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Refuge Division — Juneau, Alaska
FISH AND WILDLIFE SERVICE



DEPARTMENT OF THE INTERIOR
U. S. Fish and Wildlife Service
Bureau of Sport Fisheries and Wildlife

ALASKA - YUKON
WATERFOWL BREEDING PAIR SURVEY

May 17 to June 7, 1969

by

James G. King
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Juneau, Alaska

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Title : Waterfowl Breeding Pair Survey; Alaska & Yukon Territory
Strata Covered : 37, 38, 05
Dates : May 17 to June 7, 1969
Data supplied by: James G. King, Bureau of Sport Fisheries and
Wildlife, Juneau, Alaska, Pilot

Wesley Moholt, Bureau of Sport Fisheries and
Wildlife, Moses Lake, Washington, Observer

Abstract:

For the 1968 Alaska survey, conditions, personnel, methods and phenological timing were extremely similar to 1968. Spring is early this year, water levels are low in the Interior and normal on the tundra and there has been no river flooding at all. Population indexes are down 26% from last year but are up 28% from 1967 and stand at the ten year average. The high population in 1968 is attributed to drought displaced ducks from southern Canada so to get an undistorted picture of the normal Alaska population it is necessary to compare this year with 1967. An extra column has been added to Table No. 2 to show percent change from 1967. We conclude that the Alaska breeding population is in good shape, has been increasing, and that weather and habitat conditions are optimum for good production this year.

I. Methods:

The Alaska survey was completed according to standard procedures. The survey was very comparable to the 1968 survey with the same plane used, the same observers, similar weather and habitat conditions. The only essential difference was that due to an early season the survey began three days earlier than last year and was completed a full week earlier.

II. Weather and Habitat Conditions:

The past winter was extremely cold over most of Alaska with deep ice and light snowfall. Winter broke early, most of the snow evaporated and the ice went out at Nenana eight days earlier than the fifty year average. Arriving birds found plenty of open water and bare, dry habitat in most nesting areas. We have not had as early a spring since 1958.

There was no flooding anywhere this year. The big rivers remained very low and by the time of the survey we could not even find a creek that was out of its banks. Without flooding or run off lakes in the Interior (stratum 38) continued to dry up and we have lost quite a few lakes in the past year.

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On the Yukon flats water levels are still not as low as they were in 1960. In spite of loss of water area, I am sure there is no cause for alarm. The lakes of the tundra country (stratum 37) appear normal in number and water level.

This year the willows, aspens and other deciduous trees were all leafed out at the time of the survey except in the Bristol Bay area. In the recent past very little green has been out by this time. Survey timing, however, was optimum as we were right behind the retreating ice in all areas.

By contrast, the Old Crow flats does not seem to be enjoying an early spring. There was a great deal of ice there and the birds were poorly distributed at the time of survey. To get an optimum survey we should have waited about a week and done it on June 14, as we did last year.

In short, weather and habitat appear to be optimum this year in all areas except Old Crow which may be a little late.

III. Breeding Population Indexes

At first glance the Alaska duck breeding population appears to be down by 26% from last year, however, we speculated then that we had had a big influx of drought displaced ducks from the Canadian Prairies. This year's survey coupled with the knowledge of good conditions on southern Canada would tend to confirm that theory. The overall duck population now is about at the point of the ten year average and is up 28% from 1967.

All species are up from 1967 except bufflehead, eider and scoter. These species are probably unaffected by conditions in Canada and the decrease in bufflehead and eider may only indicate the sample is inadequate. The decrease in scoter may result from the fact that the survey was about a week earlier than in the past several years and many scoter had not completed migration. Dabblers are up 38% from 1967. All species are down from 1968 except golden-eye and bufflehead and here again sample size may be too small on these two species.

Breeding conditions have been good over the past two years after four or five late, poor seasons. This appears to have resulted in a moderate gain in the permanent breeding population, especially for dabblers. Conditions are ideal for good production this year and Alaska should produce a fall flight well in excess of 1967. It is difficult to predict just how the 1969 fall population will compare with the inflated 1968 population.

On the Old Crow breeding populations are close to the ten year average but are down somewhat from 1967 as well as 1968. Poor survey conditions (too much ice) could account for some of the apparent decrease. The Yukon flats 100 miles southwest down the Porcupine River were 100% ice free on May 22 and the Old Crow flats were still 60% ice covered on June 7 so possibly some ducks remained or diverted a few miles south.

ALASKA

TABLE NO. 1 TEN-YEAR TREND IN WATERFOWL BREEDING POPULATION INDEXES BY SPECIES
(Index numbers in thousands)
UNADJUSTED FOR VISIBILITY BIAS

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	10-yr. Average
ducks:											
harlequin - - - - -	78	108	60	83	67	27	32	42	76	53	63
american widgeon - -	26	42	42	27	36	40	32	59	133	114	55
green-winged teal - -	1	4	2	2	10	14	17	24	45	41	16
goldeneye - - - - -	7	17	7	5	7	4	5	6	32	21	11
tufted - - - - -	356	440	476	378	379	240	250	247	622	294	368
Subtotal - - - - -	468	611	587	495	499	325	336	378	908	523	513
geese:											
branta - - - - -	19	6	7	17	11	21	17	15	43	21	18
canada - - - - -	597	657	657	585	562	355	425	314	498	488	514
hutchinson - - - - -	27	26	33	10	9	9	13	38	35	39	24
hillary - - - - -	24	31	39	37	32	29	22	30	21	26	29
Subtotal - - - - -	667	720	736	649	614	414	477	397	597	574	585
allanaceous:											
otter - - - - -	324	316	225	165	148	190	252	250	301	246	242
le - - - - -	17	30	11	11	20	27	14	16	7	6	16
l Squaw - - - - -	90	87	69	94	92	49	79	87	133	93	87
Subtotal - - - - -	431	433	305	270	260	266	345	353	441	345	345
Total ducks - - -	1,566	1,764	1,628	1,414	1,373	1,005	1,158	1,128	1,946	1,442	1,442

ALASKA

TABLE NO. 2 COMPARATIVE STATUS OF WATERFOWL BREEDING POPULATION INDEXES
 BY SPECIES AND STRATUM
 1969
 (Index numbers in thousands)
 UNADJUSTED FOR VISIBILITY BIAS

Species	Stratum		Total		Average 1960 to 1969	Percent change from		
	37	38	1968	1969		1967	1968	Average
Dabblers:								
allard - - - - -	20	33	76	53	63	+26	-30	-16
American widgeon - -	31	83	133	114	55	+144	-14	+107
Green-winged teal - -	17	24	45	41	16	+71	-9	+156
Shoveler - - - - -	5	16	32	21	11	+250	-34	+91
Wintail - - - - -	166	128	622	294	368	+19	-53	-20
Subtotal - - - - -	239	284	908	523	513	+38	-42	+2
Divers:								
Canvasback - - - - -	00	21	43	21	18	+40	-51	+17
Caup - - - - -	205	283	498	488	514	+55	-2	-5
Goldeneye - - - - -	15	24	35	39	24	+3	+11	+63
Bufflehead - - - - -	4	22	21	26	29	-13	+24	-10
Subtotal - - - - -	224	350	597	574	585	+45	-4	-2
Miscellaneous:								
Cotter - - - - -	183	63	301	246	242	-2	-18	+2
Sider - - - - -	6	00	7	6	16	-62	-14	-62
Old Squaw - - - - -	82	11	133	93	87	+7	-30	+7
Subtotal - - - - -	271	74	441	345	345	-2	-22	none
Total ducks - - - -	734	708	1,946	1,442	1,442	+28	-26	none

OLD CROW, YUKON

TABLE NO. 3 TEN YEAR TREND IN WATERFOWL BREEDING POPULATION INDEX BY
SPECIES - 1960-1969
(Index numbers in thousands)
UNADJUSTED FOR VISIBILITY BIAS

Species	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	10-yr. Average
ducks:											
Willard - - - - -	2	4	4	2		1	1	3	2	1	2
American Widgeon - -	9	9	6	7	4	5	9	15	13	14	9
Green-winged teal - -	1	2	1		1			Tr.	1	Tr.	1
Noveler - - - - -	1								1		
Antail - - - - -	37	16	6	10	6	4	2	9	24	9	12
Subtotal - - - - -	50	31	17	19	11	10	12	27	41	24	24
geese:											
Canada back - - - - -	6	1		1		2	16	8	1	3	4
Trump - - - - -	38	49	35	24	24	21	49	38	33	39	35
Goldeneye - - - - -	2	2	2	3		1		4	7	2	2
Redhead - - - - -							1	Tr.	Tr.		
Subtotal - - - - -	46	52	37	28	24	24	66	51	41	44	41
Other miscellaneous:											
Waterfowl - - - - -	68	74	52	32	20	17	43	39	47	39	43
ducks:											
Red quaw - - - - -	6	7	11	4	7	3	8	10	10	6	7
Subtotal - - - - -	74	81	63	36	27	20	51	49	57	45	50
Total ducks - - -	170	164	117	83	62	54	129	128	139	113	116

OLD CROW, YUKON

TABLE NO. 4 COMPARATIVE STATUS OF WATERFOWL BREEDING POPULATION INDEXES
BY SPECIES
(Index numbers in thousands)
UNADJUSTED FOR VISIBILITY BIAS

Species	Stratum 05 Total		Average 1960 to 1969	Percent change from 1968	
	1968	1969		Average	
ducks:					
Mallard - - - - -	2	1	2	-50	-50
American widgeon - - -	13	14	9	+7	+56
Green-winged teal - - -	1	Tr.	1	-60	-60
Shoveler - - - - -	1	0	Tr.	-100	
Pintail - - - - -	24	9	12	-62	-25
Subtotal - - - - -	41	24	24	-41	None
geese:					
Canvasback - - - - -	1	3	4	+200	-25
Chukar - - - - -	33	39	35	+18	+11
Common eider - - - - -	7	2	2	-71	None
Wedge-tailed - - - - -	Tr.	0			
Subtotal - - - - -	41	44	41	+7	+7
miscellaneous:					
Lesser scaup - - - - -	47	39	43	-17	-9
Goldeneye - - - - -	10	6	7	-40	-14
Subtotal - - - - -	57	45	50	-21	-10
Total ducks: - - - -	139	113	116	-19	-3

ALASKA

TABLE NO. 5 WHISTLING SWAN BREEDING POPULATION INDEXES - 1960-1969
(Index numbers in thousands)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	10-yr. Average
mi. sampled	604	648	492	468	414	208	212	210	212	212	
per counted	710	759	470	567	481	298	256	208	213	367	
lation index	79	79	56	64	50	62	52	43	50	75	61

ALASKA, OLD CROW

TABLE NO. 6 STRATUM DATA SHEET

Survey Design	Strata		
	37	38	05
Square miles in the stratum	43,450	33,200	1,970
Square miles in the sample	212	214	18
Lineal miles in the sample	1,696	1,712	144
Number of transects in the sample	30	63	3
Number of segments in the sample	106	107	8
Expansion factor	205	155	109

Data

	Strata					
	37		38		05	
Numbers of	Sample	Stratum	Sample	Stratum	Sample	Stratum
Lone males	728	149,240	738	114,390	168	18,312
Duck pairs	850	174,250	917	142,135	275	29,975
Flocked ducks	201	41,205	167	25,885	25	2,725
Unidentified ducks	149	30,545	494	76,570	80	8,720

Stratum 37 Dates: 5 /24 /69 Thru 6 /2 /69

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL (10)	POPULATION INDEX (15)
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped (7)	As Drake & Pairs (8)	As a Group (9)		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard	33	8	82	8			82	15		97	19,885
Black duck											
Gadwall											
American widgeon	42	21	126	13			126	24		150	30,750
Green-winged teal	21	12	66	7	3	60	69	13	1	83	17,015
Blue-winged teal											
Shoveler	5	5	20	2			20	4		24	4,920
Pintail	281	57	676	70	2	40	678	132		810	166,050
Redhead											
Canvasback											
Scaup											
Ring-necked duck											
Goldeneye											
Bufflehead											
Scoter											
Ruddy duck											
Merganser											
Sub-total	382	103	970	100	5	100	975	188	1	1,164	238,620
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	382	64	74	148
Ducks in pairs (b)	206	35	40	40
Sub-total (c)				188
Ducks in groups (d)	5	1	1	1
Coot (e)				
Grand Total (f)	593	100	115	189

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	43,450
Square miles in the sample	212
Number of segments	106
Expansion factor	205
Segment length	16 miles

Stratum 37 Dates: 5 /24 / 69 Thru 6 /2 /69

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL (10)	POPULATION INDEX (15)
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped (7)	As Drake & Pairs (8)	As a Group (9)		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard											
Black duck											
Gadwall											
American widgeon											
Green-winged teal											
Blue-winged teal											
Shoveler											
Pintail											
Redhead											
Canvasback											
Scaup	154	329	966	44	20	10	986	16		1,002	205,410
Old Squaw	96	89	370	17	25	13	395	6		401	82,205
Goldeneye	24	13	74	3			74	1		75	15,375
Bufflehead	8	1	18	1			18	1		19	3,895
Scoter	56	307	726	33	151	77	877	12	3	892	182,860
Eider	7	6	26	1			26	1		27	5,535
Merganser	1	2	6	1			6			6	1,230
Sub-total	346	747	2,186	100	196	100	2,382	37	3	2,422	496,510
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	346	17	6	12
Ducks in pairs (b)	1,494	73	25	25
Sub-total (c)				37
Ducks in groups (d)	196	10	3	3
Coot (e)				
Grand Total (f)	2,036	100	34	40

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	43,450
Square miles in the sample	212
Number of segments	106
Expansion factor	205
Segment length	16 miles

Stratum 38 Dates: 5 /17 /69 Thru 6 /5 /69

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL	POPULATION INDEX
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped (7)	As Drake & Pairs (8)	As a Group (9)		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard	51	22	146	12			146	70		216	33,480
Black duck											
Gadwall											
American widgeon	75	108	366	29	1	25	367	169	1	537	83,235
Green-winged teal	22	28	100	8	3	75	103	47	4	154	23,870
Blue-winged teal											
Shoveler	13	21	68	6			68	35		103	15,965
Pintail	135	146	562	45			562	263		825	127,875
Redhead											
Canvasback											
Scaup											
Ring-necked duck											
Goldeneye											
Bufflehead											
Scoter											
Ruddy duck											
Merganser											
Sub-total	296	325	1,242	100	4	100	1,246	584	5	1,835	284,425
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	296	31	139	278
Ducks in pairs (b)	650	68	306	306
Sub-total (c)				584
Ducks in groups (d)	4	1	5	5
Coot (e)				
Grand Total (f)	950	100	450	589

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	33,200
Square miles in the sample	214
Number of segments	107
Expansion factor	155
Segment length	16 miles

WATERFOWL BREEDING POPULATION SURVEY

Stratum 38 Dates: 5 / 17 / 69 Thru 6 / 5 / 69

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL	POPULATION INDEX
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped	As Drake & Pairs	As a Group		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard											
Black duck											
Gadwall											
American widgeon											
Green-winged teal											
Blue-winged teal											
Shoveler											
Pintail											
Redhead											
Canvasback	19	48	134	5			134	2		136	21,080
Scaup	277	597	1,748	69	45	28	1,793	35	1	1,829	283,495
Old Squaw	28	3	62	3	6	4	68	2		70	10,850
Goldeneye	39	21	120	5	30	18	150	2	1	153	23,715
Bufflehead	38	30	136	5	2	1	138	2		140	21,700
Scoter	41	118	318	13	80	49	398	7	1	406	62,930
Merganser											
Sub-total	442	817	2,518	100	163	100	2,681	50	3	2,734	423,770
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	442	20	9	18
Ducks in pairs (b)	1,634	73	32	32
Sub-total (c)				50
Ducks in groups (d)	163	7	3	3
Coot (e)				
Grand Total (f)	2,239	100	44	53

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	33,200
Square miles in the sample	214
Number of segments	107
Expansion factor	155
Segment length	16 miles

WATERFOWL BREEDING POPULATION SURVEY

Stratum 05 Dates: 6 / 7 / 69 Thru / /

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL (10)	POPULATION INDEX (15)
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped (7)	As Drake & Pairs (8)	As a Group (9)		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard	3		6	5			6	5		11	1,199
Black duck											
Gadwall											
American widgeon	28	8	72	55	2	100	74	54	2	130	14,170
Green-winged teal	1		2	2			2	2		4	436
Blue-winged teal											
Shoveler											
Pintail	25		50	38			50	37		87	9,483
Redhead											
Canvasback											
Scaup											
Ring-necked duck											
Goldeneye											
Bufflehead											
Scoter											
Ruddy duck											
Merganser											
Sub-total	57	8	130	100	2	100	132	98	2	232	25,288
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	57	76	43	86
Ducks in pairs (b)	16	21	12	12
Sub-total (c)				98
Ducks in groups (d)	2	3	2	2
Coot (e)				
Grand Total (f)	75	100	57	100

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	1,970
Square miles in the sample	18
Number of segments	8
Expansion factor	109
Segment length	18 miles

Stratum 05 Dates: 6 / 7 / 69 Thru / /

SPECIES	IDENTIFIED							UNIDENTIFIED		GRAND TOTAL (10)	POPULATION INDEX (15)
	Observed		Birds in Pairs		Grouped Birds		Pairs & Grouped (7)	As Drake & Pairs (8)	As a Group (9)		
	Drakes (1)	Pairs (2)	Total (3)	% (4)	Total (5)	% (6)					
Mallard											
Black duck											
Gadwall											
American widgeon											
Green-winged teal											
Blue-winged teal											
Shoveler											
Pintail											
Redhead											
Canvasback	2	11	26	4	1	4	27	1		28	3,052
Scaup	71	100	342	45	4	18	346	12		358	39,022
Old Squaw	14	10	48	6	1	4	49	2	1	51	5,559
Goldeneye	7		14	2			14			14	1,526
Bufflehead											
Scoter	17	146	326	43	17	74	343	11	1	355	38,695
Ruddy duck											
Merganser											
Sub-total	111	267	756	100	23	100	779	26	1	806	87,854
Coot											
GRAND TOTAL											
Canada geese											

Proration of the Unidentified	Identified		Unidentified	
	Total (11)	% (12)	Estimate (13)	Total (14)
Observed drakes (a)	111	17	4	8
Ducks in pairs (b)	534	80	18	18
Sub-total (c)				26
Ducks in groups (d)	23	3	1	1
Coot (e)				
Grand Total (f)	668	100	23	27

Number of observed ponds (x2)	
Pond index	
Square miles in the stratum	1,970
Square miles in the sample	18
Number of segments	8
Expansion factor	109
Segment lengths	18 miles