HB

569

HEARING NOTIFICATION TO ADMINISTRATION

BILL NUMBER	LETTER DATE	INFORMED	HEARING DATE
HCR 83	1-11-78	Dept. of Revenue (J. Messenger) John Williams, Ken Vassar	1-19-78
HB 555	1-11-78	Dept. of Revenue (J. Messenger) John Williams, Ken Vassar	1-19-78
HB 569	1-11-78	Commissioner, Fish & Game	1-19-78
HB 572	1-11-78	Commissioner, Fish & Game	1-19-78
HB 573	1-11-78	Pete Jeans (Commerce), John Williams	1-19-78
HB 574	1-11-78	Pete Jeans (Commerce), Ken Vassar	1-19-78
HB 575	1-11-78	John Williams, Jim Baldwin	1-19-78

STATE OF ALASKA
JAY S. HAMMOND, GOVERNOR
DEPARTMENT OF FISH AND GAME
OFFICE OF THE COMMISSIONER
SUBPORT BUILDING - JUNEAU 99801

January 26, 1978

THE ALASKA DEPARTMENT OF FISH AND GAME COMMENTS ON
(HB 569) "Transplant of caribou to Various Locations in the Shumagin and Aleutian Islands."
Sponsor: Osterback, Hayes and Snider

Background on Relevant Department Activities:

The Department supports the concept of developing some unoccupied habitats through the introduction of appropriate wildlife. Such introductions should proceed with care to avoid undue adverse impact upon resident species of plant and animal life. If the proposed introductions meet this criteria, plus the balance of the items mentioned below, we generally support such introductions.

Evaluating the effect of introductions is complex; for example, introductions may have an adverse effect upon indigenous animals or plants. Once established, the transplanted species may not be available for harvest because of difficult terrain, logistics or the lack of available access. The land owners and the State should enter into cooperative agreements to insure appropriate management of the introduced animals. Management costs, traditionally provided for by sport hunters, should be evaluated to insure equity to the various users. These are a few of the items which should be considered prior to making an introduction.

The Department will be transplanting caribou from the Alaska Peninsula to Nagai Island in the Shumagins in early spring 1978 in compliance with a Statute enacted in 1977. We should learn a considerable amount about logistics and the cost of transplant operations in the lower Alaska Peninsula on this operation. This island chosen does have some reasonably good habitat and several beaches are suitable for aircraft landing, which will facilitate the transplant.

Specific Comments:

Islands under consideration in House Bill 569 are discussed individually as follows:

Big and Little Koniuji Islands - The community of Sand Point is approximately 40 miles to the northwest of these islands. The islands are under consideration for inclusion in the U.S. Federal refuge system as a part of the (d)(2) issue. Topography is steep and favorable habitat may not be present in sufficient volume to support a caribou population of any size. The islands themselves are relatively small.

Ukolnoi Island - Sand Point is approximately 50 miles east of this island. The land ownership is not indicated to change as a result of the Native Claims Settlement Act. The topography is relatively steep and at this time we are not certain that it will support a caribou population

over a long period of time.

Korovin Island - Sand Point is approximately 20 miles to the west. Land ownership status is not indicated as changing as a result of the Native Claims Settlement Act. Some of the island does not appear suitable for caribou habitat, and again, the island may be too small to support a long-term population of caribou.

Tigalda Island - The Village of Akutan is approximately 20 miles to the west; Cape Sarichef Coast Guard Station approximately 20 miles to the north and Cold Bay is 70 miles to the northeast. No indicated land ownership change as a result of the Native Claims Settlement Act. The island is rather small and we are not in a position to evaluate its ability to carry caribou for a long period of time.

Deer Island - This island is located immediately south of Cold Bay. It had an established caribou population prior to the turn of the century with reported migrational movements to the mainland. By 1900 the caribou were no longer present. Obviously the island will support caribou, but there may have been problems because of its size, or other factors that are unknown.

Akutan Island - This island is located west of Unimak Pass; the island has one community of approximately 90 people. The island will probably support a small, carefully managed population of caribou, but the herd should be closely managed to prevent overpopulation and subsequent decline. Transportation to the island is restricted to salt water landings by amphibious aircraft or boat.

Unga - The island is located immediately west of Sand Point and has about 430 people. The island probably can support a population of caribou. Unga was largely selected under A.N.C.S.A.

The foregoing are preliminary comments and not based upon personal experience on these islands. The Department has had considerable experience with island populations of reindeer and caribou with mixed results. It seems probable that many of the proposed locations will support small, carefully managed herds, but some additional evaluation of each site would be beneficial.

Fiscal Impact:

We estimate that transplants to all islands stipulated in HB 569 would require funding at approximately $352,000. With no experience at present in transplanting to these locations, fiscal estimates are, at best, rough estimates. We expect to be able to refine these after conducting the Nagai transplants this spring.

Program Impact:

We feel we could conduct this program with relatively little disruption to ongoing programs, using personnel from King Salmon and Anchorage.

Overall Position:

The Department concurs transplants may be beneficial to some of these islands, but we need a great deal more information on each island before we can make definite recommendations. Of the islands listed, Akutan and Unga appear, at this time, to be the best suited for caribou transplant.

STATE of ALASKA

MEMORANDUM

Received by Division of Game
DIRECTOR
DEP. DIR.
CHIEF RES.

DATE: January 25, 1977 JAN 26

TO: Robert A. Rausch
Director
Division of Game
Juneau

TELEPHONE NO.:

FILE NO.:

ADM. ASS'T.
LIBRARY
FILE
OTHER

FROM: Ronald J. Somerville
Regional Supervisor
Division of Game
Anchorage

SUBJECT: Caribou Transplants - Aleutian Islands

As directed, this is an update on the feasibility of transplanting caribou to specific islands in the Aleutians, SCSHCR 93.

In a previous memo the islands that had the best possibility of supporting a caribou population were specified. They were: Unalaska, Nagai, and Akutan. This memo will attempt to spell out the procedures that will be followed to capture and move caribou to those specified islands and the cost involved.

Because of the remoteness of Umnak and the high cost of operating that far from supply points, it is suggested that caribou be captured from the Port Heiden area and not Umnak. The number of caribou in the Port Heiden area is at least 10,000 compared to an unknown herd size on Umnak but probably much less than 1,000.

A Jet Ranger 206B helicopter will be used to dart caribou using M-99 and Rompun as the immobilizer. The caribou will be moved to holding facilities at Port Heiden as they are captured until a Goose load is acquired, approximately six animals. Six animals in a day is a realistic number and obtainable weather permitting. Because of the long days, animals could be moved to the islands the same day captured.

From information gathered from past transplants, a three female to one male ratio is desirable and capturing pregnant cows provided a bonus of two animals for one if the transplant can be done in May before calving.

At least three biologists will be needed to capture and handle the animals to be transplanted. No personnel or facilities will be needed at the transplant sites. The animals will simply be released on the islands.

Thirty-five to forty animals should be released at each location the first year. The cost of the operation is estimated to be in the neighborhood of $92,420.

The cost to make only one transplant would be approximately one-third or about $38,000. It would be easier to make only one transplant in order to evaluate the techniques and watch the progress of the herd for the first year before doing the other two transplants. Because of the proximity of Nagai Island to Port Heiden, it would be easiest to make the first transplant there.

Salaries are not included in the cost

02-001A

Sometime between now and the actual transplant a reconnaissance should be made of the island or islands to check on the range and release site.

Because of the time frame and the uncertainties of the first transplant it may not be possible to do all three transplants and the spring photo surveys on the Mulchatna and Peninsula caribou herds. Frankly, considering all manpower and money problems we would much prefer May of 1978.

Estimated cost of Aleutian Island caribou transplant

Helicopter

Ferry Time	12 hours	$325/hr.	=	$ 3,900
Day Operation	5 hours	$325/hr.	=	$ 1,625
6 caribou/day for a total of 40 caribou/site 7 days			=	$ 11,375
3 release sites - 21 days flying				$ 34,125
Fuel 27 gal./hr.- 5 hr./day. = 135 gal./day x 21=2835 gal.x $1				$ 2,835
Pilot Room & Board $55/day, 21 days			=	$ 1,155
Total Helicopter			=	$ 42,015

Goose - $240/hr. wet

Ferry Time - variable, depends on location	$ 1,000
Nagi - 300 mi. round trip - 3 hr./trip, 7 trips	$ 5,040
Akutan - 720 mi. round trip - 7 hr./trip, 7 trips	$ 11,760
Unalaska - 800 mi. round trip - 8 hr./trip, 7 trips	$ 13,440
Pilot Room & Board	
Total Goose	$ 31,240

180 Cessna Reconnaissance of Islands	$ 5,000
3 Biologists	
21 days room & board @ $55/day = $1155/biologist	$ 3,465
Transportation	$ 700
Salary	6,000
Drugs and Equipment	$ 10,000
	~~6,000~~
TOTAL	~~$ 92,420~~
	98,420

STATE
of ALASKA

MEMORANDUM

TO:
James W. Brooks
Commissioner

DATE : February 7, 1977

FROM: Robert A. Rausch
Director
Division of GAme

SUBJECT: Car ibou Transplants
Aleutian Islands

This is an update on the feasibility of transplanting caribou onto specific islands in the Aleutians as requested in SCSHCR 93.

There are a number of islands that might support caribou, but in the opinion of the field staff those with the best characteristics are Unalaska, Nagai and Akutan. This summary plan provides an overview of the procedures to be followed in the capture and movement of caribou to the specified islands, and the cost involved.

Because of the remoteness of Umnak and the high cost of operating that far from supply points, it is recommended that caribou be captured from the Port Heiden area instead of Umnak. The number of caribou in the Port Heiden area is at least 10,000 compared to herds of unknown size on Umnak.

A jet ranger 206B helicopter will be used to dart caribou using M99 and Rompun as the immobilizer. The caribou will be moved to holding facilities at Port Heiden as they are captured until a load is acquired, approximately six animals if we use a Grumman Goose. Capture of six animals per day, and their movement, weather permitting, is realistic considering the long days and the accessibility of the animals. If at all possible the animals will be moved the same day captured.

Information gathered from past transplants suggests a three female to one male ratio is desirable, and capturing pregnant cows provides a bonus of two for one when the transplants can be accomplished in May or earlier.

At least three biologists will be needed to capture and handle the animals for transplant. No personnel or facilities will be needed at the transplant sites. The animals will simply be released on the islands.

Thirty-five to forty animals should be released at each location the first year. The cost of the operation is estimated to be in the neighborhood of $98,000. The cost to make only one transplant would be approximately one-third or about $38,000. It would be much easier to make only one transplant the first year in order to evaluate the techniques and watch the progress of the herd for a year before doing the additional work. Because of the proximity of Nagai Island to Port Heiden, it would be easiest to make the first transplant there.

Sometime between now and the actual transplant a reconnaissence should be made of the island, or islands, to fully evaluate the range and release site. Because of the time-frame and the uncertainties of the first transplant and the necessity of negotiating management agreements with appropriate native corporations once funds are available, it may not be possible to do all three transplants and the spring photo surveys of the Mulchatna and Alaska Peninsula caribou herds with our existing manpower. Frankly, considering all factors, including money and manpower I would prefer to carry out this activity in late winter and early spring 1978. However, our activities will be directed by the wishes of the legislature.

In an earlier memo I had mentioned that this Division worked closely with the National Marine Fisheries, in developing a plan to move reindeer from St. Paul Island to St. George Island next summer. We have coordinated this effort with Walt Kirkness. In a telephone conversation Thursday, February 3, 1977, he mentioned the possibility that they might use an alternate source of stock. Nevertheless, we will cooperate with this agency by providing species experts and individuals skilled in handling animals.

Estimated Cost of Aleutian Island Caribou Transplant

Helicopter

Ferry Time	12 hours	$325/hr.	=	$ 3,900
Day Operation	5 hours	$325/hr.	=	$ 1,625
6 caribou/day for a total of 40 caribou/site 7 days			=	$11,375
3 release sites - 21 days flying				$34,125
Fuel 27 gal./hr.-5 hr./day = 135 gal/day x 21 = 2835 gal x $1				$ 2,835
Pilot Room & Board	21 days	$55/day	=	1,155
Total Helicopter			=	$42,015

Goose - $240/hr. wet

Ferry Time - variable, depends on location	$ 1,000
Nagi - 300 mi. round trip - 3 hr./trip, 7 trips	$ 5,040
Akutan - 720 mi. round trip - 7 hr./trip, 7 trips	$11,760
Unalaska - 800 mi. round trip - 8 hr./trip, 7 trips	$13,440
Pilot Room & Board	
Total Goose	$31,240

180 Cessna Reconnaissance of Islands	$ 5,000
3 Biologists	
21 days room & Board @ $55/day = $1,155/biologist	$ 3,465
Transportation	$ 700
Salary	$ 6,000
Drugs and Equipme	$10,000
TOTAL	$98,420

of ALASKA

MEMORANDUM

TO:

John Vania
Game Division
Anchorage

Through: Jim Faro, King Salmon

FROM:

Nick Steen
Game Division
King Salmon

DATE: September 7, 1977

FILE NO:

TELEPHONE NO:

SUBJECT: Caribou transplant to Nagai Island

House Bill No. 289, sponsored by A. Osterback of Sand Point, directs the Department of Fish and Game to transplant 40 caribou from Cold Bay to Nagai Island. In anticipation of this transplant, an aerial survey of the island, using a Widgeon aircraft, was flown on August 23, 1977. Participating in the survey were James Faro, Area Game Biologist, Nick Steen, Assistant Area Game Biologist, John Nickels, Fisheries Technician from Sand Point, and Orin Siebert, Pilot.

Nagai Island lies approximately 19 miles east of Sand Point and is about 31 miles long by 11 miles wide at the widest point. Its ragged coastline forms deep cut fiords. Maximum elevation on the island is 1,842 feet, with numerous elevations exceeding 1,500 feet. The north and south quarters consist of rolling hills covered with what appears to be a lichen. These two areas comprise the majority of habitat appearing suitable for caribou. The central portion is mountainous, with the lower approximately 900 feet covered with alder, willow, and dense beach grass that is not believed suitable habitat for caribou. The upper reaches of the mountains, above 900 feet, change into the same type of habitat found on the extremities of the island. This provides a limited amount of additional caribou range, although it is not contiguous to the extremities. Sufficient range is believed to exist at these higher elevations to permit caribou to freely migrate the length of the island.

The beach fringe of Nagai Island consists mainly of rocky inter-tidal areas bordering steep cliffs. There were, however, several areas that appeared suitable for landing wheel equipped aircraft. Most of these were not in areas considered to have good caribou habitat and were therefore ruled out as release sites. Three locations which seemed to have potential as release sites were investigated from the ground.

The first location was inside a gravel spit on the south side of Eagle Harbor. The gravel had sufficient sand to form a hard base. The spit is affected by tides and landing should be considered only on falling or low tides. The nearest available habitat is high on an adjacent mountain. To reach it, the caribou would have to travel through approximately one mile of dense alder and grass. As a release site, it should be considered poor.

The second location was a sandy beach located on the southwest side of Northeast Bight. It is also below high tide and usable only during part of the day. The nearest suitable habitat is approximately one mile north through dense beach grass and short willows. The site is believed to hold a good potential for a successful release of caribou.

The final area investigated is an isthmus in the southern portion of the island known as "Saddlers Mistake". The west side of the isthmus consists of a wide, flat, white sand beach. The majority lies above the mean high tide mark, and would be usable at all but very high tides. It has no obstruction for several miles on either end providing outstanding approaches for landing aircraft. The nearest available caribou range is approximately one mile southwest through dense beach grass. The lack of tidal restrictions and the easy access to suitable habitat make this the best location for potential caribou release.

The August 23 aerial survey of Nagai was brief and intended only to provide a general over-view of the island. The areas believed suitable for caribou were not checked on the ground and were considered suitable only because they compared favorably to known caribou range. Any herd resulting from the released caribou should be restricted in numbers until much more information is available on the quantity and quality of the range. The herd should be restricted in size to 500 caribou. This herd size is arbitrary and assumes the animals will utilize all available habitat on the island. If they restrict their movements to the habitat in the vicinity of the release site, the size should be reduced to 300 caribou. The limited extent of the caribou range observed on the August 23 survey makes it doubtful if the island could indefinitely sustain a population exceeding the recommended levels. The management goal for the island should be for a long term population, not a boom and bust herd such as occurred on St. Matthews Island.

cc: John Nickels, Sand Point

DEPARTMENT OF FISH AND GAME

ROUTE SLIP

TO:
DIV: Game LOC: Juneau
ATTN: Bob Rausch

Fars and Stein took a look at Nagai Is. for release sites. Looks pretty good. We can probably use wheel aircraft which will save us time and money.

FROM: Jarvis
DATE: 9-15-77 LOC: Anch.

Received by Division of Game
DIRECTOR
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STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

January 13, 1978

MEMORANDUM

SUBJECT: Transmittal of Supporting Material for H. B. 569

TO: The Honorable Alvin Osterback

FROM: George Utermohle
Research Analyst

The sum of $352,000 is necessary to fund transplants of caribou to eight islands in the Aleutian and Shumagin Islands during Fiscal Year 1979.

The Department of Fish and Game estimates that it will cost about $700 per animal to transplant caribou to the Shumagin Islands and about $1,500 per animal to transplant caribou to the Aleutian Islands. It is assumed that a minimum of forty animals must be transplanted to insure that a viable population is established.

The estimated cost of the transplants is determined as follows:

Shumagin Islands

Transplants of 40 caribou at $700 per caribou to Unga Island, Korovin Island, Big Koniuji Island, and Little Koniuji Island $112,000

Aleutian Islands

Transplants of 40 caribou at $1500 per caribou to Ukolnoi Island, Deer Island, Akutan Island, and Tigalda Island will cost.....$240,000

ESTIMATED TOTAL COST $352,000

Supporting material supplied by the Department of Fish and Game is attached.

Attachments

GU:ftc

STATE
of ALASKA

MEMORANDUM

TO: George Utermohle
Research Analyst
Legislative Affairs Agency

DATE: December 27, 1977

FILE NO:

TELEPHONE NO:

FROM: R.A. Rausch
Director
Division of Game
Department of Fish and Game

SUBJECT: Transplants of Caribou to Various Locations in the Shumigan and Aleutian Islands

Developing a cost estimate for moving reindeer or caribou to various locations in the Shumigan and Aleutian Islands has proven to be frustrating. This occurs because of the many variables introduced by the uncertainties of weather, the cost of logistic support and the availability of animals for transplanting. Nevertheless, I have made several estimates of cost that you may use, but I caution that these estimates are not based upon recent experience in moving animals in this area, nor have we had time to obtain firm costs on air charter for any of these operations. The information for the transplant to Nagai is considered reasonably firm and we'll be attempting that move in early 1978. The estimates for moving animals to the Shumigans should remain as we have projected the cost for that island--approximately $700.00 per animal. Similar cost projections for the Aleutians are less firm, but if we use caribou from the Alaskan Peninsula, I believe a cost of $1,500.00 per animal moved is not unreasonable.

There are a host of items that must be solved prior to inauguration of any such move. These items include land ownership patterns on the proposed release sites, the capability of the areas selected to support reindeer or caribou, the relationships of an introduced species to indigenous flora and fauna, provision for harvest in the event of success, provision for access to effect harvest (since the use of public funds are contemplated) and the availability of reindeer for transplant purposes as opposed to caribou from the Alaskan Peninsula (there are reindeer on Umnak and Unalaska, but their availability for use in such an endeavor as has been proposed in unknown at this time). There may be other problems that I have not addressed. To acquaint you with some of the considerations that we entertained when considering the Nagai transplant, I have attached Departmental memoranda dealing with that subject. If I can be of further assistance, please feel free to call upon me.

Attachments

February 18, 1977

The Honorable Alvin Osterback, Chairman
House Resources Committee
Pouch V
Juneau, Alaska 99811

Dear Representative Osterback:

My staff has prepared the requested cost estimate for transporting 40 caribou from the Alaska Peninsula to Nagai Island, using Cold Bay as the base of operations. The estimate follows:

Caribou Transplant

40 Caribou to Nagai - from Cold Bay

Helicopter @ $325 X 5 hrs per day = $1,625/day X 7 days helicopter time =	$11,375
Goose 3 hr. round trip X 7 trips @$720 = (perhaps less if we can catch caribou in Stepovak Bay)	5,040
Room and board chopper pilot, $55 X 10 days =	550
Fuel at Cold Bay, 945 gal. at .48/gal. =	453
Per diem 3 biologists for 10 days =	1,650
Transportation of staff =	700
Drugs & equipment =	5,000
	$24,768
If helicopters are not available locally, ferry time from Anch. to Cold Bay and return =	3,900
	$28.660

This estimate does not include personnel costs which the division will absorb.

Sincerely,

Robert A. Rausch
Director
Division of Game

STATE
of ALASKA

MEMORANDUM

DATE: February 15, 1977

TO: Ronald J. Somerville
Regional Supervisor
Division of Game
Anchorage

TELEPHONE NO.:

FILE NO.:

FROM: John S. Vania
Management Coordinator
Division of Game
Anchorage

SUBJECT: Nagi Island Caribou
Transplant Cost Estimate

The following is a cost estimate for transplanting caribou to Nagi Island from Cold Bay. The cost of ferry time for the helicopter from Anchorage to Cold Bay and return is separated out.

Helicopter cost per day 5 hours @ $325/hr. $1625	
6 caribou/day for total of 40 caribou 7 days @ $1625/day	$ 11,375
Goose time to Nagi $240/hr. 3 hr. round trip $720	
6 caribou per trip 7 trips @ $720	5,040
Room and board for helicopter pilot 10 days @ $55/day	550
Fuel for helicopter at Cold Bay 945 gal. @ .48 gal.	453
Per diem 3 biologists 10 day @ $55/day	1,650
Transportation	700
Drugs and equipment	5,000
Total	$ 24,768
Ferry time helicopter Anchorage to Cold Bay & Return	3,900
Total with ferry time	$ 28,660

We have checked with most of the helicopter companies in Anchorage and at least two now have contract work on the Alaska Peninsula for this coming spring. None are sure at this time of any contract work for the spring and summer of 1978.

We would make a strong effort to use any suitable helicopter company that is working in the area to avoid ferrying costs; however, we are very skeptical that one will be found. It has been our experience that most helicopter pilots are not qualified to fly a darting operation. Unless they have exceptional flying ability, more time is wasted attempting to dart the animals than is spent ferrying a good pilot and helicopter to the area. This type of low-level flying is also very hazardous and the staff will not fly with just any pilot who happens to be working on the Peninsula.

Jet fuel is available at Cold Bay for 48 cents a gallon if we can purchase it wholesale. No costs are projected for ferrying fuel into the field if it becomes necessary to do so.

The costs you see are bare bones. Everything would have to fall exactly in place to accomplish the transplant at or less than the figures provided.

cc: J. Faro

MEMORANDUM State of Alaska

TO:

John Vania
Game Division
Anchorage

DATE : January 22, 1977

FROM:

Jim Faro
Game Division
King Salmon

SUBJECT: Thoughts concerning caribou transplants from Alaska Peninsula to offshore islands

The following are somewhat disorganized thoughts concerning the proposed transplants of caribou during the summer of 1977 to offshore islands in the vicinity of the Alaska Peninsula. Unfortunately, there is not time to more thoroughly prepare this memo, but these should be helpful in synthesizing the program at this stage of its development.

1. Sources of Caribou:

A. Unimak Island: The island has a healthy caribou herd that is virtually unharvested. Little data are available concerning their patterns of movement and location of concentrations during summer months. In general I would expect them to be on the western portion of the island on the slopes of Pogromni Volcano. Logistics would have to be based out of Cold Bay and only one large landing strip (Cape Sarichef) exists on the island. Large lakes and lagoons exist that could facilitate transportation for amphibious aircraft. The island is part of the U.S.F.W.S. Refuge system and restrictive regulations exist concerning the use of aircraft for transportation of hunters. Problems could exist insuring that transplant activities do not conflict with wilderness management programs of the Refuge. Either of the two main segments of the Alaska Peninsula caribou herd on the mainland could probably supply adequate caribou for the transplant at reduced operational cost.

B. Black Hills-Caribou River: An estimated 3 to 5 thousand caribou occupy the westernmost tip of the Alaska Peninsula. Calving has been documented in these areas the past two years with about 2,500 animals counted from census photographs. Movement patterns after calving are poorly documented and logistics would be best based from Cold Bay. Large strips exist at David River, Cathedral River and Canoe Bay which could facilitate handling of caribou after they have been captured.

C. Ilnik: This is the primary calving ground of the northern portion of the Alaska Peninsula caribou herd. It is the best documented segment of the herd. Approximately 5 to 6 thousand caribou have concentrated in the area for calving in recent years. Following calving, the animals move northward to the upper Meshik River area before they begin to scatter in late June. Logistics could be based from Port Heiden. No large air strips exist in the immediate area to facilitate transportation of captured animals,

but amphibious landings could be made at Wildman Lake, Black Lake or in the inter-tidal area at Ilnik.

D. Cinder River: In the past several years a secondary calving ground has developed near the mouth of the Cinder River. This would be the closest group of animals to Port Heiden if that runway were selected as a logistic center for the transplant (approximately 30-40 miles). The number of caribou to select from would be smaller than from other possible transplant sources (approximately 2-3 thousand). Large pumice patches exist on the upper drainage of Cinder River that could be utilized as a collection point for captured animals prior to actual transplant. In addition, the Department of Public Safety cabin at Pumice Creek could be used as a logistic center.

2. Potential Transplant Areas:

Problems in land ownership have been discussed elsewhere. In addition to private ownership and trespass problems, these should include discussions of the impact on lands within the U.S.F.W.S. Refuge system and perhaps the need to file an environmental impact statement before altering the natural ecology of any Aleutian Island. These comments are made without practical field time on the proposed transplant islands.

A. Deer Island: Located immediately south of Cold Bay, this island had an established caribou population prior to the turn of the century with reported migrational movements to the mainland. By 1900 the caribou were no longer present. This indicated that the island is probably too small to support a permanent population without intensive management to restrict caribou numbers at a level compatible with available habitat. No human settlement occurs on the island, and hunters would have to travel to the island by boat, which means the herd would probably not see a high level of use. The Alaska Peninsula caribou population between False Pass and Nelson Lagoon are nearly as accessible to residents of King Cove as would be a Deer Island population. Residents of Cold Bay presently have both the mainland population and the Unimak Island population available for their use. No developments exist on the island to facilitate receipt of transplant. Saltwater landings or boat transportation of captured caribou would be necessary. For these reasons I would give any transplant to this island a low priority.

B. Akutan Island: Located west of Unimak Pass, this island has one community of approximately 90 people. If a transplant occurs, there would be a resident population available to utilize the caribou once they became established, as well as use by commercial fishermen. Presently the closest population of caribou to residents of the island is on Unimak Island, about 30 miles away. There is no reported history of caribou ever being present on Akutan. Because of the island's small size, the herd would have to be closely managed to prevent over-population and subsequent decline. Transportation to the island is restricted to saltwater landings by amphibious aircraft or by boat.

C. Unalaska Island: The largest island of the proposed transplant sites and located west of Akutan. The island has a human settlement at Dutch Harbor-Unalaska of approximately 250 persons. A transplanted caribou herd could be used by local residents and the commercial fishing fleet. Again no history of caribou existing on the island. A reindeer herd on adjacent Umnak Island is available to hunters with transportation (either boat or aircraft) to that island. Caribou are available on Unimak Island, approximately 80 miles to the east. A large landing strip exists at Dutch Harbor that could facilitate the transplant, otherwise access would have to be by float plane or boat. This island appears to be the most viable of the proposed transplant sites.

D. Nagai Island: Located immediately southeast of Sand Point, a transplant could provide a herd for residents of that community (approximately 430 persons) and commercial fishermen. No history of caribou existing on the island. Access to the island will have to be saltwater landings by amphibious aircraft or boat. One local Naknek resident with experience in the area states areas for entry onto the island are quite limited. The island's small size will require that herd be regulated to prevent over-population. Because of its close access to Sand Point, hunting might be capable of maintaining the population at a level compatible with available habitat, but this is an opinion that can be proven only if a herd becomes established.

E. Metrofania Island: Located between Chignik and Perryville, this island has no history of caribou. Presumably, use of a transplanted herd would be by residents of these communities (approximately 275 persons total, and each about 30 air miles away) and commercial fishermen. Chignik residents have access to the main body of the Alaska Peninsula caribou herd, but residents of Perryville need to travel a much greater distance to take animals for meat. No developments exist on the island that could facilitate the transplant effort. Because of the island's small size, it is doubtful that suitable habitat exists to maintain a viable transplant without intensive management. Logistics are such that hunters would probably not exercise adequate control of the population.

F. St. George Island: One of the Pribilof Islands located well out in the Bering Sea. It has a human population of approximately 160 persons who could make use of a caribou herd. The island once had a reindeer herd transplanted that grew in numbers then crashed. For this reason, it would be inadvisable to transplant caribou without sufficient knowledge to insure a re-occurrence of this pattern did not occur. In addition, it is the most remote of the proposed transplant sites and would have the most expensive logistics. In spite of developments on the island this could facilitate the transplant.

3. Logistic Centers for Transplant:

A. Port Heiden: Located in the central portion of the Alaska Peninsula. This area would be the closest to Anchorage from which many of the materials, supplies and equipment items would have to

be transported. Its primary asset is the close association with the largest numbers of caribou from which to select transplant animals. The movements of the group of caribou calving at Ilnik are the best documented and the secondary calving area exists at Cinder River which could provide animals. Transplant personnel could be housed at the Reeves station if prior arrangements were made. Fuel for helicopters and amphibious aircraft could be delivered to the runway by Reeves Aleutian Airlines.

Disadvantages are:

(1) The lack of fuel for helicopters and perhaps fixed wing aircraft would necessitate additional transport cost.

(2) The area is furthest from most of the proposed transplant sites.

(3) No air charter service exists at Port Heiden that could facilitate or support transplants.

(4) Housing may not be available as the terminal is often fully booked by oil companies.

(5) Few additional landing sites are available for amphibious aircraft except Black Lake, Wildman Lake, or saltwater landings. Particularly if Transplant occurs in July after caribou have moved into the Meshik River area.

B. Cold Bay: Located near the southwestern tip of the Alaska Peninsula. At this time I am inclined to prefer this location over Port Heiden, even though the Department has less adequate data concerning the availability of caribou.

Advantages are:

(1) An abundant supply of jet fuel and av-gas is available at the Cold Bay Airport, so it would not be necessary to transport fuel to the area.

(2) Housing facilities are available at both the Reeves station and the Flying Tigers terminal.

(3) A large, all-weather airport could be an asset for the operation during periods of inclement weather.

(4) Large strips exist at David River, Cathedral River, and Canoe Bay which could serve as a staging station for collection of captured animals. These strips are in the immediate area of the calving grounds.

(5) Both Winship Air Service and Peninsula Airways should have Gruman Gooses stationed in the area. These air services could be an asset to the transplant program, although aircraft might not be available on call.

(6) Closer to transplant sites of Unalaska and Akutan than Port Heiden. About equal distance to Nagai Island or St. Paul, but a significantly greater distance to Metrofania Island.

(7) The availability of a Department office in the area or the U.S.F.W.S. Refuge office to facilitate logistics.

Disadvantages are:

(1) Additional distances from Anchorage would increase cost of transportation of materials, helicopter, and personnel. Savings in fuel cost would probably compensate for that.

(2) Less data available on location and movements of caribou from which to obtain transplant animals. Smaller numbers of caribou to select from.

(3) Area frequently has inclement weather, however, for two of the proposed transplant sites, the same weather factor would be a factor even if working from Port Heiden.

Additional Justification for Selection of Cold Bay area for Logistic Center:

Data for all big game species in the south tip of the Alaska Peninsula is extremely limited. Associated with the capture work, it might be possible to conduct ground composition counts on caribou following calving. Tentatively, we hope to do some photo censusing work this spring.

Also, the area immediately north of the calving grounds has an embryonic moose population of undetermined size. Additional funds could be expended to gather data on its status. Present observations are on a "target of opportunity" basis only.

All personnel associated with the program could be required to fill out observation forms on all big game species except bears. For bears only the locations of dens should be noted. In addition, the skulls of beach dead otter could be collected for Karl Schneider. Skulls from this area closely resemble those of the California or southern sea otter sub-species and are of taxoromic importance. These activities could be accomplished without additional cost to the program.

4. Timing of Transplant:

Calving occurs earliest on the northern portion of the Alaska Peninsula. In general calving occurs about June 1 at Cinder River and Ilnik and about June 15 on Unimak Islands. The Black Hills-Caribou River calving segment falls between these dates. This timing of calving is a factor to be considered in programming the transplant once the logistic center and source of animals has been determined.

May: If animals can be captured prior to calving, then it might be possible to augment the transplant with natural reproduction the first year. This should be attempted only if there is a reasonable certainty that drugs or handling would not result in a high mortality among the cows or their fetus.

Without a spring bear season, both Nick and I would be available to assist the transplant and it would not be necessary to pull as many

personnel from Anchorage or other areas. Weather is normally fair to good during this period, but sub-freezing temperatures and snow storms can occur.

June: At this time it would probably be inadvisable to capture pregnant cows. This would restrict capture efforts to bulls and yearlings. With yearlings, more animals could probably be carried aboard the transplant aircraft. Caribou would still be bunched in large post calving concentrations.

Major activities that the King Salmon office would be associated with would be moose calving surveys, monitoring the moose collaring research done in April, preparing for the McNeil River field season, and perhaps getting the Walrus Island program started. Additional personnel would have to be pulled from other areas, as it is doubtful that both Nick and I could be available for the full program.

Weather is normally excellent with warmer temperatures. Bad storms are not common, but fog could ~~hamper~~ hamper work.

July: Again, capture would be limited to bulls and yearlings as it would probably not be possible to capture both the cow and her calf. In addition, I seem to recall reading there is an initial high mortality in calves immediately following capture (Adak transplant). Caribou would be starting to scatter and it might require additional helicopter time to capture animals. In addition, capture activities could cause abandonment of new born calves.

The King Salmon office should not have major field activities pending. McNeil River (and Round Island?) should be established and on "auto-pilot". Monitoring of collared moose should be completed or require only minimal time. Both Nick and I could probably be associated with the full program.

Weather normally remains good, but it can deteriorate with abundant southeastern rain storms in the later portion of the month, so work would best be done early.

5. Methods of Logistics for Transplant Animals:

A. State Gooses: I have been informed that State aircraft cannot transport "freight" that could be carried by private sector. Transplanting caribou could fall into that definition. Also, during June and July these aircraft may be committed to the commercial fish enforcement program and unavailable. The availability of these planes should be determined well in advance or other arrangements made.

B. Peninsula Airways: Penn Air has recently purchased two Gooses from Reeves Aleutian Airways. One of these planes will be stationed in King Salmon and the other at Cold Bay. The King Salmon Goose should be available in May, but in June and July, it will be committed to hauling passengers for Kulik Lodge and Brooks Camp. The Goose stationed at Cold Bay will be committed to mail runs on three days a week and unavailable on those days. Widgeons could also be available, but with a greatly reduced payload.

C. Winship Air Service: This air charter service has stationed a Goose at Cold Bay in the past. I have no knowledge of its availability this summer, but it has worked for the RCA station on the Aleutians and for the commercial fishing fleet at Dutch Harbor.

6. Personnel:

Chuck Irvine - experienced with capture work on caribou and field conditions on the Alaska Peninsula.

Lee Miller - extensive experience on Alaska Peninsula under field conditions.

Al Franzmann - extensive experience with capture work on moose (caribou?). Should have some experience on Alaska Peninsula following moose work this spring.

Jerry Sexton - very thorough in preparation of equipment and materials, competent under field conditions. Has worked on Alaska Peninsula.

Jim Davis - has his work given him expertise in handling caribou with drugs?

Larry Jennings- has experience with transplant of large game animals (bison and musk ox). His expertise could facilitate handling of animals.

Egbert, Hardy, Modafferi, or Palmer - could fill manpower needs and work could broaden their background knowledge of both work technique and different areas of the State.

For lack of time, I'll leave it at this. My sincerest condolences to whoever has to put it all together - stop looking at me like that!.