STATE of ALASKA

MEMORANDUM

1981

DATE: November 4, 1981

TO: Jim Faro
Regional Management Coordinator
Anchorage

TELEPHONE NO.: 842-5925

FILE NO.:

FROM: Ken Taylor
Area Game Biologist
Dillingham

SUBJECT: Round Island Report
Summer 1981

There was considerable excitement on Round Island this season. For some reason all the close calls and near catastrophes seemed to occur this summer after a couple of relatively uneventful years. Incidences included Armstrong Air's wrecked 206 after dropping off visitors, Nanalook and crew's attempt to take their "subsistence walrus" from the island, several harrowing experiences with "Benthos Bob" (a polite nickname attached by Taggart to a kid from the lower 48 who brought out some visitors in a skiff from Togiak) and several others of a less dramatic nature. We were reminded only too vividly how dangerous a place Round Island can be and how lucky we have been so far not to have had any serious accident. Jim, Cindy and I feel its necessary to make several changes in the Round Island operation next year.

First, we need to modify the information we send potential visitors to more accurately describe the potentially harsh conditions and transportation difficulties. Round Island is no place for a 78 year old overweight lady with high blood pressure. Attached is a new version of the form letter that should accompany the brochure when people request information on the Sanctuary.

Second, we need a more adequate rubber raft. The present raft is too small to be safe in ocean swells and is too slow to effectively travel against the tide if there is a headwind. Jim risked his life on at least two occasions saving people or their boats this summer. I will check with Calkins to see if the OCS raft is available the next time I'm in Anchorage.

Third, communications must be improved from the island to boats in the area and from Dillingham to the island. A marine VHF radio is essential for communicating with boats that wish to visit the island so their arrival can be coordinated. Portable VHF's are necessary for communicating with boats that arrive on the west side without a permit.

Visitors who arrive by boat next year will be required to arrive at a designated time (between 9 and 11 A.M.) or to contact island personnel via Marine VHF for permission if they wish to come ashore at any other time.

Cabin space, as you well know, is severely limited on the island and since the CIP for a new facility didn't pass last year, we decided on constructing an addition which we began this August. The addition will be 12x14 and should improve living conditions immensely. Next spring I am planning to help Taggart and Zabel complete the addition. This activity should coincide with the peak of the herring fishermen visitors, and it will be easier to handle them with three of us there.

Attachment

STATE

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF FISH AND GAME

BOX 199 – DILLINGHAM 99576

Greetings,

An excursion to the Walrus Islands State Game Sanctuary is a memorable experience. There are few places as wild and unspoiled so teaming with wildlife as Round Island, the main island in the sanctuary. As managers of the sanctuary we have kept human disturbance and development to a minimum. Visitor activities are governed by a set of rules designed to prevent the harassment of wildlife. These rules will be listed on your permit which you must read before you leave for the island.

Getting to and from Round Island is often very difficult. You should be on a flexible schedule as one rarely makes it to and from the island in the time frame planned. While air charter operators in Dillingham and King Salmon have aircraft suitable for landing near the island, weather conditions are ~~usually~~ suitable for landing only about 20% of the time. ~~A day's notice is generally sufficient for reservations, however.~~ Two week stretches of rough seas are not uncommon. If you wish to travel by air reservations should be made 48 hrs. in advance.

We keep a daily radio schedule with island personnel who provide current weather and landing condition information. If weather conditions are poor or if you prefer to travel by boat to the island, a charter might be arranged with one of the fishing boats at the Dillingham city dock or small boat harbor. There are no full time charter operators in the Bristol Bay area, however.

Round Island is a very rugged and often extremely inhospitable place. Visitor use areas contain none of the standard public facilities. Although fresh water is plentiful, firewood is nonexistant. Visitors must bring their own tents and camping gear including food, stove, sleeping bag, good rain gear and warm wool clothing. ~~Down~~ clothes or sleeping bags are not recommended in this damp coastal area. Tents must be good quality, ripstop nylon, waterproof, have extra long stakes and be capable of withstanding winds up to 75 m.p.h. Wall tents or canvas pop tents are inadequate. Bring enough food to last an extra week.

The best months for visiting Round Island are June, July and August. Permits are available at the following Fish & Game offices: ADF&G, Box 199, Dillingham, AK 99576; ADF&G, Game Division, Box 37, King Salmon, AK 99613; ADF&G, Game Division, 333 Raspberry Rd. Anchorage, Ak 99502. If you pick up your permit in Anchorage, you must stop by or notify the Dillingham office before you leave for the island.

If you need any additional information please write or call the Dillingham office.

Sincerely,

Ken Taylor
Area Game Biologist
Dillingham (907) 842-5925

ROUND ISLAND REPORT

1981 FIELD SEASON

Jim Taggart & Cindy Zabel

ROUND ISLAND VISITORS

Thirty-five groups of visitors came to Round Island during 1981. Eight of these parties camped on the island and 27 of them stayed for only a few hours. The number of parties that camped on the island was similar to 1980 (7 parties), but the number of day visitors doubled (17 groups in 1980). This was due primarily to increased visitation by herring fishermen. Twenty of the 27 day visitors were fishermen from the herring grounds who came to Round Island during a three-week period. The 8 groups of campers used float plane transportation, and all of the day users arrived by boat, with one exception. All visitors were either from Alaska or were Bristol Bay fishermen, with the exception of two out of state groups who camped on the island.

Several problems arose with visitation by herring fishermen. Walruses are hauled out only on the north end of the island (the "spit") most days. The only access to these animals is traversing across an 800 foot elevation, 45 degree slope. This slope is usually covered with snow and/or iced up until early June. Consequently, access to the walruses is dangerous and slow. The time necessary to traverse back and forth to the spit is at least three hours under these conditions. It is necessary for an ADF&G employee to lead groups of visitors across these snow gulleys by cutting steps with an ice ax. Problems arose when boats arrived while both employees were already engaged in leading groups to the north end of the island. Unless boats arrive to the island at the same time, only two groups of visitors can be accommodated by two employees. On several occasions, boats were not met by employees because other boats had arrived earlier

and visitors were being led to view walruses. This lack of supervision resulted in boats blowing horns, skiffs running around groups of animals, and many stampeding walruses. Problems were amplified because permits were issued for a ten-day period, and ADF&G employees never know when boats would arrive within that time period. A common occurrence was many boats to arrive on the same day when sea conditions were calm and the sun was shining. To avoid similar problems in the future, we propose that employees on the island have scheduled radio stand-by on a VHF radio every morning during the herring season. Boats with permits should be required to notify Round Island personnel by VHF on the morning of the day they wish to visit. Arrival of boats can be scheduled so that all groups of visitors are met by ADF&G employees. If boats do not have VHF aboard, we suggest that they be required to arrive at the island no later than a pre-arranged morning hour that is stated on the permit.

Boats that were anchored offshore of Round Island characteristically would drag anchor except when the seas were flat. There is no protection from heavy seas and the bottom is very poor for anchoring. It is important for boat drivers to be notified that any wind will make it impossible for them to leave their boat and view walruses.

On two occasions, visitors arrived by large skiffs (approximately 20 footers). The skiffs were anchored while the people camped ashore. The winds picked up during the night on both occasions. Both boats were dragging anchor and were almost lost. ADF&G personnel had to launch their small Avon in 7 foot white-capping seas to rescue one of the boats. This was a very hazardous procedure and it will not be repeated in the future. Parties

interested in anchoring a skiff off Round Island should be strongly discouraged.

Transportation by plane also resulted in serious problems. Early in the season, a 206 float plane flipped over while taxiing. Fortunately, the pilot had already dropped off the elderly visitors (who would not have survived a submersion in the cold water) before he flipped his plane. The single pilot remaining in the Bristol Bay area who will fly to Round Island lands only when the seas are flat calm. This makes his service relatively safe, but extremely infrequent. Consequently, at least 50% of the parties attempting to fly from Dillingham to Round Island never got beyond Dillingham.

Although we never talked to these parties-,the pilot told us that some of them were extremely angry that they hadn't been adequately warned of the tenuous transportation from Dillingham to Round Island.

Air transportation is often very disruptive to hauled out walruses, in addition to being unreliable. Thus, visitors inquiring about transportation to Round Island should be encouraged to charter boats, and to use air charter only as a last resort.

Many visitors brought insufficient food supplies and inadequate camping gear, as has been true in past years. Several individuals felt that they had not received adequate warning about Round Island's strenuous topography. Parties who came adequately prepared, considered their experience first class. It is imperative that information given to potential visitors be written so that they will properly prepare for the difficult conditions they are likely to encounter.

ROUND ISLAND VISITORS

APRIL 28, 1981 - AUGUST 31, 1981

DATE	NUMBER VISITORS/ PARTY	TOTAL LENGTH OF STAY	# "UNPLANNED WEATHERED-IN" DAYS	NUMBER MAN-DAYS	NUMBER CAMP-DAYS	MODE OF TRANSPORTATION
April 27	6	2 hours		6	0	FISHING BOAT
May 2	4	1 hour		4	0	FISHING BOAT
May 3	4	1 hour		4	0	FISHING BOAT
May 4	2	2 days		4	2	FISHING BOAT
May 7	4	5 hours		4	0	FISHING BOAT
May 7	3	2 hours		3	0	FISHING BOAT
May 8	15	4 hours		15	0	FISHING BOAT
May 8	5	1 hour		5	0	FISHING BOAT
May 9	8	5 hours		8	0	FISHING BOAT
May 10	12	5 hours		12	0	FISHING BOAT
May 10	8	6 hours		8	0	FISHING BOAT
May 14	3	1 hour		3	0	FISHING BOAT
May 14	4	1 hour		4	0	FISHING BOAT
May 14	4	1 hour		4	0	FISHING BOAT
May 14	4	1 hour		4	0	FISHING BOAT
May 14	5	1 hour		5	0	FISHING BOAT
May 15	8	4 hours		8	0	FISHING BOAT
May 15	6	3 hours		6	0	FISHING BOAT
May 15	4	2 hours		4	0	FISHING BOAT
May 15	4	1 hour		4	0	FISHING BOAT
May 23	2	2 days		4	2	FISHING BOAT
June 9	3	2 hours		3	0	FISHING BOAT
June 16	1	5 days	2	5	5	Arr: Fishing Boat Dept: Plane
June 17	2	4 days	2	8	8	FISHING BOAT
June 24	3	3 hours		3	0	PLANE
June 24	3	5 days	2	15	12	PLANE
July 16	3	10 days		30	30	PLANE
July 18	20	2 hours		20	0	FISHING BOAT
July 22	11	5 hours		11	0	FISHING BOAT

DATE	NUMBER VISITORS/ PARTY	TOTAL LENGTH OF STAY	# "UNPLANNED WEATHERED-IN" DAYS	NUMBER MAN-DAYS	NUMBER CAMP-DAYS	MODE OF TRANSPORTATION
July 25	7	6 hours		7	0	FISHING BOAT
July 25	4	2 days		8	0	FISHING BOAT
July 29	4	4 days	2	16	20	PLANE
August 3	3	7 days		21	18	Arr: PLANE
						Dept: FISHING BOAT
August 7	2	4 hours		2	0	FISHING BOAT
August 9	9	7 hours		9	0	FISHING BOAT
35 Groups	190	76 hours		277	97	
		41 days				

RED FOX STUDY

BACKGROUND

Red foxes have frequently been described as asocial, highly monogamous Canids (Scott, 1967; Fox, 1975; Kleiman, 1977). Family groups have been thought to be composed of a breeding pair (Murie, 1944; Scott, 1943; Storm, 1965; Burrows, 1968). However, due to their secretive behavior, direct observation of red foxes in the wild has been rare. Recent evidence indicates that red foxes may form social groups in some habitats (Macdonald, 1979). A small proportion of communal dens were discovered in Wisconsin (Pils and Martin, 1978). However, the role of different adults in pup rearing at communal dens has not been determined.

Social behavior of red foxes was observed on Round Island (Walrus Islands, Bristol Bay, Alaska) from May through September 1980, and from May through August 1981. Foxes on this island are tolerant of human observers and are undisturbed when followed at close distances by people.

OBJECTIVES

1. Identify the number of active dens with pups and determine the number of adults associated with each den. Determine the number of monogamous and polygamous family groups, and the number of dens with non-lactating foxes acting as helpers.
2. Determine population density.
3. Establish lineages and relatedness of adults comprising "family groups".

4. Determine survivorship of cohorts.

PROCEDURES

Adult foxes were captured by firing 2 cc darts from a Cap Chur pistol. Drug dosages were based on those used by Dennis Voight (1978), in a ratio of 7:3 Ketamine:Acepromazine. Barbless needles were used so the dart would fall out and thus not frighten the fox. Dosages higher than those used by Voight were needed. This may have been due to heavier foxes (the average weight of Round Island foxes was 11.8 pounds), and/or drug back-leak associated with barbless needles. With the consultation of Al Franzman and Ken Taylor, dosages were increased from an initial 1 cc to 1.5 cc/fox.

Each fox was ear tagged with a small, numbered Roto tag. After tagging, foxes were weighed and measured.

Pup foxes were captured primarily with snares set in dens. Depending on the age and size of the pups, the minimum strength fishing line necessary to hold pups was used (#2-#10). In each den, 30-50 fishing line snares were tied to grass tussocks. Snares were set at one den at a time and then watched until adults arrived to deliver birds and call pups out of the den. When pups came out of the den holes, they ran through the den playing with one another. Consequently, their feet and legs became tangled in the snares. Snared adults broke the line without even realizing they had been caught. After several pups became snared, the den area was entered and captured pups were ear tagged and sexed.

Pup survivorship from 1980-1981 was approximately 42% (five out of twelve marked pups remained on the island). Six males, five females, and one unknown sex pup were tagged in 1980. Of the five survivors, three were females, one was male, and one unknown. More data are needed before conclusions can be drawn about differential survival of sexes.

Four family groups raised pups during 1981. Four males, seven lactating females, and two female helpers comprised four denning groups. One family group was monogamous, one was polygynous, and two were polygynous with an additional helper.

A total of 26 pups were raised in four dens; ten females and ten males were marked and sexed.

DEN	REPRODUCTIVE UNIT	HELPER	# MALE PUPS	# FEMALE PUPS	SEX UNKNOWN	TOTAL
1	Monogamous	no	2	0	1	3
2	Polygynous	no	1	5	1	7
3	Polygynous	Yes	6	2	2	10
4	Polygynous	Yes	1	3	2	6
	TOTALS		10	10	6	26

The average litter size was 3.7 pups per female (n=7). The breeding male from den #1 was marked in 1980 when he was a pup. He was the only young breeding male and also the only mongamous male (all other breeding males had large, blunt canines). The female from den #1 whelped at the same den during 1980. However, in 1980 she was polygynous. Her mate did not survive to 1981, nor did the second

female. Interestingly, her yearling mate in 1981 occupied an overlapping/adjacent territory next to his polygynous father's territory. (NR male).

In 1980, NR's den was located on the north ridge of the island. He was monogamous, but had a female helper in addition to his mate in 1980. During 1981 he mated with two new females in a den that was not used in 1980 (den #2). One of these females, ST, did not raise a litter in 1980. However, she defended an area around a den site and regularly rested at this den. She gave brith to pups at the same den in 1981. Thus, two females (ST and female #1) remained in the same territory for two consecutive summers, and both of them acquired new mates during this period.

NR's family group was observed intensively during June while the females were nursing. The two females raised their pups in separate dens (located about 200 yards apart) until they were weaned, at which time they combined the litters into one den. The male delivered birds to both females at their respective dens. On June 16 pups were first seen outside of both dens (2½ weeks earlier than in 1980). One June 23 the two females were both seen at the larger of the two dens with seven pups. The smaller den was never used again. This same pattern was observed during 1980 at den #1: two females nursed their litters in separate dens and combined them into a communal den after the pups were weaned.

At the beginning of the season, box traps were baited and tied open in den areas to habituate pups to them. After most of the pups in a den had been snared, the remainder were captured in box traps. Pups were selectively trapped by manually releasing the door from a distance.

Information on home range of foxes was gathered by walking trails around the island once daily, weather permitting. Identity and location of foxes was recorded on an aerial photo of the island.

Family groups were determined from den observations made daily.

RESULTS AND DISCUSSION

A total of 24 adult foxes were captured on the 1.9 square mile island. Three additional adults associated with denning activities were not marked. Therefore, the population estimate is a minimum of 27 adults. (No foxes, other than these 27, were seen from July 11 to August 31). Compared to average fox densities of approximately 2 square mile in the midwestern U.S. (Ables, 1975), this is an extremely high density.

The adult sex ratio was skewed toward females 17:10, compared to a pup sex ratio of 10:10. Studies in the midwestern U.S. found that male fox pups disperse at a higher rate than female pups, and travel further from their birth place than females do (Storm et. al., 1965). Thus, the skewed sex ratio on Round Island may be the result of a higher proportion of males dispersing onto the ice pack during the winter. The adult ratio may be highly variable depending on whether Bristol Bay freezes. During 1980 the bay froze sufficiently to allow dispersal to the mainland (Ken Taylor, pers. comm.).

Past history of the adults associated with the other dens is unknown. Fifty-two percent of the adult foxes (14 out of 27) were not associated with denning activities. These non-breeders were often seen in pairs of triplets, playing together or sleeping in close to each other. The north ridge of the island and the top of the island, where there were no active dens in 1981, were the locations where these non-breeders were most commonly seen.

On three occasions, female offspring of the female at den #1 were observed going into the den area. The mother tolerated these yearlings and made no attempt to chase them away. However, on two occasions, the yearling male who was the 1981 father at this den and who was not the father of these yearlings, aggressively chased the females away. This observation led to the hypothesis that helpers to breeding foxes may be offspring that are tolerated only when the parents remain together as a family unit. If one parent dies or disperses, the new parent may not recognize the offspring and consequently may not allow them to help raise pups. More data will be needed to test the validity of this hypothesis.

RED FOX STUDY

SEX	WEIGHT POUNDS	OZS.
F	12	8
M	11	8
F	13	0
F	10	8
F	12	8
M	10	8
F	11	8
M	10	0
M	11	0
F	10	8
M	13	0
M	12	12
F	10	8
F	11	8
M	14	0
F	12	8
F	13	0

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WALRUS STUDY

BACKGROUND

Nine six-month transmitters were successfully attached to the tusks of walruses during 1980. Fall-off rate was minimal. During 1980, information was gathered on the haul-out patterns of individual walruses. Walruses spent 7-10 days away from Round Island (presumably feeding at sea), and 1-3 days hauled-out on the island resting.

This information is very important for aerial surveys that are conducted to estimate the size of the walrus population. However, in order to more accurately understand the data gathered from aerial surveys, information on the haul-out patterns of walruses on the ice pack is sorely needed. Due to the expense and time required to work on the pack ice, transmitters that will last several years are necessary.

Round Island is the only place in the U.S. where walruses consistently haul-out on land to rest. Thus, it is the ideal place to test tagging techniques and to develop a long-term attachment methods.

OBJECTIVES

1. Test the electronic and attachment durability of 18-month transmitters.

2. Document the arrival of these transmittered walruses the following spring.

PROCEDURES

From the data gathered during the 1980 field season, we concluded that transmitters attached with the hydraulic tool were more durable than those attached with the latex banding tool. However, the hydraulic tool was heavy and cumbersome to operate. During the winter (1980-81) parts of the hydraulic tool were redesigned or remachined from new materials to decrease the weight of the tool from 26 to 15 pounds. Simultaneously, the air supply tanks were reduced from 20 to 10 pounds. In addition, valves with larger orifaces were installed to increase the speed of the tightening procedure, and the air/water recharge procedures were simplified.

The transmitters were purchased from Telonics Electronic Corp. They were different from the transmitters used during the 1980 field season (purchased from Cedar Creek Bioelectronics Lab) in the following ways:

1. Larger, high output lithium batteries were used.
2. The battery was hermetically sealed in a bronz case rather than in scotch resin.
3. Pulse rate was reduced from 75 to 40 beats per minute.
4. Antenna material was changed from stainless steel cable to a urethane encased spring (used successfully on grey whales by Bruce Mate).
5. The antenna was connected to the top of the transmitter where it turned 180 degrees and paralleled 3/4" along the transmitter tube (previously the antenna extended straight out of the bottom of the transmitter).

6. The overall length of the transmitter increased from 2¼" to 3½". The diameter decreased from .8" to .6".

DISCUSSION

At the beginning of the 1981 season, the research goal was to attach transmitters to both tusks of a walrus so that transmitter malfunction rate and fall-off rate could be estimated. However, we were unable to find walruses that were both approachable and that had both tusks accessable for tagging. Thus, we resorted to attaching single transmitters to walruses. Due to bad weather, uncooperative walruses, and large amounts of time spent attempting to double tag animals, we were able to attach only nine of the eighteen transmitters that were taken into the field.

The durability of transmitters, and the arrival of walruses equipped with long lived transmitters will be determined during 1982. Although relocation of these transmittered walruses next season will confirm the attachment and electronic durability, failure to relocate them will be inconclusive. Because the walruses are not double banded, fall off and electronic malfunction rates are impossible to calculate. In addition, there is an unknown probability that transmittered walruses will fail to return to Round Island.

One encouraging resight was made during the 1980 season. A transmitter that was attached during the 1980 season was visually resighted in 1981. It was still securely attached and it appeared to be in good shape.