

U. S. Fish and Wildlife Service
Anchorage, Alaska



CAPE NEWENHAM NATIONAL WILDLIFE RANGE

1969

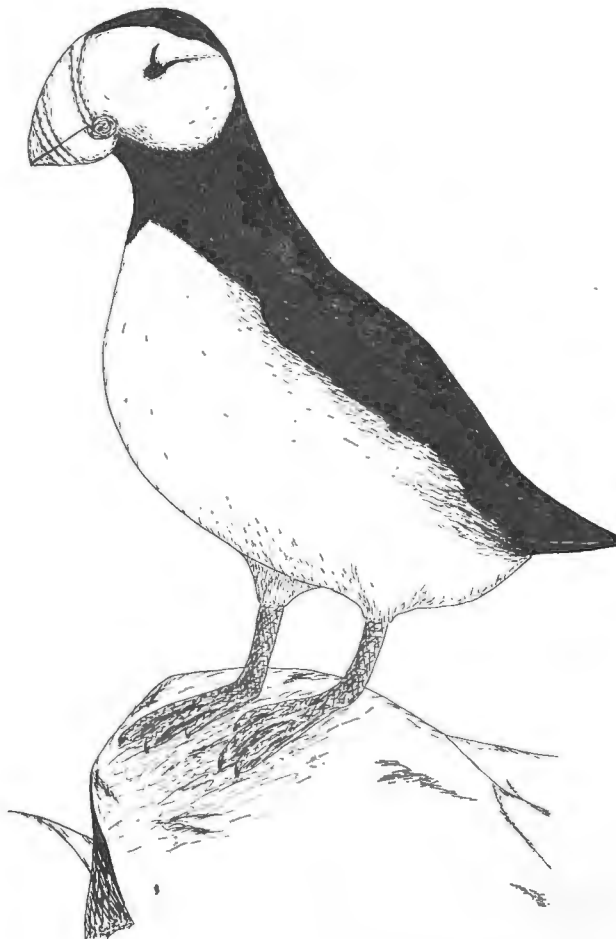
Annual Report



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UNITED STATES GOVERNMENT

Memorandum

*R - Narr. Repos
Cape Newenham*

TO : Refuge Manager, Clarence Rhode NWR
Bethel, Alaska

DATE: May 4, 1970

FROM : Acting Regional Refuge Supervisor
BSF&W, Portland, Oregon

SUBJECT: Annual Narrative Report - 1969

We were very pleased with the well-written and professional-type reports submitted by you and your staff covering the 1969 activities on Cape Newenham and Nunivak.

All those in this office who had an opportunity to review commented on the fascinating reading and professional excellence. We want you to know that your fine efforts did not go unnoticed.

Edward J. Smith

cc:
Assoc Supv, Alaska Refuges

EJSmith:kd



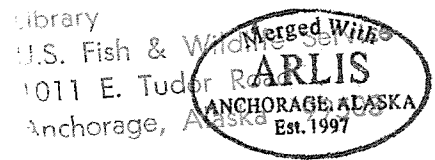
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CAPE NEWENHAM NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

January 1, to December 31, 1969



Staff

Administered by the staff of the
Clarence Rhode National Wildlife Range

Department of the Interior
Bureau of Sport Fisheries and Wildlife
Fish and Wildlife Service
Bethel, Alaska



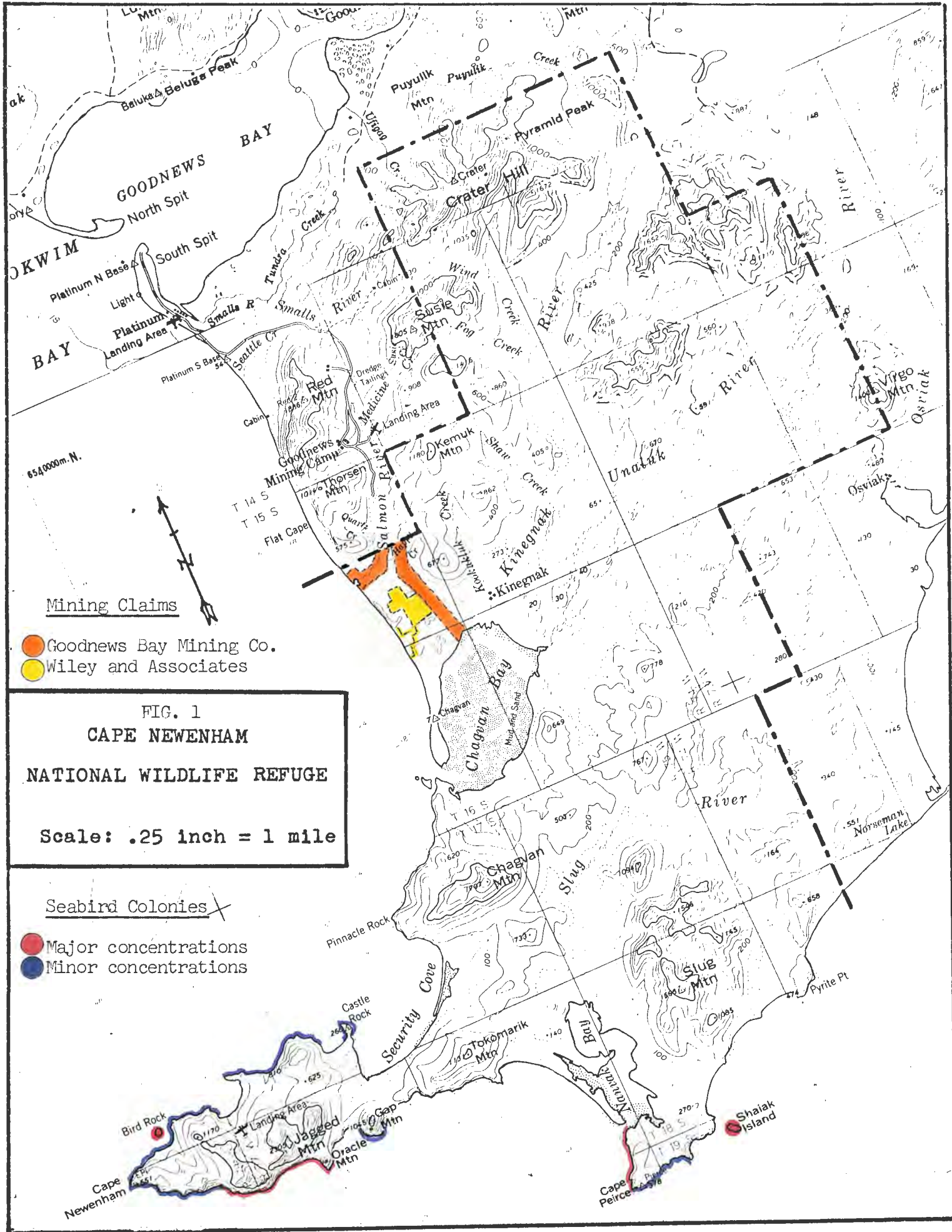


FIG. 1
CAPE NEWENHAM

NATIONAL WILDLIFE REFUGE

Scale: .25 inch = 1 mile

Seabird Colonies

- Major concentrations
- Minor concentrations

TABLE OF CONTENTS

INTRODUCTION	1
Establishment	1
Physical Description	2
History of Human Contact	3
 FIELD STUDIES	 5
Habitat Conditions	6
Wildlife	6
Birds	6
Mammals	7
Fish	8
Further Studies	8
 REFUGE MANAGEMENT AND DEVELOPMENT	 9
Sport Hunting and Fishing	9
Bears	10
Caribou	10
Marine Mammals	10
Furbearers	10
Waterfowl	10
Ptarmigan	10
Fishing	10
Commercial Fishing	11
Non-hunting Recreational Use	11
Mining	12
 PUBLIC RELATIONS	 13

CAPE NEWENHAM NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

January 1, to December 31, 1969

INTRODUCTION

Establishment

The Cape Newenham National Wildlife Refuge was created on January 20, 1969, when Interior Secretary Stuart Udall approved the transfer of 265,000 acres of public land to the National Wildlife Refuge System. This act successfully concluded the efforts of many persons, but particularly those of James G. King, former Refuge Manager of the Clarence Rhode National Wildlife Range. King made several visits to the area to gather information, which culminated in a report titled, "Cape Newenham, Alaska - A Wildlife Metropolis", with the recommendation that the area be made a National Wildlife Refuge.

The importance of this area is very aptly stated in a memorandum from the Director, Bureau of Land Management, to the Assistant Secretary, Public Land Management, justifying the withdrawal:

"The Cape Newenham National Wildlife Refuge includes possibly the greatest "bird city" on the North American mainland. A million or more murre, kittiwakes and puffins make up the rank and file of this population, and cormorants, guillemots, gulls and other seabirds form substantial minority groups.

The vast eelgrass beds in the bay areas adjoining the Cape are second only in importance to those found in Izembek Bay (Izembek National Wildlife Refuge) for attracting black brant, geese and other waterfowl in the spring and fall. Mammals found on the refuge include grizzly bear, hair seal, sea lions and others. Spectacular salmon runs occur in the clear freshwater streams rising within the refuge and flowing to the Bering Sea. This refuge comprises an outstanding public showplace of wildlife representative of Alaska and is truly of national significance".

Physical Description

Location

Cape Newenham juts into the Bering Sea of southwestern Alaska to form the geographical boundary between Bristol Bay to the south and Kuskokwim Bay to the north. In air miles the cape is approximately 150 miles southwest of Bethel, 70 miles west of Togiak, and 40 miles south of Goodnews Bay.

Geology

The primary physical features of the area include mountains to 2300 feet, the shores of Nanvak and Chagvan Bays, many small streams and rivers and 60 miles of coastline with roughly twenty miles bordered by high cliffs and 12 miles lined by dunes and sandy beaches. The area within Chagvan and Nanvak Bays, totaling about 13,500 acres, and which is of critical importance for migrant waterfowl, is under the jurisdiction of the State of Alaska. Geologically, the area is a polygenetic mixture of rock ranging from granite to limestone. The cliffs and mountains are of altered volcanic rock on which sculpturing by wind and sea has produced spectacular arches and pinnacles. The flatter areas are variously covered by glacial till, water and wind deposits, and frost rived rubble from the higher mountains.

Climate

The climate is rugged. Fog frequently shrouds the mountains and cliffs. Weather records from the Cape Newenham radar site indicate that summer temperatures in the 50s are usually accompanied by wet, windy, and foggy weather. The average annual temperature is about 34 degrees. Precipitation is about 45 inches, or twice the norm of other southwestern Alaska stations.

Sea ice does not ordinarily extend south to Cape Newenham except in the form of occasional drift. The bays are frozen and the mountains snow covered from late October to May.

In reference to the climate, King aptly described Cape Newenham as, "a place to which white men have come only by necessity and left with dispatch." We predict, however, that an increasing number of persons will brave the rigorous climate to see and enjoy the spectacular display of wildlife in a correspondingly spectacular setting.

Vegetation

The flora of Cape Newenham is typical of arctic tundra. Willow or alder brush may occasionally form a narrow band along a stream, but otherwise woody plants are limited to dwarf or prostrate shrubs. Dense stands of beach ryegrass cover the sand dunes. Slopes are covered with a variety of mosses, lichens, and flowering plants. Cranberries, blueberries, and crowberries are common. Sedges dominate the marsh areas and eelgrass forms dense stands in Chagvan and Nanvak Bays. The sedges, berries, and, above all, the eelgrass provide rich feed for waterfowl.

History of Human Contact

During the summers of 1966 and 1967, Washington State University conducted archeological and ethnological studies in Chagvan and Nanvak Bays. Results of this expedition are forthcoming but were not available at this writing. However, information from the Nushagak area to the south indicate that area was populated from at least 2000 BC. A "Choris Point" found by refuge personnel in July 1969 confirms a similar early occupation of Newenham. The best records of human occupancy are from Petrof's (1884) census of 1880, in which he recorded the following:

"A branch of this tribe (Togiagamute) occupies a few villages in a peninsula formed by Cape Newenham. These differ much in their habits and customs from their immediate neighbors, owing to the fact that large droves of reindeer (caribou) still roam over the mountains of the peninsula, the hunting of which seems to be a monopoly of these natives, whom we may distinguish as the Chingigumute or Cape people, and whose principal settlement is Azivigiak (osviak). The Chigigumute have been in contact with both Russians and neighboring tribes, as a portage route from the Kuskokwim to Togiak Bay leads through their country; consequently they do not differ much in their customs from the Kuskokvagmute, though their dialect is that of the Togiagamute."

The Cape Newenham area was visited again during the 1890 census and while the Azivigiak settlement was not mentioned, the following description was made of the Kinegnagmiut, whose principal village was on the south side of Chagvan Bay.

"Beginning our review at Cape Newenham, its southernmost point, we find the first settlement of Kinegnagmiut, on the north side of a narrow isthmus connecting the cape with the Togiak chain of mountains. The people living here are Kuskwogmiut Eskimos numbering 76."

The dwellings in this village were described as underground huts with frames of drift logs, covered with sod.

"The neighborhood of Cape Newenham, with its many surrounding shoals and reefs, is one of the few places to which walrus still resort at certain seasons. Most of these huge animals are found to the south and east of the Cape, and a number of dwellings have been constructed on that side by the Kinegnagmiuts for temporary occupation. Though the walrus is highly prized by these people for its ivory as an article of trade and as a material for the manufacture of tools and implements, the people by no means depend upon the meat for food. They hunt the hair seal and the beluga successfully for their meat, blubber, and oil. Sea birds, which roost in myriads around the cliffs and rocky islands furnish them with meat, eggs and garments made up out of their feathered skins. The streams and lakes teem with trout and herds of reindeer (caribou) feed upon the mossy tundra."

"The Kinegnagmiuts obtain tobacco, powder, and lead, and a few manufactured articles, through native traders from the Kuskokwim, who visit Good News Bay and the Cape during the winter season with dog teams. Once during every summer these people migrate to the hills in

search of ground squirrel skins for undergarments, and also indulge in their custom of annual physiking by means of a diet of green weeds boiled in oil."

The above village is not the same as the site of Kinegak Village shown on current maps and located at the head of Chagvan Bay. The latter is a much later village and was occupied until the 1940s. At the present time there are no active villages on the Refuge.

Captain James Cook, on July 16, 1778, was probably the first white man to see Cape Newenham. The following description was taken from his journal:

"There is also a bay on the north west side of the flat point, between it and an elevated promontory which, at this time, bore North 36, West, fifteen miles distant. At nine, I sent Lieutenant Williamson to this promontory with orders to land and see what direction the coast took beyond it, and what the country produced; for from the ships, it had a barren appearance."

"Soon after Mr. Williamson returned, and reported, that he had landed on the point, and, having climbed the highest hill, found, that the farthest part of the coast in sight bore nearly North. He took possession of the country in his Majesty's name, and left on the hill a bottle, in which was inscribed, on a piece of paper, the names of the ships, and the date of discovery. The promontory, to which he gave the name of Cape Newenham, is a rocky point of tolerable height". "The country, as far as Mr. Williamson could see, produces neither tree nor shrub. The hills are naked; but on the lower grades grew grass and other plants, very few of which were in flower. He saw no other animal but a doe and her fawn (caribou); and a dead sea horse or cow (walrus?) upon the beach. Of these animals we had lately seen a great many."

Cook tried to proceed north along the coast but was stopped by shoals, probably in the vicinity of Quinhagak, and was forced to return to Cape Newenham. On July 21, 1778, on his way south and probably in the vicinity of Goodnews Bay, he was visited by ... "twenty-seven men of the country, each in a canoe...". They traded with these people receiving, "dresses of skins, bows, arrows, darts, and some wooden vessels." Cook described these people as the same sort they had seen of late along the coast and wore the same kind of ornaments in their lips and noses (labarets), but commented they were far more dirty and not so well clothed. Cook's impression was that these people had not had previous contact with whites, stating they did not know the use of tobacco nor, but for the exception of iron knives, had no "foreign articles" in their possession.

Cook, after leaving Cape Newenham sailed northwest, missed Nunivak Island, and next sighted land at St. Matthew Island (the present Bering Sea National Wildlife Refuge) on July 29, 1778.

The origin of many names reflects the interest or origin of early visitors. Those listed in the "Dictionary of Alaska Place Names, (USGS Prof. Paper No. 567) include:

- Cape Newenham: Named by Lt. Williamson of the Royal Navy, an officer of Capt. Cook's party, on July 16, 1788. The cape was called "Black" by the natives, because of its appearance.
- Chagvan Bay: Native name (Tchagvan) published by Lt. Sarichev, Imperial Russian Navy, 1886.
- Goodnews Bay: Credit for naming this bay is uncertain. The following persons are listed: Capt. James Cook, 1778, Vstiugof and Korsakof (listed as the most like originators) 1818-19, and Capt. Lutke, Imperial Russian Navy, 1836. The latter called it "Bonnes Nouvelles Baie (Good News Bay) and said it might better be called "Bay of False Reports". The U. S. Coast and Geodetic Survey (1868) derived the name from a Russian chart where it was called Port Dobrykh Vestey, meaning Port Goodnews. The Eskimo name was Imakhpiquak.
- Cape Peirce: Named in 1869 by the USCGS for Benjamin Peirce, then supervisor of the Coast Survey. Capt. Tebenkov (1852) called it Cape Point. This may be the Calm Point named by Capt. Cook in 1785.
- Security Cove: Named in 1914 by USCGS because, "the cove offered security during a storm."

Most other names listed by the Geological Survey were obtained from local sources and were of unknown origin.

FIELD STUDIES

Field studies were limited to two reconnaissance surveys, each lasting 10 days, and to one aerial survey on which about two hours were spent on the ground at Nanvak Bay. The first trip was made by Assistant Manager Hout and Matthew Dick, a seasonal aide. Transportation to and from a tent camp on Nanvak Bay was by charter aircraft. During this trip surveys of wildlife and habitats were made of the Bay, the cliffs and shore from Nanvak Bay to a point opposite Shaiak Island, and of the dunes, which parallel the sea beaches west of the bay. Rain on all but the first day of the trip, and winds which reached 60 knots, made camping and field work difficult.

The second trip, July 20-29, was made in the Refuge's new "Boston Whaler" by Hout and Maintenance man Geerds. The shallows of Kuskokwim Bay (by accident), Chagvan Bay, Security Cove, the east coast of Newenham, and Bird Rock were explored in this voyage, which covered more than 200 miles.

Three days were spent at the Goodnews Bay Mining Company to acquaint the management with the objectives and policies of the Refuge and to learn

as much as possible about the mine, which has claims extending onto Refuge lands. Weather during this trip was much improved over the first, and although it rained on 8 of the 10 days, and the wind occasionally blew, activities were not seriously hampered.

The final trip of the season was made in the Refuge Cessna on September 18, to evaluate the status of resident bird populations and use of Nanvak and Chagvan Bays by migrants. Weather was typical in that conditions which were reported and forecast to be clear and nearly calm, were actually a ceiling of 1200 that was rapidly lowering, and gusty 18 knot winds, which produced considerable turbulence.

Habitat Conditions

Habitat surveys in Nanvak and Chagvan Bays were brief and general in nature, with the primary attention given to the condition and extent of eelgrass beds. The June survey of Nanvak Bay was hampered by weather and resulted in an incomplete survey of the Bay. Very little eelgrass was observed, but this was believed to be due to the time of the season, being too early for maximum growth. The aerial survey on September 18, proved this to be the case, as at that time good stands of eelgrass were observed. In June extensive windrows of dead eelgrass were observed along the beaches of Nanvak Bay. It was being used extensively by kittiwakes for nest building. In July, Chagvan Bay was nearly covered with eelgrass. In fact, it was so choked with this vegetation that it was necessary to continually stop the boat to clear the prop.

Terrestrial vegetation observed in the Chagvan area was of four main types: (1) wet tundra, characterized by a diverse flora containing Carex, Eriophorum, Elymus, Rumex, Sedum, Betula, Petasities, Andromeda, Lathyrus, Rubus, Ranunculus, Salix, and Equisetum. (2) beach or dune vegetation was made up almost entirely of grasses with beach rye, Elymus, being the most common. (3) heath or upland tundra contained a variety of species including, Dryas, Emmetrum, Betula, Spirea, etc. (4) The most obvious streamside vegetation, because of its height in this treeless country, are alders and willows. The latter, on the south side of Chagvan Bay, are of tree form and reach a height of about 15 feet and a diameter of four inches.

Wildlife

Birds

A total of 65 species of birds were observed on the three trips to the Cape Newenham Refuge (Table 1). The most impressive sight was provided by the thousands of nesting murres and kittiwakes. Rookeries containing these species, plus horned and tufted puffins, pelagic and double-crested cormorants, parakeet auklets, and pigeon guillemots were located along the cliffs from Chagvan Bay to beyond Cape Peirce. Distribution of these rookeries are not continuous, as there are large areas with few or no birds. The largest concentrations observed, however, were on Bird Rock.

A still larger colony is located on the south side of the point of Cape Newenham but weather did not permit visiting this rookery.

A description from Matthew Dick's diary will give some idea of the magnitude and distribution of rookeries on the north and south sides of Cape Peirce:

(June 5) "This morning I left camp at 9:45 am to walk to Cape Peirce along the top of the cliffs. The wind was blowing from the southeast at 40-50 mph. There were birds on all the cliffs facing west and northwest leading to Cape Peirce. On the south facing cliffs, on the other side of the Cape, there were only three small cliffs with birds, and these cliffs were facing to the west. From the strength of the wind and rain hitting the south and southeast cliffs today it is easy to see why the birds chose northwest cliffs. When I dropped down below the sloping top of the cliffs north of Cape Peirce I could not tell the wind was blowing. Kittiwakes, glaucous-winged gulls, and murre were in numbers in the calm water at the foot of the cliff. The murre seemed to be feeding in a line 75 to 100 feet wide and stretching perhaps 1/4 to 1/2 mile out to sea. There must be 10,000 to 15,000 birds along the cliffs north of Cape Peirce to Nanvak Bay (all species). Besides pelagic and double-crested cormorants, common murre, kittiwakes, and glaucous-winged gulls, I saw one horned puffin in the water along the shore 1 1/4 mile east of Cape Peirce, and a flock of 300-400 male and female harlequin ducks with one male Steller's eider in the midst of the flock."

"The southern cliffs are not as steep at most places as the cliffs running north. At places there are slides where one can walk down... to long, stony beaches. The south cliffs are more broken up (than the cliffs on the north side of Cape Peirce)."

Waterfowl use Chagvan and Nanvak Bays all summer, but the period of intensive use is restricted to a relatively brief period in early spring and late fall. During this time the bays are used as staging areas for ducks and geese migrating to and from their nesting grounds. Visits to the bays in 1969 did not coincide with the periods of peak use so the numbers of waterfowl observed were small (Table 2). However, some of the surveys made by King in 1963 and 1964 did coincide with periods of peak use, and are included to illustrate the size of the population, and when the concentrations occur (Table 3). All sea birds were gone from the cliffs on September, and only ravens, rosy finches, and gyrfalcons remained.

Some nesting occurs around Chagvan and Nanvak Bays but is limited, due to the small amount of suitable habitat. King reported 100 flightless, local brant in Nanvak Bay and a pintail nest at Chagvan Bay in 1963. A common eider with a brood of 6 was observed by Hout at Chagvan Bay in July 1969. A few small areas of potential nesting habitat for waterfowl are present on the Refuge, which were not examined, but these are of negligible importance as compared to the areas of excellent habitat throughout adjacent regions of the Delta.

Mammals

Animals observed included hoary marmot, arctic ground squirrel, red fox, hair seal, walrus and sea lion. Marmots were commonly seen along the

Table 1. Species of birds observed other than waterfowl

Species	Nanvak Area	Chagvan Area	Remarks
Common loon	2		
Red-throated loon		Common	
Red-necked grebe	1		
Double-crested cormorant	75	Common	Nesting on cliffs
Pelagic cormorant	Abundant	Abundant	Nesting on cliffs
Gyr Falcon	1		
Willow ptarmigan	4	12	1 brood of 5
Sandhill crane	20		
Semipalmated plover	4	Few	
Golden plover		Common	On spit-Platinum
Black-bellied plover	1		
Black turnstone		Common	Goodnews Bay
Common snipe	2		
Bristle-thighed curlew		5	On spit-Platinum
Wandering tattler	2		
Rock sandpiper	130		On beach-Nanvak Bay
Least sandpiper	7		
Dunlin		Common	
Western sandpiper	250	Common	
Northern phalarope	Common		
Red phalarope	1		
Parasitic jaeger	2		
Long-tailed jaeger	4		
Glaucous gull			Status uncertain
Glaucous-winged gull	300+	Common	
Mew gull	1		
Bonaparte's gull	8		
Black-legged kittiwake	Thousands	Thousands	Nesting on cliffs
Arctic tern	35		
Common murre	Thousands	Thousands	Nesting on cliffs
Pigeon guillemot	10-30	Few	In sea at base of cliffs
Parakeet auklet	9	2	In sea at base of cliffs
Horned puffin	6	Common	Most obs. on Bird Rock
Tufted puffin	9	Common	Most obs. on Bird Rock
Short-eared owl	2	1	
Tree swallow	16		
Raven	4		
Gray-cheeked thrush	3		
Yellow wagtail	Common	Common	Beach habitat
Wilson's warbler	1		Alder thicket
Gr.-crowned rosy finch	3		
Savannah sparrow	Abundant	Abundant	Beach habitat
Golden-crowned sparrow	Several		
Lapland longspur	Common	Common	
Snow bunting	Abundant		Nesting around cliffs

Note: Additional species observed in other years - Arctic loon, whistling swan, sanderling, Sabine's gull, thick-billed murre?, black-footed albatross, short-tailed albatross

Table 2. Waterfowl Observations - Cape Newenham NWR, 1969 ¹

Species	Nanvak Bay 6/3-12/69	Chagvan Bay 7/21-29/69
Brant	265	
Emperor	21	
White-front		75-100
Canada		200-250
Mallard	2	
Pintail	3	50
Green-winged teal	2	
Shoveller	2	
Greater scaup		40- 50
Common goldeneye	3	
Barrow's goldeneye	3	
Old squaw	10	
Harlequin	400	
Common eider	95	116
King eider	3	
Steller's eider	1	
White-winged scoter	119	
Surf scoter	90	
Common scoter	58	
Red-breasted merganser	2	
Total -	1079	568

¹ Figures are not the result of complete census.

Table 3. Waterfowl use of Chagvan and Nanvak Bays - King 1963-64

Species	Date	Number	Remarks
Black brant	8/12/63	1,200	Both bays
	8/22/63	12,000	
	9/3/63	21,000	No brant on 4/30
	9/17/63	1,500	
	9/21/63	8,300	
	5/28/64	32,000	Total of 102,000 geese
	7/3/64	62	in bay on 5/28/64
	8/16/64	3,000	
	8/25/64	10,000	
Canada geese	8/22/63	500	Both bays. No Canadas
	9/17/63	1,500	on 8/12, 9/3, 4/30,
	9/21/63	2,500	7/3, 8/16, 8/25
	5/28/64	10,000	
Emperor geese	9/3/63	2,000	Both bays. No emperors
	4/30/64	500	on 8/12, 8/22, 9/17,
	5/28/64	60,000	9/21, 7/3, 8/16, 8/25
Pintail	7/ /64	5,000	Chagvan Bay
Scaup	9/ /63	5,000	Chagvan Bay
Eider	5/ /64	100,000	Chagvan Bay
Common eider	7/ /64	sev.hund.	Nanvak Bay
King eider	4/ /64	lge.flocks	Cape Newenham
Red-breasted merganser	7/ /64	300+	

edges of the sea cliffs and rock outcroppings between Nanvak Bay and Cape Peirce. Only one arctic ground squirrel was seen at Nanvak Bay, but at the Goodnews Bay Mining Camp they were extremely abundant.

At least four red foxes were observed, one at Chagvan and three at Nanvak. Two of the foxes at Nanvak were quite tame. One approached within 50 feet of the camp, where he watched the human activity for about ten minutes. The other fox was evidently attracted to the noise of chopping as Assistant Manager Hout was removing a tusk from a dead walrus. After watching this operation for awhile, the fox became bored and walked off a short distance to lay down and go to sleep. The Chagvan fox was discovered just after it had killed a goose from a flock of moulters that were fleeing from Geerdt's and Hout during their ascent of the Kinegnak River. Both red and arctic foxes were reported to be common around the Goodnews Bay camp during the winter.

A herd of 50-75 spotted seals were seen daily, swimming or loafing on the sand bars exposed by low tide at the outlet of Nanvak Bay. Other marine mammals observed included a young walrus, and a dead sea lion near Cape Newenham. Several walrus skulls and bones were found along the outside beach of Nanvak Bay. All but one had the ivory removed!

Sign of both beaver and bear were found, but the animals themselves were not sighted. Beaver sign, in the form of fresh cuttings, was seen on the Slug River near its outlet into Nanvak Bay. Fresh grizzly tracks were seen along the Kinegnak River and on the beach at Nanvak Bay. Two old bear skulls were found on the sand spit at Chagvan Bay.

No moose were observed, but they may occasionally wander onto the Refuge, as there is a population just about 50 miles to the east in the Togiak and Tikchik drainages. A bull and cow were sighted by the mining crew at the Goodnews Bay camp this spring.

Caribou are no longer found in the Cape Newenham area, probably becoming extinct in the 1800s. Bones of these animals were found in the middens at Nanvak and Chagvan Bays.

Fish

Species of fish known to occur in the waters of the Refuge include all five species of Pacific salmon; King Oncorhynchus tshawytscha, red O. nerka, silver O. kisutch, chum O. keta, and pink O. gorbuscha. These salmon spawn in the Kinegnak and Unaluk Rivers (Chagvan Bay) and Slug River and Igloo Creek (Nanvak Bay). Short surveys were made of these systems which were found to contain excellent gravel for salmon spawning. In addition to salmon, Dolly Varden and possibly arctic char, occur in the two bays and their drainages. Grayling are also reported near the headwaters of the Kinegnak River and probably occur in the Unaluk River.

Further Studies

Field studies on the Cape Newenham Refuge will continue to be a minor function of the refuge program as the small staff and limited funds must be devoted primarily to the more urgent management problems associated with the Clarence Rhode Range and Nunivak Refuge.

Continuing studies of most immediate concern relate to the status of individual species, including their distribution in space and time, their approximate numbers, and critical areas of habitat. This information is particularly important for waterfowl and sea birds which are associated with the vast Bristol Bay fauna because of the impending development of that area by the petroleum industry.

Other studies are less critical, as it seems unlikely that habitats are subject to appreciable change. However, many observations may be made incidental to studies of wildlife populations. These include, (1) seasonal distribution of eelgrass in Chagvan and Nanvak Bays, (2) location and mapping of archeological sites, and (3) continued monitoring of mining activities.

REFUGE MANAGEMENT AND DEVELOPMENT

The Cape Newenham Refuge is wilderness and without development of any kind. Development for enhancement of wildlife values is neither necessary or practical, as existing habitats are superb, and primary objectives for the Refuge are met by preserving the existing excellence. However, most species, for which the Refuge is vital, are migratory, and are dependent on Refuge habitat only during a brief breeding season or during migration in spring and/or fall. Thus, preservation of Refuge habitat does not insure their survival, and an evaluation of the welfare of each species will depend on knowledge of annual distribution patterns and ecological requirements throughout the year.

Although it is not necessary to improve Refuge habitats for wildlife, much could be done to facilitate their use by people including, incidentally, the Refuge staff. The unique and varied wildlife populations displayed in a spectacular wilderness setting provides an attraction that can be found in no other place, and we anticipate that recreational and scientific use of the Refuge will increase rapidly. Such use, if properly channeled, is entirely compatible with the primary objective of protecting wildlife populations and habitats, and should be encouraged.

No management policies or development programs have been initiated. Hence, the following sections are intended to describe current conditions, and to suggest policies and programs that will facilitate the collection of information necessary for management of Refuge wildlife and habitats, and also enhance use by the public.

Sport Hunting and Fishing

Sport hunting and fishing is not expected to become an important use of the Refuge, which is remote from population centers, and is not as accessible as other areas where opportunities for hunting or fishing are equally good. At the present time, hunting and trapping is confined largely to Eskimos living adjacent to the Refuge. However, even limited hunting will jeopardize the status of some species, i.e., grizzly bears. Regulations

which are believed appropriate for each species or group of species are suggested below. In general, they would permit hunting for most species, in accordance with regulations of the Alaska Department of Fish and Game for adjacent areas, but would provide additional protection for a few species which are present in low numbers or which have particular importance for non-hunting visitors.

Bears. Grizzly bears are present in very low numbers, but their chance sighting would provide a significant attraction to visitors. The population, which may not number more than 10 bears, would not support extensive hunting. A closed season on the Refuge would not subtract appreciably from the opportunity for hunting this species in Alaska.

Caribou. Caribou do not occur on the Refuge, but are present in adjacent mountain areas. As caribou may eventually extend their range to the Refuge, every opportunity should be taken to encourage this species and hunting should not be permitted.

Marine Mammals. Marine mammals, including seals, sea lions, and walrus may be observed at Nanvak Bay. There are few places in Alaska where all of these species may be observed, and none which are as accessible. As a unique type of wildlife that has been nearly exterminated from most coastal regions of the United States, they provide a primary attraction to visitors. The seal population at Nanvak Bay would be particularly vulnerable to hunting and, in addition, the wariness of animals remaining would be much increased. Seals have been virtually exterminated from Chagvan Bay and areas now commonly visited. They would soon suffer a similar fate in Nanvak Bay if a commercial fishery is started there. Thus, hunting of marine mammals should be prohibited, or limited to the region of Chagvan Bay, where a limited number of animals are taken by natives. Closure of Nanvak Bay to hunting of marine mammals would require action by the State of Alaska, which has sole authority below mean high tide.

Furbearers. Furbearers are potentially of most economic value to local Eskimos and it is unlikely that trapping would in any way affect their numbers or wariness. Although furbearing animals add much to the recreational value of the area, an open season can be permitted without detriment to other uses of the Refuge. State regulations for adjoining areas should apply.

Waterfowl. Limited hunting of waterfowl would not be harmful over most of the Refuge. Further, hunting pressure is not likely to become significant, because other areas available to hunters are more accessible. All of the Refuge may be open to hunting.

Ptarmigan. All of the Refuge may be open to hunting of ptarmigan. Hunting will be negligible and such hunting as occurs will be during seasons when photography or non-consumptive use of the Refuge is minimal.

Fishing. Sport fishing may contribute a significant attraction to visitor, whose primary intent in visiting the Refuge is for other purposes. The Refuge should be open to such use in accordance with regulations of the Alaska Department of Fish and Game. Because the Refuge is remote, and other excellent fishing areas are more accessible to the casual fisherman or

sportsman, fishing pressure is not likely to become significant in the near future.

Commercial Fishing

Commercial fishing in Nanvak or Chagvan Bay, or other waters adjacent to the Refuge are subject to the jurisdiction of the Alaska Department of Fish and Game. Such fishing, however, may have considerable impact on fish and wildlife resources of the Refuge.

Chagvan and Nanvak Bays were opened to salmon fishing by the State, for the first time this year. There was no fishing in Nanvak Bay and, while a fishery of sorts took place in Chagvan Bay, it was anything but a success. Hampered by extended periods of bad weather, the half dozen boats that ventured to Chagvan delivered only 101 fish to the Japanese freezer-ship at Goodnews Bay. This catch included 7 kings, 65 reds, 6 silvers, 15 chums, and 8 pinks. More fish than this were caught, but three boats were forced to dump their loads, as the fish had been held too long.

This fishery is viewed with mixed emotion. It is imperative that all possible resources be utilized for development of the native economy and there is no question that a harvestable surplus of salmon exists. State regulations will adequately protect the fishery, but the activity of fishermen in the bays and their use of waterfowl and seals as subsistence food may result in undesirable disturbance. This possibility was discussed with State personnel, and was considered in prescribing the portion of the bays in which fishing was permitted. There were probably 2000 to 3000 ducks and geese in the bay at the time of the fishery in 1969, but if fishing were continued later, than this year, the number of waterfowl, particularly brant, would be much larger.

It was apparent to the fishermen who participated in the Chagvan fishery that larger and more seaworthy boats would be required to travel from the fishing grounds to the freezer boat in Goodnews Bay. It is questionable if this investment would pay off, especially when the present boats are adequate for use in the more important Goodnews Bay fishery. The result of this year's operation may discourage activity in Chagvan Bay. We do not expect a fishery in Nanvak Bay in 1970, because of the predicted large run in Bristol Bay, which will divert effort.

The fishery in the Kuskokwim Region is growing rapidly and it is expected that, eventually, more effort will be made to tap the fishery resources of the Refuge. If so, a continued effort must be made to monitor the effect of such fishing on other resources.

Non-hunting Recreational Use

In addition to wildlife and its habitat, non-hunting recreational and scientific values of the Refuge are of priority concern. Such values have not been realized because Cape Newenham is remote and unfamiliar to most persons - or familiar only as an isolated military radar and communications site that commonly reports miserable weather. The establishment

of the Refuge has aroused considerable interest, and the unique wildlife and scenic attraction of the area will undoubtedly attract increasing public use.

At present the only practical means of access is by charter aircraft, which are expensive, and as undependable as the weather. As there are no permanent shelters, camping in tents is necessary but extremely difficult, and impossible with safety, except for the exceptionally experienced and well-equipped visitor. Because of the inherent hazards of camping in remote areas, where normal means of transportation are not available and aircraft may be delayed by weather for long periods, the Refuge is obligated to provide, at least, minimum facilities to insure safety of visitors.

The most obvious requirement is for the construction of two or more small shelter cabins which should be furnished with essential equipment and emergency food and first aid supplies. These cabins would meet the immediate needs of the Refuge staff, and of visitors with either scientific or recreational interests. Their number can be expanded, as necessary.

The second, and longer range possibility for facilitating public use and enhancing the recreational value of the Refuge is to improve accessibility by the construction of a road or trail from Platinum to Nanvak Bay. Scheduled air service to Platinum is available, and such a road or trail would make the principal areas of interest accessible without infringing excessively on wilderness values. Non-vehicular trails or routes could be extended from Nanvak Bay to other areas of significant interest.

Mining

Placer mining operations are conducted in areas immediately adjacent to Refuge boundaries and valid claims extend onto Refuge lands. To the present, mining activities on the Refuge have been limited to exploratory drilling and annual assessment work, required by federal law. We do not anticipate more extensive mining activity on the Refuge in the near future.

Although mining is not an immediate problem of Refuge management, the mining in adjacent areas is of considerable interest. The mouth and a two mile stretch of the Salmon River is located on Refuge lands. This river has long been silted as a result of dredging, and will remain in this condition until operations terminate. The river discharges into Kuskokwim Bay where the silt load is dissipated by strong tides.

Platinum was discovered on a small tributary of the Salmon River in 1926. The original discovery was made by natives who were unfamiliar with the heavy material that occurred with gold panned from the stream and a sample was sent to the University of Alaska, where it was identified as platinum. In 1934, the present Goodnews Bay Mining Company purchased the claim and in 1937 Platinum became Alaska's newest boomtown. At that time, Platinum had a population of 50, two trading posts, a roadhouse and a Post Office.

As one of the free world's two platinum mines, the deposits are of considerable importance to the United States. Platinum from this operation goes primarily to the fuel industry where it is used as a catalyst (Plat-

formate). The ore occurs in "free" form and is extremely pure, running about 75% platinum. Some of the other associated platinum group metals, such as osmium, and some gold are also recovered.

The ore is recovered from placer deposits by means of a large floating dredge (valued at 1 to 2 million dollars) that operates through the ice-free period of April to October. Mining has been confined to the Salmon River drainage, but claims extend onto the Refuge from Happy Creek to the north side of Chagvan Bay (Fig. 1). The bulk of these claims are owned by the Goodnews Bay Mining Company, but additional claims are owned by Wiley and Associates, a California concern.

A visit to the current drilling site and to sites that had been drilled in the past revealed only minimal damage being done to the tundra. Sites that had been drilled as recently as two to three years ago showed very little sign of disturbance and would have been difficult to locate had they not been pointed out. In contrast to many mining activities in Alaska, this is an exemplary operation. Although placer mining is inherently destructive of terrain, damage at Goodnews Bay is minimal and the unnecessary scattering of trash and debris, that has accompanied nearly all other mining operations in Alaska, has been avoided.

Actual operation on the Refuge is not anticipated for some time, as mining there will be somewhat more difficult than that being carried out on the Salmon River, where reserves are extensive. Exploratory drilling has revealed that bedrock in the Happy Creek area is about 160 feet below the surface. Should operations start in the area now being tested, Chagvan Bay would be protected by a ridge which separates the Happy Creek drainage from it, and wildlife values in the small area of the claims are negligible.

PUBLIC RELATIONS

The lack of advance notice for the Refuge withdrawal created some ill feeling among the Eskimos and the mining industry in the Goodnews-Platinum area. When the information was received by this office showing the proposed boundaries, letters were sent to the Goodnews Bay Mining Company, the village council president at Goodnews, and the Commanding Officer of the Cape Newenham radar base. In addition to describing the boundaries, an offer was extended to answer any questions, either by mail or by personal visit.

Assistant Manager Hout spent three days at the Goodnews Bay mining camp discussing Bureau policies and observing the mining operation, both on and off the Refuge. Personal contact was also made with the Commanding Officer of the radar base and arrangements made to visit the site later this winter, to present a wildlife program and to discuss Refuge policy.

Mr. Bob Bellous, on assignment to the Audubon Society, spent about 10 days on the Refuge to obtain photographs and material for an article in the Audubon Magazine. Mr. Bellous was flown by charter aircraft to Nanvak Bay and eventually hiked to the military site, a distance of 20-25 miles, over rough tundra, with heavy pack.

Submitted by: Calvin J. Lonsink
Refuge Manager

2/20/70
Date

Approved by: David L. Spencer
Associate Refuge Supervisor

Refuge Supervisor



A view through one of the rock arches at Nanvak showing the Bering Sea beach and cliff-lined mountains leading to Cape Newenham (on right of photo).



Driftwood on outside beach of Chagvan Bay. Cape Newenham is visible in background at right end of mountain range. (Bird Rock is visible at the end of the Cape)



Bird Rock located at the tip of Cape Newenham is home for thousands of nesting murres and kittiwakes. Other species observed included tufted and horned puffins, cormorant, pigeon guillemot and parakeet auklet.



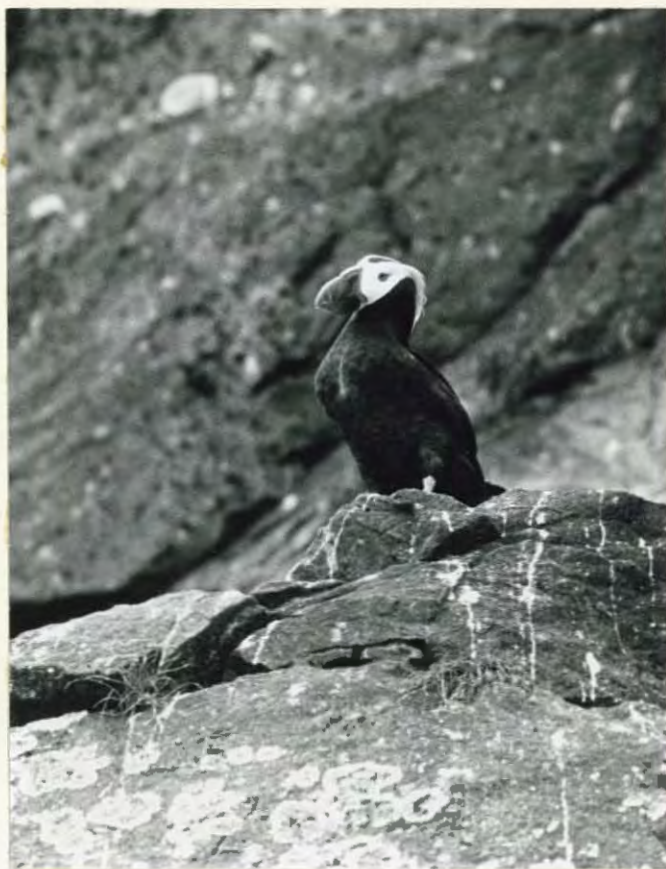
Common murres are the most numerous of the sea birds nesting on the Cape Newenham Refuge. Here a small group discusses what to do about that guy with the camera.



Black-legged kittiwakes rival the murre in abundance. The birds shown are in the process of laying and incubating eggs. Dried eelgrass is used extensively for nest forms.



The parakeet auklet is rarely observed on land, only coming ashore to nest. This bird was photographed on Bird Rock.



Tufted Puffin



Horned Puffin



The red foxes at Nanvak Bay appeared to be almost without fear of man.



Tracks and a couple of old skulls were the only sign of grizzlies observed. This fresh track was on the beach of Nanvak Bay.



Excavations made by Washington State University in the summers of 1966 and 1967 dot the area around the Igloo Camp site of Chagvan Bay. In time, vegetation will make these excavations less unsightly.



Artifacts found laying exposed along the beach at Chagvan Bay include, from L. to R: ground slate knives, scrapers, points, and pot sherds.



The Goodnews Bay Mining Camp is located on Squirrel Creek, a small tributary of the Salmon River, about 10 miles from the village of Platinum. About 50 people are employed in the operation which runs from April to November.



A dredge built at a cost of one million dollars in 1937 is used to extract the platinum and gold ore at bedrock level in the Salmon River.



Each of the 100 buckets weighs one ton and has a capacity of 8 cubic feet. With a bite of 31 buckets per minute the dredge can handle 7000 cubic yards per day and is able to dig to a depth of 50 feet.



Tailing piles left behind the dredge stretch for miles along the Salmon River and up the side tributaries. In an average season 1.25 million cubic yards are moved.