

FILE - Emperor
Goose

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Waterfowl Survey of St. Lawrence Island, Alaska
13 July, 1984

by

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INTRODUCTION

References from published data vary in the importance of St. Lawrence Island to emperor geese (*Chen canagica*). Dixon (1916) referred to "over 100" in June 1913, while Murie (1936) considered this goose [emperors] "very abundant" on the island. More recently, Fay and Cade (1959) reported that thousands of nonbreeders occur along the south coast in summer, and Fay (1961) estimated that "between ten and twenty thousand non-breeding" emperors congregated there during the molt. Fay (1961) also compared abundance of waterfowl species represented in 2000 year-old Eskimo middens to mid-1950's harvest from the Northwest Cape of St. Lawrence Island. The emperor goose was considered uncommon and none were found in recent archeological records. Fay (1961) weighted the harvest data and determined that emperor geese increased from uncommon to common and were increasing in the harvest data.

Portenko (1972) reported many geese molting near Uelen on the Northeast side of the Chukchi Peninsula, USSR in 1934, and "enormous flocks" sometimes were there in fall. We have no present population estimates of emperors in the USSR. Populations have declined in key areas of Alaska, thus we might assume similar declines in the USSR.

Jones (1972), Eisenhauer and Kirkpatrick (1977), and Mickelson (1973) observed molt migration of emperors from the central Yukon Delta northwest towards St. Lawrence Island from mid to late June (Figure 1). These observations, made between 1960 and 1974, varied from flocks of a few 10's and to totals of 2,000 birds.

No avian surveys for St. Lawrence Island have been conducted for the past two decades. The objective of this survey was to obtain data on the distribution and abundance of emperor geese.

METHODS

On 13 July, 1984 a twin engine Cessna 402 was chartered at Nome, Alaska. Although this low-winged aircraft did not provide the best platform for observation, it was a compromise of what was available and the added safety of two engines for the 200 km open sea flight. During the survey, the aircraft was operated at approximately 150 m elevation and airspeed at 175 km/hr. One observer sat in the right front seat of the aircraft and navigated, while the second observer sat in the rear seat behind the wing. During this survey, Rod King (MB - Fairbanks) was front observer and navigator and Dirk Derksen (WA - Anchorage) was second observer. Communication between the front and rear observers was made on a regular basis.

RESULTS

The survey duration for St. Lawrence Island was approximately 3 hours and 45 minutes. During this time, 3,837 emperors were observed. The route of flight and survey area observed is found in Figure 2. Table 1 summarizes all waterfowl observed by major segments of the island, as well as notes on other wildlife observed. We surveyed approximately 90 percent of what appeared to be emperor goose habitat on St. Lawrence Island. It is estimated that less than a few hundred emperor geese were missed during the survey.

DISCUSSION

St. Lawrence Island and the Chukchi Peninsula, USSR, have been considered major molting areas for emperor geese (Fay 1961, Portenko 1972). Our results indicate that the number of emperor geese using St. Lawrence Island has declined significantly in the past two decades. Factors that could contribute to the decrease in use are: 1) the total population of emperors has declined, 2) a shift to other habitats has occurred, 3) a series of poor production years has occurred, or 4) overharvest and disturbance on the island has increased.

There are few recent population estimates of emperors in the USSR, and no accounts of increases of emperors in other areas of Alaska. It is likely then that if there were significant increases (within the last ten years) of emperors on U.S.S.R. habitats there would be some literature citing such a change. Expansion of emperor habitat surveyed in Alaska since 1981 has not resulted in increased counts of emperors from the 1960's era. King (1964) estimated 139,000 emperor geese and later (King, 1968) estimated a world total of 250,000. Current population estimates from King and Derksen (1984) and Dau and King (1985) are far below the 1960's estimate. Population estimates vary from spring to fall depending on the timing of the survey team to count emperors during peak use of southwestern Alaska habitats. Fall population estimates during the last two years have been between 59,000 to 82,000 (King and Derksen, 1985; and King and Eldridge, 1986). Comparison of these data to King's (1964) estimate indicates a 41 to 58% decline of the emperor goose population in Alaska during the last two decades.

CONCLUSIONS AND RECOMMENDATIONS

(There has been no published data in reference to emperor goose populations in the USSR since the 1960's. St. Lawrence Island was the most significant recorded molting habitat for emperors nearest USSR. To acquire an accurate population estimate for emperor geese, it is necessary that the FWS make every effort to survey all available habitat. These surveys should include an inventory of western coastal Alaska, including St. Lawrence Island, as well as the Aleutian Islands, and significant efforts should be made to contact USSR biologists for current population estimates.

LITERATURE CITED

- Dau, C. P., and R. J. King. 1985. Spring survey of emperor geese in southwestern Alaska, 12-16 May 1985. Unpubl. U.S. Fish and Wildlife Serv. Rept. Cold Bay, Alaska.
- Dixon, J. S. 1916. Migration of the yellow-billed loon. *Auk* 33:370-376.
- Eisenhauer, D. I., and C. M. Kirkpatrick. 1977. Ecology of the emperor goose in Alaska. *Wildl. Monogr.* No. 57:1-62.
- Fay, F. H. 1961. The Distribution of Waterfowl to St. Lawrence Island, Alaska. *Ann. Rept. Wildfowl Trust, Slimbridge, England* 12:70-80.
- _____, and T. J. Cade. 1959. An ecological analysis of the avifauna of St. Lawrence Island, Alaska. *Univ. Calif. Publ. Zool.* 63(2):73-150.
- Jones, B. N. G. 1972. Moults migration of emperor geese. *Ann. Rept. Wildfowl Trust, Slimbridge, England* 23:92-93.
- King, J. G. 1964. Waterfowl Migration Spring 1964. Memo dated 19 January 1965 to Manager, Izembek National Wildlife Refuge. U.S. Fish and Wildl. Serv. files, Anchorage, Alaska.
- _____. 1968. Migratory bird populations of coastal Alaska that might be affected by oil development. Memo dated 4 January 1968 to Regional Director, U.S. Fish and Wildl. Serv. files, Anchorage, Alaska.
- King, R. J., and D. V. Derksen. 1984. Fall survey of emperor geese of southwest coastal Alaska, 3-8 October, 1984. Unpubl. U.S. Fish and Wildl. Serv. Rept. Fairbanks, Alaska.
- _____, and W. D. Eldridge. 1986. Fall survey of emperor geese of southwest coastal Alaska, 10-14 October, 1985 with summary of previous six years 1979 through 1984. Unpubl. U.S. Fish and Wildl. Serv. Rept. Fairbanks, Alaska.
- Mickelson, P. G. 1975. Breeding biology of cackling geese and associated species on the Yukon-Kuskokwim Delta, Alaska. *Wildl. Monogr.* No. 45:1-35.
- Murie, O. J. 1936. The Birds of St. Lawrence Island, Alaska. Appendix V, in *Archeological Excavations at Kukulik*, by Otto W. Geist. *Misc. Publ., Univ. of Alaska*, Vol. 2, pp. 359-376.
- Portenko, L. A. 1981. Birds of the Chukchi Peninsula and Wrangel Island. Nauka Press, Moscow-Leningrad 1(15):127-137. (Translated from Russian.)

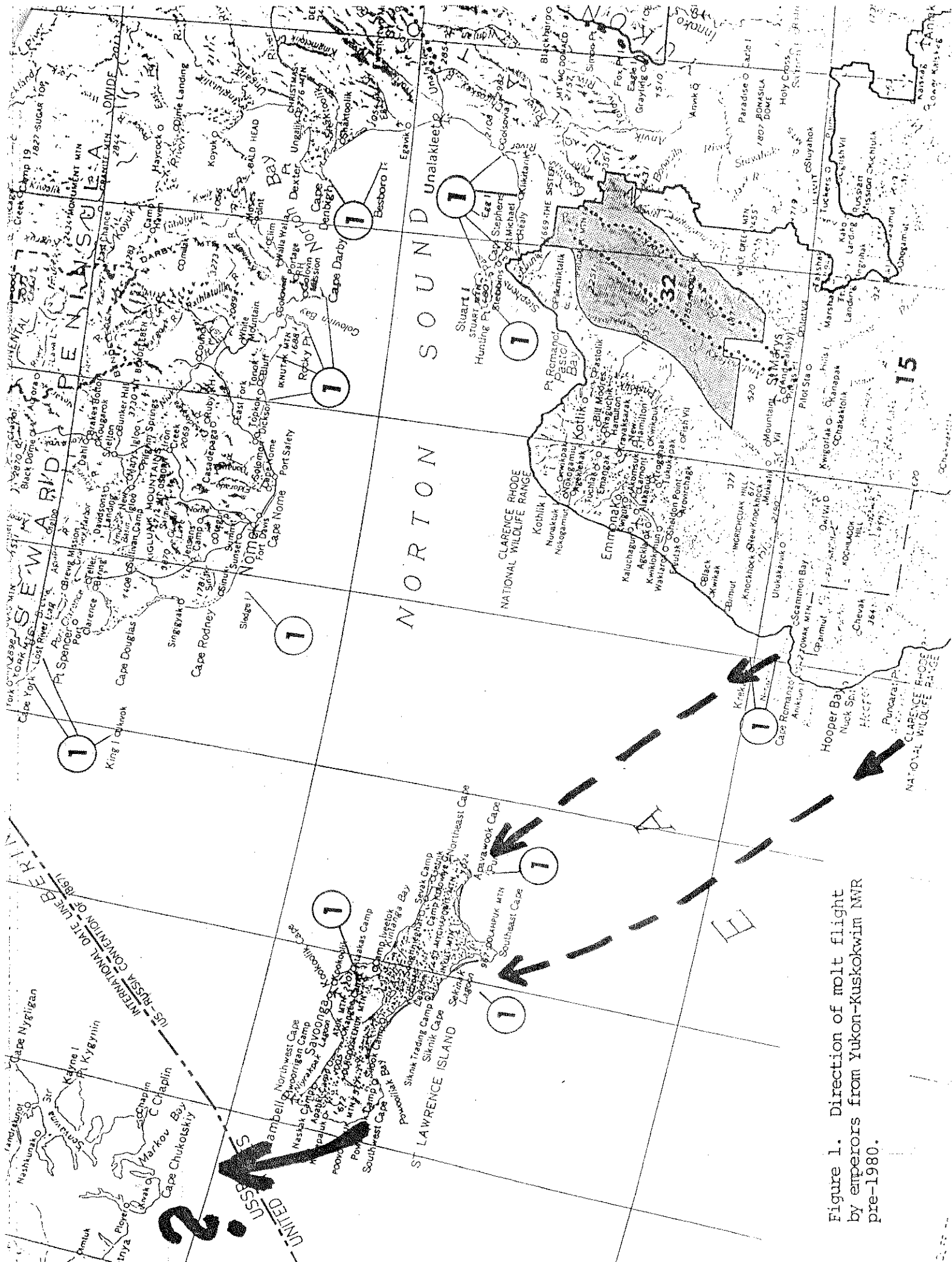


Figure 1. Direction of molt flight by emperors from Yukon-Kuskokwim NWR pre-1980.

Table 1. Results of Aerial Survey on St. Lawrence Island, Alaska - 13 July, 1984.

LOCATION	EMPEROR GOOSE	BRANT	TUNDRA SWAN	COMMON EIDER	OLDSQUAW	SANDHILL CRANE
Camp Kulowiye	61		16(5)			
Kiloknak Lagoon						
Maknik Lagoon	113		4	94		2
Sekinak Lagoon	1925	270	17(3)	995		10
Niykhapakhit Lake Uplands			15(2)			5
Koozata Lagoon	1259(11)*	110	50	76	37	
Koozata Uplands	396		23(2)			
Putgut Plateau						
Kookooliktook River	6	2	3			
Aghnaghak Lagoon			8(1)		2	
Niyrakpak Lagoon	25					
Apatiki Camp	23	1	3			
Kangee Camp			26(3)	21	1	4
Ongoveyuk Lagoon	24		9	2		2
Seepanpak Lagoon	5		7		2	1
Kitnagak Bay			2			
TOTAL	3837(11)	383	183(16)	1188	42	24

Note: During survey 7 headless beached walrus, 6 gray whales, and 1 dead gray whale were observed.

* Numbers in () are young flightless birds.

