



INTRODUCED ARCTIC FOX ERADICATION
AT RAT ISLAND, ALEUTIAN ISLANDS, ALASKA
SUMMER -- 1984

by
KIM HANSON (1)
MIKE GOOS (2)
and
FREDRIC G. DEINES (3)


Key Words: Arctic fox
Introduced predator control
Aleutian Islands
Rat Island Group
Rat Island

Restrictions: Internal Document - Not for Publication

- (1) U. S. FISH AND WILDLIFE SERVICE
ANIMAL DAMAGE CONTROL
GRAND JUNCTION, COLORADO
- (2) U. S. FISH AND WILDLIFE SERVICE
ANIMAL DAMAGE CONTROL
BISMARCK, NORTH DAKOTA
- (3) U. S. FISH AND WILDLIFE SERVICE
ALEUTIAN ISLANDS UNIT
ALASKA MARITIME NATIONAL WILDLIFE REFUGE
P. O. BOX 5251 NAS ADAK
FPO SEATTLE, WA 98791-0009
(Adak, Alaska)

November 20, 1984

Library
U.S. Fish & Wildlife Service
1011 E. Tudor Road
Anchorage, Alaska 99503



ARLIS
Alaska Resources
Library & Information Services
Anchorage, Alaska

FoxDisk 3/Rat-84

TABLE OF CONTENTS

	PAGE
Executive Summary	1
Expedition Members	2
Acknowledgements	2
Introduction	2
Results and Discussions	4
Recommendations	7
Literature Cited	8
Appendix	9
Daily Log Entries	10

FIGURES AND TABLES

FIGURES:

Figure 1 - Rat Island Group	3
Figure 2 - Basic Trap Set Used on Rat Island	6
Figure 3 - Basic Snare Set Used on Rat Island	6

TABLES:

Table 1 - Observations of Fox Stomach Contents	7
Table A - Rat Island Fox Notes - Daily Log	23
Table B - Methods Used and Results	24
Table C - Rate of Capture	25
Table D - Trap Bait/Lure Results	26

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

EXECUTIVE SUMMARY OF PUBLICATION OR REPORT

Refereed publication
Non-refereed publication
Unpublished presentation to
conference or workshop
☒ Internal administrative report
Other (see remarks)

TITLE

Arctic Fox Eradication at Rat Island, Aleutian Islands,
Alaska -- Summer 1984

DATE

November 20, 1984

I.D. NO.

AUTHOR(S) Kim Hansen, Mike Goos and
Fredric G. Deines

CITATION

OBJECTIVE Remove the introduced arctic fox from the fauna of Rat Island to benefit the
endangered Aleutian Canada goose.

METHOD OF STUDY Two biologists from the FWS ADC staff in Region 6 came to the Aleutian
Islands for 65 days to remove all foxes from Rat Island. They used leg hold traps, M-44
coyote getters, predator calls, rifles and 12 guage shotguns during their efforts.

MAIN FINDINGS A total of 175 introduced arctic fox were killed on Rat Island and it is be-
lieved to be the entire island population. Of this number, 163 were adults (93½ female and
69½ male). All female adult fox were examined for placental scars with the following re-
sults: 20 unbred, 10 undetermined (gut shot) and the remaining 63 bred having 7.4 average
placental scars. The most successful eradication method was calling and shooting (46%) fol-
lowed by trapping.

CONCLUSIONS Rat Island is believed to be fox free. Fox-free status must be further ver-
ified by additional checks of the island for fox or fox sign.

MANAGEMENT IMPLICATIONS Assuming the eradication effort was successful, Rat Island can be
considered an additional fox free migrational stop over spot and potential nesting area for
the endangered Aleutian Canada goose.

ADDITIONAL REMARKS If this eradication effort was successful, it supports the proposal to
continue supplementing refuge personnel with professionally trained predator control (ADC)
agents in removing introduced arctic fox from important wildlife islands throughout Alaska.

UPDATES OR SUPERSEDES I.D. NO.

PROGRAM

FOR COPIES OF PUBLICATION OR REPORT CONTACT

EXPEDITION MEMBERS

Kim Hanson - ADC, Grand Junction, Colorado
Mike Goos - ADC, Bismark, North Dakota

ACKNOWLEDGEMENTS

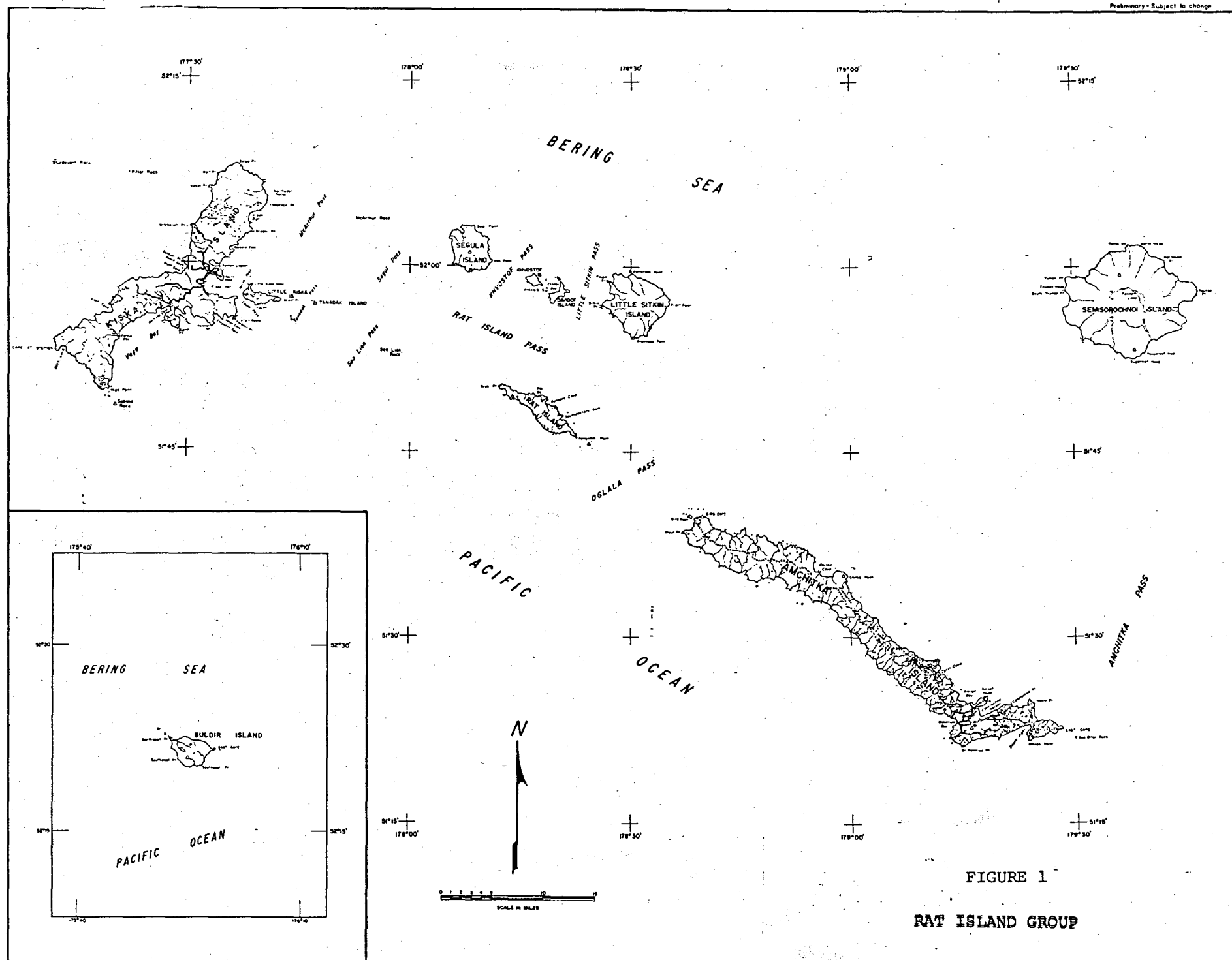
The authors offer their gratitude to Van Klett and Fred Zeillemaker for editing this report.

INTRODUCTION

Arctic fox were introduced to most of the Aleutian Islands for the purpose of fur farming by the Russians at the turn of the century. The only exceptions were Buldir and Chagulak islands, which never received fox due to their inaccessability (Jones 1963). Fox introductions significantly disrupted a relatively simple ecosystem. The food derived from occasional dead marine mammals and a wealth of bird life allowed introduced arctic fox populations to soar, thereby suppressing many bird species and endangering the Aleutian Canada goose. According to Murrie (1959) the importance of birds in the diet of arctic fox is evident when one considers 57.8 percent of Aleutian fox prey throughout the Aleutian Islands is provided by native bird life. This includes islands with large concentrations of storm-petrels and auklets such as Kasatochi, Kiska or Amukta islands and islands having smaller bird population such as Rat Island where the foxes' diet is 28.8 percent rat and about 40 percent amphipods or beach fleas. On many Aleutian islands including Rat Island, ground nesting species such as the endangered Aleutian Canada goose and several seabird species have been extirpated by the introduction of arctic fox.

To assure recovery of the endangered Aleutian Canada goose, islands at various locations in the Aleutian Islands are being cleared of introduced foxes to allow natural pioneering by or transplanting of Aleutian geese. The Aleutian Canada goose recovery plan specifies Kiska and Amchitka islands as critical reintroduction sites. Due to the large size of Kiska Island (28,177 ha (69,598 acres)), its large arctic fox population (650+) and the lack of an efficient control agent (i.e. chemicals), clearing that island of foxes is not currently practical. Amchitka Island was cleared of foxes by 1963, but attempts to reintroduce Aleutian Canada geese there at that time were unsuccessful, at least in part due to predation by a large bald eagle population existing there until recently.

Rat Island encompasses 2778 ha (6861 acres) and is located about 21 km (13 miles) northwest of Amchitka (Fig. 1). Based on a capture/recapture study of arctic fox on Rat Island during the summers of 1961 and 1962, the fox population was estimated at 247 plus or minus 28 fox (Berns 1969). Because of its close proximity



ty to Amchitka and workability (relatively low fox population and good terrain), it was chosen in 1983 as an interim site for goose reintroduction. Removal efforts were then scheduled to commence in 1984. For the first time, the Alaska Maritime National Wildlife Refuge recruited Animal Damage Control (ADC) personnel stationed in the "Lower 48" to independently conduct a fox removal effort. Kim Hanson of Colorado and Mike Goos of North Dakota were selected to perform the task. The effort detailed in this report spanned the period 25 May to 29 July 1984.

Mechanical means similar to those employed on Amukta Island during the summer of 1983 were used to attempt eradication of fox on Rat Island. These labor intensive methods involved stationing the two personnel at an abandoned cabin on Rat Island in late May 1984. Additional emphasis was placed on calling fox this year. It should also be noted that the use of M-44 coyote getters was somewhat limited and that no other poison baits were used. Contained in the appendix are excerpts from Kim Hanson's field diary which describe in detail the eradication methods employed on Rat Island. A map indicating the various locations referred to in the diary excerpts is also contained in the appendix.

RESULTS AND DISCUSSION

During the 65 day eradication effort on Rat Island, a total of 175 fox were killed. Of this number, 163 were adults and 12 were pups. The number of pups killed was small because the lactating females were taken before the pups were weaned, therefore, most of the pups starved before they could emerge from the den. According to estimates from placental scars, approximately 450 pups were eliminated in this manner. A special effort was made to accomplish this and it was a key factor in the success of the Rat Island fox removal effort! Fifty-seven percent (93) of the adults were female. All female fox were examined for the presence or absence of placental scars. Twenty adult females were found to be unbred and 63 had been bred. The status of ten additional female carcasses could not be determined. The number of placental scars found on the bred fox varied from 2 to 11 with an average of 7.4.

There are no known bird colonies on Rat Island, so fox there inhabited beaches only where food could be obtained. The most successful mode of operation was to locate, call and shoot as many fox as possible on each beach and then to set traps, snares and M-44's on each beach to catch any survivors. Fox responded to any reasonable imitation of their bark. A pheasant call might make a good fox call. The most effective call was a Burnham Brothers close range fox call that imitated the yelp of an injured pup. Calling and shooting accounted for 46 percent of the adult fox taken.

The firearms used included Remington 788's in 22-250 and 223 caliber. Each rifle was equipped with a variable scope. The rifles were very effective when they were on target. They were

sighted in every two or three days due to wet weather conditions and rough handling over rugged terrain. Soft nosed bullets were much more effective on fox at Rat Island than full metal jacket ammunition. The risk of wounding and losing animals was too great with full metal jacketed ammunition.

Steel traps were the second most effective tool. No. 1-1/2 coil spring traps painted with ZRC were used. The most effective sets were modified dirt hole sets placed on the beaches between the high tide line and the edge of vegetation (See Fig. 2 for basic set design). Driftwood drags were used to eliminate the need to carry stakes. Stakes were also difficult to drive on the rocky beaches.

Baggies or cup cake papers were used for pan covers and fine gravel or sand was used to bed and cover the trap. Table D of the appendix lists the lures that were used and which were most effective. No sight baits were used and fox carcasses were kept away from trap sets to prevent accidental capture of bald eagles.

Snares were used effectively along fox trails. Some fox were snared up in the tundra, but the most effective snare sets were on trails crossing points of land or rocks between beaches. Fox used these trails at high tide to get from one beach to another. The snare loop used was six to eight inches in diameter and the bottom of the loop was approximately seven to eight inches above the ground. The wire that supported the snare also anchored the snare to the stake (see Fig. 3). Thompson snares were used and they were somewhat stiff for arctic fox. The lock did not slide as easily as it should have and the loop did not close tight enough to cause strangulation. Thompson snares were very wind resistant, but Greger'sön snares would have probably been more effective on fox and still be relatively resistant to wind problems.

M-44's were not very effective on arctic fox at Rat Island. A better bait to use with them would have made them much more effective. Several of the top coyote M-44 lures in the lower 48, including C-50, H-40 and A-76 were tested on Rat Island fox without success. The only bait arctic fox would pull was bacon grease. Bacon grease did not retain a strong odor for more than a few days and was susceptible to being wasted away by persistent rain. M-44's were also subject to rat damage. Rats would chew the bait and the wrap from the M-44 capsule holder and sometimes chew the cap off of the cyanide capsule. For these reasons, M-44's required constant checking and servicing at a rate of at least once a week. It should be noted though, that M-44's were delivered late in the season, so they may not have been as inefficient as they appeared if used earlier in the project.

Denning cartridges were not very effective on Rat Island. Dens were plugged after a cartridge is ignited and inserted into the opening and the occupants then suffocated due to a lack of oxygen. Dens in the rocks could not be plugged at all and the dens in banks above the beaches had so many entrances they were diffi-

FIGURE 2

BASIC TRAP SET USED ON RAT ISLAND, 1984

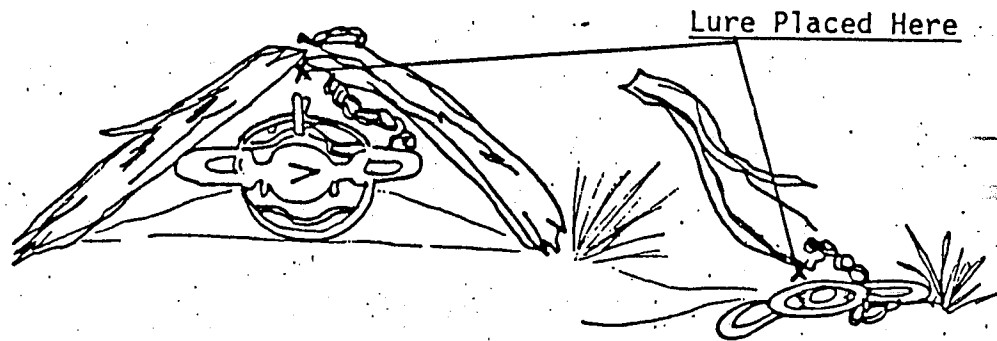
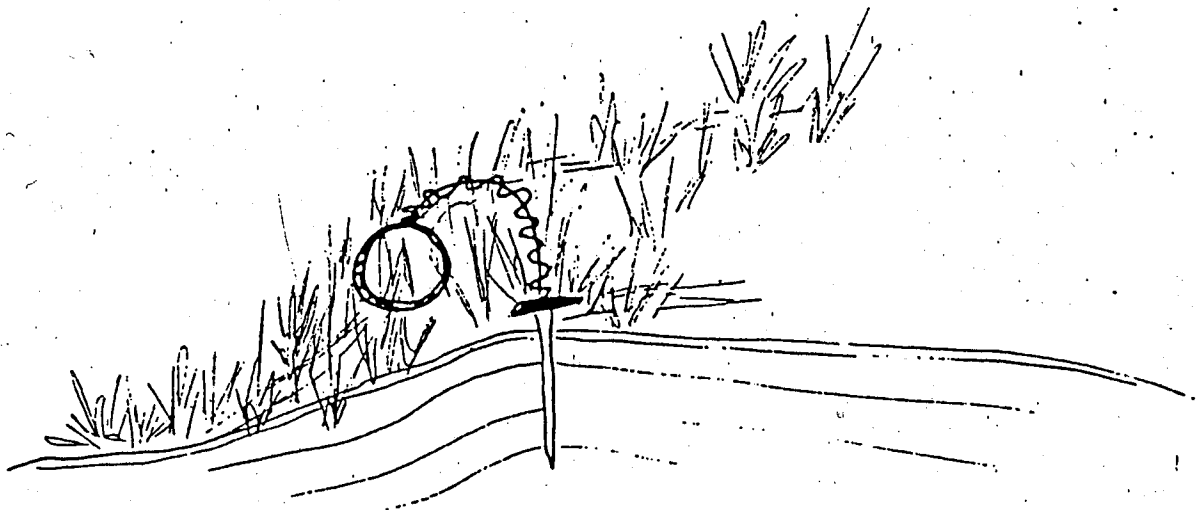


FIGURE 3

BASIC SNARE SET USED ON RAT ISLAND, 1984



cult to plug. Denning cartridges were used on only two dens on Rat Island. Three other dens had pups survive until they were old enough to emerge from the den. Most of the pups from these dens were shot, but three were taken by M-44's.

The stomach contents of 68 adult fox were checked. Amphipods were the most prominent food item in the diet (Table 1). Such results are to be expected on an island like Rat Island with no bird colonies remaining.

Table 1. Observations of Fox Stomach Contents

Number of Fox	Contents
40	100% amphipods
25	50% fish eggs, 50 % amphipods
1	75% rat, 25% amphipods
1	50% fish, 50% amphipods
1	75% gull, 25% amphipods
68	Total

Additional information concerning the 1984 fox eradication effort on Rat Island is contained in Tables A through D of the appendix. Incidental wildlife observations are also contained in the appendix.

RECOMMENDATIONS

1. Provide non-local fox trappers with detailed information on equipment needs, working environment and trapping conditions.
2. Spend a considerable amount of effort researching and testing M-44 baits to find a material better suited to deployment in the Aleutian Islands.
3. Always use M-44 capsules that are new or in good used condition.
4. Provide an orientation cruise around each island before setting up camp and drop-off caches of prepared equipment.
5. Research and test additional types or brands of fox snares. A suggested source is Gregerson Animal Snares, 810 First Street, East Roundup, MT 59072, Telephone - (406) 323-1791.
6. Continue to request authorization to use pre- and post-treatment chemical toxicants (predacide).
7. Research the possibility of using fiberglass rifle stocks or glass bedding on existing rifles to help weatherize.
8. Do not use full metal jacket ammunition.

9. Experiment with pheasant calls as possible fox calls.
10. Develop lighter weight trap stakes.
11. Begin mechanical fox control by the first week of May, or earlier if weather permits.
12. Try to complete mechanical fox control by mid-July.
13. Return to Rat Island each of the next two years to verify total eradication of introduced arctic fox. If fox sign or fox are observed, reinstitute eradication efforts.
14. Fiberglass stocks should be used in rifles with scopes attached to allow for expanding and contracting of stocks due to moisture so as to maintain zero accuracy with scope.

LITERATURE CITED

- Ambroz, C. A., F. G. Deines and D. Dragoo. 1983. Initial Arctic Fox Eradication Program on Amukta Island, Aleutian Islands, Alaska, 1983. U. S. Fish and Wildlife Service, unpublished report. 32 pp.
- Berns, V. D. 1962. Notes on Blue Fox on Rat Island, Alaska. The Canadian Field Naturalist, Vol. 83, No. 4, October-December 1969.
- Murie, O. J. 1959. Fauna of the Aleutian Islands and Alaska Peninsula, North American Fauna 61:1-364.

A P P E N D I X

May 25 (Friday) - We unpacked all our food and put it on the shelves, and arranged all our other gear. Then we built a table and put a plywood top on the old oil stove to set the Coleman stove on. Then sighted in guns. Then I set one trap out in front of the cabin. Then we went hunting southeast of the cabin. We spotted two fox having a territorial dispute. They were about 200 yards apart and barking after the fight and Mike shot at the one on the left and missed. He climbed the hill and took off. (This was right by a peregrine aeyrie. They flew all around.) The other one was sitting on a rock and we walked up in the open to within 100 yards and he was watching us close. I took a good rest on a log and plunked him. We glassed the next beach and spotted a fox so we stayed up on the ridge and moved up on him. He went under us and we went past him. I went back and then he came back and I plunked him. The next beach we glassed and didn't see anything until I barked on the critter call and here he came. He came to us and started up the hill, then went under us, so I went back and sat on a point but couldn't see him, so I just waited and then he showed up right under me 80 yards down, so I dropped him right there. I couldn't miss. We saw eight harbor seals watching us. We hiked back for radio check and I had a fox in the trap in front of the cabin. We took some pictures and then found out it was a female with five old scars. Ate and did radio check and turned in at 11:15 PM (Mike shot a male fox the other side of the waterfall.)

May 26 (Saturday) - We slept in until about 10:00 AM this morning. Mike went out to sight in his rifle again and I caught up my diary and got my personal gear organized. Then we went hunting northwest of the cabin. We shot eight fox; Mike got five, one about seven feet away that I called in. One about 12 yards away we snuck up on. One old male was asleep on the beach and just looked up and went back to sleep when I barked at him. We got a male and a female by a den but the female wasn't bred. We had six more harbor seals watching us and we found an active bald eagle nest with one chick in it. Saw our first ptarmigan today by itself.

May 27 (Sunday) - Slept in again. I cooked breakfast and did dishes while Mike built a seat for the latrine. Then we worked most of the day on a 8'x7'6" deck for the cabin with an attached shower. Charged batteries all day and cleaned up. Caught up my diary while Mike built a picnic table for the deck.

May 28 (Monday) - Mike had old male in trap. We got up about 8 AM this morning and started for the Pacific side. It was quite a sight to see. It was a two-mile sandy beach with a wrecked Jap fishing boat and white caps breaking on the beach. We called in a bitch on a pup yelp and Mike shot her on the den; she had six pups in her. The fog was coming in and the wind was picking up so we went back to camp by the Loran Station. We got bored at camp, so we painted some traps and loaded up an old backpack and set four traps southeast of the cabin. Got wet and tired.

May 29 (Tuesday) - Adjusted and loaded pack frames with traps and gear. Foggy and windy. Checked traps. I had two visits and didn't catch anything. Got a male in third set. Hiked to Black Bouy Bay. Called and shot a lactating bitch sneaking in behind us. Missed easy shot in SE Cove. Then shot bitch with six scars coming in hard to hurt pup yelp. Then missed one that wouldn't come any closer than 125 yards. Then Mike emptied gun on him but didn't connect. Set four more traps today. Two in tundra. Cold, wet, windy day. Wore rain coat and pants all day. Tired and sore tonight! Heavy pack and long wet trail.

May 30 (Wednesday) - Cloudy but no rain. Hiked to SE Cove, had one male in trap. Hunted beaches and set traps out on Augadak Point. We saw five killer whales in the mouth of SE Cove. They were quite aways out but we could see them pretty good with binoculars. All the seals got up on the rocks in a hurry. It was really exciting and awesome. Quite a sight to see. The next time we climbed up on top we could see three fox. I shot one close in and we missed one way out but he ran back to the beach below us and I shot him. Mike shot another female and then we went over to the Pacific side and shot five fox from one spot. We snuck up on two asleep and called the other in; three females and two males, 11 scars in one and 10 in the other. Had a long, hard hike back to cabin. Had to hurry to make radio check. Tacos for supper. Not as tired and sore tonight as last night.

May 31 (Thursday) - Raining pretty hard this morning so we slept in until about 11 AM. Cleaned cabin and sighted in guns again. Both shooting well again. Mike had another male in front of the cabin. Checked traps to SE Cove. I caught a female by one probable den sight and another on my tundra trail set. Got rained on coming back to cabin, but not as tired tonight. Thirty-two fox total in our first week.

June 1 (Friday) - Rainy and foggy and windy again, but we want to get a line of traps and hunt clear out to the end of Augadak point. Mike got another vixen with seven scars in front of the cabin and he trapped our first rat under the deck. I caught the male I'd been missing by the big log on the next beach east. Mike got another female just past SE Cove but had one that broke the wire on the drag and got away. I shot one more male on the north side of Augadak point (came to a bark). There was a lot of fog as we walked to the end of the point. It was kind of weird, like we were walking to the end of the world. There was an old bull sea lion on the end of the point in the rocks. He had a big cut in his neck and limped on one flipper. I got within 40 yards before I even saw him, but no camera today. That was 7 PM so I set my last trap, and we started back. We were wet from head to toe and couldn't find the trail in the fog (lost my hat). Got back on the trail with the help of our compass and made it back by 9:30. Hung clothes to dry and put on dry ones. We ate and went to bed right away.

June 2 (Saturday) - Rainy in the morning so we slept in a little. Cleared so we painted the rest of our new traps. Then we cleaned

up around the cabin. We checked our short line of traps. Didn't catch anything. The sun came out for an hour or so and it was pretty nice. I walked around Gunner's Cove and took pictures. We had a fox right behind the cabin. I got a couple of pictures but then he spooked before Mike could shoot him.

June 3 (Sunday) - Raining again this morning. We messed around awhile and cleaned up. We decided not to go out in the rain and we read most of the day. I'm reading "The Thousand Mile War" about World War II in the Aleutians. It is a good book and talks a lot about all the bad weather up here. Mike stepped out to get some meat and saw a fox on the beach. He shot it and found that it was a young male wearing his snare.

June 4 (Monday) - We got an earlier start today, up at 9 AM and left cabin by 10:30. Checked all our traps and snares to the end of Augadak Point and hunted the Pacific side back to Ambush Bay (that's where we killed four fox from one stand). It's the bay on the south side of the island just below the "D" in island on the map. Left some traps and stakes out there to get tomorrow and that really lightened my pack for the trip home. Looked for my hat but didn't find it. Got home about 9:15 PM. Felt pretty good. It was a nice day, no sun, but no wind, rain or fog either. Ate a big bowl of Mike's chili and a big salad.

June 5 (Tuesday) - Had a nice day again today; real calm and even had a couple hours of sunshine. Didn't wear a coat, but still wearing longjohns and wool shirt and pants. We went clear down to Ambush Bay (found my hat) and started hunting and setting traps on the south side of the island. All fox are still living on or just above the beaches and we have hunted and have traps set on almost 1/3 of the coastline. I'm getting in pretty good shape; waist is getting smaller and legs are getting bigger. I hope there is some mail for me when the boat comes in.

June 6 (Wednesday) - Hiked down to Log Jam Creek and picked up our packs. Set traps and hunted west up the south coast. Got clear up to lakes. We shot 15 fox today - an all-time record! We called one in on Mike's pup call and he got so close we lost him in the grass and rocks. Mike was peeking over a clump of grass and it stuck it's nose around and under his face about 8 to 10 inches away. He let out a yell and both he and the fox jumped back. We had a long, uphill walk home. We went NW and came home from the west instead of going back the way we'd come. We both ran out of bullets and Mike missed his last shot so we had to leave that one and we saw another one on the way home. Anyway, we got to camp at 10:30 PM and just got in on the tail end of radio check. Ate a huge bowl of stew and into bed tired again.

June 7 (Thursday) - It was really a nice day today. Lots of sunshine even. Took quite a few pictures. We checked most all of our traps today, down to Augadak Point and part way up the south side. Mike caught five fox and shot one. I didn't have a thing; oh well, some days are like that. We've taken 72 fox total, trapped 19, snared 2, shot 51 in two weeks - not too bad!

A couple more miles of beach to hunt and trap and we'll have half the island covered. We think we can get them all, but the last few will be tough. The boat should be in late tomorrow night or early on Saturday.

June 8 (Friday) - We took the day off to get mail ready and because we were tired and due for one anyway. It is foggy too! I hope we can get on the boat to shower and wash clothes. I'm about out of underwear and socks. We read and I cut the fingers out of some wool gloves and sewed them up. The "Vestfjord" came in about 11:30 PM. They weren't going to let us come aboard for a shower and to wash clothes because they were behind schedule, but Fred Z. had a change of heart, so we got a quick shower and washed a load of whites. Hung clothes in cabin to dry and put away food.

June 9 (Saturday) - We packed four traps each and hiked over to Log Jam Creek (down by Ambush Bay described earlier). Checked traps and hunted up to Sandy Beach (long, straight beach on SW side between 41st and 39th parallel). We shot a female with a trap on her foot and thought it might be the first one Mike lost from the other side of the island, but she had pulled out his nails on his drag on the same beach. We shot at another one right there and may have knicked a foot, but he got away. Walked home by Shoran Station (nothing but a few boards left at Shoran).

June 10 (Sunday) - We walked over to Sandy Beach and hunted and set traps back to Log Jam Bay (that's the creek on the south side of the island between the 93rd and 94th parallel). Took six fox. Mike shot one as I was sitting down to eat my lunch. Because there's no food on Sandy Beach for fox, we don't have to work that hard at all. So we have hunted and set traps on everything south of the 41st latitude. Long hike; tired out again tonight. Really windy, gust to 50 MPH.

June 11 (Monday) - We checked out our old line today. Windy and cold all day. Took only two fox today. Mike's cooking chicken tonight; smells good. Knees ache tonight. Gettin old, I guess, but getting tougher all the time. Mike made eight servings of box mashed potatoes; we couldn't quite eat them all, but we had a can of peas each and 2-1/2 chicken thighs each. That's what all this walking and climbing does for my appetite.

June 12 (Tuesday) - Well, its been one month since I left Grand Junction. Seems a lot longer in some ways. But so far, the time here is going fast. We are really working hard, covering a lot of ground, and by the time we cook, do dishes, carry water and take care of filling stoves, heaters and lanterns, we don't have a lot of spare time. I haven't read my Playboy yet or put my bow or fishing poles together. Haven't written as many letters as I should either. Well, today we wrapped M-44 heads and put out a test line NW of the cabin. We put four M-44's in five locations different bait to find out what they will pull. We also shot two on the way. I shot em cause Mike is about out of ammo. One I shot low and the bullet bounced off the rock he was standing on

and broke his back. Pretty lucky shot but Mike was amazed. Only hiked a couple miles today. Mike bruised his heel and my knees ached so we took it easy. Grilled steaks tonight -- mmm good!

June 13 (Wednesday) - Weather is supposed to be foggy and rainy today. It isn't that bad but we are taking R&R today. Hope to get some clothes washed. Finished "The Thousand Mile War" I was reading; good book! Started a letter and did wash some clothes. Washed them in a big wash pan and rinsed them under the waterfall. They are dripping all over the cabin now! My spin dry cycle needs some work. Checked my rifle at 200 yards; it was six inches low which explains why I bounced the bullet off the rock before I hit that last fox. Mike is down to ten shells, so I's doing most of the shooting.

June 14 (Thursday) - We hiked to Log Jam Bay this morning. Mike's boot was rubbing his heel so we stopped and trimmed it off a little. I trapped two males on the whole line today. We saw the one in Startle Bay we knicked a leg on but he disappeared in the grass while I was trying to sneak on him from above. We set a few new traps on Sandy Beach, which is only a mile long, not two, and stashed our extra traps before we walked to the cabin. One of our longest hikes so far, about 12 miles. We got home early though, about 8 PM.

June 15 (Friday) - We were going to go from Sandy Beach to Krysi Point but the wind is gale warnings from that direction and it was foggy so we went the other way and checked traps from Gunner's to Log Jam Creek. I caught one male in trap number 3 but that was the only action. There was a bull sea lion on the north side of Augadak Point asleep, and I could have snuck up on him if I would have had my camera. I guess I'll have to carry one all the time. Got back to camp early, 7 PM. Ate grilled burgers and cleaned cabin. Mike burned some rubbish.

June 16 (Saturday) - Well, it started out to be a pretty normal day. We loaded the packs and headed for the north end of Sandy Beach to hunt and set traps to Krysi Point. We called the first beach and nothing came so we started to set traps and three fox came around the corner. Mike got two but he only had 10 rounds of ammo left to start with, so I snuck up to where he was and shot the third one. The day went on like that. We called two on one beach and were going to set traps in the middle. I laid my pack and rifle down and Mike said "come here, there's a sea lion carcass and a fox". He said, "get your rifle and two bullets"! I stepped up to where he was looking and about 10 yards away, two fox had their heads stuck inside this sea lion carcass. One looked up so I shot and the other one was right behind him, so I got them both with one shot. A few minutes later another one was coming down the hill to the carcass and one was peeking over the top. So I shot the one on top and as he rolled down the hill, the other one ran back up and I shot him and he rolled down right by the first one. On another beach, Mike called three up to about 10 yards, one right after the other. One had been carrying a pup and she put him down and came in to the hurt pup call. We

ended up with 25 fox today. Could have had two more but we both ran out of bullets. Got back to cabin about 11 PM. Real tired, knees sore, missed radio check too (I shot 18 fox today and Mike got 7 because I had more bullets).

June 17 (Sunday) - We slept in today and got going about 12 PM. We walked up toward Krysi Point but only half way to the end of our test M-44 line and worked back. We got three fox on M-44's. They pissed on the best lures and pulled the plain old bacon grease. Mike shotgunned one we walked right up on before we saw him and he snared one. I wore my gorillas today. My feet got wet but they are light, comfortable and sure-footed. We got back early about 7 PM. We were grilling steaks and having a beer on the deck and the fish were surfacing in the cove so I tried them again and caught one the first cast. They are greenling and run a pound and a quarter to 3/4 pound. The males have red spots and their meat is "blue". We'll try them for breakfast tomorrow. Can't wait to get some mail.

June 18 (Monday) - Didn't have our greenling for breakfast. Checked our line from Log Jam Creek to North Sandy Beach, probably a 9-10 mile hike. It was windy and foggy all day. Nose ran and glasses were constantly fogged or rained on. We only took two fox today. Mike snared one on the tundra our first time there, and he caught one in a trap in the middle of Sandy Beach, got back early tonight, 6:30 PM. We had our fish for supper, it was great! We'll have to catch some more of those! We got dishes done and talked and wrote in our diaries before radio check. The first three weeks went pretty fast, but the other seven may drag! Especially when we run out of fox!

June 19 (Tuesday) - The wind was blowing hard and light rain, but we needed to check traps so we went out anyway! It was miserable; we were soaked clear through. Water in our boots, wool pants heavy with water and T-shirts and shirts soaked with sweat under the rain coats. Glasses were constantly wet and fogged. We got two fox we needed to catch. Mike snared one and trapped one. The trap where he lost the first fox was sprung and pulled out to the end of the chain. There was a little piece of skin with whiskers on it!? We can't figure out what happened for sure; not enough tracking conditions in the gravel. Felt great to get into dry clothes when we got back. The wind and rain really got going after we got back.

June 20 (Wednesday) - We took R&R today. It was windy and a little fog, but no rain. But after being out in it all day yesterday made us want to stay dry. We read and wrote letters. I went down by the waterfall in the afternoon when the weather cleared a little. Mike got out the fishing pole later and caught some greenling for fun and then he caught a couple Dolly Varden trout down by the waterfall so we kept those for breakfast. I shot the 22 pistol at some cans in the ocean and I'm getting pretty good!

June 21 (Thursday) - Still windy but not raining. We checked M-44's NW and then hiked to the SW side of the island and checked traps from Sandy Beach to Krysi Point. We shot seven and trapped seven. Mike got two with the shotgun and I shot five with my rifle. Made some good, long shoulder shots. (Mike is out of ammo for his rifle until the boat comes.) Long hike home from Krysi Point!

June 22 (Friday) - Windy and raining again! We took the day off. I wrote letters and read. Mike tried fishing a little but it was slow and cold. We had a couple whiskey waters and played a game of cribbage before bed. Oh, we shot the pistol at some cans too.

June 23 (Saturday) - The boat will be delayed until Sunday because of the wind and high seas. The wind let up so we checked our line from Log Jam Creek to No. Sandy Beach. Mike trapped the one we knicked a leg on, finally! We had clipped her lower jaw too so it was good to get her! Windy and kinda wet. Mike carried a light pack and I just carried my rifle so it wasn't a bad hike. We ate four cans of chili and three beers each plus pickles, crackers and bread.

June 24 (Sunday) - Well, the weather finally cleared up, so we had a nice day! Even had sunshine from about 5 PM to 9 PM, our longest streak yet! We both took our cameras and took a lot of pictures. Checked our line from Gunner's around Augadak Point to Log Jam Creek. No fox taken and no sign observed. If you are trying to follow along, Log Jam Creek is the big drainage straight south of SE Cove on the other side of the island. Found out at radio check the boat will be here at 1 AM. Oh boy, a hot shower tonight and mail!!! 141 fox total.

June 25 (Monday) - The landing party (1) from the "Vestfjord" got here at 2:30 AM. Just the four guys from the boat were here this time. We got to watch a bad porno film while we washed all our dirty clothes, showered and ate breakfast. We got done about 6:30 AM (the one dryer was very slow) and came back and went to bed. Got up about noon! It was a beautiful day! The sun shined all day! We aired out our sleeping bags and finished drying clothes outside and read our mail. Boy the mail was great! We grilled steaks and are feeling good about everything! We plan to hit the last stretch of Virgin Beach tomorrow on the north side of the island (from the 88th parallel to Krysi Point) and Mike has a new rifle and more shells so we should do great!

June 26 (Tuesday) - We started out by checking our short line northwest of Gunner's Cove. Didn't catch anything! We saw a fox around the next point, but it saw us first and took off; it didn't stop or even slow up so we shot at it on the run with no success. Mike shot six altogether and we missed another. The fox just weren't out today, but we did find out Mike's new rifle shoots great and the solid nose bullets are fair. We set traps and M-44's all the way, but we ran out of time and equipment about a mile from Krysi Point. Wore my gorillas today because I

put shoe goo on my bean boots for better traction. They were worn smooth already.

June 27 (Wednesday) - Had wevos rancheros for breakfast! Good stuff! Along with red beer! It is really windy today and raining, so we won't go out. I'm trying to work up enough courage just to go to the latrine. Read all day. Reread letters again.

June 28 (Thursday) - Windy and rainy again today. Read and mended packs and jeans, and made one coin purse. Put my bow together and shot a few with Mike when the weather cleared late this afternoon. Read all our new magazines.

June 29 (Friday) - We checked traps from Kerisan Mt. to Krysi Point. The tide was low enough to get out to Pyramid Island (little island of NW side). We shot two fox on Pyramid Island and heard another; set three traps and two M-44's. Tide was coming in and we had to take our boots off and wade to get back off. We shot five fox and trapped two. We caught a four-week old pup outside the den. Long walk back from Krysi Point again, but sun was shining all the way.

June 30 (Saturday) - Ran our trap line from Gunner's Cove to Krysi Point. We got three adult fox and six pups. We had shot the pair before and the pups were on the beach looking for food. We finally covered the last beaches so we have been all around the island now. Traps are spread a little thin in spots, though. Long walk home again. We were late for radio check. Nice day, no sun, but no wind or rain.

July 1 (Sunday) - We checked our rifles this morning, they were both off again. Checked traps on our oldest line (Gunner's to Log Jam). Remade sets; washed out by the high waves. Pulled some traps to use on Krysi Point. No fox taken and no sign seen! Walked home from Log Jam. Was easy compared to walk from Krysi Point. We caught some Dollies in Log Jam - enough for a couple meals and some big ones 16-18 inches too!

July 2 (Monday) - Checked our line from Log Jam to N Sandy Beach. No fox or any sign. We got back about 8 PM.

July 3 (Tuesday) - We checked traps from Kerisan Mt. around Krysi Point to Puppy Shoot Cove. I got a pup on a M-44 out on Pyramid Island and shot one more, but had to leave two. Used a denning cartridge on one den and got a lac. female on an M-44 on Krysi Point. Also another fox carcass of a lac. female there. We don't know where it came from. I finally got some good sea lion pictures. There were two sleeping on the beach and we snuck up on them and woke them up. There was one pup barking in Puppy Shoot Cove but I didn't get a shot. Long walk home in the wind and fog; my glasses kept fogging. We were a little late for radio check too. Picked up lots of otlk home in the wind and fog; my glasses kept fogging. We were a little late for

radio check too. Picked up lots of otter skulls and top of a sea lion skull and skinned another one out.

July 4 (Wednesday) - Windy and cloudy but we checked our line from Gunner's to Krysi Point. We snuck up on the barking rock fox and Mike got a good shot and drew blood but she still got under the rock and was barking at us. Mike snared a little unbred bitch and trapped a male. We set more traps and M-44's and have things pretty well covered now. There wasn't anything around at Puppy Shoot Den but put in two M-44's. Really foggy and windy but we felt good about having things well covered and getting to take the next two days off.

July 5 (Thursday) - Windy and cold. We read most of the day. Mike reworked his 223 and I patched my longjohns and put shoe goo on my boots. I caught a few greenling and threw them back in the evening. I found two of the beers I lost at the waterfalls. Had a couple red beers and a couple burbon and branch and finally beat Mike in cribbage, tight game all the way.

July 6 (Friday) - R&R again; read in the morning because the wind was blowing. Shot my bow some and washed clothes. Mike sighted in his gun and took a shower. Pretty nice day; still a little windy.

July 7 (Saturday) - We checked traps from Kerisan to Barking Rock Cove. Mike trapped a male on Krysi Point. We caught 30-40 sea lions on the beach and got some good shots. I got a pup (last one I think) at the den at Puppy Shoot. We looked for scarface at Barking Rock but she wasn't there. I took a good fall, head first, scraped up my hands, my left one is stiff (it's hard to write), and strained my knees too. Mike gave me a 9.5 on the fall. I landed head downhill and with the weight of the pack, it was hard to get up. The stars were out last night, it was beautiful and amazing!

July 8 (Sunday) - We took a gallon of blazo and hiked to Barking Rock. We heard her in there and poured in the blazo, threw in a fuse and stood back. It wasn't as spectacular as we had hoped, but it burned pretty good! We checked the rest of our line back to Gunner's. My knees and hand are really sore today. We got in about 4 PM so I took a nap after we ate. Started reading "Coming to the Country".

July 9 (Monday) - R&R. Read, mended my long underwear, shot my bow, made tortillas, got bored! Windy all day, with some sunshine. Knees are better today, but my hand is still a little stiff.

July 10 (Tuesday) - Pretty nice day; sunny for awhile. Checked our line from Kerisan Point to Puppy Shoot and on to hazzard rock. I got one pup on Pyramid Island and pulled my trap there. Left three M-44's in case there are any survivors. I had to wade over and back today-COLD! More sea lions on Krysi Point. We belly crawled up on them and got some closeups. One big bull

started to charge Mike when he was about 20 feet away, but Mike jumped to his feet and the bull turned and headed for the water right away! Shot my bow after supper while Mike did radio check. We are both homesick and now that we are about out of fox, we are getting bored too! The trip to Buldir will be great for something different! We saw a fishing boat today offshore.

July 11 (Wednesday) - We checked our line NW from Gunner's Cove to Puppy Shoot. Mike snared the scar face fox from Barking Rock; she was a lactating female. We must have killed her pups when we burned the den. We took pictures and shook hands because we feel pretty sure that is the last fox on the island. We told Chris at radio check we thought we had all of them. We could see that fishing boat pretty good today. We caught some greenling and Mike got a nice Dolly for supper. We popped our bottle Austi and toasted a job well done! Mike wrote on the cabin wall that "July 11, 1984, Rat Island Certified Fox Free". So it looks pretty good that we will get to go to Buldir. Today is the end of seven weeks on the island.

July 12 (Thursday) - We took the day off today. The next four days we will run all our trap lines. Real nice day; no wind. We burned some trash and lumber from the old shack and we both took showers. My first one (sun came out and its almost 70 degrees). I'm sitting here now with no shirt on (can't believe it) and watching the fire. Mike is napping. I took a picture of myself to prove it!

July 13 (Friday) - Drizzle this morning so we waited until noon and it quit. We ran our line from Gunner's to Log Jam and rebaited everything. Mike caught a rat but that was all. No fox sign at all! Mike used a walking staff and didn't carry a rifle to keep from bumping his finger! Grass was wet but not a bad day all in all.

July 14 (Saturday) - Rained all day, 42 degrees. We stayed in and read. I mended my Jone's hat and wrote letters.

July 15 (Sunday) - Raining all day again, 42 degrees. We stayed in all day and read. Played some more cribbage. Really slow, boring day; these are the tough ones. I did some calisthenics to loosen up and that helped some. Can't wait to get home.

July 16 (Monday) - 48 degrees. It cleared up so we ran our line from Log Jam Creek to N Sandy Beach. No fox and no sign so that was good. Mike carried home a sea lion skull. We took pictures on Sandy Beach by the Jap shipwreck and wrote in the sand that "Rat Island, 1984, Kim H., Mike Goos Certify Fox Free" and got our pictures by that!

July 17 (Tuesday) - We heard an airplane this morning go over Rat, but of course it was too cloudy to see it. Ran our line from Kerisan Point to Puppy Shoot. There was a bunch (70) of sea lions on Krysi Point again but we didn't even take a picture this time. No fox and no sign again. We are sure we got all of them

now. Mike carried home another sea lion skull and I skinned out the last one. We have 4-1/2 skulls and 4 bacculum. Ate and slept good. I's reading "Clan of the Cave Bear" now and can't hardly put it down.

July 18 (Wednesday) - Seven days until the boat comes. We checked traps from Gunner's to Puppy Shoot. No fox and no sign. Pretty nice day. This is the first day I haven't worn long underwear. Mike carried back another sea lion skull. We got back really early 5:45 PM. I had a chance to shoot my bow and read too.

July 19 (Thursday) - 65 degrees. The sun is shining and it is really nice out. One week from today the boat will be here. We checked our line from Gunner's to Log Jam. The sun shined all day. We were down to just our T-shirts for several hours. I even got a little sunburned on my arms. We got back about 6 PM and both took showers. I even put on my LL Bean wool pants. I saw a jet today just as I got back to the cabin; the first since I've been here. Shot my bow tonight and watched a ptarmigan come in to dust herself in the hollow where my target is. We couldn't receive Adak on the radio at all.

July 20 (Friday) - It was sunny and really nice when we got up, but fogged in while we ate. I washed out some socks and underwear before we left to check our line from Log Jam to N Sandy Beach. No fox as usual. We hiked up the ridge from Sandy Beach without stopping; didn't stop for a rest at the stream and we even jogged down the hill to the cabin. We had the generator going to charge the battery and Mike heard a plane go over so we ran out and just saw a C-130 going over Gunner's. It may have been Dan giving us a low buzz.

July 21 (Saturday) - We read and laid around all day. Fred came up on the radio and we decided to leave our traps out while we go to Buldir. The "Vestfjord" is behind schedule and we probably won't see them until the 28th.

July 22 (Sunday) - Rained and the wind blew all day. I read "The Guns of Navarone" today. Not much else. Oh, we ran a beach litter survey in Gunner's Cove.

July 23 (Monday) - I was light-headed and had an upset stomach after breakfast. Could have been some moldy butter I ate. I laid down for a couple hours until I felt better. We didn't get started until 1:30 so we were late and the tide came up so we had to climb a couple more cliffs. We stopped to salvage some rope too, so we were really late when we got to Krysi Point. There were a bunch of sea lions and Mike got some more shots. We got back about 10 PM and missed radio check. It was foggy all day. Mike carried the last sea lion skull back.

July 24 (Tuesday) - We had rain May 30 and 31 for a total of .71 inches. In June it rained for seven days for a total of 2.46 inches. So far it's rained nine days in July for a total of 2.01

inches. We ran our line from Gunner's to Puppy Shoot. We got another bunch of rope and Mike started saving tow ropes. It was a long hike home again. Mike was going to climb Kerisan but it was grey and overcast so the pictures wouldn't have been very good anyway.

July 25 (Wednesday) - Pretty nice day; no wind, no rain, but no sun either. We checked and rebaited our line from Gunner's to Augadak Point and Log Jam and pulled some stuff and got pickup points lined up. Mike got three more tow ropes. Shot my bow tonight.

July 26 (Thursday) - Last day on the trap line. Ran the line from Log Jam Creek to N Sandy Beach. There was thick fog at times and the sun was out at times. I took off my wool shirt on Big Sandy Beach and just wore my T-shirt. We beachcombed on Big Sandy and threw out a bunch of floats. The fog was thick when we started to the cabin but the sun broke through halfway back and we jogged the last 1/4 mile. We both took showers and it was great. We finally had a wind break up by the shower. I shot my bow after supper and Mike drank beer and worked puzzles. I won three of four in cribbage.

July 27 (Friday) - We slept in until 10. I cleaned skulls and we packed all day. We fished awhile before supper until we got tired of catching greenling. We got quite a lot of our stuff packed. No one came up on radio check. The "Vestfjord" will probably get here about midnight tomorrow!

July 28 (Saturday) - We packed our gear all day and played cribbage and cleaned skulls waiting for radio check. At radio check we found out the boat will be here tomorrow morning at 5:30 AM. So we set our beds up again and got out our sleeping bags again.

July 29 (Sunday) - We didn't sleep much and got up about 6 AM. The boat didn't get here until 7:45. We got loaded and left for Buldir about 9:30.

MAMMAL OBSERVATIONS

Sea otters and harbor seals were abundant everywhere except on Sandy Beach.

Every time we were out on Ayugadak Point we could see or hear sea lions on the island offshore.

Rats were abundant on the beaches. We noted that rat sign became more evident in open areas of the beaches as fox numbers declined.

May 30 - Saw 5 killer whales at mouth of Southeastern Cove.

June 1 - Old bull Steller's sea lion on Ayugadak Point. Heard others on small off shore island.

June 15 - One bull Steller's sea lion on Ayugadak Point.

July 7 - 30 to 40 Steller's sea lions on Krysi Point.

July 10 - 25 to 30 Steller's sea lions on Krysi Point.

July 17 - 70 to 80 Steller's sea lions on Krysi Point.

July 23 - 40 to 50 Steller's sea lions on Krysi Point.

BIRD NOTES

WATERFOWL

Mallards, Northern Pintails, Greater Scaup, Northern Shovelors, Aleutian Green-winged Teal, Harlequin Ducks and Common Eiders.

RAPTORS

Bald Eagles and Peregrine Falcons. A bird that may have been an Osprey or an eye-stripe Bald Eagle was also observed.

COASTAL

Parasitic Jaegers, Glaucous-winged Gulls, Pelagic Cormorants, Rock Sandpipers, Laysan Albatrosses, Black Oystercatchers, Ancient Murrelets, Red-faced Cormorants, Common Loons, Fork-tailed Storm-Petrels, Whiskered Auklets, Crested Auklets and Ruddy Turnstones.

UPLAND

Winter Wrens, Rock Ptarmigan, Rosy Finches, Common Ravens, Lapland Longspurs, Snow Buntings and Song Sparrows.

TABLE A
RAT ISLAND FOX NOTES - DAILY LOG

Dates	Males	Females	Unbred	Placental Scars	Others
5/25	4	1		1-5	
26	6	2	1	1-Unknown	
27	0	0			
28	1	1		1-6	
5/29	1	2		1-6, 1-Unknown	
30	6	5	1	1-11, 1-10, 1-6, 1-5	
31	1	2		1-8, 1-7	
6/ 1	2	2		1-7, 1-6	
2	0	0			
3	1	0			
4	3	5	1	1-8, 2-6, 1-Unknown	
5	2	5	1	1-11, 1-10, 1-6, 1-Unknown	
6	5	10	4	1-10, 1-9, 2-6, 1-4, 1-2	
7	1	5	3	2-8	
8	0	0			
9	1	3		1-8, 1-6, 1-Unknown	
10	4	3		1-8, 1-7, 1-5	
11	2	0			
12	1	2		1-10, 1-4	
13	0	0			
14	2	0			
15	1	0			
16	8	17		1-11, 2-10, 3-9, 2-8, 3-7 1-6, 1-4, 1-Unknown	
17	1	4		1-8, 1-6, 2-Unknown	
18	1	1		1-11	
19	0	2			
20	0	0			
21	6-1/2	7-1/2	1	1-10, 1-8, 1-7, 2-6, 1-5	1-Undeterm. Adult Fox
22	0	0			
23	0	1	1		
24	0	0			
25	0	0			
26	3	3		1-11, 1-8, 1-6	
27	0	0			
28	0	0			
29	3	4		1-12, 1-6, 1-5, 1-4	1-4 Week Pup
30	1	2	1	1-10	6-4 Week Pups
7/ 1	0	0			
2	0	0			
3	0	2		2-Unknown	
4	1	1	1		3-5 Week Pups
5	0	0			
6	0	0			
7	1	0			1-5 Week Pup
8	0	0			
9	0	0			
10	0	0			1-6 Week Pup
11	0	1		1-7	
7/12					
- 8/6					
TOTAL	69-1/2	93-1/2	20	73 10-Unknown 63-7.40 (466 Scars)	12-Pups

TABLE B
METHODS USED AND RESULTS

May 25 - July 11, 1984

<u>Method</u>	<u>Adult Fox Taken</u>
Called and shot	75
Shot	28
Trapped	47
Snared	8
M-44	<u>5</u>
Total	163

<u>Method</u>	<u>Time Expended</u>
Traps	2,893 Trap Nights
Snares	904 Snare Nights
M-44	<u>942 M-44 Nights</u>
Total	4,739

July 12 - August 6, 1984

<u>Method</u>	<u>Adult Fox Taken</u>
No Fox Taken	0

<u>Method</u>	<u>Time Expended</u>
Traps	2,369 Trap Nights
Snares	810 Snare Nights
M-44	<u>911 M-44 Nights</u>
Total	4,090

GRAND TOTALS

<u>Method</u>	<u>Amount</u>
Traps	5,262 Trap Nights
Snares	1,714 Snare Nights
M-44	<u>1,853 M-44 Nights</u>
GRAND TOTAL	8,829

TABLE C

RATE OF CAPTURE

May 25 - July 11, 1984

Method	Adult Fox	Rate
2,893 Trap Nights	47	61 Trap Nights/Fox
904 Snare Nights	8	112 Snare Nights/Fox
942 M-44 Nights	5	188 M-44 Nights/Fox

TABLE D

TRAP BAIT/LURE RESULTS

May 25 - August 6, 1984

Lure	Fox	Trap Nights	Rate
BFG	4	68	1/16
Super Call	2	88	1/44
Foxy	7	135	1/19
Crow Creek	8	97	1/12
Dakota	3	42	1/14
C-50	1	3	1/3
Pro's Choice #3	0	5	0/5
Urine	2	27	1/14

From June 11 - August 6, 1984, trap nights were not recorded per lure type.

May 25 - August 6, 1984

Lure	Fox
Foxy	14
Super Call	3
BFG	5
Dakota	8
Crow Creek	8
C-50	5
Pro's Choice #3	1
Urine	2
Bung Hole	1
Total	47

Due to differing amounts of bait/lure available and used, a personal rating system of 1-10 has been assigned in the following list. A score of ten is the highest rating and a one is the lowest rating. Rating basis includes attractiveness, durability and ease of use.

Lure	Rating
Foxy	8
Super Call	3
*BFG	8
Dakota	8
**Crow Creek	9
C-50	7
Pro's Choice #3	2
Urine	4
Bung Hole	5

*BFG may be available through: Louis Huffman, P. O. Box 1109, North Platte, NE 69103.

**Crown Creek, C-50 and Dakota are available through: Caroline Corr, P. O. Box 5, Steele, ND 58482.