ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

April 10, 1990

APR 13 1990

The Honorable Lloyd Jones
Senator
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Senator Jones:

Enclosed is our most recent update on our efforts to reduce moose mortality along the Alaska Railroad. As you can see, spring appears to have arrived, finally, and fewer moose are being seen or killed along our rights of way. Therefore, we have withdrawn our pilot car crew and returned the heavy equipment we had working in the Willow/Talkeetna area.

We'll continue to salvage any moose killed along our track with the help of our section crews as was done in the past. However, the number of kills has dropped significantly enough that we believe the number will phase out altogether by the end of this month.

Also enclosed is the latest estimate of our expenses for moose mitigation programs for this winter and a capsule look at the mortality statistics.

As always, if you or your staff need additional information, please contact me at 265-2675.

Sincerely,

Vivian Hamilton

Vivian Hamilton, APR
Corporate Communications Manager

Enclosures

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500 Update: April 9, 1990

What's New:

1. Moose sightings and moose kills have dropped dramatically on the Alaska Railroad.
2. Moose sightings by the pilot car crew have decreased and as a result this crew has been reassigned to other track maintenance jobs. They can be remobilized if the trend reverses.
3. The Thiokol, a leased vehicle being used to create moose paths, has completed the task and has been returned to Anchorage.

Measures by the Alaska Railroad To Reduce Moose Mortality

Pilot car: This vehicle has been patroling ahead of trains each night to shoo moose off the tracks with noise-making shotgun shells, spotlights and a siren. The crew reports that moose sightings and moose kills have diminished sharply. The total number of moose kills confirmed through March 31 is 675. During the week of April 2-8, there were seven moose kills reported. The week included three days during which no moose were killed. As a result of the reduction in moose kills, this crew has been reassigned to track maintenance, effective April 8. If the trend reverses, this crew can be remobilized.

Moose paths: A Thiokol, a large tracked all-terrain vehicle, was leased to plow paths on either side of the tracks from south of Willow up to Talkeetna. This work has been completed and the vehicle returned to Anchorage.

Salvage: The work of this crew has been substantially reduced so the locomotive crane and its crew were assigned other track maintenance work. In keeping with our company policy, section crews along the line will continue to be responsible for salvaging any moose killed.

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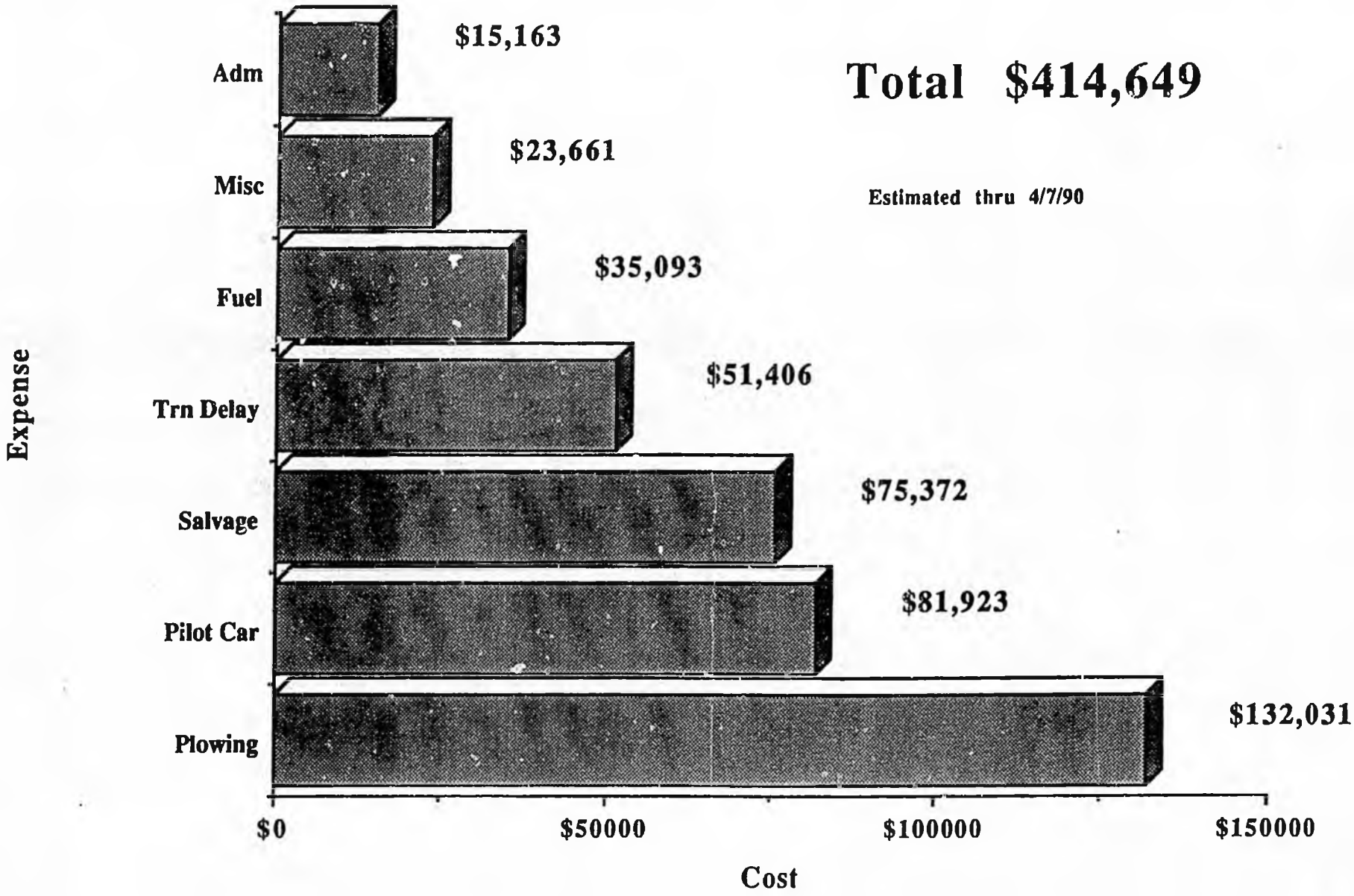
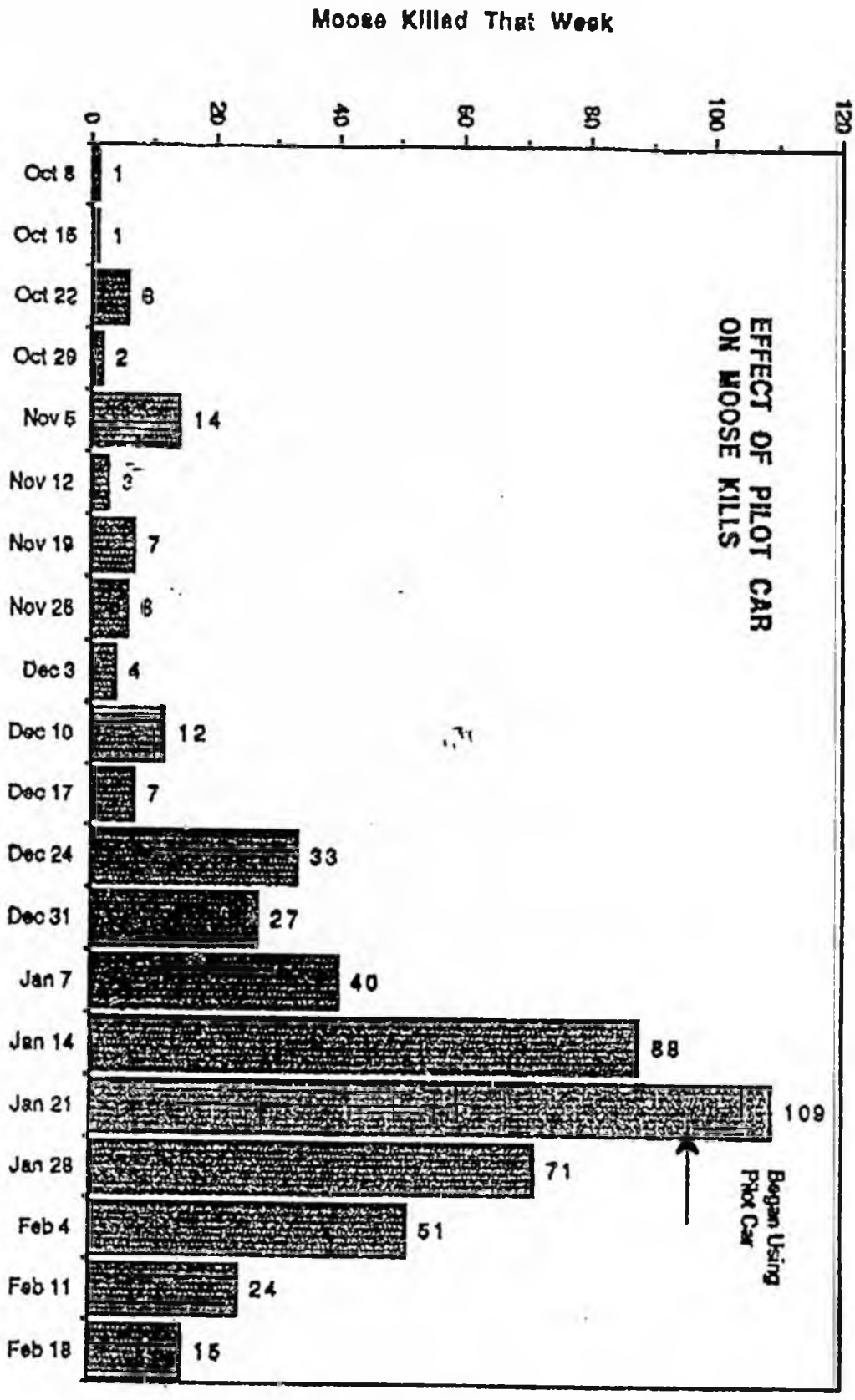
Railroad Costs for Moose Protection



Alaska Railroad Corporation
Moose Mortality Report
Winter 1989-90

Month	# Moose Killed
October	11
November	28
December	65
January	306
February	156
March	110 *
TOTAL	676

*Note: the numbers for March are still being audited and are subject to change.


Moose Killed That Week
0
20
40
60
80
100
120
Week Of
Oct 8
1
Oct 15
1
Oct 22
6
Oct 29
2
Nov 5
14
Nov 12
3
Nov 19
7
Nov 26
6
Dec 3
4
Dec 10
12
Dec 17
7
Dec 24
33
Dec 31
27
Jan 7
40
Jan 14
88
Jan 21
109
Jan 28
71
Feb 4
51
Feb 11
24
Feb 18
15
EFFECT OF PILOT CAR
ON MOOSE KILLS
Began Using
Pilot Car

Alaska Railroad Corporation
Moose Mortality Report

Railroad Moose Mortality Since State Ownership
(for the period October 1 through April 30)

1989-1990	536 (as of Feb. 26)
1988-1989	242
1987-1988	329
1986-1987	126
1985-1986	21
1984-1985	316

FACTSHEET: ALASKA RAILROAD PILOT CAR PROGRAM

*The Alaska Railroad pilot car's first trip was Jan. 23. Since that time, moose kills have dropped nearly 90 percent. In fact, from 5 a.m. Feb. 26 until 5 a.m. Feb. 27, no moose were killed anywhere along the Alaska Railroad's route, and the Willow to Talkeetna area has gone several consecutive nights without killing a moose.

*The car travels at an average of 35 miles per hour, staying between two and three miles ahead of the train. The moose leave the tracks and move to the adjacent paths plowed by various volunteer and military organizations using fuel supplied by the Alaska Railroad.

*The Moose Patrol is made up of railroad employees. The pilot car is equipped with shotguns to fire explosive "kracker" shotgun shells to scare the moose. The pilot car also uses powerful spotlights to spot the animals and sirens to scare them off the tracks.

*The pilot car itself is a one-ton Ford pickup equipped with special rail gear, allowing it to travel either on the tracks or on highways. Once on the tracks, the vehicle doesn't need steering, leaving both the driver and the passenger free to spot moose on each side of the tracks.

*On an average night, Moose Patrol members spot more than 50 moose. Generally the moose leave the tracks, although occasionally a moose gets stuck on bridges or refuses to move without being nudged by the pilot car.

*The snow depth in the Willow to Talkeetna area is seven to ten feet. Trails packed by tracked vehicles and snowmachines are giving the moose an alternate path to travel but these have been covered by recent snowfalls.

*The largest concentration of moose seems to be in the area of Willow north to Talkeetna, although plenty of moose are also spotted between Eklutna and Wasilla.

*The pilot car generally makes two to four trips each night between Eklutna and Talkeetna, averaging three hours each way.

# # #

1059R

Update: March 6, 1990

Measures by the Alaska Railroad To Reduce Moose Mortality

Pilot car: This vehicle has been operating since Jan. 23 and has been very effective as a moose deterrent. The vehicle is a 1-ton crew cab Ford pickup; two 2-member crews are rotated out on the vehicle each night. Recently white-out conditions forced the crew to stay off the tracks and, as evidence of the car's success, 13 moose were killed during the night. The success probably lies in the use of noise-making Kracker shells.

Moose paths: The Alaska Railroad's D8 and D7 are working at Kashwitna this week. By last week, about 6 miles of trail had been plowed through the snow parallel to the tracks to make a "moose sidewalk." These trails have been very effective but the work is slow because of the terrain and because nearly 3 feet of fresh snow fell late last week, covering whatever work had been done beforehand as well as any browse uncovered in the process. In some areas snow is measuring up to 10 feet deep and overnight temperatures are still dipping as much as 30 degrees below zero.

The Mat Su Motor Mushers--volunteers on snowmobiles--cut about 100 miles of trail parallel and perpendicular to the track from near Nancy Lake to north of Montana Creek. These, too, were being used by the moose until the heavy snowfall covered the trails; the group re-did them three times. Some fuel and lodging was provided the group by the railroad for their assistance.

Two sets of all-terrain, tracked vehicles were being used to cut trails. Nodwells from Denali Drilling (hired by the Save the Moose Committee and provided fuel and lodging by the Alaska Railroad) and the U.S. Army's Small Unit Support Vehicles (SUSVs) cut about 7 miles of trail from south of Sunshine to the Fish Lake area. Their work also has been covered by the heavy snowfall last week. Both groups have pulled out their equipment and

(more)

Add One--Moose Measures

the Save the Moose Committee has replaced the Nodwells with a Bombardier, a wide-tracked all-terrain vehicle used for snow clearing. It is a far better machine for the task and is expected to surpass the efforts of the Nodwells and SUSVs.

The U.S. Air Force last week had two long-track snowmachines working in the area between Willow and Talkeetna. Although the equipment was very efficient, the trails are covered now.

Rubber tire obstacles: Although the tires were effective, the heavy snow covered them up. The railroad sent out a crew with an air compressor to blow the snow off the tires but heavy snow immediately recovered the tires.

Ice on the ties: This has been the least effective method tried. When the ice froze it was porous and did not appear to affect the movement of the moose.

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For additional information:

Vivian Hamilton
Corporate Communications Manager
265-2675

Alaska State Legislature

Official Business

APR 18 1990

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

1990 State Capitol

MEMORANDUM

To: Senator Jones

From: Rep. Menard

Re: HB 484, Destruction of Moose by the AK Railroad

Date: April 17, 1990

I respectfully request that you schedule HB 484, Destruction of Moose by the Alaska Railroad as soon as possible.

The Railroad Has killed over 675 moose this year. Since the bill was introduced, the Railroad has implemented many of the requirements included in HB 484. However, to make sure these efforts continue, I think it is necessary that we pass a bill this year to ensure protection of the moose in the future.

Pourchot
May 1, 1990

SUMMARY OF SCS CSHB 484(TRANS), AN ACT RELATING TO DESTRUCTION OF MOOSE BY THE ALASKA RAILROAD

1. Requires Railroad Corp. to adopt practices to mitigate the destruction of moose by operations of the Railroad, and to cooperate with ADF&G in this effort by allowing them access to Railroad rights-of-way. Requires that an agreement concerning terms of access be executed by the Railroad and ADF&G.

2. Requires the corporation to consult with representatives of ADF&G, DNR, DOTPF, and the Mat-Su Borough, and with citizens in communities served by the Railroad, regarding mitigation efforts.

3. Requires the corporation to prepare, in conjunction with ADF&G, a contingency plan to minimize the effect of Railroad operations on moose. Requires that the contingency plan include specific criteria for timing and implementation of mitigation measures. Requires that the plan must be completed by September 1, 1990 and updated annually by September 1 of each year.

4. Requires the corporation to provide for the salvage of moose killed by Railroad operations.

6. Requires the corporation to report the number of moose killed (by time and railroad milepost) to ADF&G.

CHANGES TO HOUSE-PASSED VERSION:

1. Requirement that agreement on ROW access be entered into by ADF&G and Railroad.

2. Deletion of research program, advisory committee on development of contingency plan, "4-moose trigger" for implementation of plan, specific procedures the plan must include (pilot cars, brush removal, scheduling changes, and creation of trails parallel to the tracks), penalties for failure to report moose kills.

HB584B.TXT

6-2096M
Utermohle
4/30/90

Original sponsor(s): REP. MENARD, Navarre, Brown, Ellis, Grussendorf, Finkelstein, Donley, Goll, Jacko

IN THE HOUSE BY THE TRANSPORTATION COMMITTEE

SENATE CS FOR CS FOR HOUSE BILL NO. 484 (Transportation)

IN THE LEGISLATURE OF THE STATE OF ALASKA

SIXTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to destruction of moose by the Alaska Railroad."

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

* Section 1. AS 42.40 is amended by adding a new section to read:

Sec. 42.40.445. PROTECTION OF MOOSE. (a) The corporation shall adopt practices to mitigate the destruction of moose by operations of the railroad. The corporation shall cooperate with the Department of Fish and Game to mitigate the effects of the operations of the railroad on moose by granting access to railroad rights-of-way to the department and its contractors, if before entering railroad rights-of-way the department and its contractors execute agreements with the corporation concerning the terms of access. The corporation shall, to the extent feasible and compatible with railroad operations, provide [free] rail transportation to the department and its contractors while they are engaged in activities under this section. in accordance with the contingency plan.

(b) The corporation shall consult with representatives of the Department of Fish and Game, the Department of Natural Resources, the Department of Transportation and Public Facilities, the Matanuska-Susitna Borough, and citizens residing in communities served by the railroad regarding the mitigation of the effects of railroad operations on moose.

(c) The corporation shall prepare, in [conjunction] cooperation with the Department of Fish and Game, a contingency plan to minimize to the greatest extent feasible the effect of railroad operations on moose.

The plan shall include specific criteria for timing and implementation of measures to mitigate the effects of railroad operations on moose. The plan must be updated annually on or before September 1. In preparing the plan, the corporation may conduct one or more public meetings to discuss practices by which the destruction of moose by railroad operations may be mitigated.

(d) The corporation shall provide for the salvage of moose killed by operations of the railroad. The corporation shall cooperate with the Department of Public Safety in distributing salvaged moose meat to persons identified by the Department of Public Safety as qualified to receive salvaged moose meat.

(e) The corporation shall report the number of moose killed by railroad operations to the Department of Fish and Game. The report shall include the time and location, by railroad milepost, of each moose kill.

* Sec. 2. The Alaska Railroad Corporation shall complete the first contingency plan to minimize the effect of railroad operations on moose, as required by AS 42.40.445(c), enacted by sec. 1 of this Act, on or before September 1, 1990.

Alaska State Legislature

Official Business

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

MEMORANDUM

TO: Senator Jones

FROM: Rep. Menard

Date: April 17, 1990

RE: HB 484, Destruction of Moose by the Railroad

HB 484 is a bill to help mitigate the number of moose killed by the AK Railroad each year. The Finance version is significantly different from my original proposal.

CSHB 484 requires the AK Railroad to: 1) establish a research program to investigate methods for reducing moose kills on the Railroad Right of Way, 2) establish a committee made up of the R.R., the Department of Fish and Game, the Department of Natural Resources, the Matsu Borough and another community served by the R.R. to advise the corporation on the development of a contingency plan, 3) develop a contingency plan to prevent the destruction of moose when more than 4 moose are killed in one week due to snow conditions, 4) salvage moose killed by the R.R. and cooperate with the Department of Public Safety in distributing salvaged moose, 5) report moose which have been killed by the R.R.

The most important provision of this bill is to require that a contingency plan be prepared by the R.R. The contingency plan would provide for the use of pilot cars to precede trains, the scheduling of trains in a manner that reduces destruction of moose, removal of saplings, seedlings, and shrubs from the RR Right of Way, removal or compaction of snow to create trails along the right of way, or other measures recommended by the Department of Fish and Game or the advisory committee.

HOUSE CALENDAR: TUESDAY, APRIL 10 , 1990

BILL HISTORY - HOUSE ACTION: **HB 484**

February 7, 1990 House Journal

HOUSE BILL NO. 484 by Representatives Menard, Navarre, Brown, Ellis, Grussendorf, Finkelstein, Donley and Goll, entitled:

"An Act relating to destruction of moose by the Alaska Railroad."

was read the first time and referred to the Transportation and Finance Committees.

February 16, 1990 House Journal

Representative Jacko added his name as co-sponsor to:

HOUSE BILL NO. 484

"An Act relating to destruction of moose by the Alaska Railroad."

March 15, 1990 House Journal

The Transportation Committee has considered:

HOUSE BILL NO. 484

"An Act relating to destruction of moose by the Alaska Railroad."

and recommends it be replaced with the following committee substitute:

CS FOR HOUSE BILL NO. 484 (Transportation)
(same title)

Recommending do pass (3): Foster (Chairman), Grussendorf, Kubina

Amend (1): Leman

No recommendation (1): Hudson

The following was published March 15, 1990:

Zero fiscal note, Department of Fish & Game

HB 484 was referred to the Finance Committee.

April 2, 1990 House Journal

The Finance Committee has considered:

HOUSE BILL NO. 484

"An Act relating to destruction of moose by the Alaska Railroad."

and recommends it be replaced with the following committee substitute:

CS FOR HOUSE BILL NO. 484 (Finance)
(same title)

Recommending do pass (5): Brown, Shultz, Phillips, Ulmer, Barnes

No recommendation (5): Larson and Hoffman (Co-chairmen), Koponen, Rieger, Wallis

The following previously published note applies to CSHB 484(Fin) (March 15, 1990):

Zero fiscal note, Department of Fish & Game

HB 484 was referred to the Rules Committee for placement on the calendar.

by H. Rules Cmte.

Bill History - House Action

Alaska State Legislature

HOUSE RESOURCES COMMITTEE

P.O. Box V
State Capitol
Juneau, Alaska 99811
(907) 465-3715

MEMORANDUM

TO: Rep. Grussendorf, Chairman House Rules Committee

FROM: Rep. Menard

Date: April 9, 1990

RE: HB 484, Destruction of Moose by the Railroad

HB 484 is a bill to help mitigate the number of moose killed by the AK Railroad each year. The Finance version is significantly different from my original proposal.

CSHB 484 (Finance) requires the AK Railroad to: 1) establish a research program to investigate methods for reducing moose kills on the Railroad Right of Way, 2) establish a committee made up of the R.R., the Department of Fish and Game, the Department of Natural Resources, the Matsu Borough and another community served by the R.R. to advise the corporation on the development of a contingency plan, 3) develop a contingency plan to prevent the destruction of moose, 4) salvage moose killed by the R.R. and cooperate with the Department of Public Safety in distributing salvaged moose, 5) report moose which have been killed by the R.R.

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No. 1

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: CSHB 484(Trsp)
PUBLISH DATE: HOUSE 3/15/90

FISCAL NOTE

REQUEST:

Revision Date: 3/13/90
Title: Act Relating to Destruction of Moose by the AK Railroad
Sponsor: Menard
Requestor:

Agency Affected: Dept. of Fish and Game
BRU: Wildlife Conservation
Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	0	0	0	0	0	0

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

No FY 90 impact.

Prepared by: Molly McCammon
Phone: 465-4100
Division: Commissioner's Office
Date: 3/13/90

Approved by Commissioner:
Date: 3/13/90
Agency: Department of Fish and Game

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

STATE OF ALASKA
1990 LEGISLATIVE SESSION

BILL VERSION: CSHB 484 (Trsp.)
PUBLISH DATE: _____

FISCAL NOTE

REQUEST:

Revision Date: _____
Title: An Act relating to destruction of moose by the Alaska Railroad
Sponsor: Menard
Requestor: House Finance Committee

Agency Affected: Commerce & Economic Dev.
BRU: Alaska Railroad Corporation
Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	0	0	0	0	0	0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)
The Alaska Railroad Corporation is not subject to the Executive Budget Act. This fiscal note represents costs to the corporation and is provided for informational purposes only.

Prepared by: Jim Blasingame, Director of Administration
Division: Alaska Railroad Corporation
Phone: 265-2502
Date: 3/30/90

Approved by Commissioner: Larry Merculieff
Agency: Department of Commerce & Economic Development
Date: 3/30/90

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

GB/dg16644D/33090a

ANALYSIS - CSHB 484 (Trsp.)

The cost to the Alaska Railroad Corporation (ARRC) to retain its current moose protection program from October through March is estimated to be $780.0 ($130.0 per month for six months). This reflects the cost of administration, train and salvage crews, snow removal, pilot cars and train delays.

The ARRC estimates the additional fiscal impact of CSHB 484 (Transportation) to be $876.7. Since the cost will be borne by the ARRC and since the ARRC is exempt from the Executive Budget Act, we have submitted a zero fiscal note.

Sec. 42.40.445(a) requires the ARRC to provide rail transportation and use of railroad facilities and equipment to the Department of Fish and Game and its contractors to mitigate the effects of railroad operations on moose. The estimated cost of this subsection from October through March is $195.7 and is broken down as follows:

- Personal Services $ 90.7

  45.00 per hour 3 operators 42 hours per week 16 weeks

  This reflects the cost of railroad operators at $45.00 per hour to operate three high rails to accommodate the Department of Fish and Game.

- Equipment $105.0

  Three high rails to accommodate the Department of Fish and Game.

Section 42.40.445(b) requires the railroad to establish a research program to investigate methods to reduce the destruction of moose by railroad operations. We estimate the cost of a contract with the University of Alaska to perform this research will be $15.0. based upon a 1987 program ultrasonic sound tests

Section 42.40.445(d) requires the ARRC to prepare a contingency plan to prevent the destruction of moose by operations of the railroad when snow conditions cause moose to use the railroad right-of-way. We estimate the cost of contracting for the development of this contingency plan to be $30.0.

The brushing program identified in this subsection will cost $636.0 for 60 miles at $10.6 per mile.

+30.0
636.0
666.0

6644D/33090a

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- Equipment $105.0

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The brushing program identified in this subsection will cost $636.0 for 60 miles at $10.6 per mile.

6644D/33090a

February 27, 1990 Transportation Committee

Representative Menard presented testimony on HB 484. The sponsor stated he had introduced the legislation in an attempt to reduce the moose kill by the Alaska Railroad Corporation (ARRC). He stated that the average annual moose kill by the ARRC is 300-400. This year, due to heavy snowfall, the number has increased to over 500. Rep. Menard stated that this is very high, especially when we consider that a majority of the moose are killed in a 60 mile area, from milepost 180 to milepost 240.

The sponsor explained that measures have been taken recently to attempt to mitigate the high moose kills. While these measures are reducing the numbers, the problem is ongoing and the solutions proposed all cost money. The intent of this legislation is to set up a conservation fund to allow for implementation of long term management and to reduce the moose kills by the ARRC.

Rep. Menard stated that recently the ARRC commenced operating a pilot car in front of each train. This car has several devices that scare the moose from the track area. He also suggested several other measures that would help reduce the high number of moose kills including plowing snow parallel to the tracks, operating the trains in daylight hours and fencing the 60 mile area.

Rep. Menard went on to say that moose kills are a problem on the highways however, on certain problem areas on the highways the number of moose killed has significantly been reduced by fencing high kill areas. He cited the Eagle River road area as an example.

The sponsor stated that the ARRC must help fund a program that is part of a long-term solution. He stated that he feels that ARRC currently reacts to the problem and has no real prevention program. The sponsor emphasized that if the ARRC was a private corporation, the public outcry over the number of moose kills would be tremendous. Rep. Menard feels strongly that it is the state's responsibility to take measures to reduce this problem.

Rep. Grussendorf expressed his support for HB 484. He feels that the state must do everything possible to protect this resource. Rep. Grussendorf went on to say that while he thought the idea of operating trains during daylight hours was a good idea, he believes that reduced daylight hours in winter would prevent this measure from being implemented.

Rep. Menard informed the members that in the first week of January, over 100 moose were killed by ARRC. It was at this time that the use of the pilot car began.

Rep. Hudson stated his support for the bill. He feels that we are piecemealing the solution to the problem and expressed his support for legislation that would set aside $1-$1.5 million in funding to tackle the problem statewide.

Rep. Menard agreed. He would like to see an appropriation

to the Dept. of Fish and Game to deal with this problem statewide. He stated the ARRC is a part of the problem and that is why he has introduced this bill.
Rep. Hudson pointed out that this would be a good project for the Science and Technology Foundation to work on.
Number 0241
Rep. Kubina noted Rep. Foster's arrival at 8:40 a.m.
Mr. Frank Turpin, President of the Alaska Railroad Corporation, provided testimony on behalf of the ARRC. A copy of Mr. Turpin's testimony is included with the minutes. Mr. Turpin pointed out that the ARRC contacted various countries and states with similar weather conditions to see how they are dealing with problems such as this. He informed members that the basic problem is that the moose are starving and suggested that steps be taken to work out ways of providing adequate feed for the animals in winter months. Mr. Turpin stated that the moose come on the railroad right-of-way and tracks to get food. Mr. Turpin provided the following statistics about moose kills: 155,000 moose exist statewide, 7,000 were killed by hunters, 3,000 were killed by predators, 1,200 were killed on highways, and 158 were killed by the ARRC.
Mr. Turpin then went on to say that the 1990 statistics will be significantly higher because the heavy snowfall is causing starving moose to look for feed anywhere they can find it.
He stated the ARRC has three approaches:
1. Pilot car - this car travels in front of the train. It has loud whistles, bells and a siren to scare moose off the tracks. The crew also shot cracker shells above the moose to frighten them away.
2. Salvage meat - the ARRC has 2 crews who work at salvaging moose meat. Approximately 70 percent of the moose meat is salvaged, the remaining 30 percent is used by the Alaska Department of Fish and Game.
3. Additional plowing - the ARRC has implemented a program to plow paths along the side of the tracks. This provides the moose with a place to walk to get off the tracks.
Mr. Turpin went on to say the ARRC has tried to work closely with the Department of Fish and Game. He pointed out that the moose problem is not new, the problem has existed for years and was more severe under federal ownership.
TAPE FOURTEEN, SIDE B
Number 000
Rep. Grussendorf asked how many moose were being sighted during trips. Mr. Turpin informed him that there are still a lot of moose around the area. Approximately 50-75 are being sighted during each trip.
Rep. Menard asked how many of the trains used pilot cars. Mr. Turpin stated that the pilot car stays in the 60 mile area all night. This is the area where the pilot car is most needed.
Rep. Foster asked if someone could provide additional

information on the salvage efforts. Mr. Turpin informed him that the railroad crews salvage the meat and take it to a central point where the ADF&G can distribute it. The attached testimony by ARRC provides an indepth overview of the salvage efforts.
Rep. Leman inquired if the meat was any good after the animal had been hit by the train. He was informed that most of the meat is salvageable. Only the meat actually under the train is not salvageable for distribution. This meat is used by ADF&G for predator studies.
Rep. Hudson asked if the ARRC supports HB 484. Mr. Turpin stated that the railroad has some concerns with the bill. First, he stated that the ARRC believes that the Corporation has implemented programs that have reduced moose kills. He then went on to express concerns outlined in the the attached position paper.
Rep. Hudson stated he believes that ARRC could work more closely with other state agencies. Mr. Turpin agreed.
Representative Menard went on to express the main intent of the bill, that is, to reduce moose kills. He cited less than 75 moose kills per year as an acceptable level.
Rep. Grussendorf asked what amount of funds the ARRC would be willing to put aside each year to address the moose kill problem. Mr. Turpin stated he was unable to state an amount because the ARRC did not budget like state agencies. The corporation has spent whatever amount was necessary, the funds were taken from another budget item such as capital expenditures. Mr. Turpin pointed out that this year to date, the Corporation has spent in excess of $250,000 on the moose kill problem.
Rep. Grussendorf again asked what the railroad would be willing to spend each year, in conjunction with ADF&G and DNR, for a comprehensive kill prevention program.
Mr. Turpin stated the Corporation could not provide that figure. He emphasized that ARRC would spend the amount necessary to correct the problem.
Rep. Leman asked who administered the funds under HB 484.
Rep. Menard informed him ADF&G managed the funds. He then went on to express a desire to have the departments involved work together. Rep. Hudson expanded on this point by reiterating the importance of a joint fund and a joint departmental effort to address this problem.
Number 0789
Mr. Chuck Heath testified via teleconference. He stated that the ARRC has been dragging its feet in addressing the problem. He informed members that of the amount of meat salvaged by ARRC, only about 50-75 percent is usable.
TAPE FIFTEEN, SIDE A
Number 000
Carl Grawagel provided testimony. He stated that as an ADF&G habitat officer in the Mat-Su area, he is very familiar with the moose kill problem. He emphasized that the main problem is access to land owned by ARRC. He also informed members that he had recommended the use of a pilot

car to ARRC over two years ago but the railroad felt that was not financially feasible. Mr. Grawagel stated one of the biggest problems is that the ARRC management continually worries about the bottom line. Most of the measures undertaken by ARRC are reactionary rather than preventive. He then went on to say the ARRC has problems implementing any suggested solutions and this is very frustrating for ADF&G staff who are working on this problem.

Mr. Grawagel stated that all agencies need to work togetner to implement a plan and then get a funding source. At this point all research and development ideas can be reviewed.

Mr. Luke Pamplin, ADF&G, testified. He expressed the same concerns as the previous speaker. Mr. Pamplin stated that this is not a new problem, it has been a concern for several years. The railroad has been aware of the problems and possible solutions since 1985. He stated that all the recent media attention has forced the ARRC to work on ways to reduce the moose kill problem however they have been aware of the solutions for many years.

Mr. Pamplin believes that we must make the ARRC responsible for reducing moose kills on land that is under their control. He feels that an incentive to mitigate the damage would be a good way of dealing with this.

Number 0124

Mr. Pamplin stated that this is not an unusual winter. While snow fall is heavy, the moose always migrate from west to east or from east to west. The heavy snowfall has resulted in the animals starving and therefore remaining in the areas where feed is available for longer periods of time.

The only way this problem is going to be solved is by taking preventive measures. This will require adequate funding and the cooperation of all agencies involved. Mr. Pamplin believes that unless this is done, the state may be faced with a real reduction in moose numbers in the next few years.

Rep. Grussendorf asked if the department has jurisdiction over ARRC's right-of-way. Mr. Pamplin informed him that the department is allowed access but permission from the ARRC is required before any equipment or work may be undertaken on ARRC land.

Rep. Foster informed the members that the sponsor had requested HB 484 be held in committee until some questions are resolved with the various agencies. The bill will be rescheduled as soon as the sponsor notifies committee staff the bill is ready.

There being no further business to come before the House Transportation Committee, Chairman Foster adjourned the meeting at 9:50 a.m.

by H. Rules Cmte.

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

February 14, 1990

Lewis Pamplin, Director
Division of Wildlife Conservation
333 Raspberry Road
Anchorage, Alaska 99518-1599

Dear Lew,

Thank you for your letter of February 9 which reviewed our rece. t meeting about reducing moose mortality. I echo your sentiments that we have had a good working relationship in the past and hope this will continue as we work to resolve this issue. We appreciate your offer of personnel to assist us on various projects and will make those contacts directly as the need arises.

For the most part I agree with your synopsis of what we heard and agreed to last week; however, there are several areas where I believe clarification is needed. And, also, at your request, I will respond to your "additional" recommendations. It's probably best if I take each point as listed in your letter.

Short-term solutions:

1. Pilot cars: We're continuing this program and have begun to see increasing success when coupled with other methods of rousing moose off the tracks, such as the rubber tires between the tracks and the use of sirens on the pilot car. Right now we are using a hi-rail car primarily on the Wasilla/Talkeetna corridor because it continues to be the area of highest moose concentration. It appears that our hi-rail vehicles are the best vehicles for this program and we're outfitting several with sirens and noise-making shotgun rounds.

2. Schedules: Whenever possible we are running trains in both directions in bunches. The biggest impediments to this type of scheduling are availability of manpower and equipment, plus the constraints placed on us by safe operating practices and severe cold weather.

3. Moose trails: We're cutting these parallel trails now. However, it must be noted that it is not always feasible to plow parallel to the tracks because of streams, rock cuts and other topography.

AK Railroad Correspondence

4. Perpendicular trails: This is one of those areas where we'll be calling on your department for further assistance in marking areas for perpendicular trails away from the plowed areas.

5. Engineer's authority: Technically, it is our train conductors who have control of our trains. They work in conjuntion with the engineers to determine when it is safe and proper to move a train. Together they have the authority to slow or stop for moose and have been doing so as evidenced by our on-time record this winter which has been severely reduced because - - crews are stopping for moose. There have been no orders prohibiting slowing or stopping for wildlife.

6. Sirens: As I mentioned under pilot cars, we will be using hi-rail vehicles for this operation and are equipping several with sirens. We welcome your staff's input on the effectiveness of sirens on moose.

7. Rubber tires: When we first installed the tires, the moose walked up to the tires, got off the track and walked around the tires, then returned to the track. We have modified this now and have a row of upright tires running at right angles to the tracks on either side of the tires to guide moose away from the track. We're also cutting a path at right angle to the track where we have the tires so they'll have easier walking. This method continues to hold some promise and we'll keep you posted on our success.

8. Wing plowing: Our maintenance department continues to wing plow up to 20 feet on either side of centerline during snow removal. It must be noted, however, that despite the plowing moose continue to use our track because there is firmer footing.

Long-term solutions:

1. We'll continue our program of seeking a solution to reducing moose mortality on our tracks.

2. Later this year we will begin brushing our right of way in selected areas to remove attractive moose browse. This program could mean considerable expense to the railroad if continued on an annual basis. Therefore, wherever possible we're hopeful we can allow the trees and shrubs to mature in forest.

3. We'll continue to research and evaluate methods and ideas submitted to us for reducing the moose kills. We'll also work with your department to seek state funding for such a program.

4. We have met with several organizations which are willing to work with your department to develop moose habitat away from the railroad right of way. We hope that an inter-agency program can be developed between your department and the Division of Forestry that would promote habitat enhancement. Wherever possible, the railroad would be willing to assist in such a project. With alternative food sources available, we believe there will be fewer moose stopping on our track.

5. Our mechanical engineer is reviewing methods to "soften" the impact of our locomotive coupling device upon moose in an effort to increase moose salvagability.

6. We welcome any input your staff may have on the effects of sonic devices on moose.

7. We support your idea for a test fence and will join forces with you to gain state funding for the project.

8. Any steps which can be taken to minimize moose kills on the highways is welcomed.

Solutions with no concensus or that are unlikely to work:

1. We'll defer to your department on the effectiveness of salt licks because that falls within your expertise.

2. Construction of a "food fence" is much like the loggers' proposal to develop or enhance moose habitat in the Susitna Valley. We continue to support proposals that will attract moose away from our right of way.

3. If it becomes obvious that a huge number of moose will die each year because there is no food for them, we support a special hunt to thin the herd rather than allowing them to starve or be killed by cars or trains as they search for food.

Additional recommendations:

1. Representatives from the three main departments within our operations division will be available to meet with your staff members to discuss recommendations and possible solutions to reduce moose mortality.

2. Our maintenance department will research the possibility of using a hydro-ax for brush clearing.

3. If moose kills north of Talkeetna are not reduced, we'll consider running our pilot car farther north.

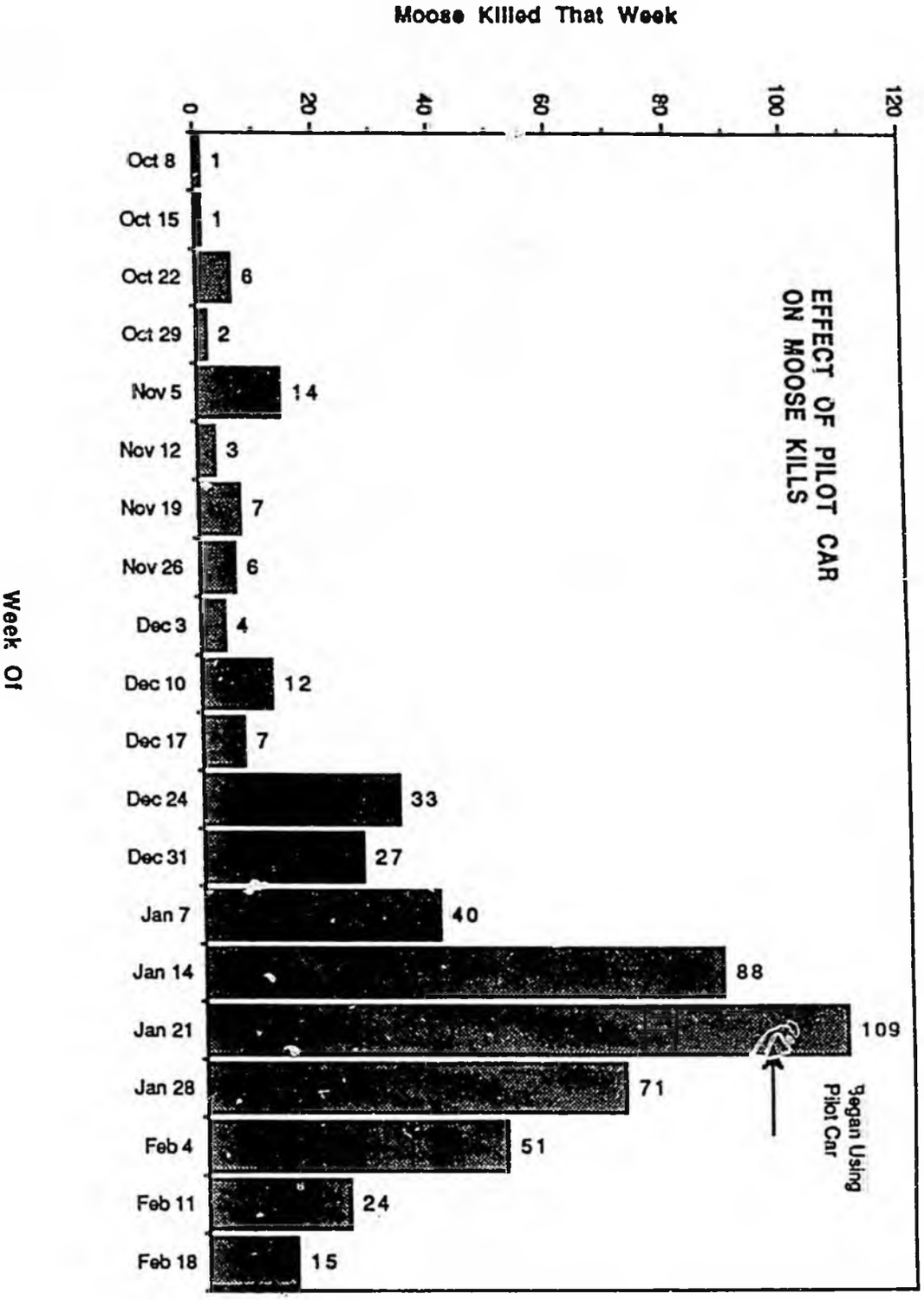
I hope this lengthy letter shows our continued support for reducing the number of moose kills on the Alaska Railroad. We'll continue to work with you and your staff for solutions to this problem.

Sincerely,

Frank

F. G. Turpin
President and CEO

cc: Don Collinsworth, Commissioner, ADF&G
Arnold T. Polanchek, Vice President, Operations, ARRC


Moose Killed That Week
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Oct 8
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Oct 15
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6
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Nov 5
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Nov 12
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Nov 19
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Nov 26
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Dec 3
4
Dec 10
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Dec 24
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27
Jan 7
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88
Jan 21
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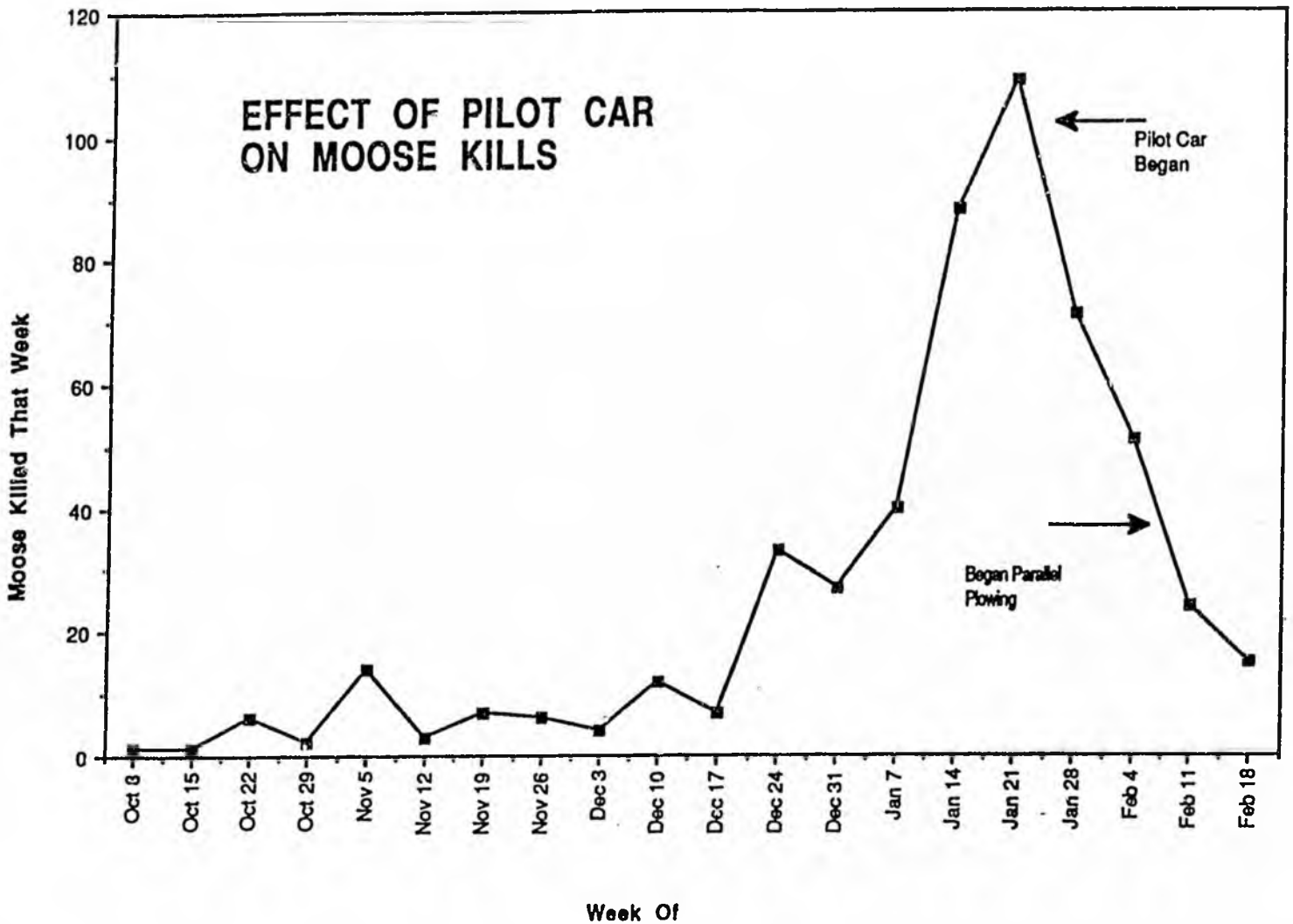
15
EFFECT OF PILOT CAR
ON MOOSE KILLS
Began Using
Pilot Car


EFFECT OF PILOT CAR
ON MOOSE KILLS
Pilot Car
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Moose Killed That Week
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Oct 15
Oct 22
Oct 29
Nov 5
Nov 12
Nov 19
Nov 26
Dec 3
Dec 10
Dec 17
Dec 24
Dec 31
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Week Of

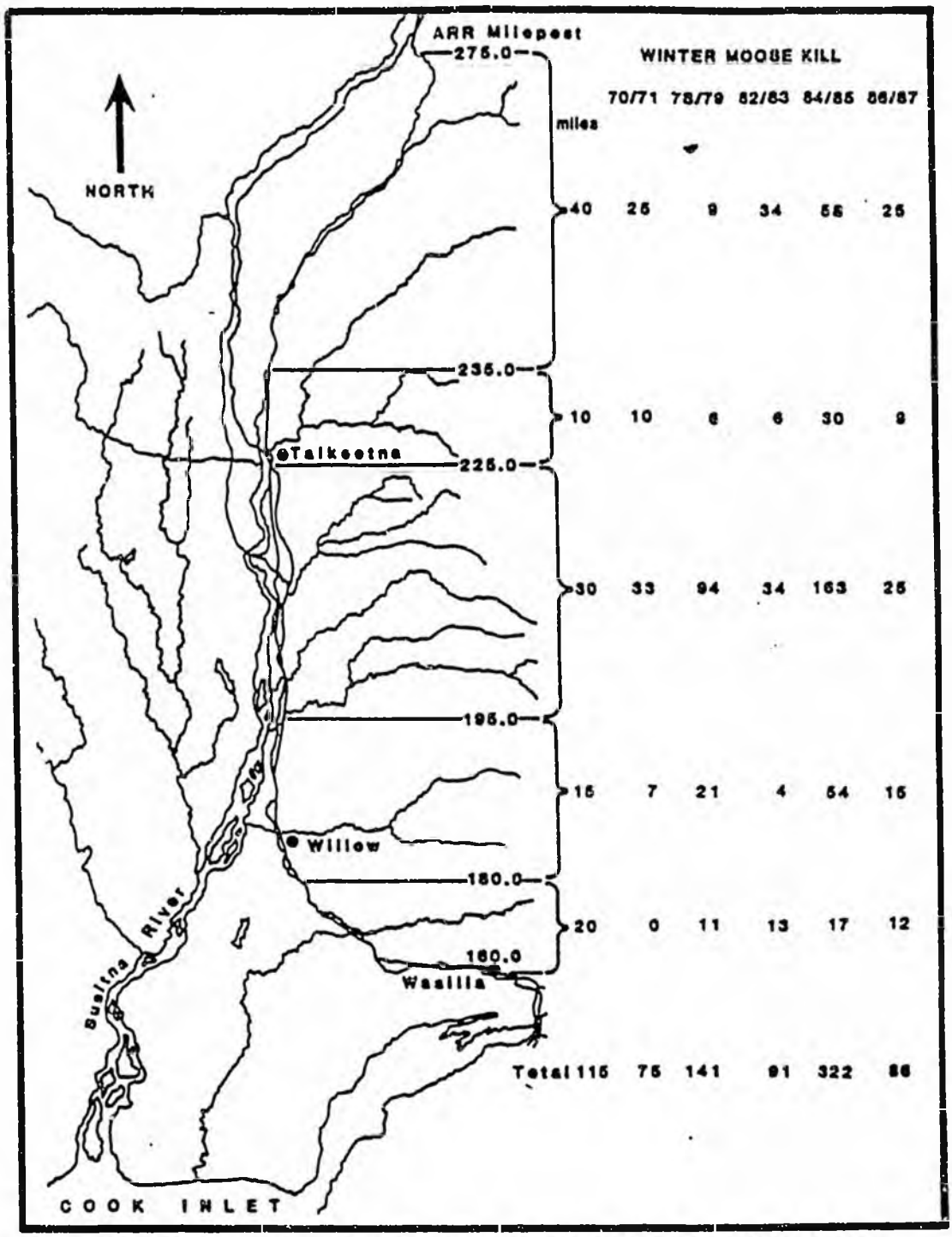

Fig. 1. Distribution and number of moose reported killed by trains in the Alaska Railroad (ARR) right-of-way between milepost 160.0 (near Wasilla) and 275.0 (near Chulitna Pass) during winter (November - April) 1070-71, 1978-79, 1982-83, 1984-85 and 1986-87.

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

February 23, 1990

The Honorable Curt Menard
Representative
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Representative Menard:

By now you have probably read or heard about the large number of moose dying throughout Alaska this year because of our severe winter. Most of the moose are dying from starvation or are being killed on the highways and on the railroad tracks as they search for food and an escape from heavy snow.

To keep you informed on what is being done by the Alaska Railroad to help reduce the number of moose dying on our tracks, I am sending you a synopsis of some of the measures we're trying or have tried in the past. This may help you and your staff members when responding to your constituents who are writing or calling you about this issue.

If you need additional information on moose, please contact me or Vivian Hamilton, our Corporate Communications Manager, at 265-2675.

Sincerely,

F. G. Turpin
President and Chief Executive Officer

Enclosure

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

Measures By The Alaska Railroad To Reduce Moose Mortality

Pilot car: A pilot car--a Ford Bronco equipped with rail gear which allows it to run on the rails--is being operated in front of freight trains. This has produced excellent results in driving moose away from the track. Raw data shows as many as 90 percent of the moose are frightened away. Moose contacts have been reduced substantially since this was initiated.

Creating moose paths: Wherever possible along either side of the right of way between Willow and Talkeetna, Alaska Railroad maintenance crews are cutting 13-foot wide paths parallel to both sides of the track. The snow removed while creating the paths is used to build a berm between the paths and the railroad track to serve as barricades to prevent moose from getting to the track.We have dedicated two Caterpillar tractors to the operation. The moose are using the trails that have been cut but continue to favor the railroad tracks. The Mat-Su Motor Mushers, a group of volunteers on snowmachines, also have cut about 8 miles of snowmachine trails through the marshy areas where the Cats are unable to work.

Rubber tire obstacles: At four locations between Willow and Talkeetna, a series of rubber tires have been installed between the rails, nailed to the ties. The tires create an obstacle which cause moose to leave the track. To further guide the moose, tires have been positioned up-right and at right angles to the track in these locations and funnel the moose away from the track. This method was suggested to us by a member of the public and appears to be very successful.

Ice on the ties: This also was suggested by a member of the public. Water was applied to the tracks in several locations to create a layer of ice between the rails. It was believed that the moose would avoid the icy surface and move away from the track, however this did not prove to be true. Creating the ice was extremely difficult because a heated tank car full of water had to be used to keep the water from freezing before it was applied to the ties. Soon after the ice formed a foot of snow fell in the area, covering the ice. However, before the ice was covered moose were seen walking over the icy spots, indicating the measure would not be a deterent.

Plowing: Routine snow removal along the track includes plowing a 40-foot-wide path in the area where most moose mortality occurs. This appears to have no affect on the moose who prefer the hard-packed surface of the track rather than the plowed area, which despite the plowing remains as deep as 6 feet in some areas because of the slope of the track shoulder.

Brushing: Railroad crews cleared three locations for a total of more than seven miles of right of way last summer, removing the brush which moose find so tempting as a food source. Alaska Department of Fish and Game biologists had suggested this might remove the attraction for moose; however, in the areas where the brushing was done, moose mortality on the track actually doubled this season. We'll continue experimenting with this idea, though, and will clear additional areas this summer or fall.

Noisemakers: The railroad has installed on several types of vehicles small high-frequency sound devices used to deter deer and other large game animals. None appears to have been effective. The railroad also hired the University of Alaska to test the affects of various sounds on moose. The $15,000 experiment did not produce a sound which would repel the moose. We also have attempted to scare moose with more conventional sounds such as sirens and horns; the pilot car is equipped with a siren and it appears to have some effect.

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500

April 10, 1990

The Honorable Curt Menard
Representative
Alaska State Legislature
P. O. Box V
Juneau, AK 99811

Dear Representative Menard:

Enclosed is our most recent update on our efforts to reduce moose mortality along the Alaska Railroad. As you can see, spring appears to have arrived, finally, and fewer moose are being seen or killed along our rights of way. Therefore, we have withdrawn our pilot car crew and returned the heavy equipment we had working in the Willow/Talkeetna area.

We'll continue to salvage any moose killed along our track with the help of our section crews as was done in the past. However, the number of kills has dropped significantly enough that we believe the number will phase out altogether by the end of this month.

Also enclosed is the latest estimate of our expenses for moose mitigation programs for this winter and a capsule look at the mortality statistics.

As always, if you or your staff need additional information, please contact me at 265-2675.

Sincerely,

Vivian Hamilton

Vivian Hamilton, APR
Corporate Communications Manager

Enclosures

ALASKA RAILROAD CORPORATION

P.O. Box 107500 • Anchorage, Alaska 99510-7500 Update: April 9, 1990

What's New:

1. Moose sightings and moose kills have dropped dramatically on the Alaska Railroad.
2. Moose sightings by the pilot car crew have decreased and as a result this crew has been reassigned to other track maintenance jobs. They can be remobilized if the trend reverses.
3. The Thiokol, a leased vehicle being used to create moose paths, has completed the task and has been returned to Anchorage.

Measures by the Alaska Railroad To Reduce Moose Mortality

Pilot car: This vehicle has been patroling ahead of trains each night to shoo moose off the tracks with noise-making shotgun shells, spotlights and a siren. The crew reports that moose sightings and moose kills have diminished sharply. The total number of moose kills confirmed through March 31 is 675. During the week of April 2-8, there were seven moose kills reported. The week included three days during which no moose were killed. As a result of the reduction in moose kills, this crew has been reassigned to track maintenance, effective April 8. If the trend reverses, this crew can be remobilized.

Moose paths: A Thiokol, a large tracked all-terrain vehicle, was leased to plow paths on either side of the tracks from south of Willow up to Talkeetna. This work has been completed and the vehicle returned to Anchorage.

Salvage: The work of this crew has been substantially reduced so the locomotive crane and its crew were assigned other track maintenance work. In keeping with our company policy, section crews along the line will continue to be responsible for salvaging any moose killed.

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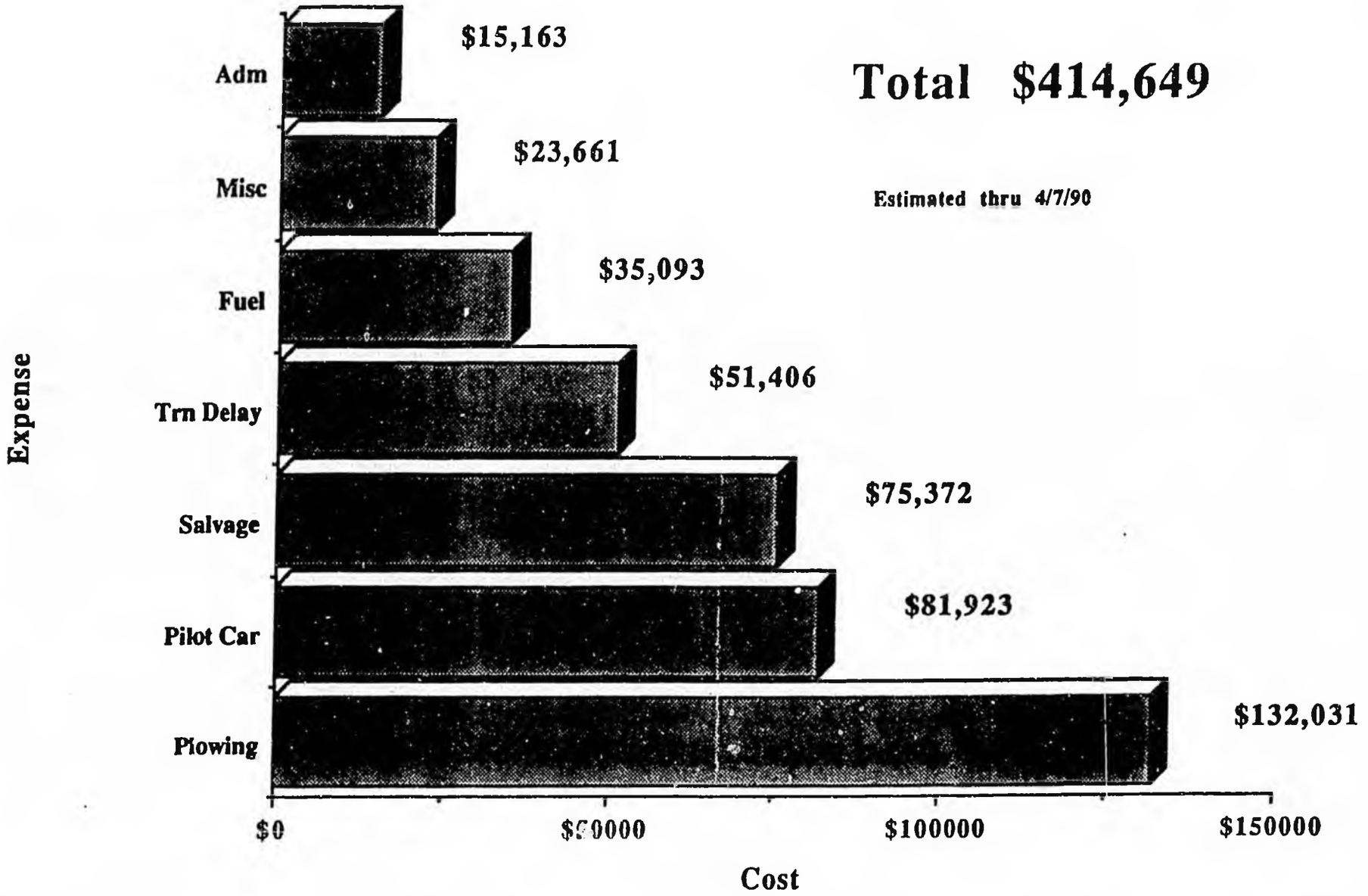
Railroad Costs for Moose Protection



Mis-mo-ver

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF FISH AND GAME

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99518-1599
PHONE (907) 344-0541

February 9, 1990

Frank Turpin
Executive Director
Alaska Railroad Corporation
P.O. Box 107500
Anchorage, Alaska 99510-7500

Dear Mr. Frank Turpin:

Thank you for meeting with us on February 6 to discuss options to reduce moose kills by Alaska Railroad (ARR) trains. Although our staffs have been working on this problem for several years, it is apparent with this winter's extraordinarily high kill that we must initiate more concerted actions to minimize this serious public resource problem.

Moose populations in the Matanuska/Susitna Valley traditionally use winter ranges near the railroad/highway corridor and many moose are struck by trains and vehicles every winter. This year, the problem has been intensified because record snowfall has resulted in higher densities of moose along this corridor. Many moose killed by trains and vehicles are prime reproductive animals that would otherwise survive the winter and help rebuild the population from losses due to natural causes such as winter starvation. Therefore, reducing mortality from trains and vehicles is important to maintaining stable moose populations at current levels.

We have agreed that both ARR and the Alaska Department of Fish and Game (ADF&G) must work together closely to significantly reduce the loss of moose. Summarized below are the potential solutions we discussed and agreed to.

Short-term solutions mutually agreed to by both parties:

1. Pilot cars (chase cars) will precede north and south bound trains. The pilot cars will operate principally between Wasilla and Talkeetna, but extending operations to other areas should be considered, if necessary, over the next two months.

2. When more than one train is heading north or south, train schedules will be arranged so that they run close together. Ideally, trains running in the same direction should depart within an hour of one another.

3. Trails will be plowed parallel to and on both sides of the tracks. Exit trails will be constructed in combination with the parallel trails to provide a means for moose to easily "escape" the railbed. Biologists and railroad staff will coordinate to prioritize which areas should be plowed first and identify locations for exit trails; Carl Grauvogel will be ADF&G's principal field contact and Jim Carr will be the principal contact for ARR.

4. In some areas, perpendicular trails will be plowed to encourage moose to move away from the ROW into areas where natural feed is available. Supplemental feeding may be used on a case-by-case basis in conjunction with this kind of trail system. Department biologists will make recommendations where perpendicular trails should be constructed and identify locations for possible supplemental feeding.

5. Train engineers have the authority to slow trains as conditions warrant, especially if trains encounter groups of moose on the tracks.

6. The railroad will mount sirens on all pilot cars and most (if not all) trains. The railroad will try to determine to what extent sirens are effective. If possible, the effectiveness of sirens should be tested scientifically.

7. The railroad will nail rubber tires to railroad ties, and will attempt to evaluate whether they discourage moose from running between the rails.

8. The railroad will continue to "wing plow" up to 18 ft. either side of the track centerline.

Long-term solutions mutually agreed to by both parties:

1. Actions implemented this winter that are effective in reducing the number of moose struck by trains will be continued in future winters.

2. Next summer or fall, the railroad will begin removing all trees and shrubs within selected sections of the railroad ROW, particularly between mileposts 170-270. Department biologists will recommend areas to be brushed as well as identify are which could be allowed to "mature" and grow out-of-reach moose.

3. A research and development (R&D) program is needed, and it may provide the best means to develop long-term solutions for reducing moose kills. The railroad will evaluate whether it can contribute money (perhaps $50-100,000.00) to initiate a bonafide R&D effort, but it will also assist in soliciting funds from the state legislature or private groups. An R&D program should be implemented immediately given the existing conditions.

4. The department will work with the Division of Forestry and other agencies to enhance moose habitat in areas away from the ROW. However, implementation of this option is a very long-term solution (10-20 years), and this will not totally solve the problem. If successful, habitat enhancement will increase the number of moose overall and redistribute moose densities to other areas (lower moose densities in the ROW), but it will not eliminate moose from the ROW. Because moose habitually migrate between the mountains and low valleys each year, moose will continue to use and cross the ROW on a continuing basis, even if there is little food available in the immediate vicinity of the railroad ROW.

5. Although the railroad takes a dim view of designing a device for the front of the train engine that will increase moose salvageability (because they see potential problems with meeting their operational criteria and federal railroad regulations), they will help investigate this option if money and/or personnel are available.

6. Sonic devices tested in the past have not been very effective in scaring moose; however, a more exhaustive scientific test should be conducted to determine whether such devices hold any promise.

7. If funding for a 5-mile electric fence can be obtained, the fence should be tested under "natural" conditions to determine its effectiveness.

8. The department will consult with DOT officials about the possibility of reducing highway speed limits along some state roads, and of implementing winter road maintenance procedures that minimize "entrapment" of moose by high snow berms.

Solutions with no concensus or that are unlikely to work:

1. Putting out large numbers of salt blocks.

2. Constructing a "feeding fence" away from the ROW.

3. Use of special hunts to reduce moose numbers in ROW.

Additional ADF&G recommendations:

1. The department and ARR need to immediately form a working group to consider all options that have been suggested by our respective staffs and the public to reduce moose kills. This working group should consist of 2 or 3 ADF&G biologists and an equal number of railroad employees who are intimately familiar with railroad operations and procedures. The group should be established and meet as soon as possible to identify options that are feasible and appear to hold promise for reducing moose kills. Recommendations from this group could be the basis for initiation of an R&D program. As recommendations are formulated by the group, they should be sent to you and me for review, approval, and implementation.

2. The railroad should look into the feasibility of brushing during the summer and fall using a hydro-ax; it may prove to be less expensive and more of the railroad ROW could be cleared.

3. If moose kills continue north of Talkeetna, the pilot car should be used as far north as milepost 270.

Again, thanks for your willingness to meet with us to discuss this difficult problem. I am confident that by continuing to work together we can develop cost effective means to reduce the number of moose killed this year and during future winters.

We should get together again in the next couple of weeks to discuss progress in addressing this problem and funding options. Please advise me of your thoughts on our "additional" recommendations. Thank you.

Sincerely,

Lew Pamplin
Director
Division of Wildlife Conservation

cc: Don Collinsworth, Commissioner, ADF&G
Norm Cohen, Deputy Commissioner, ADF&G
Warren Wiley, Assistant Commissioner, ADF&G
Wayne Regelin, Deputy Director, DWC
Bruce Dinneford, Acting Planning Chief, DWC
Dan Timm, Southcentral Regional Supervisor, DWC
Greg Bos, Southcentral Management Coordinator, DWC
Carl Grauvogel, Palmer Area Wildlife Biologist, DWC

MEMORANDUM

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

TO: Molly McCammon
Special Assistant
Commissioner's Office
Juneau

DATE: 20 February 1990

TELEPHONE NO: 745-5015

FROM: Carl A. Grauvogel
Wildlife Biologist
Division of Wildlife Conservation
Palmer

SUBJECT: Priority Expenditures, HB 485

You requested how funding would be spent if HB 485 passes. Collinsworth's memo of 5 February to Governor Cowper outlines the Department's recommendations to reduce the kill of moose by trains and highway vehicles; however, implementation of all these recommendations would cost more than $250,000.00. Greg Bos and I have discussed which recommendations should be implemented first. If the legislature authorizes $250,000.00, following is our prioritization on expenditures.

1. Recommendation: Plow trails parallel to and on both sides of the railroad track in the high kill zone (milepost 175-260).

Discussion: The Alaska Railroad has started this task, but they have only completed 2 miles of trail in 10 days and still have at least 58 miles to go. Alascom is currently trying to raise money from the private sector to help with this effort. If Alascom's effort is successful, we would match private contributions; if not the state would hire equipment to help complete the trails.

Estimated cost: 20.0 - 40.

2. Recommendation: Plow perpendicular trails where wintering moose density is high and use supplemental feed to attract and hold moose away from the tracks.

Discussion: Supplemental feeding will be used to enhance the effectiveness of the trail systems in some areas and to help moose that need food along the railroad/highway corridor survive the winter. The Department may feed up to 500 moose.

Estimated cost: 100.0 - 120.0

3. Recommendation: High snow berms along highways and Mat-Su Borough back roads should be cut down and perpendicular exit trails should be cut at regular intervals so that moose "trapped" in the road corridor will be able to easily leave the highway.

Discussion: Snow in the Susitna Valley averages 5-7 feet on the level and berms from snow plowing are usually higher. High berms are a "barrier" to moose when they access the highway. Local road-service districts have exhausted their winter maintenance funds and have no money for "extra" snow-plowing work. The department would hire equipment to do these jobs. Estimated cost: 20.0 -40.0.

4. Recommendation: Clear all the trees and shrubs in the railroad right-of-way (ROW), particularly between mileposts 170-270.

Discussion: Recommendations listed above are all "short-term" solutions. Long-term permanent solutions need to be addressed. Removing brush and young trees in the ROW will eliminate the food source that, in part, attracts moose to the railroad tracks. This work can be best accomplished in the summer and early fall.
Estimated cost: $150.0 to 195.0

5. Recommendation: Conduct research to develop devices, substances, and procedures to reduce the kill of moose on the railroad tracks.

Discussion: This recommendation is really the key to reducing the railroad moose kill. The Department, the railroad, and the public, have suggested many ways to reduce the kill, but these ideas need to be developed and tested in the railroad environment. An established research and development program is needed to accomplish this goal, and any money left over from the appropriation will be devoted to this cause.
Estimated annual cost: 50.0 to 100.0

cc Greg Bos

Steve Cowper
Governor

February 6, 1990

M/W-MC-RR

465-4100

Briefing Memorandum:
Alaska Railroad
Moose Kills

Don W. Collinsworth W3 for H
Commissioner
Department of Fish and Game

Issue

Excessive moose kills by the Alaska Railroad (ARR) and public concern about starving moose.

Problem

Extremely deep snow accumulation in the Matanuska/Susitna Valley area has resulted in extraordinary moose mortality on the ARR and on highways and secondary roads. Media coverage has intensified public attention on this loss as well as on the plight of starving moose. The public is demanding action by the railroad and the state to reduce the kill of moose by trains and highway vehicles and to feed starving moose.

Background

Cause and Level of Mortality

Lowland areas adjacent to the railroad right-of-way (ROW) in the lower Matanuska-Susitna River Valleys are particularly attractive to moose in winter because moose prefer the plant species found on abandoned homesteads for winter browse. The close proximity of moose concentrations to the railroad and local highways results in vehicular collisions with moose. Mortality is greatest when snow is deep, because moose seek out plowed or packed snow areas for travel and are attracted to forage regrowth along roads.

Since 1985, the average annual kill has been 237 by trains and 153 by highway vehicles on Matanuska/Susitna Valley roads. So far this winter at least 375 to 400 moose have been killed by trains, and with at least two more months of expected heavy mortality remaining, the kill will far exceed

the record of 382 in winter 1984/85. More than 150 moose have died on area roads.

Moose have been stressed this winter by extreme snow depths (in some areas greater than 8 feet) and some starvation has been reported. It is likely that many moose, particularly calves, will starve before spring. Moose are seeking out roads and trails where snow is plowed or packed down. Consequently, many are on local roads, dog mushing/ski trails, and in residential areas where their weakened condition is more visible to the general public.

Past and Current Actions

* Historical railroad moose kill records were compiled and analyzed by our department to identify sections of track where remedial actions would be most effective and to determine if train schedules or other operating procedures could be modified.

* A number of devices (e.g., lights, horns and other sonic devices, a cushion bumper, and a water cannon) have been considered or tested without success.

* Wing plowing has not been effective.

* A test in which trains were slowed to the lowest economical speed (25 mph) did not reduce the number of moose struck.

* Clearing brush from the railroad ROW was initiated by the ARR, but an insufficient area was cleared to determine its effectiveness.

* The feasibility of a moose-proof electrical fence has been investigated. Such a fence may have the highest potential for significantly reducing mortality, but construction costs would be high.

* A pilot car is being used ahead of some trains to move moose off the tracks; the results have been encouraging.

* The ARR has begun plowing an alternate trail parallel to the tracks to reduce numbers of moose on the tracks.

* Salvage procedures by the ARR and distribution of meat to qualifying families have been improved. Options have been proposed to modify the front of locomotives, since about 40 percent of struck moose are unsalvageable. The railroad has not pursued this.

* Through the cooperation of the Department of Public Safety, a computerized database on road-killed moose has been developed to identify road sections with high kill rates. Problem road areas can be evaluated in terms of remedial actions such as fencing, brush clearing, traffic speed control, and eliminating the use of salt in road sanding.

* In the past, the department has discouraged supplemental winter feeding of moose because it is generally cost-prohibitive and ineffective.

Recommended short-term solutions

The following "short-term" solutions should be implemented immediately to help moose survive this winter.

1. Alaska Railroad

   a. The ARR should have a pilot car (chase car) precede every train through the high kill zone. Once chased off the tracks, moose would likely stay off for some time, especially in areas with plowed trails adjacent to the tracks.
   Estimated cost: $42.0

   b. Trails should be plowed parallel to and on both sides of the track in the high kill zone (milepost 175-260). Moose moving to the railroad ROW would encounter plowed trails first and would likely use them instead of the railroad tracks.
   Estimated cost: $41.0

   c. Trails should also be plowed perpendicular to the tracks in areas where wintering moose density is

high. Preferably, such trails should access feeding areas to encourage moose to move away from the railroad ROW.

Estimated cost: $6.0

d. Supplemental feed could be used to attract and hold moose away from tracks, as well as to enhance the effectiveness of trail systems in certain areas. However, since it is expensive, the department should test its effectiveness before full implementation.

Estimated cost to feed 500 moose: $120.0

e. The ARR should authorize engineers to slow trains below economical speeds, if necessary, especially where they encounter groups of moose on the tracks.

Estimated cost: Unknown

2. Highways

High snow berms should be cut down and perpendicular exit trails cut at regular intervals so that moose "trapped" in the highway corridor will be able to easily leave the highway. Where roads have been plowed only wide enough to allow "one way" traffic, escape trails should be plowed from the road and/or frequent pull-offs constructed to provide temporary resting places for moose. This work could be done by DOT/PF with existing equipment and personnel.

Estimated cost: Unknown

3. Other Locations

a. Where wintering moose density is high, create a network of plowed or packed trails to assist moose in reaching natural feeding areas.

Estimated cost: $20.0
(Also possible with volunteers)

b. Identify state, borough, and private lands where "near-term" timber harvests have been planned. Organize volunteers or hire people to periodically

cut trees for moose browse. Cutting should be carefully controlled and confined to areas where numbers of moose are wintering in the vicinity.
Estimated cost: Volunteers

The department does not recommend supplemental feeding at specific locations since doing it on an "affordable" scale will have insignificant effects on moose survival.

Recommended Long-term Solutions:

4. Alaska Railroad Operations

a. If any short-term solutions prove successful, incorporate them into long-term operating plans.

b. The ARR should clear all trees and shrubs in its ROW, particularly between mileposts 170-270. Clearing should be repeated every four to seven years to prevent regrowth of attractive winter food. Estimated cost: $195.0

c. The ARR should design a device for the front of the locomotive that will increase salvage of struck moose and reduce the kill-rate of those "clipped" by the train plow.
Estimated cost: Unknown

d. The ARR should have a full-time staff person, preferably a design engineer with a working background in railroad operations, to research devices, substances, and procedures to reduce the kill of moose.
Estimated annual cost: $100.0

e. The department and the ARR should construct and test a five mile moose-proof electrical fence from mileposts 197 to 202. Estimated cost: $436.4

f. Alternate winter browsing habitat should be created to attract moose away from the ROW. When forests are cut, winter browse could be most

quickly created by immediately scarifying the area and planting nursery-grown seedlings.

Estimated cost for habitat enhancement for 1,000 moose for 15 years: $4.8
($320/moose/year)

5. Highway Operations

a. Highway ROWs should be cleared of brush in areas with high kill rates. Warning signs, improved lighting, and other means to help identify moose from a distance at night should be erected. Fences should be used in areas where other methods are ineffective.

Estimated cost: Unknown

b. Gravel "turnouts" should be constructed every mile or so in high kill areas to provide winter escape routes. Estimated cost: Unknown

c. DOT/PF should stop using salt in road sand on sections that pass through areas of moderate to high densities of wintering moose. Moose have been regularly observed kneeling and licking the salted roadbed.

Estimated cost: Unknown

6. Other Locations

a. The state is developing a Susitna Forest Plan for managing timber harvests in the Matanuska-Susitna Valley. Habitat retention and enhancement are identified as key components. Specific plans on how reforestation is to occur have not been developed. The department should be consulted to identify areas where habitat enhancement for moose would be most beneficial. Such areas should have special treatment methods (tree planting, scarification, fertilization, etc.) to provide moose browse and timber reproduction in as short a time frame as possible, in order to attract wintering moose and reduce densities along railroad and highway corridors.

Estimated cost: Unknown

Funding

The department has no funds to implement any of the suggested solutions. Immediate actions identified under short-term solutions will require a supplemental appropriation, or the ARR could direct its own resources toward these solutions. Long-term solutions can be funded through increased funds to the Division of Wildlife Conservation, capital improvement appropriations, or both. Legislation also could require the ARR to fund such procedures, equipment, and facilities as may be necessary to significantly reduce the number of moose killed and improve the salvage of struck moose.

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

White

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February 16, 1990

Karl E. Rye, President
Denali Resources Limited
P.O. Box 873287
Wasilla, Alaska 99687

Dear Mr. Rye:

Representative Menard provided us with a copy of your proposal to obtain a Cooperative Resource Development Agreement under AS 38.05.027 to enhance moose habitat through timber harvest programs as a means of reducing the loss of moose in the Susitna Valley highway/railroad corridor. We are also very concerned about the loss of moose and have been working with the Alaska Railroad, the Department of Natural Resources, and the Department of Transportation on both short and long-term solutions to this problem. I have enclosed a copy of a recent letter to Frank Turpin which may be of interest to you.

Creating alternative winter browse habitat to attract/hold moose away from the corridor is one option the department has considered in seeking long-term solutions to the moose kill problem. We believe this approach has merit in some areas if done properly. Timber harvesting with appropriate regeneration treatments may be the most cost-effective enhancement method available on suitable sites in the lower Susitna and Matanuska Valley, given the land ownership patterns and development that has already occurred there, the timber resources present, and interest by the industry in developing those resources. At the same time, we recognize other resource values and public interests in those areas and the potential for timber development to adversely affect some of those values/interests. The department has participated in Susitna Regional Forest Planning and the Matanuska/Susitna Borough Forest Planning efforts and has provided comments and recommendations on forest management practices that would apply to areas considered for timber harvest and habitat enhancement as a means of reducing highway and railroad-caused moose mortality.

Department staff have begun to review past and current timber sales sites in the Valley to evaluate hardwood regeneration and the production of moose forage in these areas, and we have discussed preliminary findings with Division of Forestry personnel. From these investigations, it is clear that in many

instances past practices have not resulted in adequate regeneration to support winter use by moose or even to fully replace harvested timber within a reasonable rotation period. We and Forestry staff agree that carefully prescribed scarification and/or other regeneration treatments will be necessary to ensure adequate regeneration for productive forests. The department will not support timber harvest programs that do not maintain optimum sustained yields of forest resources, including fish and wildlife. As you know, application of forest regeneration methods can increase costs of timber harvest.

Department staff are presently working with the Department of Natural Resources to develop a plan that will guide timber harvest in the Susitna Valley. The plan is scheduled to be presented for public review this spring. The department does not support the use of forest management agreements as a vehicle to enhance moose habitat.

We are presently working with other state and borough agencies to identify suitable timber harvest areas where enhancement efforts to reduce highway/railroad moose mortality can begin. Timber harvest areas cannot be expected to regenerate significant amounts of available moose forage until at least 5 years after treatment and maximum browse production would likely occur during 10-15 years after treatment. We view such an enhancement program as a long-term effort within the context of a broader Susitna Valley moose habitat enhancement program integrated into the Susitna Regional Forest Plan.

We suggest that you contact the Division of Forestry and the Matanuska Susitna Borough regarding timber harvest opportunities on both existing and upcoming state and borough timber sales. We will continue to work with the Division of Forestry on short-term solutions to help moose this winter as well as timber harvesting plans and practices which will benefit moose habitat over the long-term. We appreciate your interest in the Susitna Valley moose population and your desire to offer positive contributions.

Sincerely,

W. Lewis Pamplin, Jr.
Director
Division of Wildlife Conservation

Enclosure

cc: Representative Curt Menard
Representative Ramona Barnes
Norman Cohen, Deputy Commissioner, ADF&G
Bob Dick, Director, Division of Forestry
Wayne Regelin, Deputy Director, Division of Wildlife Conservation

Frank Rue, Director, Division of Habitat
Dan Timm, Southcentral Regional Supervisor, Division of Wildlife Conservation
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STEVE COWPER, GOVERNOR

DEPARTMENT OF FISH AND GAME

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March 9, 1990

The Honorable Richard Foster
House of Representatives
Chairman of House Transportation
Room 409, Capitol
P. O. Box V
Juneau, Alaska 99811

Dear Representative Foster:

During your committee's hearing on HB484, you requested that I provide you with some suggestions regarding possible contingency measures which would be applied in the future to reduce winter moose kills associated with the Alaska Railroad (ARR) and highways. Last week I sent you copies of correspondence and other background information describing recommendations we have made to minimize moose losses this winter.

We strongly support the development of contingency plans for reducing moose mortalities on the ARR and state highways. In order to minimize normal winter kills and substantially reduce kills during severe winters, contingency plans must contain actions which will be accomplished on an annual basis and be funded as part of normal operating budgets. Development and implementation of these plans should be mandatory and the responsibility of the agency/organization which can make them work. The Alaska Department of Fish and Game (ADF&G) should be included as a cooperating party. Summarized below are some measures which we believe should be incorporated in contingency plans.

Alaska Railroad Contingency Measures

1. A goal should be established to reduce railroad-related moose kills below a set level; an acceptable biological level would be to reduce kills below 75 moose/year.

2. Plow or pack trails parallel to and along both sides of railroad tracks, between Willow and north of Chase (MP 175-260), beginning when snow depths reach 2 feet and with each 1 foot accumulation thereafter. Snow berms from plowed trails should be placed on the track side of trails. In winters with deep snow accumulation, additional trails should be created perpendicular to the tracks in areas

Highway Contingency Measures

1. Shoulders of roads/highways should be plowed free of snow as soon as possible after snowfall.

2. All snowplow berms should be cut down to not exceed 3 feet above ground level in moderate to high density moose areas.

3. In areas identified by ADF&G, escape lanes should be plowed perpendicular to the roadway when snow accumulations reach depths that restrict moose movement from plowed roadbeds.

4. Reduced speed limits should be established during winter periods in areas identified by ADF&G as having historical or potential high vehicle-moose collision rates.

5. In areas identified by ADF&G, all shrubs and trees should be removed from the road ROW to a distance of 100 ft. from the edge of the driveable road surface.

6. When highways are constructed/upgraded with Federal Highway funds, moose-proof fencing and/or lighting should be installed at the perimeter of the ROW in areas identified by ADF&G as having historical or potential high vehicle-moose collision rates.

7. Use of road salt (NaCl) should be discontinued in specific areas where salt use has contributed to high vehicle-moose collision rates.

I hope you find these suggestions helpful in your committee deliberations. If you or your aides have additional questions, please contact me (267-2231) or Greg Bos, our management coordinator in Anchorage (267-2200). Thank you for your concern and support for Alaska's wildlife.

Sincerely,

W. Lewis Pamplin, Jr.
Director
Division of Wildlife Conservation

cc: Representative Curt Menard
Norman Cohen, Deputy Commissioner, ADF&G
Molly McCammon, Special Assistant to the Commissioner, ADF&G
Wayne Regelin, Deputy Director, Division of Wildlife Conservation, ADF&G
Dan Timm, Southcentral Regional Supervisor, Division of Wildlife Conservation, ADF&G
Greg Bos, Southcentral Management Coordinator, Division of Wildlife Conservation, ADF&G
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