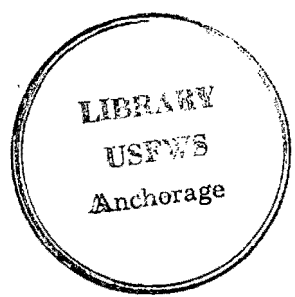


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WRANGEL ISLAND SNOW GOOSE INVENTORY
YUKON DELTA NATIONAL WILDLIFE REFUGE
ALASKA - 1985



1985 Inventory Report

Key Words: Snowgeese, Wrangel Island, Yukon Delta
Productivity, Juveniles

John P. Clark
U.S. Fish and Wildlife Service

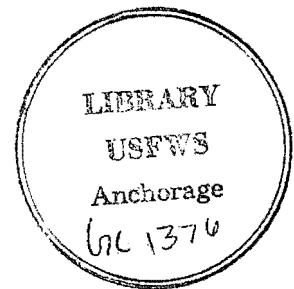
Data Collected
by
Mike Reardon Mike Brown Dean Cramer
Yukon Delta NWR Yukon Delta NWR Yukon Delta NWR
USFWS

Inventory Plan
Yukon Delta National Wildlife Refuge
U.S. Fish and Wildlife Service
Box 346
Bethel, Alaska 99559

November 1985

UNITED STATES GOVERNMENT
memorandum

DATE: November 28, 1985
REPLY TO
ATTN OF: Refuge Manager, Yukon Delta NWR
SUBJECT: 1985 Snow Goose Inventory
TO: Refuges (S) *plus nesting*



Attached is the 1985 snow goose inventory.

Ronald L. Perry

cc. W.A.
Research
Becharof
Izembek
Togiak
W.I.

*original in Files
copy to lib.*

memorandum

DATE: November 20, 1985

REPLY TO
ATTN OF: John P. Clark, Wildlife Biologist

SUBJECT: 1985 Inventory of Wrangel Island Snow Geese

TO: Ronald L. Perry, Manager, Yukon Delta National Wildlife Refuge

The annual fall inventory of Wrangel Island lesser snow geese was conducted on September 25 and October 1 in the Kokechik River and Dall Lake areas. Relatively few flocks were observed on these dates, most snow geese apparently had not yet arrived from areas farther north. Later inventory flights were planned, but were not conducted due to delays caused by the following factors:

1. adverse weather
2. commitment of aircraft and personnel to assist in extraction of a Wildlife Assistance aircraft from coastal mudflats
3. downtime associated with conversion of refuge aircraft from floats to skids
4. detailing of refuge pilots to Anchorage for proficiency check rides and pilot training.

The inventory was conducted in a manner similar to previous inventories. Aerial photographs were taken of flocks from Cessna 185 and Piper Supercub aircraft using a 35mm, motor-drive, single lens reflex camera with a 200mm lens and ASA 200 Ektachrome slide film. During the inventory six flocks totaling 2,520 geese were photographed (Table 1). Two other small flocks, consisting of 52 total geese, were counted from aircraft but not photographed.

The developed slides were projected on 24" X 36" sheets of paper. The slides of one flock were of insufficient quality to allow identification of juveniles. A roll of film containing the photographs of two other flocks was lost, thus no data on age ratios are available for these flocks. Five slides were selected to sample the ratio of juveniles to total geese in the three remaining flocks which had been photographed. Locations of juveniles and adults on the paper were marked with contrasting-colored pens. The numbers of pen marks were tallied to determine the number of juvenile and adult geese in each photograph. These data were used to determine the percentages of juveniles in the photographs of each flock and data from all flocks were combined to yield a percentage juveniles in all counted geese (Table 1). A weighted mean percentage of juveniles designed to compensate for varying flock sizes was calculated. The resulting estimate of percentage juveniles in the population varied by less than one percent from the actual counts, so these calculations are not presented.

Aerial photographs have been used to estimate productivity of Wrangel Island snow geese since 1975 (Table 2). Estimates of percent juveniles have ranged from 0.5 percent to 42.1 percent. Total numbers of birds counted from photographs each year has varied from 2,474 to 12,947. The 1,222 geese counted from photographs and complete censuses during the 1985 inventory falls far short of previous inventory totals. The percentage of juveniles calculated from 1985 counts (38.5%) is the second highest percentage recorded in the past decade. The data seem to indicate the Wrangel Island snow geese had a highly successful reproductive effort this year, although smaller sample size may have affected our data.

Several small problems were noted during this year's inventory. These are discussed below to aid in future inventories.

COMPLETE FLOCK PHOTOGRAPHS Complete-flock photographs were not taken. These photos were needed to determine total flock size, since the observer significantly underestimated flock sizes. In two cases, counts of geese from photos showing only a fraction of the total flock exceeded the estimated flock size by 25 to 50 percent. Complete-flock photographs are designed to be taken from a distance and to show the entire flock in a single photograph so that all geese can be counted. They are best taken while the flock is loosely-aggregated rather than clumped.

AIRCRAFT AND PILOT AVAILABILITY Better planning of training periods for pilots and schedules for converting aircraft from floats to skiis would aid in completing the data-gathering phase of this inventory procedure.

SPRING INVENTORY A spring inventory of productivity and staging areas of snow geese is included in the refuge's inventory procedure. The spring inventory has not been conducted in recent years and therefore must be included in the annual schedule of refuge activities.

Table 1. Numbers and percentages of juvenile snow geese in flocks as determined by counts from photographs or complete flock censuses.

Flock number	Estimated number in flock	Number counted in photos		Percent Juvenile
		Juveniles	All geese	
1	800	247	580	43%
2	600a	165	445	37%
3	150	Not counted - Poor quality photos		
4	150a	39	145	27%
5b	35	14	35	40%
6	120	Not counted - film lost		
7	700	Not counted - film lost		
8b,c	17	6	17	35%
TOTAL	2,555	471	1,222	38.5%

- a These values were determined by estimating the flock size from the series of photographs after the field estimates were found to be too small.
- b Data on these flocks were obtained from complete censuses made by observers during inventory flights.
- c This flock was observed approximately 20 miles north of Kotlik along the coastline, by refuge biologists conducting the coastal waterbirds survey.

Table 2. Percentages of juvenile Wrangel Island snow geese in flocks counted on Yukon Delta National Wildlife Refuge from 1975 to 1985.

Year	Number of Juveniles	Total number of geese	Percent Juveniles
1975	2,767	9,443	29.3%
1976	1,417	3,362	42.1%
1977	451	12,947	3.5%
1978	3,607	10,131	35.6%
1979	1,949	5,203	37.5%
1980	540	2,673	20.2%
1981	2,533	6,829	37.1%
1982	412	3,808	10.8%
1983	22	4,558	0.5%
1984	346	2,474	14.0%
1985	471	1,222	38.5%

John S. Clark

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