintain an "artificial" right-of-way some distance from the track during winters of deep snow accumulation. This would provide areas of lesser snow depth for the animals and would stimulate regrowth of browse.

Another habitat-oriented recommendation is to create large areas of browse at least ½ mile from the tracks. Excellent quality and abundant food sources would attract moose away from the tracks. Large scale habitat enhancement can be accomplished by "chaining" with dozers, fire, or mechanical "tree crushers" depending upon site specific conditions. The department has used all three techniques in Alaska and we own three 40-ton tree crushers for such work on the Kenai Peninsula. We would be pleased to explore the possibilities of large scale habitat enhancement with the railroad, should you feel this is a feasible alternative. We have advanced the possibility and desirability of moose habitat enhancement within the Susitna River Valley north to Talkeetna, but other priorities and funding limitations probably preclude such work in the immediate future.

Your cooperation and sensitivity to the moose/train collision problem are appreciated and the positive actions to date have resulted in reduced moose mortality. Thank you for the opportunity to allow our biologist to make first-hand observations from a locomotive. Should deep snows continue, we would again like to observe from your locomotives. We will continue working with you to reduce the severity of the problem and I am sure that after an accurate collision reporting system is implemented we can make more definitive recommendations.

Sincerely,

W. Lewis Pamplin, Jr.
Director

cc: Don Collinsworth, Commissioner
Bob Hinman, Deputy Director
Regional Supervisors

ADN 1/30/90

running the Valdez aground on Bligh Reef. The ruptured tanker dumped nearly 11 million gallons of crude oil that floated free over thou-

through a pool of about 100 potential jurors today. Judge Karl Johnstone said

Please see Back Page, **TRIAL**

Anchorage Daily News/Erik Hill

Defense attorney Michael Chalos and Joe Hazelwood monitor the proceedings Monday in Anchorage Superior Court.

Railroad experiments with ways to trim moose deaths

By **CRAIG MEDRED**
Daily News reporter

Susitna Valley moose are continuing to die at record rates beneath the wheels of Alaska Railroad locomotives.

State wildlife biologist Greg Bos said Monday the death toll is rapidly closing in on the grisly record of 360 dead moose, and the traditional months of carnage — February and March — are still ahead.

Railroad officials have begun experimenting with new means to chase moose off the tracks.

A pilot truck was leading the Anchorage-to-Fairbanks train from Willow to Talkeetna Monday night, said Arnie Polanchek, railroad operations officer.

Earlier experiments with the pilot truck appeared to show some promise, Polanchek said. Railroad employees were able to frighten some moose off the tracks with the truck or by peppering the animals in the rump with birdshot.

But some moose still refused to get out of the way, and Polanchek said it remains unclear whether the moose that fled were reacting to the new form of harassment or responding to the plowing of the right of way along the tracks.

The railroad last week plowed some stretches to a width of 20 feet on either side of the rails to give moose room to walk. Unusually heavy snows have forced the animals out of the woods in search of easier walking.

Polanchek said it was snowing again in the Talkeetna-Willow area Monday evening. He said the new snow should help railroad officials gauge the effectiveness of their new harassment techniques.

Rep. Curt Menard, D-Wasilla, who plans to hold teleconference hearings tonight from Juneau on ways to minimize the moose kill, said the railroad has to do some-

Please see Back Page, **MOOSE**

Discovery may speed computers

Machines might run 1,000 times faster

By **JOHN MARKOFF**
The New York Times

Scientists at Bell Laboratories introduced Monday an experimental machine that uses pulses of light rather

New voices of protest

Russians deplore use of troops in troubled republics

By **MICHAEL PARKS**
Los Angeles Times

MOSCOW — "My son was not born to die in Azerbaijan!"

The hand-lettered sign, held up by a Russian mother at a weekend rally in Moscow, demanded the withdrawal of the troops sent to Azerbaijan and Armenia to prevent a potential civil war between the two southern Soviet republics.

■ **STRIKE EASES:** Many Azerbaijanis heeded their leaders' call and returned to work Monday, despite attempts by extremists to keep workers from their jobs in Baku. **A-7**

ing its way into the Azerbaijan capital of Baku a week ago, strong sentiments are developing, particu-

THE BACK PAGE

MOOSE: Railroad tries pilot truck, birdshot in attempt to cut moose toll

Continued from Page A-1

thing. It has been trying to get the Alaska Department of Fish and Game to solve the problem, but Menard said the railroad has the primary responsibility.

"I don't feel that we've received a full-fledged effort from the railroad," Menard said. "It seems to be a problem they don't want to get involved with."

Railroad officials have said there is little more — short of shutting down the railroad — that can be done to stop the slaughter.

Unusually heavy snows are to blame for the high death toll, said railroad spokeswoman Vivian Hamilton, and the railroad can't do anything about the weather.

Moose get onto the tracks to avoid foundering in the snow, and they simply refuse to get off the tracks, Hamilton said. She rode in an engine last week to assess the problem herself. Some moose ran right off the tracks as soon as the engineer blew the horn, she said, but others just kept running down the rails until the engine ran them over.

Slowing the trains, blowing the whistle, flashing the lights — none of these techniques have make any real difference in forcing moose of the tracks, according to railroad employees and state biologists. The moose, they said, often refuse to get off unless there is an area of shallow or packed snow onto which they can flee.

Railroad employees in the pilot truck have even tried shooting moose with rubber bullets last week, said Raymond Lee, a cabin owner along the tracks north of Willow.

"They had chased off nine, and by the time the freight came to (Sheep Creek) it'd only hit one," he said. "That was effective."

The problem, Lee said, was that the moose-shooing truck ran into two moose that couldn't even be driven from the tracks by a barrage of rubber bullets. The freight train, meanwhile, was closing in on the pilot truck. The truck finally had to maneuver onto a siding to avoid getting run over. The moose never did move.

"The train got those two," Lee said.

Back when the federal government ran the Alaska Railroad, Lee said, railroad workers used to come along with a tractor and plow moose escape routes perpendicular to the tracks every quarter-mile or so in years of unusually deep snow.

That gave the moose somewhere to flee, he said, and the animals took advantage.

Hamilton said the railroad is worried that trails perpendicular to the tracks might just attract more moose to the rails.

Bos, Fish and Game's regional wildlife supervisor, said he isn't sure snowmobile trails are possible everywhere, but there are areas where they might help.

"We could give it a try," he said, providing the railroad is willing to cooperate. The railroad would have to haul the snowmobiles into remote areas.

The last time this idea was suggested to the railroad, Bos said, railroad officials said they didn't have the equipment or the personnel to do it.

"They're just looking at the profit and loss column," he said. "It is frustrating."

TRIAL: Jury selection under way

Continued from Page A-1

he expects to spend at least a week sitting a jury and three or four alternates.

Media relations and arguments on the sort of fine legal points appreciated mostly by lawyers dominated the first day of the trial:

• Defense attorneys Michael Chalos and Dick Madson lost on a motion to dismiss the charges against Hazelwood, but they hadn't expected to win anyway. They argued that state courts don't have jurisdic- Hazelwood's con-ing, Madson said, but not commercial shipping.

"I don't think the state can argue that the Exxon Valdez was some kind of recreational Love Boat," Madson said.

The analogy didn't help. Johnstone, who had rejected a similar motion last year, denied this one, too.

• Johnstone plans to pare the long list of questions defense and prosecution attorneys proposed for jurors. The defense could lose 13 of its 70 questions, including inquiries about the receipt of permanent fund dividends, whether prospective have treated them unfairly.

Jurors spent part of Monday filling out a three-page questionnaire asking, among other things, if they have lived or worked around Prince William Sound, if the oil spill affected them personally or financially, and if they've been the victim of an alcohol-related accident.

• Johnstone issued press badges so jurors and witnesses will know when they're talking to reporters. He also set some guidelines for courthouse decorum, asking reporters not to disclose the names of jurors during the trial and ruling hallways

NEW DEVICE: Bell Labs machine may substantially speed up computers

Continued from Page A-1

to collect and analyze the vast amounts of data produced by a government-financed atom-smasher now being planned in Texas.

Optical computers are expected to be available commercially early in the next century. The device introduced Monday, which is based on a synthesis of new technologies developed over the last five years, is the first publicly demonstrated example of a processor that would be the heart of such form computations. An array of laser beams is rapidly switched on and off and combined with other arrays to perform simple addition and subtraction. The lenses focus and direct the beams, and the mirrors pass them to other optical switches.

Optical computers show promise because of the unique properties of light. The limits on existing computers are largely established by the bottlenecks that restrict the amount of data that can be processed at one time.

[illegible] will require "parallel computing," in which the processor simultaneously addresses millions of tasks.

Among such tasks are image recognition — for example, discerning human faces in a security system, or acting as the "eyes" for a robot assembling a product on a factory floor — and computing more easily the most difficult problems for which today's supercomputers are used.

The Pentagon has invested in optical computing to attempt to meet the immense processing require-

COLOMBO

P.O. BOX 966, DELTA JUNCTION, ALASKA 99737

D. Nick Colombo (907) 895-4388

PROPOSAL

1. I be allowed to capture one hundred (100) head of yearling moose per year from the Alaska Railroad right-of-way.
2. I would transport them to the Delta area, where there is 100,000 acres of cleared land suitable for moose habitat.
3. Fence the required number of acres to protect the herd.
4. Raise them as domestic animals for a red meat industry.
5. Set up a visiting program to educate not only the tourist but the people of Alaska.

BENEFITS PRODUCED BY THIS PROPOSAL

1. Fewer moose kills will result along the Alaska RR, thus saving time and money for clearing, as well as producing better PR for the railroad.
2. The state has thousands of acres that are laying fallow because of the unsuccessful attempt at farming in the Delta area. I would and could improve the fallow land with fencing and making the farm a success.
3. This would not interfere with the moose available to the hunter or subsistence user because the moose are currently being killed. I am requesting only yearlings which are not legal bounty anyway.
4. Alaska imports most of its red meat from the lower 48 or from Australia. We could not only furnish exotic, low cholesterol meat to Alaska but begin an export business to the world.
5. Delta is economically depressed with the state foreclosing on farms, homes and commercial properties. This could help recover the economic situation in Delta Junction.
6. Trucking would once again become a profitable industry in the state. Back-hauling would be cheaper, sparking the industry even further.
7. With the extreme colds, food supplies ran short in Alaska because of transportation problems. We could become more self-sufficient in providing food and products from ourselves.
8. As a private game farm, the hassles at State Fish and Game would not be a real problem. Political pressures would be relieved at the State level.

This is not setting a precedent, since reindeer, musk-ox and bison farms have already been established using our state's wildlife to originate these managed farms.

Please consider this proposal. I will be more than happy to furnish any information that you want or need. I have done extensive research in this project and am convinced that it can work. I am therefore asking the legislature to consider changing the law to allow me to raise moose as a domestic animal, creating a red meat industy, bearing in mind that my program would be a result of capturing the moose on the railroad before they are killed and a total loss to the people and the State of Alaska.

OVERVIEW-
STATUS
OF
STATE'S
LAND
SELECTIONS

STATE SELECTIONS

March 2, 1990

I. History

A. Where we are today

ENTITLEMENT: 105.3 MILLION ACRES

Statehood grants	
General grant:	102,550,000 acres
Community grant:	400,000 acres
National Forest Grant:	400,000 acres*
Territorial grants	
Mental Health:	1,000,000 acres*
University:	100,000 acres*
** School (rounded):	104,000 acres*
** University-Tanana (rounded)	11,000 acres*
Other grants	
ANILCA school lands:	75,000 acres
Cook Inlet Land Exchange (net, rounded):	691,000 acres*
Other (rounded):	1,000 acres*

*these grants are largely filled
**in place grants

CONVEYED: 84.9 MILLION ACRES

*patented: 35.1 million acres
*ta'd: 49.8 million acres
*also received by right at statehood: all tidelands, submerged lands and shorelands

REMAINING ENTITLEMENT: 20.7 MILLION ACRES

ALLOWED TO SELECT: 25.8 MILLION ACRES

1. Allowed to select 125% of remaining entitlement.

2. Deadline for filing selections: January 3, 1994.

PENDING SELECTIONS: 24.7 MILLION ACRES

1. Includes general and community grant only; we have made no selections under ANILCA school lands and

have essentially completed the selections under the other programs.

2. Approximately 10 million of this is selected by both the state and the ANCSA corporations; we estimate that about 5 million acres of these lands will be conveyed to the state; these 10 million acres are often near communities or have high mineral or recreation values.

3. Includes several million acres of federal withdrawals, including military bases and areas such as the withdrawal for Rampart Dam; we estimate that about 2 to 5 million acres of withdrawn land may never be conveyed to the State.

NEED TO SELECT: APPROXIMATELY 8.1 MILLION ACRES

1. 5 million to replace the 5 million dual selected acres that will probably be conveyed to ANCSA corporations.

2. 2 million to replace the federal withdrawals that are not likely to be conveyed to us.

3. 1.1 million to reach our allowed selection total.

AVAILABLE FEDERAL LAND: APPROXIMATELY 38.4 MILLION ACRES

1. This is unreserved federal land managed by BLM (yellow areas on map).

2. Of that, 19.6 million acres has been reviewed through our area plans and relinquishment project and determined to be of low value and not worthy of state ownership.

3. <u>That leaves 18.8 million acres of available lands from which to select 8.1 million acres. Most of this 18.8 million acres may also be low value</u> (e.g. at least 1.3 million acres are covered by glaciers).

B. How we got here: history of state selections

1959 - 1966 EARLY SELECTIONS

1. Selected 17.4 million acres, an average of a little over 2 million acres/year.

2. Small and carefully calculated; directed toward land that had immediate resource value or was surveyed.

3. Included land around Fairbanks, Chena Hot Springs, Delta Junction, the Susitna and Matanuska Valleys, McCarthy, the Kenai Peninsula, Haines, and the North Slope (including Prudhoe Bay).

1966 - 1971 LAND FREEZE

1. Dec. 1966 Udall initiated a "freeze" on transfer of federal lands to allow time to sort out Native claims and protests of state selections.

2. Selected about 8.5 million acres.

3. Concentrated on areas believed to have oil and gas potential and areas lying outside areas of Native claims: more North Slope; Copper River Basin, and Alaska Peninsula.

1972 -1980 AFTER ANCSA

1. The Native claim issue was resolved with the passage of ANCSA Dec. 18, 1971.

2. Section 17(d)(2) of ANCSA directed the Secretary of Interior to withdraw up to 80 million acres suitable for additions to federal conservation system units.

3. The State immediately selected 77.1 million acres in an attempt to preempt federal land withdrawals (early 1972); State and Interior later negotiated an agreement that validated 41 million acres of these selections and dropped the other 36 million (September, 1972).

4. Native corporations' selection period expired in Sept 1976. Within next 6 months State selected 3.6 million acres of land from the pool that had been set aside for Native selections.

5. State selected another 41 million acres in 1978; these lands became known as the "May 15" list and were conveyed to the state via ANILCA (subject to existing withdrawals) in December, 1980; this list included 1.6 million acres of land withdrawn for federal reserves and military bases.

1981 - PRESENT AFTER ANILCA

1. 1982: State selected 10.3 million acres from previously withdrawn federal land that became available throughout interior Alaska and on the North Slope.

2. 1986: State selected 2.8 million acres in the Pipeline Utility Corridor north of the Yukon River and along the Denali Highway.

3. 1989: State selected about 600,000 acres in the Utility Corridor within the North Slope Borough. Also completed the National Forest Community Grant Selections.

4. 1984 to present: State asked BLM to focus on quality rather than quantity of conveyances; up to that point BLM had been conveying large acreages without conflict which were the more remote areas and glaciers; focusing on quality conveyances ensures that the state gets higher quality land but slows down the rate of conveyance because it takes time to resolve the conflicts.

5. Area plans completed for over half the state; most reviewed federal lands and made recommendations for selections that have since been selected: Susitna, Copper River, Bristol Bay, Kuskokwim, and Northwest (plus several that addressed NFCG lands).

6. 1985: DNR adopted the following criteria for state selections in Department Order 101:

   a. Public benefits (economic, recreation, etc).

   b. Land management efficiency (logical land management patterns).

   c. Consistency with statewide goals and objectives.

   d. Land quality: select land with multiple rather than single resource values.

   e. Accessibility: land that ensures access to and between state land and major transportation and service centers.

II. Significant issues in the Land Transfer Program

A. General ANCSA Problems

In 1969, to preserve the status quo until the question of Native rights to land could be settled, the Department of Interior ("Interior") withdrew, in effect, the entire state from state selection and ceased all action on existing selections. ANCSA passed in December 1971, and the state immediately filed selection applications for approximately 77 million acres. Interior rejected the selections and the state sued. The suit was settled in September 1972 with Interior agreeing to make about 35 million acres available for state selection.

Through most of the 1970's, much of the state was withdrawn for Native selection and/or for study for possible inclusion in conservation units. In addition, in 1974, Cook Inlet Region, Inc. ("CIRI"), sued Interior in an effort to secure better land for its and its villages' selection. In the suit, CIRI asked the court to overturn the 1972 settlement and make that land available for Native selection. The state entered negotiations with CIRI and Interior in 1975 to resolve the matter, finally reaching agreement in 1975. While the new agreement specified some areas that would be made available for state selection, continued large withdrawals, other Native corporation overselections, and the D 2 controversy continued to limit the availability of land for state selection.

B. National Forests

The state and the U.S. Forest Service battled for some years -- all the way to the United States Supreme Court -- over community grant selection criteria in the Tongass and Chugach National Forests. This controversy in turn held up selections in interior Alaska, and forced state acquiescence in Forest Service criteria.

C. Submerged Lands

Submerged lands are an important consideration in the state's land selections, since submerged lands should not be charged against the state's acreage entitlements. In addition to the general issue of chargeability, there are three specific issues involving submerged lands affecting the state's selections: navigability, federal reserved submerged land claims and federal surveys and conveyances that erroneously include state submerged lands.

1. Chargeability Under the BLM Manual of Surveying Instructions, the beds of all rivers at least 198 feet wide and all lakes that are 50 acres or larger are meandered and segregated on the federal survey plats and should not be charged against the state's total acreage entitlement, even if nonnavigable. For the first twenty years after statehood,

the United States refused to follow these usual rules for state selections. With very few exceptions, the state was charged for all submerged lands, including the beds of navigable waters. Following years of negotiations, the Department of the Interior in 1983 agreed to follow the BLM Survey Manual. After the state spent three years in federal court defending that decision, Congress in 1988 passed a law requiring BLM to follow the manual.

By a Memorandum of Agreement dated March 28, 1984, the DOI and the state agreed that the new policy would be routinely applied to new survey plats upon which the BLM would issue patents. In the case of approved survey plats upon which patent had not been issued, the BLM would apply the policy only in the case of water bodies shown on the plats; that is, the BLM would simply calculate the submerged land acreage of water bodies shown on the plat and report this figure on the face of the plat. The BLM would not apply the policy to lands previously patented to the state unless the state reimbursed the BLM for the cost of the recalculation. It has been estimated that there may be up to 2 million acres of submerged lands erroneously charged against our entitlement that we could recover and use elsewhere. We have estimated the cost at doing this to be $890.0 a year for 3 years. If we are to recover title to this land we must do so my January 2, 1993

2. Navigability Although use of the BLM Survey Manual has resolved many submerged land acreage chargeability issues, the question of ownership still remains. The state has been seeking judicial clarification of the proper application of the title navigability test for many years, with lots of success. Other than floatplane use as evidence of navigability, the state has won every navigability case so far. In December 1989, the state won another major victory in the Gulkana River case. The 9th Circuit court of appeals ruled that the contemporary use of the river for commercial river rafting and guided hunting and fishing trips conclusively establishes that the river was susceptible for use as a "highway of commerce" and was therefore legally navigable when Alaska became a state in 1959. A BLM attempt to convey the submerged lands under ANCSA was overturned. The time for the Native corporation to seek U.S. Supreme Court review of that decision has not yet expired, so the case may not be over.

3. Federal Reserved Submerged Land Claims and Erroneous Surveys When Alaska became a state in 1959, nearly 98% of the territory was federal land and over 25% was included in some type of federal withdrawal or reservation. The United States claims that many of these prestatehood federal reservations defeated the state's title to the submerged lands. For example, the United States claims that PLO 82, which reserved

the minerals on most of the North Slope of Alaska for use by the federal government in World War II, also reserved title to the submerged lands and defeated the state's title.

The state sued the United States in 1987 challenging the PLO 82 claim. The lawsuit also sought to require BLM to make navigability determinations and to administratively correct erroneous surveys and conveyances. For most surveys and conveyances of state selections affected by PLO 82, the United States has refused to even consider whether any waters are navigable. In November 1989, after the court ruled that it could not reach the issues raised by the state without a specific title dispute, the state amended its complaint to include a claim to quiet title to the bed of the Kukpowruk River. In addition to navigability and reserved submerged land issues, the case may determine whether BLM can administratively fix the errors it has made in past surveys and conveyances or if litigation will be required in every case.

D. Alaska Native Allotments

Under the federal Native Allotment Act of 1906, over 8,000 applications covering well in excess of 1 million acres of land throughout Alaska were pending adjudication with the BLM prior to ANCSA's passage. The exact nature of an Alaska Native's right to an allotment, and how the right could be established, was the subject of a number of protracted federal court disputes throughout the 1970's, until Congress approved most allotments in ANILCA in 1980. In the meantime, the uncertainty created by the lawsuits and allotment applications for many lands the state was interested in selecting delayed final state decision-making on selections.

E. Mining Claims

There are two dimensions to the issue of mining claims. First, the BLM may be required to recover title to mining claims which were conveyed in error to the State of Alaska and some Native corporations. Second, in many cases, the BLM is unable to patent lands to the State and some Native corporations because it is not able to locate mining claims from applicants' descriptions or in the field.

Descriptions of mining claim locations are notoriously vague. And, until after the passage of FLPMA, the BLM did not maintain a record of mining claims on federal lands. The records were maintained by the State recording districts. However, in 1979, as required by FLPMA, miners filed thousands of mining claims with the BLM.

At the present time, the BLM's automated records show that there are approximately 4,600 active claims on lands that have been tentatively approved to the State and approximately 2,000 claims located on lands that have been conveyed to Native corporations.

The BLM and the State are negotiating the criteria for reconveyances. At this time, they are considering only cases where the claimant is willing and able to go to patent (mineral patent application has been fully adjudicated and a favorable mineral examination has been conducted).

F. Navigable Waters on Reserved or Withdrawn Land

Historically, the Department has maintained that title to the beds of navigable waters on lands reserved or withdrawn at the time of Statehood, did not pass to the States. In 1987, the U.S. Supreme Court issued an opinion in the Utah Lake case that contradicted the Department's position. The Department has not yet issued a policy statement that takes the Court's opinion into account.

In 1959, about 90 million acres of Alaska were in Native reserves, national parks, wildlife refuges, forests, and military withdrawals, including all of the oil-rich North Slope (withdrawn by Public Land Order 82). The Interior Department agencies maintain that title to the beds of navigable waters in these various reserves and withdrawals did not pass to the State in 1959 but were retained by the United States under Section 5 of the Submerged Lands Act. The State of Alaska claims that the reserves and withdrawals did not expressly include the beds of navigable waters and, if they did, the United States lacked the authority to defeat the State's title to this land.

G. State Priorities

The BLM has not made significant progress in recent years to satisfy the State's remaining entitlement. The State is required to prioritize its selections in the order in which it wishes to receive conveyances. Throughout Alaska, the Native corporations have selected large amounts of land also selected by the State. As the ANCSA selections are conveyed, relinquished or rejected, the State must adjust its priorities.

The BLM's future workload in processing State land applications is significant. The State has until January 4, 1994, to make its remaining land selections, that is, up to 125 percent of its remaining entitlement under each grant. This statutory deadline is rapidly approaching.

In accordance with Section 906(e) of ANILCA, the State also may file a future application on lands that are not available for selection, such as lands in federal withdrawals. These State

filings are counted against the 125 percent limitation until the BLM either denies or rejects the application. If the lands should ever become available for selection, the State's filing automatically falls into place.

H. Withdrawals

Lands withdrawn for federal purposes are not available for conveyance to the State of Alaska. (See map 15.) In order to make the land available for selection, the BLM is required by law to follow a complicated and time-consuming process.

Generally, the State begins the process with a petition filed with the BLM. In the case of Power Site Classifications (PSC's) and Power Site Reserves (PSR's), the BLM prepares waterpower-potential evaluations, necessary reports and recommendations. The District Office perform the cultural resource clearances and hazardous material inspections. The BLM's recommendations are then sent to the Federal Energy Regulatory Commission (FERC) for review and a determination. Petitions on Power Projects are sent directly to the FERC. Where a Power Project is overlapped by a PSC or PSR, the BLM prepares a report and recommendations. Upon receiving the FERC's determination, the BLM takes the appropriate action: preparation of a PLO and Notice of Opening, or denial of petition.

Currently, the BLM has seven State petitions for PSC's and PSR's at various stages in the process. The State is presently lobbying Congress to restore lands encumbered by power withdrawals and to modify FERC rules. These lands include those the State owns and those the State has selected or has identified for selection. Regardless of the State's success in obtaining legislative relief, the BLM anticipates an additional workload in this area.

III. What We Need To Do Before 1994

A. Tasks

1. Review available federal lands according to DO 101 criteria.

2. Review selected lands (that are not on May 15 list) according to criteria in DO 101.

3. Work with ANCSA corporations and BLM to reduce the corporations' overselections.

4. Determine how much of what we have selected are top filings on federal withdrawals.

5. Relinquish and select as appropriate, up to 125% of our remaining entitlement.

6. Set priorities for our remaining selections.

B. Process

1. Establish a statewide agency planning team.

2. Develop a ranking system for evaluating potential selections and relinquishments, based on the DO 101 criteria.

3. Evaluate potential and existing selections.

4. Propose new selections and relinquishments.

5. Hold public meetings around the state to review the proposal.

6. Planning team recommends final proposal.

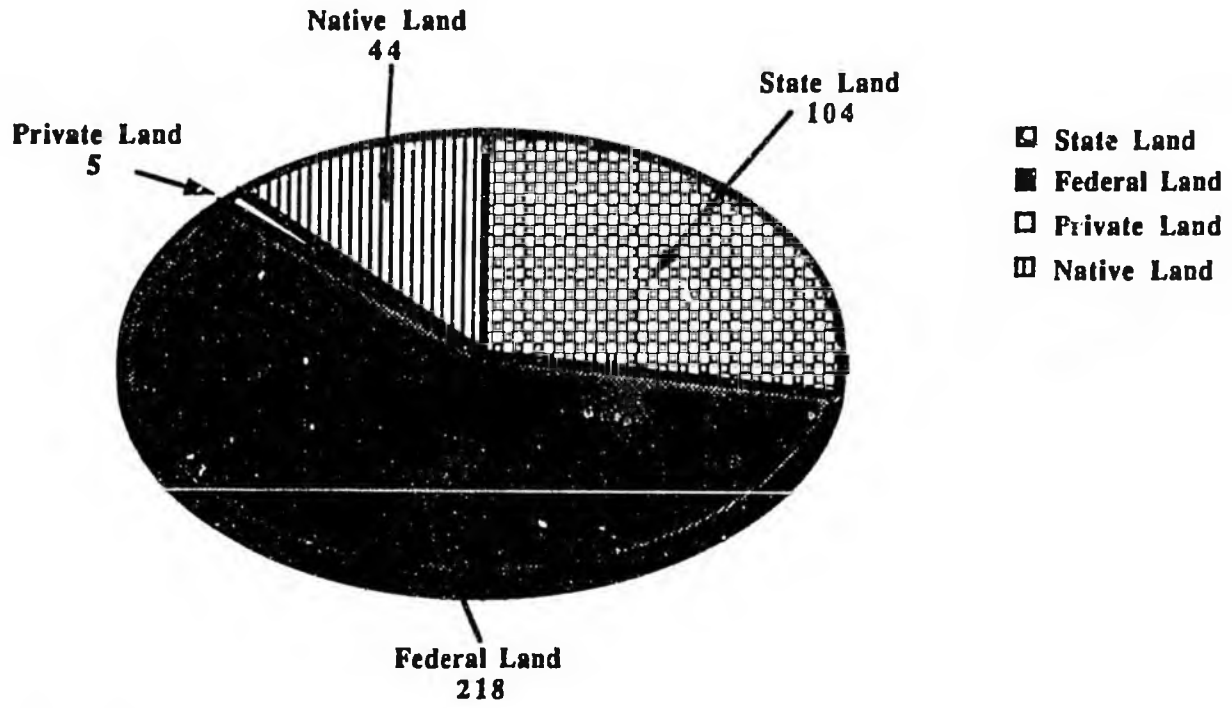
7. Commissioner makes final decision.

8. File the selections and relinquishments before January, 1994

Department of Natural Resources

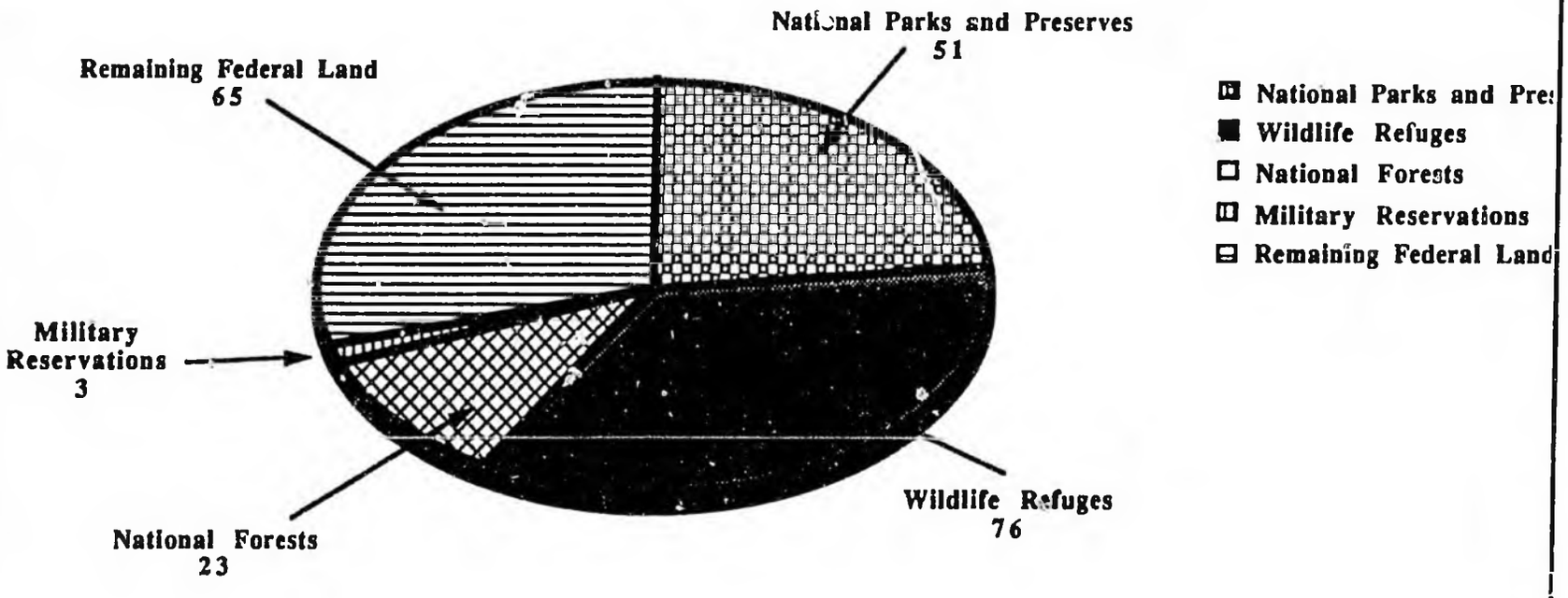
Division of Land and Water Management

Land Ownership Pattern (Overall)



(Millions of Acres)

Land Ownership Pattern (Federal)



(Millions of Acres)

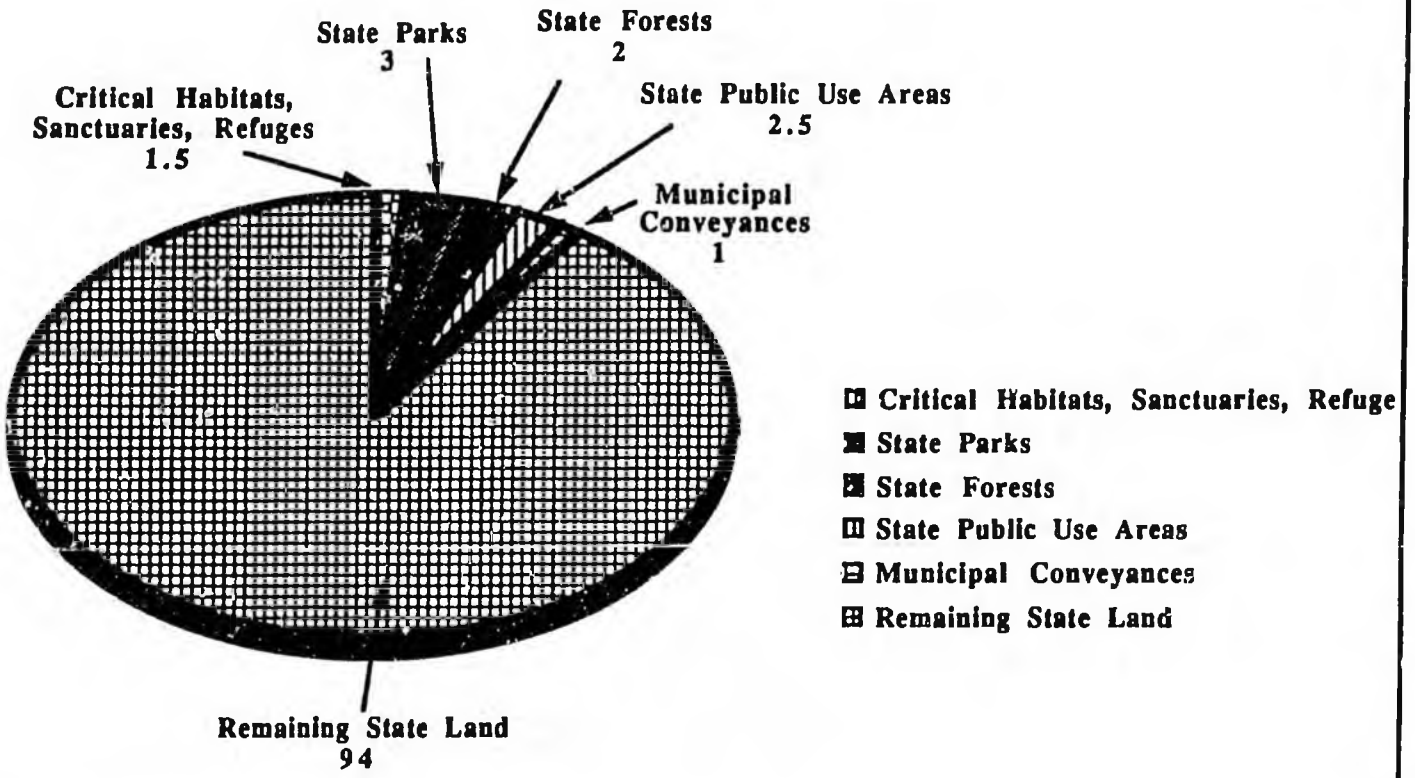
ALASKA LAND ACREAGE SUMMARY
DECEMBER 31, 1989

	Millions of Acres		% of Total
Total Land Alaska		367.7	100.0%
State Land Entitlement [1]		105.8*	28.8%
Selected Land [2] (includes overselection)	25.1		
Tentatively Approved [2]	49.8		
Patented [2]	35.1		
Private Land Owned by Individuals [3]		5.0*	1.4%
Native Corporation Land Entitlement [4]		43.7*	11.9%
Selected Land (includes overselection)	35.0		
Interim Conveyed or Patented [5]	35.8		
Total Federal Land		217.7*	59.2%
National Park System	51.0**		(13.9%)
(Parks Acreage also within the National Wilderness Preservation System: 32.4) [6]			
Parks/Monuments Established Prior to 1980 [7]	7.5		
Parks/Monuments Established in ANILCA [6]	24.6		
Preserves Established in ANILCA [6]	18.9		
U.S. Fish and Wildlife System	76.0**		(20.6%)
(Refuge Acreage also within the National Wilderness Preservation System: 18.6) [6]			
Refuges Established Prior to ANILCA [8]	22.3		
Refuges Established in ANILCA [6]	53.7		
U.S. Forest System	23.2**		(6.3%)
(Forest Acreage also within the National Wilderness Preservation System: 5.4) [6]			
Forests Established Prior to ANILCA [9]	19.8		
Forests Established in ANILCA [6]	3.4		
Bureau of Land Management	65.0**		(17.7%)
National Petroleum Reserve-Alaska	22.4		
Areas Established in ANILCA [6]			
Conservation & Recreation Areas	2.2		
Nat'l Wild & Scenic Rivers System	1.5		
Other Alaska Land (Public Domain)	38.9		
Military Land [10]	2.5**		(0.7%)

Note: Because of unresolved overlaps between state and Native selections and various federal designations and because state entitlement land may be disposed of to private owners, the sum of subtotals exceeds the statewide total.

*Figures add to statewide total.
**Figures add to federal total.

Land Ownership Pattern (State)



(Millions of Acres)

State of Alaska
Refuges, Forests and Parks

February 1990

Name	Statute	Acres
Fish & Game Designations (AS 16.20)		
Walrus Island State Game Sanctuary	(AS 16.20.090-140)	9,700
McNeil River State Game Sanctuary	(AS 16.20.160-170)	83,800
	Total sanctuary acres	**93,500**
Palmer Hay Flats State Game Refuge	(AS 16.20.032)	26,000
Mendenhall Wetlands State Game Refuge	(AS 16.20.034)	3,800
Susitna Flats State Game Refuge	(AS 16.20.036)	300,800
Trading Bay State Game Refuge	(AS 16.20.038)	160,960
Cape Newenham State Game Refuge	(AS 16.20.030)	14,000
Izembek (Lagoon) State Game Refuge	(AS 16.20.030)	181,440
Creamer's Field Migratory Waterfowl Refuge	(AS 16.20.039)	1,664
Goose Bay State Game Refuge	(AS 16.20.030)	10,880
Anchorage Coastal Wildlife Refuge	(AS 16.20.031)	32,500
Minto Flats State Game Refuge	(AS 16.20.037)	500,000
	Total refuge acres	**1,232,044**
Port Moller Critical Habitat Area	(AS 16.20.550)	127,000
Port Heiden Critical Habitat Area	(AS 16.20.555)	72,000
Cinder River Critical Habitat Area	(AS 16.20.560)	26,000
Egegik Critical Habitat Area	(AS 16.20.565)	8,000
Pilot Point Critical Habitat Area	(AS 16.20.570)	46,000
Kalgin Island Critical Habitat Area	(AS 16.20.575)	3,500
Fox River Flats Critical Habitat Area	(AS 16.20.580)	7,100
Chilkat River Critical Habitat Area	(AS 16.20.585)	4,800
Kachemak Bay Critical Habitat Area	(AS 16.20.590)	222,000
Clam Gulch Critical Habitat Area	(AS 16.20.595)	2,500
Copper River Delta Critical Habitat Area	(AS 16.20.600)	597,000
Anchor River & Fritz Creek Critical Habitat Area	(AS 16.20.605)	19,000
Tugidak Island Critical Habitat Area	(AS 16.20.615)	50,240
Dude Creek Critical Habitat Area	(AS 16.20.610)	4,083
Willow Mountain Critical Habitat Area	(AS 16.20.620)	22,720
Redoubt Bay Critical Habitat Area	(AS 16.20.625)	183,640
	Total critical habitat area acres	**1,395,583**
Forestry Designations (AS 41.15-17)		
Tanana Valley State Forest	(AS 41.17.400)	1,786,000
Haines State Forest Resource Mgmt. Area	(AS 41.15.300-330)	247,000
	Total forestry acres	**2,033,000**

Park Units (AS 41.21-23)

Chilkat State Park	(AS 41.21.111-120)	6,045
Chugach State Park	(AS 41.21.121-125)	495,000
Kachemak Bay State Park	(AS 41.21.131-134)	165,370
Kachemak Bay State Wilderness Park	(AS 41.21.140-143)	210,240
Denali State Park	(AS 41.21.151-152)	421,120
Wood/Tikchik State Park	(AS 41.21.161-167)	1,428,320
Shuyak Island State Park	(AS 41.21.172-178)	11,000
Pt. Bridget State Park	(AS 41.21.181-183)	2,800
Marine Parks:	(AS 41.21.300-306)	*14,440

Beecher Pass, Bettles Bay, Chilkat Islands, Dall Bay, Funter Bay, Horseshoe Bay, Joe Mace Island, Oliver Inlet, Saint James Bay, Sawmill Bay, Security Bay, Shelter Island, Shoup Bay, South Esther Island, Sullivan Island, Surprise Cove, Taku Harbor, Thoms Place, Zeigler Cove

* does not include 22,510 acres of water

Captain Cook State Recreation Area	(AS 41.21.415-425)	3,620
Caines Head State Recreation Area	(AS 41.21.435-445)	5,961
Nancy Lake State Recreation Area	(AS 41.21.455-465)	22,685
Chena River State Recreation Area	(AS 41.21.475-490)	254,080
Willow Creek State Recreation Area	(AS 41.21.491-495)	3,583
Kenai River Special Management Area	(AS 41.21.502-514)	2,693
Alaska Chilkat Bald Eagle Preserve	(AS 41.21.611-630)	49,000
	Total Park Acres	**3,095,957**

Other Designations

Delta Junction Bison Range Area	(AS 16.20.300)	*72,000
Matanuska Valley Moose Range	(AS 16.20.340)	**132,500
Nelchina Public Use Area	(AS 41.23.010-040)	2,350,000
Hatcher Pass Public Use Area	(AS 41.23.100-130)	5,100
Ernie Haugen Public Use Area	(AS 41.23.050-080)	420
Recreation Rivers:	(AS 41.23.400-510)	***243,000

Alexander Creek, Kroto Creek & Moose Creek, Lake Creek, Little Susitna River, Talachulitna River, Talkeetna River

Total other designations	**2,803,020**

* does not include additional 17,500 acres within military withdrawal

** does not include selected land

*** does not include borough or private land

NOTE: Most figures are approximate and many include tide and submerged acreage. Fish & Game estimates that half of the acreage designated in Title 16 is submerged.

Fish & Game designations	2,721,127
Forestry designations	2,033,000
Park designations	3,095,957
Other designations	2,803,020
Total legislative designations	**10,653,104**

Alaska Department of
NATURAL
RESOURCES