WALRUS ISLAND STATE GAME SANCTUARY

ANNUAL REPORT 1997

Prepared by

Alaska Department of Fish and Game

TITLE: **WALRUS ISLAND GAME SANCTUARY ANNUAL REPORT**

REPORT PERIOD: JANUARY 1 - AUGUST 31, 1997

PROJECT LOCATION: GMU 17A (Round Island, Northern Bristol Bay)

PROJECT GOALS:

A management plan for the Walrus Islands State Game Sanctuary was drafted in October 1992. This plan has not been finalized and no formal management goals have been developed by the Department. In the interim, management goals for the Sanctuary are to:

1) protect walrus and other wildlife within the Sanctuary;
2) provide an opportunity for scientific and educational study of walrus; and
3) provide an opportunity for the public to view, photograph, and enjoy all wildlife within the Sanctuary.

Two wildlife technicians, Rick Raymond from the Alaska Department of Fish and Game (ADFG), Division of Wildlife Conservation and Steve Rice from the United States Fish and Wildlife Service (USFWS), Marine Mammal Management were stationed on Round Island in the sanctuary from May 3 through August 14, 1997. The Round Island duties were shared between the two staff members, and included: patrolling the island for access violations; daily walrus (*Odobenus rosmarus*) counts; documenting walrus disturbance; Steller sea lion (*Eumetopias jubatas*) counts; monitoring three seabird species; and visitor services.

WORK ACCOMPLISHED DURING THE PROJECT REPORT PERIOD:

Facility Maintenance

Facility maintenance was a high priority this season due to deteriorating conditions of the staff facilities. Substantial work was done to preserve existing structures and construct

new facilities. The staff cabin and all out-buildings were scraped and painted with a coat of stain similar to the original color of dark brown. The cabin window and door frames were scraped, caulked and painted red. The interior furnace chimney pipe was sanded and painted with a heat resistant black paint. The cabin walkway was reinforced in several areas.

Two tent platforms for public use were constructed and preserved. An additional platform was constructed near the visitor water supply, allowing more convenient access to the water and mitigating soil and plant degradation. Approximately 48 feet of new board walk was constructed and installed along portions of the trail deemed hazardous. All new construction was preserved with raw-hide stain.

A new marine VHF antennae was installed on the northwest corner of the cabin. A new single side band (SSB) radio was installed inside the cabin and an antennae tuner was installed on the southeast corner of the cabin. A wind generator, obtained to supplement the solar array, and associated tower were installed adjacent to the cabin in September.

PROGRESS TOWARDS MEETING GOALS:

Cooperative staffing agreement

The 1997 season marks the fifth year of cooperative staffing on Round Island. A cooperative agreement between ADFG and USFWS for mutual support of the Walrus Islands Game Sanctuary program was signed and implemented in the spring of 1993 and has extended through the 1997 field season. ADFG and USFWS each agreed to provide one staff person and one half the transportation and supply costs. ADFG supplied all facility and logistics support during this field season; USFWS supplied groceries while in the field. ADFG and USFWS field staff shared responsibility for sanctuary management and walrus research activities while on the island. ADFG was primarily responsible for sanctuary management and the USFWS was primarily responsible for walrus research.

Round Island Walrus Hunt

In March 1995, the Alaska Board of Game adopted regulations that enabled ADFG (for the first time in 35 years), to issue access permits allowing the discharge of firearms by local residents for the subsistence harvest of ten walrus on Round Island. In response to this regulatory change, a management agreement and plan to regulate the hunt was developed and signed by ADFG, USFWS, Qayassiq Walrus Commission and the Eskimo Walrus Commission.

1995: The Round Island walrus hunt was conducted between October 1 and October 31, with a harvest quota of 10 walrus. Ten bull walrus were harvested, and an additional 4 animals were wounded and not recovered. An observer from ADFG and USFWS was present during the hunt to monitor walrus numbers and behavior and collect biological samples from harvested walrus. A summary of the hunt is outlined by L. J. Van Daele in a 1996 ADFG report to the Alaska Board of Game.

1996: From October 1 to October 31, 1996, a walrus hunt similar to the 1995 hunt was held on Round Island. The allowed harvest was ten bull walrus, with 6 taken and 1 lost. Observers monitored the hunt and collected biological samples from harvested walrus. The hunt was determined a success and no problems were identified that would modify hunt activities. However, there was local interest in increasing the harvest quota and modifying the hunting period. Representatives of the Qayassiq Walrus Commission (QWC) petitioned the Board of Game to increase the harvest quota to 20 animals, including those struck and lost, and change the season dates to September 20 to October 20.

1997: A subsistence walrus hunt was again held on Round Island during 1997. The season and quota changes requested by QWC in 1996 were implemented. Hunt information received by the Department indicates that 19 animals were struck by local hunters, with 15 animals retrieved and 4 animals lost. Biological samples taken by agency staff were similar to previous years.

Staff Exchange Program

The Department provides sanctuary staff a leave period during the season if suitable alternate staff, and funding, are available. Rick Raymond was able to leave the island between June 25, 1997 through July 5, 1997. During that time, Dan Grangaard, a technician from the Tok area office, and Craig Gardner, the Tok area biologist, served as replacement staff. Both volunteer staff assisted in the daily walrus counts, maintained facilities and trails, and retrieved ivory from dead, beach-cast walrus.

On the evening of July 4, Craig Gardner slipped while climbing and sustained severe injuries to the right side of his face. Staff were unable to control bleeding from the injury, and he was evacuated via helicopter to Dillingham where he received medical attention.

VISITOR PROGRAM:

A total of 112 people visited the island this season, representing camping and day use visitors. Day use was significantly greater than 1996, and reflected the excellent weather conditions present throughout most of the summer. Camping use declined sharply and this type of use continues to be under utilized by the public.

Day Visitor

There were 83 day use visitors (16 in 1996) from 12 different vessels; nine fishing boats brought a total of 25 visitors; one fish tender brought three visitors; one private boat brought seven visitors; one floating processor brought 25 visitors; and one charter vessel brought 16 visitors during four trips to the island. On June 1, seven USFWS seasonal employees made the trip from King Salmon by private boat to visit Round Island for the day.

Campers

Camper visitation to Round Island was low this season. One reason for this decline may be related to uncertainty regarding the sanctuary's future because of previous years funding problems. A significant amount of media attention was devoted to the potential closure of the visitor program in 1996, which may have influenced visitation this summer with potential visitors choosing to travel elsewhere.

In 1997, there were 29 campers, compared to 47 in 1996. The campers came from Alaska, California, Oklahoma, Utah and Wisconsin. The only foreign visitors were six campers from Germany.

Two film crews came to the Round Island during the field season. The first film crew was with "Wild Things Production", from Hollywood California. This production crew filmed a professional photographer and his interaction with the wildlife on the island. The second, was an independent film crew from Alaska which collected stock footage of flora and fauna of the island. Additionally, a television news crew visited the island during October to film a story on the Round Island subsistence walrus hunt.

Traverse Trail Overlook

Foot access to an overlook area with a view of West Main Beach involves traveling along a steep trail, immediately adjacent to steep cliffs of 125 to 300 meters above East Main Beach. The Traverse trail was open to visitors most of this season because of warm, dry conditions. However, the trail is extremely steep and narrow, and closure of the Traverse Trail would be necessary if wet or unsafe trail or weather conditions existed.

Weather

The weather in Bristol Bay was unusually hot and sunny for a majority of the season. The average temperature was approximately 70 degrees Fahrenheit with 80 percent of the

days being clear and sunny. This season was the hottest summer since 1954 and the warmest water temperatures ever recorded at 5 to 10 degrees above normal.

VIOLATIONS:

There were seven vessels suspected to be within the 3-mile restricted access zone during 1997. An attempt was made to contact all suspect vessels and, of the vessels contacted, three responded to our radio hail and claimed to be outside the 3-mile zone. It is difficult to visually determine the distance from shore to vessel accurately, therefore, the vessel's claims are likely accurate because of their navigation systems. However, if the Department determines that the 3-mile access zone is important and needs to be enforced, then electronic instruments such as a range-finder or radar should be installed on the island.

On May 7, the fish tender *Golovin Bay* was observed by sanctuary staff approximately 100 meters offshore from Main Beach. An attempt was made to contact the vessel by VHF radio, however the vessel did not respond. All pertinent information regarding this incident was recorded and passed on to the Dillingham area biologist. The vessel was later contacted by State Fish and Wildlife enforcement officers, cited and required to perform a community service announcement concerning the restricted area around the sanctuary. No walrus disturbance was observed from this vessels activity.

There were no air space violations this season.

COOPERATIVE WILDLIFE RESEARCH:

Walrus behavioral study information was not gathered during 1997. Research emphasis

was directed to other species, however documentation of walrus disturbance was opportunistically recorded by staff throughout the season.

Walrus Radio Tagging

From May 28 through June 1, 1997, three biologists from National Biological Survey (NBS), Larry Van Daele from ADFG and sanctuary staff conducted a walrus radio tagging operation. The first walrus was immobilized on First Beach and for unknown reasons the animal could not be revived and died. A total of six walrus were immobilized on Main Beach and fitted with two radio transmitters each; one VHF transmitter and one satellite transmitter were secured to their tusks.

Walrus Counts

Two established methods of counting walrus were used on Round Island beaches: 1) daily east side land based counts; 2) opportunistic circumnavigation of the island using an inflatable skiff that allowed walrus to be counted on west side beaches.

In addition, a third method was initiated, where walrus on Main Beach were counted every two hours between 0800 and 2000 hours on three randomly selected days of each week during June and July. These counts were instituted by USFWS, Marine Mammal Management (MMM), to quantify rates of change on the beach and identify tidal periodicity in walrus haulout use.

Daily Walrus Counts

The beaches with the highest numbers of hauled out walrus are located on the north and east sides of the island. These beaches are accessible to staff and the public from established trails. Walrus counts were conducted during the most convenient low tide period from observation points reached via these footpaths. The counts included all walrus hauled out on beaches and any walrus in the water within ten meters of the shore line. The daily total count was derived by adding the number of walrus hauled out on land with the number of walrus in the water.

This season, 103 daily walrus surveys were completed (94 in 1996) between May 3, 1997 and August 13, 1997. The lowest number of walrus counted was on August 8, with 90 walrus (0 in 1996). The low count was probably directly related to weather conditions at the time. On this day, there was a strong southwest gale with winds up to 35 mph buffeting the island. The highest daily count occurred on May 21, with 6,092 walrus counted on the combined east and west side beaches.

Total Island Counts

Total island counts were conducted from an outboard powered Achilles inflatable skiff. Walrus were observed on all haul out beaches with the aid of binoculars . The entire island was surveyed from the inflatable skiff at a distance of approximately 100-200 meters from shore. Boat surveys were conducted only when weather, tide and time permitted. During 1997, 11 boat surveys were completed, compared to six in 1996, primarily because good weather allowed more frequent use of the inflatable skiff. The highest count of walrus recorded from the skiff was on May 21, with 6,949 animals counted.

West Side Walrus Counts

Due to the good weather this season, west side surveys were conducted approximately 25 times. During the months of June and July, two random days were chosen per week to survey the west side of the island. This survey method was developed by USFWS Marine Mammal Management. The data collected will be used in the research program that was initiated in 1993.

Walrus Calf

On May 31, while radio tagging walrus on Main Beach, a walrus calf approximately six months old was observed hauling out on the beach with a group of adult walrus. Staff were concerned that the calf would be trampled when surrounding walrus were driven off the beach to allow access to the anesthetized animal. The calf was observed entering the water with other walrus, apparently uninjured; however, the calf was never seen again.

The calf was believed to be the youngest animal ever observed on the island, and was of special interest because it is believed that calves stay with their mother for 18 months on the ice pack.

Walrus Carcasses

There were at least 14 walrus carcasses (4 in 1996) sighted on land or floating in near-shore waters. Staff salvaged ivory from eight carcasses, and additionally, collected loose beach cast ivory.

STELLER SEA LIONS:

Counts

Steller sea lions were counted at least once per week at East Cape/Third Beach. The peak sea lion counts of 350 animals occurred in May. By early June, sea lion numbers decreased to approximately 150 animals. Periodically, sea lions were counted from the boat, which allowed for a full view of the haul out area. From this vantage point it was obvious that at least half of the sea lion population had left the area by mid June. During late June and July the sea lion population was comprised of mainly females and young bulls with only two or three adult bulls. In early August, sea lion numbers increased to approximately 200 animals with the occurrence of more adult males.

Observations

During routine sea lion counts, staff searched for flipper tags and noted any unusual observations. On June 6, a lone bull sea lion was observed along the rocks of Camp Ground Beach. This animal had severe lacerations to the left side of its face, was very lethargic, and remained in the same area for approximately five days. After five days, it was never seen again. On July 22, a young male sea lion was observed at Third Beach with a wire ring around its neck. It appeared that the wire was constricting and digging into its flesh, however, the animal seemed healthy otherwise and showed no signs of

distress. On May 16, a young male was observed with one red flipper tag on its right front flipper. On July 31, a young bull sea lion was observed with one red flipper tag, attached dorsally on each front flipper. No identifying numbers were observed from the tag sightings.

OTHER WILDLIFE

Red Fox

Staff identified and observed four individual red fox (*Vulpes vulpes*) during the season. One frequently observed individual exhibited little caution around staff and visitors. During June and July, fox sightings were less frequent, but increased again in early August, usually, of the same animal. There were three known active den sites; one at East Cape, one behind the cabin and one along the Traverse trail. Kit production was not documented.

Sea Birds

Three seabird species, pelagic cormorant (*Phalacrocorax pelagicus*), black legged kittiwake (*Rissa tridactyla*) and common murre (*Uria aalge*) were observed and monitored for productivity throughout the summer. Seabird species in the northern Pacific have experienced a recent decline, and there was interest in determining if similar declines were occurring on Round Island.

Group plots were established on cliffs at Main Beach and First Beach for each species, and nests counted within each plot for egg production, hatching success and fledgling survival. Pelagic cormorants were incubating eggs by May 15; chicks were visible on June 23; and fledglings were observed by July 25. Black legged kittiwakes were first observed with eggs around June 8; chicks were sighted around the first week of July. Kittiwake fledglings were sighted on nests starting August 1. Common murre eggs were first observed on June 6, and the first murre chick was sighted on July 23. Murre fledglings were never observed because staff left the island prior to that event.

In late July and early August, there were reports of widespread seabird mortalities in the Bristol Bay area, and in the Bering Sea. Round Island staff observed and recovered several dead seabirds. The cause of this large die-off was not determined, however, the extreme warm air and sea temperatures are suspect. A preliminary report summarizing seabird mortality, authored by USFWS staff, is attached as Appendix 1.

Sea Bird Egg Predation

Predation of murre eggs by ravens was observed on several occasions in early June. A raven would land next to a murre that was sitting on a egg, grab the adult murre by the wing with its beak and fling the bird off the cliff, leaving the egg exposed. The raven would then pick up the large egg and fly off.

Other Marine Mammals

Between May 3, 1997 and May 10, 1997, large numbers of gray whales (*Eschrichtius robustus*) were observed traveling from southeast to northwest past Round Island . During this time, at any given moment, more than 20 whales could be observed spouting between the island and the mainland. A single young harbor seal (*Phoca vitulina*) was observed in Boat Cove during the low tide periods for approximately seven days.

FACILITIES:

The following list details new equipment that was obtained during the 1997 field season:
Single side band radio and antennae tuner.
VHF whip antennae.
Five sections (3 foot/ section) of six inch galvanized exterior stove pipe.
Skil 71/4 inch worm drive circular power saw.
Air-3 marine version wind generator

RECOMMENDATIONS:

1. Secure Capital Improvement Project (CIP) funding for new cabin.

2. Lumber for additional boardwalk and camp platforms.

3. Modify or change cable method for securing boat in Boat Cove. This is a serious safety concern. A new method for securing the boat must be addressed before an accident occurs. The risk factor is high with the existing system.

4. Electronic range finder, radar or loran to gauge vessel distance from island.

5. Develop a day use visitor access policy that includes vessel mooring and transport to and from vessels.

6. Continue and promote staff exchange program.

EQUIPMENT NEEDS:

The following lists equipment needs for the sanctuary program. These items are necessary for safe operation of the public use program.

- 14 foot Niad hard bottom inflatable skiff
- 25 horse power long shaft outboard motor
- Lap top computer

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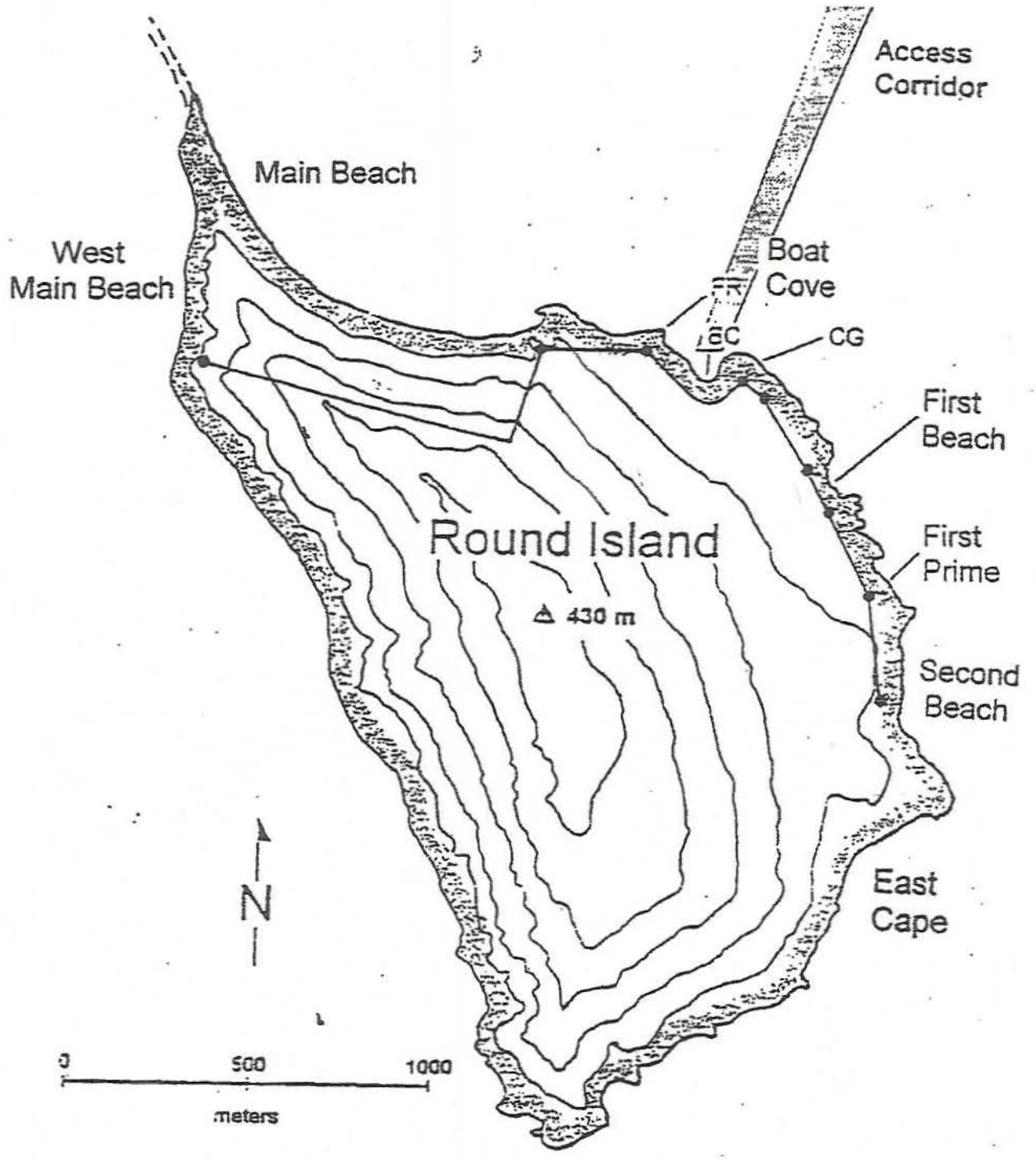

Figure 2. Area map of Round Island, including locations of walrus haulout beaches used in observations. Dots signify terrestrial observation points and the connecting line signifies the trail system. FR= Flat Rock, BC= Boat Cove Beach. CG= Campground. Topographic contours= 76 m (250 ft).

PRELIMINARY REPORT ON THE 1997 ALASKA SEABIRD DIE-OFF

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17 October 1997

A large and extensive seabird die-off occurred in Alaska in summer 1997, in association with unusual oceanographic conditions. Short-tailed Shearwaters died from the western Gulf of Alaska to the Chukchi Sea. Other species also died in parts of this area: Black-legged Kittiwakes on the Alaska Peninsula, and murres and some other species in small parts of the west and north. Mortality lasted from mid-May to early September and spanned a week or 2 in each area. The provisional explanation for the die-off is starvation; additional information will be obtained in the coming weeks.

This die-off was very widely reported, considering that the entire area has no roads and few human residents. Approximately 100 village residents, fishermen, and biologists (from state and federal agencies, universities, and others) telephoned with information. Ground surveys were conducted on 21 beaches and aerial surveys on four. (Numbers of birds on beaches are given below for some ground surveys. They suggest relative mortality but are not precise indices, since some beaches collect more flotsam than others, and scavengers and waves can remove many carcasses.) Cooperators sent dead birds from 20 locations.

The first unusual mortality involved Common Murres in western Alaska in the last week of May. Moderate numbers of freshly dead murres (approximately 1-2/km) were observed on beaches of northeastern Nunivak Island between Mekoryuk and Etolin Strait, and on the adjacent mainland from Hazen bay to Chagvan. Several hundred also were seen dead in waters of the strait. No new mortality was reported after May.

The next reported mortality was in waters between Gambell and Savoonga (northwestern St. Lawrence Island) at the end of July. Several hundred birds included Thick-billed and Common Murres, Horned Puffins, Black-legged Kittiwakes, and lesser numbers of Pigeon Guillemots, Herring Gulls, and Northern Fulmars. Short-tailed Shearwaters also were found dead off northeastern St. Lawrence Island in the first week of August. There is no information from other parts of the island for early August.

Around August 1 a widespread die-off of Short-tailed Shearwaters and Black-legged Kittiwakes began on both sides of the Alaska Peninsula. "Thousands" of dead birds were reported in tide rips near shore. Both species washed up on beaches of the lower half of the peninsula, on the south side from Amber Bay to Cold Bay, and on the north side from east of Port Heiden to Izembek Lagoon. Dead birds were distributed everywhere within this area, based on an aerial survey conducted by FWS. A few dead shearwaters were reported in the water as far north as Shelikof Strait (off southern Kodiak Island). Beaches surveyed by foot had 5-50 dead Short-tailed Shearwaters and 1-20 Black-legged Kittiwakes per km. Freshly-dead birds ceased to be reported by the middle of August. Dead storm-petrels were reported from one beach on the south side of the peninsula.

Short-tailed Shearwaters began dying in unusual numbers throughout the southeastern Bering Sea at about the same time. Mortality was reported in the Aleutian Islands from Unimak Pass to Adak in the first 2 weeks of August. Freshly dead shearwaters (as well as large flocks of live birds) were seen by fishermen on both sides of the chain. Birds washed up on beaches discontinuously; many were reported at Akutan, Unalaska, Atka (37/km on a beach), and Adak (15/km), whereas almost none were found by biologists on nearby Aiktak and Kasatochi. No unusual mortality was reported at Kiska or Buldir Islands in the western chain.

The die-off appeared to spread northwards in the second week of August. Up to 50/km washed up on beaches of St. Paul Island. During the 2nd and 3rd week of

August, 50-150/km carcasses were found on beaches of northern Bristol bay, from the Nushagak Peninsula (near Dillingham) to Hagemeister Strait. The highest density reported on a beach was 349/km on southern Nunivak Island. Only normal numbers of dead kittiwakes, murres, cormorants, and puffins seemed to have died in this area.

Shearwaters also died in the northern Bering Sea. Near Anadyr, in Russia just south of the Bering Strait, 80/km were counted on a beach in the second week of August. Large numbers also were reported on the 80-km beach of southern St. Lawrence Island.

Mortality of several species was reported in the Chukchi Sea. A mixture of Thick-billed and Common Murres and Short-tailed Shearwaters appeared on beaches south of Kivalina (between Kotzebue and Point Hope) in the last week of August. Densities were about 10 birds/km. These birds had been dead for a week or longer when they arrived. Some dead murres and kittiwakes washed up south of Point Hope, and a few shearwaters (0.4/km) were found at Cape Lisburne (at the northwest corner of Alaska).

Seabird mortality in each area appears to have continued for a week or less. Carcasses observed after the first week generally were old.

Numerous reports were received of birds behaving unusually. Some flocks of shearwaters were feeding within 100m of shore. Shearwaters, and kittiwakes in the Gulf of Alaska, were attempting to obtain food from fishing gear and sometimes perching on vessels. Several shearwaters were seen up to 30km inland on rivers and freshwater lakes. Flocks of shearwaters on the sea commonly included moribund birds that did not fly at the approach of a vessel and whose heads drooped. Murres had lower than normal breeding success in the Pribilofs (G.V. Byrd and A.L. Sowls, unpubl. data).

Dead birds whose condition was reported were thin and light in weight. Necropsies of Common Murres, Short-tailed Shearwaters, and Black-legged Kittiwakes carcasses collected throughout the die-off area showed symptoms of starvation (low body fat and muscle mass) and no bacterial infection. Tests are continuing for possible viral and parasitic infections.

Not all Alaskan seabirds were adversely affected in summer of 1997. No mortality occurred in the northern and eastern Gulf of Alaska, according to observations by biologists. No species appear to have been affected other than those listed above, although 38 species breed in Alaska and 2 shearwater species visit during the summer. Breeding success of kittiwakes, which is highly sensitive to availability of suitable prey at the surface, was normal in most areas studied, including the Pribilof Islands (G.V. Byrd and A.L. Sowls, unpubl. data). (Data on kittiwake productivity are still being analyzed for some breeding colonies. We have none for 1997 on the south side of the Alaska Peninsula, unfortunately.)

Occasional mortality of seabirds is normal at any time of year. Some dead shearwaters are found regularly on the north side of the Alaska Peninsula in summer, especially after storms (C.P. Dau, pers. comm.). However, most reported mortality in 1997 exceeded normal "background" levels.

Unusual conditions prevailed at sea in the Gulf of Alaska and southern Bering Sea in summer 1997. Surface waters were very warm, which can cause prey of surface-feeding kittiwakes to retreat below the surface. Based on George Hunt's work in eastern Bristol Bay, water there was highly stratified. The dense Euphausiid (zooplankton) swarms that usually are exploited by Short-tailed Shearwaters along the Inner Front of the Bering Sea were absent because nutrients were not being upwelled there (G.L. Hunt, unpubl. data). Several researchers and fishermen reported extensive areas of weirdly beautiful pale-aqua water in the Bering Sea. Hunt has identified this phenomenon as a bloom of Coccolithophorids, a phytoplankton with calcium carbonate in its skeleton that is more common in temperate waters.

The condition and behavior of the birds, and what is known so far about water conditions, suggest that starvation was an important factor in the seabird mortality of 1997. Die-offs attributed to starvation have occurred in other years when marine waters were unusually warm, although none appeared to be as widespread as the 1997 event. Die-offs of seabirds are reported in Alaska every few years; those that have been investigated previously were caused by starvation, in association with unusual conditions such as warm water or severe storms.

Necropsy of specimens from various locations has shown that birds that died had wasted muscles and almost no body fat, and some were anemic. The evidence supports starvation as the principal cause of death. Some specimens had parasites in the intestinal tract and kidneys, but no indication has been found of other disease. We are continuing to do research on factors that may have contributed to the die-off. Further information about oceanographic conditions also will help.

A complete report of die-off observations and necropsy results will be written in the coming months. Plans will be developed for monitoring of affected seabird populations, and for response to possible future events during this severe El Nino, in cooperation with other agencies and local people.

I would welcome any additional information or insights about the events of summer 1997, from villages, research cruises, or other observers. Please contact me at the phone number or Email address given above.