

HB

485

HOUSE COMMITTEE REPORT

(9)

Date Referred: February 7, 1990

FURTHER REFERRALS:

FINANCE

Date of Committee Action: 2/20/90

The RESOURCES Committee considered:

HB 485

HOUSE BILL NO. 485

APPROP: MITIGATE RR-MOOSE COLLISIONS

"An Act making a special appropriation to the Department of Fish and Game for an emergency railroad-moose collision mitigation program; and providing for an effective date."

RECOMMENDATIONS:

- [] be replaced with _____ [] the same title
- [] _____ [] a new title
- [] have attached amendment(s)
- [] do pass
- [] do not pass
- [] no recommendation
- [X] individual recommendations
- [] additional referral to the _____ Committee

ADOPTS: _____ letter of intent

ATTACHES NEW FISCAL NOTE(s):
(Dept)

APPROVES PREVIOUS: (Date/Dept)

- [] fiscal impact _____
- [] zero fiscal note _____
- [] zero with analysis _____

- [] fiscal note(s) _____
- [] zero fiscal note(s) _____
- [] zero fn/analysis _____

SIGNING DO PASS:

George Jacobson

Mike Puro

SIGNING:
(Check approp. column)

	Do Not Pass	No Rec	Amend
<i>Cliff Davidson</i>		✓	
<i>Bob Huds</i>		✓	
<i>Ben Sharp</i>		✓	
<i>W Furrowe. - (NO Funding of RTD - spend funds on moose feed</i>			✓

Cliff Davidson
Chairman's Signature

Steve Cowper
Governor

February 6, 1990

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.



Alaska State Legislature

Official Business

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

MEMORANDUM

TO: House Resource Committee Members
FROM: Representative Curt Menard *Curt*
DATE: February 20, 1990
RE: HB 485, Appropriation: Mitigate Railroad-Moose Collision

An explanation of the expenditures for the appropriation of \$250,000 is enclosed with this memorandum.

The recommendations are listed along with a short discussion, and the approximate cost for each recommendation.

It is my intention that this emergency appropriation will begin the process of decreasing the moose mortality along the Alaska railroad. This has become a problem that needs everyones attention and assistance.

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

STATE OF ALASKA

M/W-MO-YER

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. *Turpin* 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.

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.

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 recent 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.

Lewis Pamplin
February 14, 1990

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 conjunction 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.

Lewis Pamplin
February 14, 1990

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.

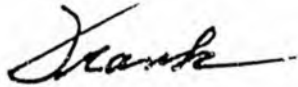
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Lewis Pamplin
February 14, 1990

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,



F. G. Turpin
President and CEO

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

Steve Cowper

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improve the salvageability of struck moose. The railroad has not yet pursued this option.

- * 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. Supplemental feeding as a means of significantly ameliorating the effects of severe winters on large numbers of moose is generally cost-prohibitive and ineffective.

Possible Short-term solutions

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

1. Railroad Right-of-Way

- a. A pilot car (chase car) should precede every train through the high kill zone. Pilot cars could chase many vulnerable moose off the tracks before the train arrives, and moose would likely stay off the tracks for some time, especially in areas with plowed trails adjacent to the tracks. Estimated cost: 42.0
- b. Plow trails 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. In addition, when a train approaches, moose would be more likely to leave the tracks if they had

Steve Cowper

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access to a plowed trail, rather than flounder in deep snow.

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. Use supplemental feed to attract and hold moose away from tracks. Supplemental feeding would enhance the effectiveness of trail systems in certain areas.

Estimated cost to feed 500 moose: 120.0

- e. Train engineers should have the authority to slow trains as conditions warrant, especially where they encounter groups of moose on the tracks.

Estimated cost: Unknown

2. Highways

- a. High snow berms should be cut down and perpendicular exit trails should be 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 should be constructed to provide temporary resting places for moose.

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.

Steve Cowper

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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

- c. In combination with a. and b. above, provide supplemental food at specific locations.

Estimated cost: 0.2/moose

- d. Purchase commercially prepared moose feed, and give it to people willing to distribute it to feeding sites. Recipients must comply with the department's criteria/recommendations on how supplemental feeding should be conducted. Estimated cost: 0.2/moose

Possible Long-term Solutions:

4. Alaska Railroad Operations

- a. If any short-term solutions prove highly successful, incorporate them into long-term operating plans.
- b. Clear all trees and shrubs in the railroad ROW, particularly between mileposts 170-270. Clearing should be repeated every 4-7 years to prevent regrowth of attractive winter food. Estimated Cost: 195.0
- c. Design a device for the front of the locomotive that will increase salvageability of moose that are struck