AMCHITKA BIOENVIRONMENTAL PROGRAM
STUDIES OF THE AVIFAUNA ON AMCHITKA ISLAND, ALASKA
ANNUAL PROGRESS REPORT

July 1, 1971 - June 30, 1972

by

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ABSTRACT

No changes from previous years in bird species present or in their ecological or geographical distribution were observed during the study period, July 1, 1971 through June 30, 1972.

Summer and winter populations of birds on Amchitka showed no change from previous years with the exception of an increase in the number of nesting Bald Eagles.

No long-term effects of Milrow were detected. Cannikin resulted in the known test-related deaths of 17 birds, the loss of two Peregrine Falcon eyries, and the loss of four Bald Eagle eyries. At the same time it appears likely that new nesting habitat for some species of small sea birds was created by Cannikin-induced rockfalls along the Bering Sea coast.

INTRODUCTION

Battelle's Columbus Laboratories' Amchitka Bioenvironmental Program was organized to predict, document, and evaluate the effects of the U.S. Atomic Energy Commission's activities on the Amchitka biota and environment; to recommend measures for minimizing adverse effects; and to predict radiological hazards to man that might result from radionuclide transport through food chains, should there be an inadvertent release of radioactivity. The birds of Amchitka are being studied to provide data on the avifauna, required to accomplish these objectives. The studies are sponsored by the U.S. Atomic Energy Commission's Nevada Operations Office as a part of its Supplemental Test Site Program.

This progress report covers field and laboratory studies of the avifauna of Amchitka conducted between July 1, 1971 through June 30, 1972; a continuation of studies begun in August 1967. Results obtained up to July 1971 are given in earlier Annual Progress Reports: Williamson (1968); Williamson and Emison (1969); and Williamson, Emison, and White (1971 and 1972). The broad objectives of this program are to gather and interpret data for the prediction and assessment of effects of underground nuclear testing on bird life and to recommend actions to help minimize any potential deleterious effects to the avifauna. To accomplish these objectives the following studies were conducted during the time period covered by this report:

- (1) Updating the list of species present
- (2) Collecting data on the ecological and geographical distribution of birds, particularly in relation to both nesting and feeding activities

- (3) Measuring of the population densities of birds, by direct counts or by extrapolation from sample counts (Revisions of many of the density estimates previously given are based on additional census data, more accurate assessments of areal extent of different habitats, and complete detailed analyses of field records.)
- (4) Studying the breeding biology of selected species (Special emphasis was on the Bald Eagle and Peregrine Falcon since races of these species are endangered in other locations.)
- (5) Continuing food-habit studies of the Bald Eagle and Peregrine Falcon
- (6) Continuing studies on Milrow effects to determine if any long-term change in density, distribution, or nesting habitat has occurred
- (7) Predicting the possible effects of Cannikin on the Amchitka avifauna (on the basis of previous field work and particularly on the effects of Milrow)
- (8) Assessing the short-term effects of Cannikin on avifauna
- (9) Outlining of future studies to adequately assess the impact of Cannikin.

As an additional related task, bird samples were taken upon request for radiological analysis by the Laboratory of Radiation Ecology of the University of Washington.

The data upon which this report is based include not only those gathered during the study period, but other pertinent information gathered since 1967. As of this writing 830 man-days have been spent on Amchitka in the effort to acquire definitive data on the biology of the avifauna. In addition, considerable effort was expended in preparing publications.

Place names on Amchitka referred to in this report are shown in Figure 1.

SPECIES COMPOSITION AND ANNOTATIONS

The new avian species recorded during FY 72 are listed in the Appendix which also includes references for the annotated lists of the 91 species recorded on or near Amchitka since 1967.

Since 1955, 112 avian species had been observed on or near Amchitka (Kenyon, 1961; this study). Of these, 52 occur regularly in substantial numbers, and 60 species occur only as accidentals or casuals.

FIGURE 1. LOCATION OF PEREGRINE FALCON TERRITORY SITES REFERRED TO IN TABLE 1

ECOLOGICAL AND GEOGRAPHICAL DISTRIBUTION

In previous studies, 14 ecologic formations were characterized by life form of plants and distinctive features of topography and geology. This is a necessary step in determining environmental circumstances, including trophic position and relationships, that allow for the presence of any species of bird. Twelve ecological formations and the primary avian inhabitants of each are described in Williamson and Emison (1969) which also presents a schematic ecological profile of Amchitka showing the relative positions of the 12 formations, and two additional ecologic formations utilized by nesting and feeding birds were described in the 1972 report.

POPULATION DENSITIES

Population densities of important avian species of Amchitka have been reported previously and the most recent estimates of population densities, by season, for 38 species inhabiting either the Island proper or nearshore littoral waters are given in Williamson, Emison, and White (1972). These estimates are that the total population is about 50,000 birds on or near Amchitka in the summer, decreasing to about 30,000 birds in the winter. Data collected this year indicate that these populations did not change from prior years.

During this study period particular effort was expended in the collection of data on the Peregrine Falcon (Falco peregrinus), the Bald Eagle (Haliaeetus leucocephalus), terrestrial birds, and waterfowl. For the two raptor species it seems appropriate to present a summary of our general knowledge of them on Amchitka, followed by a report on their status during the 1971 breeding season. Additional details are given in the previously mentioned reports, and in White, Emison, and Williamson (1971).

Peregrine Falcon

Status of Occurrence. Permanent resident.

Ecological and Geographical Distribution on Amchitka. Throughout most of the year this falcon is most commonly found along the sea cliffs, over the marine littoral waters, and judging from the remains of seabirds found in eyries, it also spends much time hunting in the marine pelagic waters. During the autumn and winter months there is an increase in the numbers of falcons hunting over Empetrum-Cladonia tundra and Carex meadow communities. There is a rather uniform distribution of falcons nesting around the entire Island.

Density. During the spring and summer, the total population of about 20 pairs nested on Amchitka, but this population is increased during the autumn and early winter months by the fledged young. However, by early spring few young of the previous year have been found during surveys on the Island.

Breeding Biology. In 1968, we tentatively located seven eyries, although only two were determined to contain either eggs or young birds. Of the remaining five locations,

three were relocated in 1969 and 1970 but the other two did not have falcons present in these years. In 1969, 17 eyries or faces of cliff with defending adults were located. In 1970, all of the locations found in 1969 were again occupied, and we found two more eyries that were not located in the previous two years.

Egg laying commences about April 15, and fledging takes place during the last week of June and the first week of July. Data on productivity collected in 1969 and 1970, revealed an average clutch size of 3.32 eggs ($n=15$), and a fledging success of 1.36 young per nest ($n=11$).

Foods. Small alcids (Crested Auklets, Ancient Murrelets and Least Auklets) are the most commonly found food during the spring and summer, while the resident Rosy Finch, Snow Bunting and Rock Ptarmigan increase in occurrence during the autumn and winter. A detailed report on the feeding habits of this species will be prepared by the authors.

Status in 1971. The success of nesting attempts of the Peregrine Falcon in 1971 was most encouraging (see Table 1). As in previous years the peregrines showed a marked tendency to return to specific nesting areas, all of which are listed in Table 1 and shown in Figure 1. As indicated in Table 1, the actual ledge used for placement of eggs has varied between years at the Constantine Harbor and "C site" eyries and, collectively, the data indicate that between 15 and 20 pairs of Peregrine Falcons attempt to nest annually on Amchitka.

Bald Eagle

Status of Occurrence. Permanent resident.

Ecological and Geographical Distribution on Amchitka. The Bald Eagle, one of the most conspicuous birds on Amchitka, is usually found on the sea cliffs (including adjacent sea beaches and marine littoral waters) around the entire perimeter of the Island. However, individuals and pairs soaring and hunting inland also are common during all seasons. There has been a rather uniform distribution of eagles nesting around the entire Island during the period of this study.

Density. Repeated censuses indicate that about 200 Bald Eagles (excluding nestlings) are present on Amchitka during the summer months. Of these, about 75 percent are adults and 25 percent are subadults (excluding nestlings). During winter, the population is somewhat larger because of the fledglings reared on Amchitka, and also probably because some interisland movement occurs in the western Aleutians (Murie, 1959). Counts made from helicopters show that the winter population is about 300 eagles, of which 58 percent are adults and 42 percent are subadults.

Breeding Biology. Each year, between 55 and 60 pairs of eagles nest around the perimeter of the Island. The majority of nests are located in small grassy areas on top of isolated rocky pinnacles (sea stacks) just offshore. Some nests also are situated on sea cliffs and on larger offshore islets. Only one nest has been found inland on a tundra mound.

During the 1968, 1969, and 1970 nesting seasons, 88 different nest sites occupied by adults were located. Sixteen of these sites were used in all three breeding seasons, 30 were used twice, and 42 sites were used only once. Between 30 and 35 percent of the

TABLE 1 SUMMARY OF DATA ON PEREGRINE FALCON EYRIES WITH REMARKS ON NEST SUCCESS FOR 1971

Eyrie Location(a)	1968	1969	1970	1971			Remarks
				Eggs	Young	Young Fledged	
1 North Bright	Ads. Present	Young	Young	(b)	3	3	
2 Constantine Harbor a	Young	Eggs, failed	--	--	--	--	Not occupied
2 Constantine Harbor b	--	--	Eggs, failed	--	--	--	Not occupied
3 Constantine Harbor c	--	--	--	4	4	4	New adult male
4 Stone Beach Cove, "Bat"	?	Young	Young	--	3	3	
5 "C Site" a	Ads. Present	Eggs, failed	--	--	--	--	
5 "C Site" b	--	--	Young	--	--	--	Not occupied
5 "C Site" c	--	--	--	3	3	3	Not occupied
6 "Peregrine Point"	Ads. Present	Ads. present	Eggs	?	?	?	Pair present, no eyrie found
7 Chitka Cove	?	Ads. present	Young	--	--	--	None seen
8 "East Chapel"	?	Ads. present	Young	4	2	2	
9 "West Chapel"	?	Ads. present	Ads. present	--	--	--	Pair present, no eyrie found
10 Finger Point	?	Eggs	Ads. present	--	2	2?	
11 Bird Cape #2	?	--	Eggs, failed	4	--	--	Eggs lost
12 Bird Cape #1	Young	Young	Young	--	--	--	Nesting started, deserted
13 Aleut Point	?	Ads. present	Young	--	3	3	
14 "High Cliff"	?	--	--	--	--	--	Fledged young seen, late June
15 Rim Point	?	--	--	--	2	2	
16 "West Column" a	?	Young	--	--	--	--	None seen
16 "West Column" b	?	--	Young	--	--	--	None seen
17 "East Column"	?	Young	Young	4	4	4	
18 "House Cove"	?	--	--	--	2	2?	
19 Andesite Point	?	--	--	--	--	--	Lone female, May-June
20 Lumpet Creek a	Ads. present	Young	Young	--	--	--	None seen
20 Lumpet Creek	?	--	--	2	2	2	New adult female
21 "Lumpet-Fall" Creek	?	--	--	--	3	--	Young disappeared, mid-June
22 Fall Creek	?	Ads. present	Ads. present	--	--	--	None seen
23 "Mex Island"	?	Young?	Ads. present	--	3	3	
24 "Ultra Creek"	?	Lone adult	Lone adult	--	--	--	None seen
25 "Charlie Cove"	Young	Eggs, failed	Eggs, failed	--	2	2	One young killed by eagle
26 "Clover Lake"	?	Ads. present	Young	--	3	3	
27 South Bight	?	Ads. present	--	--	--	--	Lone female, May-June
28 Omega Point	Pair?	--	Lone adult	--	--	--	None seen

(a) Names of the eyrie locations are reference names used in the study. The numerical values preceding the name are shown on Figure 1 and identify the location of that site.

(b) -- indicates zero, ? indicates that the number could not be determined.

nests occupied in any one year are unoccupied the following year. A similar low nest-site tenacity has been described by Hensel and Troyer (1964) for Bald Eagles nesting on Kodiak Island.

Egg laying takes place during the last week of March and most hatching occurs during the first week of May. The average clutch size in 43 nests examined during this study was 1.91 eggs (7 one-egg, 33 two-egg, and 3 three-egg clutches). In 1969, 0.94 young fledged per nesting attempt.

Foods. Eighty-nine food items of eagles have been identified, most of which were remains found in nests during the chick rearing period. Of these, 28 percent were mammals, with sea otter remains constituting about half, and rat remains and carrion of whales and seals making up the remainder; 57 percent were remains of birds with the marine littoral and pelagic inhabitants (fulmars, cormorants, eiders, oystercatchers, gulls, murres, murrelets, auklets and puffins) making up the majority of the total. However, some terrestrial and freshwater species (mallards, scaup and ptarmigan) also were taken, particularly during the winter; fishes (primarily rock greenling, but also a few lumpsuckers, snailfish and Dolly Varden) made up the remainder of the food remains.

Status in 1971. In 1971, of 64 nesting attempts (includes only nests which showed rebuilding activity) 48 were successful. A total of 83 young were produced in the 48 nests as follows: 16 nests with one young; 29 nests with two young; and 3 nests with three young. The nests were placed on sea stacks (39), rock columns or ridges connected to the mainland (17), and on the mainland (8). Of the nests, 44 were located in the sites used in 1969 and 1970, 18 were in new localities, and 2 were in undetermined sites. Thus, the population of Bald Eagles increased even though human activity was at a maximum and presumably caused disturbance of nesting birds.

Terrestrial Birds

Population data on tundra-nesting birds were collected in 1971 on the same three census plots studied in previous years. It was not possible to detect any change in the numbers of Lapland Longspurs (Calcarius lapponicus), Rock Sandpipers (Erolia ptilocnemis), or Rock Ptarmigan (Lagopus mutus) nesting in these plots.

Waterfowl

Considerable effort has been expended over the years locating the areas most heavily used by the ducks, geese, and swans of Amchitka, and censusing birds in those areas in an attempt to determine relative numbers and species composition. During the breeding season of 1971 the numbers of nesting species did not vary appreciably from those reported earlier. However, it is of interest to note that only a limited number of lakes and ponds are used by waterfowl as loafing and feeding places in autumn prior to the first permanent freezing of lake surfaces. There are about 2,500 lakes and ponds on Amchitka, and the largest of these is about 1,000 yards long by 400 yards wide. Although 10 percent of these lakes are seemingly suitable for waterfowl, repeated censuses have shown that certain ones, 16 or about 0.7 percent, are

used traditionally by flocks of waterfowl during the fall. Results of the most complete survey (made on October 23, 1971, partly by helicopter) of nearly all the lakes on Amchitka are given in Table 2, and the geographic location of those lakes is shown in Figure 2.

FEEDING ECOLOGY OF AMCHITKA BIRDS

Definitive accounts of the feeding ecology of Amchitka birds have been presented previously. This work is continuing only with the Peregrine Falcon and Bald Eagle for which significant new data were gathered during FY 1972. These data will be reported at a later date after a thorough analysis has been completed. However, these data indicate that the Bald Eagle is important as a predator of juvenile sea otters, and this relationship may play a significant role in the welfare of populations of these two vertebrates.

LONG-TERM EFFECTS OF MILROW ON AVIFAUNA

The results discussed in preceding sections, together with data presented earlier (Williamson, Emison, and White, 1972), indicate little, if any, long-term effect of Milrow on the avifauna of Amchitka. It appears obvious that any deleterious effects are related almost entirely to minor habitat disturbances associated with construction activities, and that they are restricted to specific localities.

SHORT- AND LONGER-TERM EFFECTS OF CANNIKIN ON AVIFAUNA

Prediction of the possible effects of Cannikin were presented earlier (Williamson, Emison, and White, 1972). To enhance these predictions and to assess the immediate and longer-term effects of the detonation, intensive studies were carried out prior to and just following the test. In addition, follow-up studies were conducted in April, May, and June of 1972. The results of these studies through the first two months after Cannikin have been summarized by Kirkwood and Fuller (1972) and need not be repeated here except to say that the significance of short-term effects of Cannikin can be fully assessed only after we determine their impact as seen through long-term studies.

Longer-Term Effects of Cannikin

Data on the early part of the nesting cycle of Bald Eagles and Peregrine Falcons nesting at locations damaged by Cannikin were gathered during April, 1972. This was a critical time (although about 3 weeks earlier would have been better for the eagle) since these species were still in the latter phases of setting up territories and constructing nests.

TABLE 2. DENSITY OF WATERFOWL ON LAKES USED IN FALL FOR LOAFING AND FEEDING

Lake ^(a)	Common Teal	Mallard	Pintail	Greater Scaup	Goldeneye	Red-Breasted Merganser	Europ. Widgeon	Buffle- head	Green-Wing Teal
1 "D" Site	40	60							
2 Near C. I. (Ultra drainage)	2	4		9				1	
3 Ultra Creek	75	15		2					
4 Tern Lake nr. Square Bay		14							
5 Near Silver Salmon	10	20	150					3	
6 Rifle Range	10	10		1					
7 Quonset				3					
8 Jones	20	20		70	2	4	2	20	1
9 Clevenger	250	50		10					
10 Main Camp (Nr. Sewer Pond)	100								
11 Pumphouse	20	50		15					
12 Tin	40	20							
13 Pillow Point	30	10							
14 G. E. Lake	50								
15 64 Lake	75	25	2				2		
16 E. Cape- S. Bight		3							
Total	722	301	152	110	2	4	4	24	1

(a) Numerical values in front of the names of the lakes indicate geographic placement in Figure 2.

FIGURE 2. GEOGRAPHIC PLACEMENT OF LAKES FREQUENTED BY WATERFOWL AS INDICATED IN TABLE 2

Bald Eagle

Three neighboring Bald Eagle nests (and a fourth one sometimes used) were destroyed by Cannikin on the Bering Sea side of the Island. The questions of importance were (1) the extent to which the birds attempted to nest in the region used formerly even though there was essentially no remaining suitable habitat, (2) whether territories of the other nesting eagles could be compressed laterally to allow placement of new nests or, (3) whether they would completely abandon the area. Two nests were destroyed and a third was damaged by Cannikin on the Pacific Ocean side of the Island but they could not all be checked because of weather conditions during the limited sampling period. Results of the preliminary observations revealed that the nest damaged on the Pacific Ocean side was not used (though it had been used for the four previous years), possibly because not enough nest structure remained or, there was not enough space to construct a new nest. These eagles moved about 200 feet away to the main Island. On the Bering Sea side, at least two nests appeared abandoned, and there were no eagles anywhere in the proximity of the former nesting sites. At a third site, eagles were nesting 200 yards away on a small piece of turf left behind when the surrounding hillside slid away.

Another aspect of eagle biology that was examined cursorily was the diminished utilization of the garbage dump as a feeding area. Planned garbage burial in recent years coupled with the reduction of work force on the Island resulted in less refuse available as food for the eagles. This change should be followed during the coming years until the ecological effects have been measured. We anticipate a reduction of eagles comprising the younger age groups.

Peregrine Falcon

The eyrie at Stone Beach Cove, (Location 4, Figure 1) originally damaged by Milrow and further damaged by Cannikin, was not used for breeding in April of 1972. The fact that the falcons moved to an adjacent cliff down the beach could possibly constitute a shift not related to Cannikin. The site, however, is on a suboptimal cliff (marginal situation) and it is not clear why such a site would have been selected other than if a better one were lost. The nesting site that remained on Petrel Point (Location 5 on Figure 1) was occupied by falcons, although egg-laying had not started when the field work was terminated. Although much of the cliff was destroyed by Cannikin it may be that other suitable ledges for nesting have been created. The first week in April at least two of the five pairs checked were incubating eggs.

Habitat Creation

It has continued to remain puzzling why no colonies of auklets or petrels have been found on Amchitka Island. These birds have representatives that commonly breed in the western Aleutians, and one is left to the conclusion that there exists a lack of suitable nesting sites such as the jumble of boulders (lava) near the beach on Semisopchnoi Island. It appears that the large slides of rock induced by Cannikin-related earth movement along the Bering Sea coast may very well serve as suitable nesting sites for these small sea birds in the not-too-distant future. Such an event would logically follow stabilization and revegetation of the slides and would have a beneficial effect on the Peregrine Falcon, a species already known to depend on these small sea birds for food.

REFERENCES

- Hensel, R. J., and W. A. Troyer. 1964. Nesting Studies of the Bald Eagle in Alaska. Condor 66:282-286.
- Kenyon, K. W. 1961. Birds of Amchitka Island, Alaska. AUK 78:305-326.
- Kirkwood, J. B., and R. G. Fuller. 1972. Amchitka Bioenvironmental Program. Cannikin D+2 months report. Battelle Memorial Institute, Columbus Laboratories, U.S. AEC Report BMI-171-147. 62 pp.
- Murie, O. J. 1959. Fauna of the Aleutian Islands and Alaska Peninsula. U.S. Fish and Wildlife Serv., N. Amer. Fauna, No. 61:1-364.
- Williamson, F. S. L. 1968. Amchitka Bioenvironmental Program. Studies of the avifauna on Amchitka Island, Alaska; annual progress report, August 1967 - June 1968. Battelle Memorial Institute, Columbus Laboratories, U.S. AEC Report BMI-171-102. 53 pp.
- Williamson, F. S. L., and W. B. Emison. 1969. Amchitka Bioenvironmental Program. Studies of the avifauna on Amchitka Island, Alaska; annual progress report, June 1968 - July 1969. Battelle Memorial Institute, Columbus Laboratories, U.S. AEC Report BMI-171-125. 75 pp.
- Williamson, F. S. L., W. B. Emison, and C. M. White. 1971. Amchitka Bioenvironmental Program. Studies of the avifauna on Amchitka Island, Alaska; annual progress report, July 1969 - June 1970. Battelle Memorial Institute, Columbus Laboratories, U.S. AEC Report BMI-171-131. 46 pp.
- Williamson, F. S. L., W. B. Emison, and C. M. White. 1972. Amchitka Bioenvironmental Program. Studies of the avifauna on Amchitka Island, Alaska; annual progress report, July 1970 - June 1971. Battelle Memorial Institute, Columbus Laboratories, U.S. AEC Report BMI-171-134. 30 pp.

APPENDIX A

ANNOTATED LIST OF SPECIES*Anser fabalis. (Bean Goose)

Status on Amchitka. Accidental.

Distribution on Amchitka. Tundra near Rifle Range.

Density. One specimen was collected by Baine Cater, U.S. Bureau of Sport Fisheries and Wildlife, near the roadside at Rifle Range on 23 May 1971.

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds in Iceland and Spitsbergen, eastward across Eurasia to Chukotski Peninsula. Winters south to southern Europe, Mediterranean and Caspian seas, China, and Japan.

Specimens. Female, one.

Anas formosa. (Baikal Teal)

Status on Amchitka. Accidental.

Distribution on Amchitka. Freshwater lakes near Constantine Harbor.

Density. A single female was observed on a pond near the head of Constantine Harbor (Fox Runway) as it mixed with a flock of Common Teal on June 1, 1971.

Breeding Biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds in northern and eastern Siberia in the region of the Yenisei, Lena, Indigirka and Kolyma Rivers and in northern Ussuriland. Winters in China, Korea, Japan and south to Burma and Assam; also occurs in the Kurile Islands. Casual in coastal Alaska, England, and Italy.

Specimens. None.

Arenaria melanocephala. (Black Turnstone)

Status on Amchitka. Accidental.

Distribution on Amchitka. Near tundra ponds in the southeastern portion of the Island.

Density. One was seen by Clayton Hardy, U.S. Bureau of Sport Fisheries and Wildlife, who is familiar with this species, on June 22, 1971 at Mason Lake. We saw what may have been the same bird near a small lake just north of Mason Lake on June 23, 1971.

*This listing supplements Appendix B of BMI-171-125 (Williamson and Emison 1969) Appendix A of BMI-171-131 (Williamson Emison and White 1971) and Appendix A of BMI-171-134 (Williamson Emison and White 1972) This Appendix also updates BMI-171-134 as several species were inadvertently left out of Appendix of that report

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds along Alaskan coast from Shismaref Inlet south to the Sitka district. Winters from southeastern Alaska to central Sonora, Mexico. Casual in Yukon Territory, interior Oregon and California and as far north in Alaska as Kotzebue Sound.

Specimens. None.

Philomachus pugnax. (Ruff)

Status on Amchitka. Accidental.

Distribution on Amchitka. Tall grass in meadows and on the tundra at the southeastern portion of the Island.

Density. An adult male, described as having a black "mane" or "ruff", white body, and a conspicuous "orangish" bill, with two smaller "brownish" females were independently seen and described to us by several persons on May 30, 1971. The birds were seen feeding in the tall grass near the head of Constantine Harbor (near Fox Runway Lake) during the time the persons were fishing. They were seen in good light as close as 100 feet and watched for about one-half hour. The birds were again reportedly seen by other persons on a tundra mound about 4 miles to the northwest of the first locality on June 1, 1971.

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds in Eastern Asia north of the Anadyr River, Anadyr peninsula westward through northern Siberia, and northern Europe. Locally in France. Winters from the North Sea to South Africa, and to a lesser extent in southern Asia.

Specimens. None.

Erolia melanotos. (Pectoral Sandpiper)

Status on Amchitka. Accidental.

Distribution on Amchitka. Tundra and edges of wet regions on the tundra.

Density. A single bird was collected on September 25, 1971 as it was resting near a small pond to the northwest of Rifle Range.

Breeding Biology. This species does not nest on Amchitka.

General Distribution and Migration. Breeds on Arctic coast of eastern Siberia, eastward along northern coast of Alaska and Canada to Southampton Island and south coast of Hudson Bay, in Alaska south to Goodnews Bay. Winters in southern South America and casually to Samoa, and New Zealand. Casual in Greenland, Europe, and eastern coast of southeast Asia.

Phalaropus fulicarius. (Red Phalarope)

Status on Amchitka. Casual.

Distribution on Amchitka. Presumably passes near the Island at sea.

Density. A freshly killed specimen was found in the eyrie of a Peregrine Falcon in a cove opposite Charlie Runway on May 30, 1971.

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds circumpolarly along Arctic and northern coasts mainly above the Arctic Circle. Winters in southern hemisphere, off Africa, South America, and New Zealand. Accidental in India.

Specimens. Sex unknown, one.

Cuculus saturatus. (Oriental Cuckoo)

Status on Amchitka. Accidental.

Distribution on Amchitka. Beaches and abandoned buildings; tundra.

Density. A specimen was collected as it foraged along the beach at White Cove on May 31, 1971. A second specimen was seen by Daniel Gibson on July 7, 1971. At least one individual was present between June 14 to 28, 1972 and two were seen together on June 18, 1972.

Breeding biology. This species does not nest on Amchitka.

General Distribution and Migration. Breeds from Arctic Circle in eastern Siberia south to Burma and Formosa. Winters in India and many islands of the South Pacific Ocean.

Specimens. Adult male, one.

Riparia riparia. (Bank Swallow)

Status on Amchitka. Accidental.

Distribution on Amchitka. Overland near landing strips and sand bank areas.

Density. On September 24, 1971, a flock of five were watched as they coursed back and forth feeding over Baker Runway and ponds adjacent to the North Hanger.

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds in north central Alaska east of Newfoundland, British Isles, northern Russia and northern Siberia. In North America south to southern U. S. and eastern Hemisphere south to India and Japan. Winters in South America, Africa, and southern Asia.

Specimens. None.

Bombycilla garrulus. (Bohemian Waxwing)

Status on Amchitka. Accidental.

Distribution on Amchitka. Tundra.

Density. A single specimen was collected on October 24, 1971.

Breeding biology. This species does not breed on Amchitka.

General Distribution and Migration. Breeds in northern Europe and Scandanavia east to eastern Siberia, Asia Minor, and Japan; and from western Alaska, and Manitoba south to northern Idaho and Montana. Winters south to California, New Mexico, Illinois, New England, and Nova Scotia. Casual in Greenland.

Specimens. Immature female, one.