CANADIAN WILDLIFE SERVICE

PROGRESS NOTES NO. 7 June 25, 1968

Progress Notes contain *interim* data and conclusions and are presented as a service to other wildlife biologists and agencies. The notes will appear in summary volumes from time to time.

SPECIES OF WATERFOWL KILLED IN CANADA DURING THE 1967-68 HUNTING SEASON

This report presents results of a survey of the species making up the waterfowl harvest in all provinces of Canada in 1967-68. The survey, conducted by the Canadian Wildlife Service, was the first of its kind covering all of Canada. The survey was designed to yield information on the species, age, and sex of waterfowl shot and retrieved in Canada, and is intended to complement the harvest survey (Progress Note No. 5).

The 1967-68 survey was in part experimental in that the response rate could not be forecast, i.e., we could not estimate what proportion of hunters would co-operate. Consequently, the sample size was too low in some provinces.

Sales records of Canada migratory game bird hunting permits sold in 1966-67 were used as the statistical universe. The number of people contacted in each province depended on the numbers of permits sold at post offices in that province (Table 1) and on estimates of the number of birds killed by the average hunter. In late August and early September 1967, packets containing 10 preaddressed reply envelopes, a letter of introduction, and a postcard to be used when requesting additional envelopes were sent to 22,442 persons who had purchased a Canada migratory game bird hunting permit in 1967. Each response envelope sent out in 1967-68 was hand stamped with the 1966-67 Canada migratory game bird hunting permit number of the hunter to whom it was sent. Postcards used for requesting additional envelopes were also marked with the appropriate permit number. This was done to permit identification of wings reported by individual hunters.

In early January 1968, ten biologists of the Canadian Wildlife Service went to the Patuxent Research Center, Laurel, Maryland, for training in the identification of wings by age, sex, and species.

Wings of ducks and tails of geese were sent by co-operating hunters to Canadian Wildlife Service offices at Vancouver, Saskatoon, Ottawa, Quebec, and Sackville. Wings were sorted by species at those centres and identified as to age and sex at Saskatoon, Aurora, and Quebec City. Federal, provincial, and university biologists and members of the Special Squad, Royal Canadian Mounted Police,

undertook the identification. Key personnel from the Migratory Bird Populations Station, United States Bureau of Sport Fisheries and Wildlife, Laurel, Maryland, were present at each of the three wing examination centres. That procedure was followed to ensure that data obtained from the Canadian and United States surveys would be of comparable accuracy.

Detailed reports were prepared by regional biologists of the Canadian Wildlife Service, notably by W.A. Morris for British Columbia; M. Sorensen, Alberta and Manitoba; G. Staines, Saskatchewan; D. Dennis, Ontario; M. Laperle, Quebec; W. Whitman, the Maritime Provinces; and D. Gillespie, Newfoundland. This report summarizes information on file in Ottawa and presents highlights of those studies.

The distribution by province of residence of contacts attempted in 1967 is given in Table 1. The response rate is not known for all of Canada but varied from 11.4 to 21.7 per cent depending on the province analysed. It was not possible to assess the response rate for all provinces because of the time required to hand sort completed reply envelopes. In addition, it is known that at least 3.2 per cent of the contact envelopes were returned by the Post Office Department as undeliverable. Because the sample was drawn from sales records obtained in the year before the survey, an unknown but large proportion of hunters had moved, died, or did not hunt in 1967-68. This point is discussed in Progress Note No. 5.

The reported species composition of the kill of ducks (exclusive of sea ducks) in each province is given in Table 2. The data from each province have been stratified to coincide more or less with the zones described in Progress Note No. 5. The stratification used in the present survey is not completely identical with that of the former and should be considered an approximation. Since it was not possible to allocate all material received to zones, the totals for some provinces differ from those of the combined zones within the province. Approximations of the zones are shown in Maps 1 and 2.

The reported species composition of the sea duck kill in each province is given in Table 3. Data from provinces in which fewer than 20 wings of the most common sea duck species were returned are excluded from Table 3. Sea ducks, i.e., eiders, scoters, and oldsquaw, were segregated in the harvest survey questionnaire and accordingly are segregated here. The collection of wings and tails for the species composition survey ceased at the close of the regular duck season. Consequently, no material was received from the extended sea duck seasons which continued in some areas for an additional two months, and it is thus not possible to compare the harvest of sea ducks with that of other ducks. Because of the incompleteness of the sea duck sample, there is reason to suspect the validity of the results.

The reported species composition of the kill of geese in each province is given in Table 4. There is good reason to believe that the survey does not provide an adequate sample of geese from areas of intensive kill, such as around James Bay in Ontario and Quebec; near Kindersley, Saskatchewan; and in the Interlake region of Manitoba. In part this is owing to the high proportion of hunters using those areas whose permanent abode is in the United States. Although a sample of United States hunters who purchased permits in 1966-67 was contacted, many do not return to Canada to hunt each year and thus did not submit goose tails in 1967-68.

Age ratios, expressed as the number of immatures per adult, for the more important duck species in each province are given in Table 5. Data on age ratios are based on a hand count of wings received and have not been adjusted for differential vulnerability to hunting. That adjustment will not be possible until band recovery data from the 1967-68 hunting season become available.

Because this was the first year in which a Canada-wide survey was undertaken, no comparable data are available. Results from previous surveys in individual provinces are not strictly comparable because of differing methods of sampling. A continuing effort will be made to improve the accuracy of data obtained in future surveys of this sort.

Previous information on the Canada migratory game bird hunting permit and related surveys is available in Progress Note No. 2 (1967), No. 4 (1968), and No. 5 (1968).

TABLE 1 Distribution of survey sample

Province	Sample Size: Potential hunters	Sample Size: Number contacted	Sample Size: Percentage	Results: Response rate	Results: Total wings	Results: Wings/ contacts
Newfoundland	14,863	1,468	9.87	11.40	745	0.51
Prince Edward Island	3,094	543	17.55	13.90	402	0.74
Nova Scotia	7,883	1,027	13.02	21.23	1,365	1.33
New Brunswick	7,739	944	12.19	18.10	953	1.01
Quebec	32,491	3,967	12.20	18.50	5,044	1.27
Ontario	146,493	7,967	5.43	21.70	9,786	1.23
Manitoba	35,620	1,505	4.22	*	2,454	1.63
Saskatchewan	44,651	1,485	3.32	*	1,944	1.31
Alberta	55,892	1,505	2.69	*	2,347	1.56
British Columbia	33,195	4,031	12.14	*	6,063	1.50
Unknown	1,111					
Total	383,032	24,442	6.38	*	31,103	1.27

* Response rate not calculated because of shortage of staff

TABLE 2 NEWFOUNDLAND

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	ZONE 1 NO. WINGS	ZONE 1 % COMP.	ZONE 2 NO. WINGS	ZONE 2 % COMP.	PROVINCE TOTAL NO. WINGS	PROVINCE TOTAL % COMP.
Mallard	3	0.63	1	0.93	4	0.69
Black Duck	220	46.51	16	14.95	236	40.69
Gadwall	--	--	--	--	--	--
American Widgeon	2	tr	--	--	2	tr
Green-winged Teal	135	28.54	14	13.08	149	25.69
Blue-winged Teal	3	0.63	--	--	3	0.52
Shoveler	--	--	--	--	--	--
Pintail	--	--	2	1.87	2	tr
Wood Duck	--	--	--	--	--	--
Redhead	--	--	--	--	--	--
Canvasback	--	--	--	--	--	--
Greater Scaup	4	0.85	--	--	4	0.69
Lesser Scaup	2	tr	3	2.80	5	0.86
Ring-necked Duck	24	5.07	--	--	24	4.14
Common Goldeneye	53	11.21	27	25.23	80	13.79
Barrow's Goldeneye	--	--	--	--	--	--
Bufflehead	--	--	--	--	--	--
Ruddy Duck	--	--	--	--	--	--
Common Merganser	9	1.90	2	1.87	11	1.90
Red-breasted Merganser	17	3.59	38	35.51	55	9.48
Hooded Merganser	1	tr	4	3.74	5	0.86
TOTAL	473		107		580	

tr - less than 0.5%

TABLE 2 PRINCE EDWARD ISLAND

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	PROVINCE TOTAL NUMBER WINGS	% COMPOSITION
Mallard	3	0.82
Black Duck	81	22.19
Gadwall	--	--
American Widgeon	1	tr
Green-winged Teal	165	45.21
Blue-winged Teal	81	22.19
Shoveler	1	tr
Pintail	15	4.11
Wood Duck	--	--
Redhead	--	--
Canvasback	--	--
Greater Scaup	1	tr
Lesser Scaup	--	--
Ring-necked Duck	9	2.47
Common Goldeneye	4	1.10
Barrow's Goldeneye	--	--
Bufflehead	--	--
Ruddy Duck	--	--
Common Merganser	1	tr
Red-breasted Merganser	3	0.82
Hooded Merganser	--	--
TOTAL	365	

tr - less than 0.5%

TABLE 2 NOVA SCOTIA

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	ZONE 1 NO. WINGS	ZONE 1 % COMP.	ZONE 2 NO. WINGS	ZONE 2 % COMP.	PROVINCE TOTAL NO. WINGS	PROVINCE TOTAL % COMP.
Mallard	9	1.38	1	tr	12	1.10
Black Duck	336	51.38	131	33.76	482	44.22
Gadwall	--	--	--	--	--	--
American Widgeon	--	--	1	tr	1	tr
Green-winged Teal	138	21.10	126	32.47	278	25.50
Blue-winged Teal	14	2.14	17	4.38	39	3.57
Shoveler	--	--	--	--	--	--
Pintail	5	0.76	4	1.03	10	0.91
Wood Duck	5	0.76	3	0.77	9	0.82
Redhead	--	--	--	--	--	--
Canvasback	--	--	--	--	--	--
Greater Scaup	4	0.61	--	--	4	tr
Lesser Scaup	6	0.92	4	1.03	10	0.91
Ring-necked Duck	27	4.13	24	6.19	51	4.67
Common Goldeneye	68	10.40	13	3.35	82	7.52
Barrow's Goldeneye	1	tr	--	--	1	tr
Bufflehead	5	0.76	4	1.03	9	0.82
Ruddy Duck	--	--	--	--	--	--
Common Merganser	5	0.76	28	7.22	34	3.11
Red-breasted Merganser	30	4.59	32	8.25	67	6.14
Hooded Merganser	1	tr	--	--	1	tr
TOTAL	654		388		1090	

tr - less than 0.5%

TABLE 2 NEW BRUNSWICK

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

	ZONE 1		ZONE 2		PROVINCE TOTAL	
SPECIES	NO. WINGS	% COMP.	NO. WINGS	% COMP.	NO. WINGS	% COMP.
Mallard	4	0.53	1	1.02	5	0.54
Black Duck	295	39.23	61	62.24	379	41.06
Gadwall	--	--	--	--	--	--
American Widgeon	15	1.99	--	--	18	1.95
Green-winged Teal	105	13.96	12	12.24	123	13.32
Blue-winged Teal	87	1.06	7	7.14	114	12.35
Shoveler	--	--	--	--	--	--
Pintail	14	1.86	11	11.22	26	2.81
Wood Duck	32	4.26	--	--	34	3.68
Redhead	--	--	--	--	--	--
Canvasback	--		--	--	--	--
Greater Scaup	10	1.33	--	--	11	1.19
Lesser Scaup	6	0.80	--	--	6	0.65
Ring-necked Duck	92	12.23	2	2.04	104	11.26
Common Goldeneye	74	9.84	2	2.04	82	8.88
Barrow's Goldeneye	1	tr	--	--	1	tr
Bufflehead	7	0.93	--	--	7	0.75
Ruddy Duck	2	tr	--	--	2	tr
Common Merganser	--	--	--	--	--	--
Red-breasted Merganser	--	--	1	1.02	2	tr
Hooded Merganser	8	1.06	1	1.02	9	0.97
TOTAL	752		98		923	

tr - less than 0.5%

TABLE 2 QUEBEC

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

	ZONE 1		ZONE 2		PROVINCE TOTAL	
SPECIES	NO. WINGS	% COMP.	NO. WINGS	% COMP.	NO. WINGS	% COMP.
Mallard (includes Mallard Black)	343	9.05	45	8.30	392	8.91
Black Duck	927	24.46	164	30.26	1110	25.20
Gadwall	7	tr	--	--	7	tr
American Widgeon	120	3.17	8	1.48	128	2.91
Green-winged Teal	433	11.42	137	25.28	577	13.10
Blue-winged Teal	565	14.91	35	6.46	612	13.92
Shoveler	53	1.40	2	tr	55	1.20
Pintail	225	5.94	56	10.33	285	6.41
Wood Duck	178	4.70	4	0.74	186	4.20
Redhead	39	1.03	--	--	42	0.90
Canvasback	4	tr	--	--	4	tr
Greater Scaup	198	5.22	6	1.11	205	4.61
Lesser Scaup	144	3.80	5	0.92	150	3.41
Ring-necked Duck	131	3.46	19	3.50	154	3.50
Common Goldeneye	217	5.73	36	6.64	255	5.80
Barrow's Goldeneye	--	--	--	--	--	--
Bufflehead	43	1.13	3	0.55	46	1.00
Ruddy Duck	3	tr	--	--	3	tr
Common Merganser	52	1.37	4	0.74	57	1.29
Red-breasted Merganser	30	0.79	11	2.03	41	0.93
Hooded Merganser	78	2.06	7	1.29	87	1.97
TOTAL	3790		542		4396	

tr - less than 0.5%

TABLE 2 ONTARIO

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	ZONE 1		ZONE 2		ZONE 3		PROVINCE TOTAL	
	WINGS	% COMP.	WINGS	% COMP.	WINGS	% COMP.	WINGS	% COMP.
Mallard	865	30.91	1054	22.02	365	21.62	2306	24.42
Black Duck	275	9.83	802	17.75	329	19.49	1420	15.03
Gadwall	25	0.89	9	tr	--	--	35	tr
American Widgeon	126	4.49	78	1.63	40	2.37	246	2.60
Green-winged Teal	241	8.61	297	6.20	124	7.35	671	7.10
Blue-winged Teal	144	5.15	387	8.08	99	5.86	637	6.74
Shoveler	11	tr	5	tr	--	--	16	tr
Pintail	75	2.68	107	2.24	50	2.96	232	2.41
Wood Duck	207	7.40	744	15.54	80	4.74	1050	11.11
Redhead	177	6.33	30	0.63	9	0.53	217	2.29
Canvasback	52	1.86	5	tr	2	tr	60	0.61
Greater Scaup	127	4.54	203	4.24	15	0.89	347	3.67
Lesser Scaup	144	5.15	178	3.72	73	4.32	398	4.21
Ring-necked Duck	90	3.22	370	7.73	286	16.94	774	8.19
Common Goldeneye	59	2.11	190	3.97	110	6.52	363	3.81
Barrow's Goldeneye	--	--	--	--	--	--	--	--
Bufflehead	123	4.40	102	2.13	26	1.54	254	2.69
Ruddy Duck	14	0.50	3	tr	--	--	17	tr
Common Merganser	7	tr	14	tr	21	1.24	47	tr
Red-breasted Merganser	9	tr	16	tr	4	tr	30	tr
Hooded Merganser	27	0.96	193	4.03	55	3.26	278	2.94
Unidentified	--	--	--	--	--	--	44	tr
TOTAL	2798		4787		1688		9442	

tr - less than 0.5%

TABLE 2 MANITOBA

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	ZONE 1		ZONE 2		PROVINCE TOTAL	
	NO. WINGS	% COMP.	NO. WINGS	% COMP.	NO. WINGS	% COMP.
Mallard	609	32.31	61	52.59	784	33.80
Black Duck	1	tr	--	--	1	tr
Gadwall	70	3.71	--	--	83	3.53
American Widgeon	146	7.75	3	2.59	168	7.24
Green-winged Teal	163	8.65	6	5.17	196	8.45
Blue-winged Teal	172	9.12	10	8.62	211	9.09
Shoveler	118	6.26	4	3.45	137	5.90
Pintail	153	8.12	14	12.07	203	8.75
Wood Duck	7	tr	1	0.86	8	tr
Redhead	142	7.53	4	3.45	168	7.24
Canvasback	58	3.08	2	1.72	69	2.97
Greater Scaup	6	tr	--	--	7	tr
Lesser Scaup	133	7.06	4	3.45	151	6.51
Ring-necked Duck	84	4.46	3	2.59	91	3.92
Common Goldeneye	13	0.69	3	2.59	16	0.68
Barrow's Goldeneye	--	--	--	--	--	--
Bufflehead	6	tr	1	0.86	9	tr
Ruddy Duck	--	--	--	--	6	--
Common Merganser	--	--	--	--	--	--
Red-breasted Merganser	--	--	--	--	--	--
Hooded Merganser	4	tr	--	--	11	tr
TOTAL	1885		116		2319	

tr - less than 0.5%

TABLE 2 SASKATCHEWAN

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	PROVINCE TOTAL NO. WINGS	% COMP.
Mallard	1228	63.21
Black Duck	1	tr
Gadwall	197	10.14
American Widgeon	151	7.77
Green-winged Teal	55	2.83
Blue-winged Teal	61	3.14
Shoveler	78	4.01
Pintail	92	4.73
Wood Duck	--	--
Redhead	24	1.23
Canvasback	33	1.70
Greater Scaup	--	--
Lesser Scaup	9	tr
Ring-necked Duck	4	--
Common Goldeneye	2	tr
Barrow's Goldeneye	--	--
Bufflehead	3	tr
Ruddy Duck	1	tr
Common Merganser	--	--
Red-breasted Merganser	--	--
Hooded Merganser	2	tr
TOTAL	1941	

NOTE: Results listed are from Zone 1 as Zone 2 netted less than 1% of Total

tr. - less than 0.5%

TABLE 2 ALBERTA

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

SPECIES	ZONE 1 NO. WINGS	% COMP.	ZONE 2 NO. WINGS	% COMP.	PROVINCE TOTAL NO. BIRDS	% COMP.
Mallard	484	50.57	520	53.39	1222	53.69
Black Duck	--	--	--	--	--	--
Gadwall	105	10.97	94	9.65	222	9.75
American Widgeon	63	6.58	82	8.42	169	7.42
Green-winged Teal	23	2.40	30	3.08	60	2.33
Blue-winged Teal	40	4.18	56	5.75	105	4.61
Shoveler	74	7.73	38	3.90	126	5.53
Pintail	111	1.60	89	9.13	239	10.50
Wood Duck	--	--	--	--	--	--
Redhead	17	1.78	22	2.26	41	1.80
Canvasback	18	1.88	9	0.92	29	1.27
Greater Scaup	--	--	--	--	--	--
Lesser Scaup	11	1.15	23	2.36	39	1.71
Ring-necked Duck	1	tr	1	tr	2	tr
Common Goldeneye	--	--	3	tr	3	tr
Barrow's Goldeneye	1	tr	1	tr	3	tr
Bufflehead	5	0.52	1	tr	7	tr
Ruddy Duck	4	tr	4	tr	8	tr
Common Merganser	--	--	--	--	--	--
Red-breasted Merganser	--	--	--	--	--	--
Hooded Merganser	--	--	1	--	1	tr
TOTAL	957		974		2276	

tr - less than 0.5%

TABLE 2 BRITISH COLUMBIA

SPECIES COMPOSITION OF DUCKS (EXCLUDING EIDERS, OLDSQUAW AND SCOTERS)

	ZONE 1		ZONE 2		PROVINCE TOTAL	
SPECIES	NO. WINGS	% COMP.	NO. WINGS	% COMP.	NO. WINGS	% COMP.
Mallard	1486	39.94	902	53.22	2575	44.13
Black Duck	--	--	--	--	--	--
Gadwall	17	tr	1	tr	18	tr
American Widgeon	733	19.70	262	15.46	1058	18.13
Green-winged Teal	752	20.21	94	5.54	892	15.28
Blue-winged Teal	4	tr	43	2.54	49	0.83
Shoveler	68	1.83	21	1.24	99	1.69
Pintail	510	13.71	93	5.49	669	11.46
Wood Duck	30	0.81	25	1.47	61	1.04
Redhead	2	tr	7	tr	10	tr
Canvasback	11	tr	11	0.65	22	tr
Greater Scaup	26	0.70	5	tr	34	0.58
Lesser Scaup	16	tr	49	2.89	68	1.16
Ring-necked Duck	10	tr	20	1.18	32	0.54
Common Goldeneye	11	tr	9	0.53	20	tr
Barrow's Goldeneye	6	tr	85	5.01	102	1.79
Bufflehead	25	0.67	61	3.60	98	1.67
Ruddy Duck	7	tr	1	tr	11	tr
Common Merganser	5	tr	2	tr	8	tr
Red-breasted Merganser	--	--	--	--	--	--
Hooded Merganser	2	tr	4	tr	8	tr
TOTAL	3721		1695		5834	

tr - less than 0.5%

TABLE 3 Species composition of "Sea Ducks" killed in Canada

	PROVINCE											
	NFLD.		N.S.		N.B.		QUE.		ONT.		B.C.	
SPECIES	# WINGS	%	# WINGS	%	# WINGS	%	# WINGS	%	# WINGS	%	# WINGS	%
Oldsquaw	12	10.00	22	9.31	2	11.76	44	10.57	39	20.41	4	21.05
Common Eider	63	52.50	79	33.45	1	5.88	54	12.98	--	--	--	--
Common Scoter	18	15.00	45	19.06	4	23.53	89	21.39	49	25.64	--	--
W.W. Scoter	9	7.50	30	12.71	1	5.88	107	25.72	41	21.41	6	31.58
Surf Scoter	18	15.00	60	25.42	9	52.94	122	29.32	62	32.45	10	47.37
Total	120		236		17		416		191		20	

Total "Sea Duck" wings reported from:

Prince Edward Island 4
Manitoba 2
Saskatchewan 2
Alberta 9

TABLE 4 SPECIES COMPOSITION OF GEESE KILLED IN CANADA

SPECIES	NFLD.		P.E.I.		N.S.		N.B.		QUE.	
	No. of wings	%	No. of wings	%	No. of wings	%	No. of wings	%	No. of wings	%
Lesser Snow Goose	--	--	--	--	--	--	--	--	6	3.01
Greater Snow Goose	--	--	--	--	--	--	--	--	110	55.26
Ross' Goose	--	--	--	--	--	--	--	--	--	--
Canada Goose	46	100.0	33	100.0	36	100.0	13	100.0	74	36.67
White Fronted Goose	--	--	--	--	--	--	--	--	--	--
Brant	--	--	--	--	--	--	--	--	9	4.52
Black Brant	--	--	--	--	--	--	--	--	--	--
TOTAL	46		33		36		13		199	

TABLE 4 SPECIES COMPOSITION OF GEESE KILLED IN CANADA

SPECIES	ONT.		MAN.		SASK.		ALTA.		B.C.	
	No. of wings	%	No. of wings	%	No. of wings	%	No. of wings	%	No. of wings	%
Lesser Snow Goose	36	26.27	11	8.46	15	9.04	13	23.21	13	6.40
Greater Snow Goose	--	--	--	--	--	--	--	--	--	--
Ross' Goose	--	--	--	--	3	1.81	2	3.57	--	--
Canada Goose	98	71.53	109	83.84	76	45.78	30	53.57	170	83.74
White Fronted Goose	--	--	10	7.69	72	43.37	11	19.64	5	2.46
Brant	3	2.18	--	--	--	--	--	--	--	--
Black Brant	--	--	--	--	--	--	--	--	15	7.39
TOTAL	137		130		166		56		203	

TABLE 5 IMMATURE TO ADULT RATIOS FOR NUMERICALLY IMPORTANT SPECIES OF DUCKS

PROVINCE	SPECIES															
	MALLARD		BLACK		GADWALL		WIDGEON		GREEN-W. TEAL		BLUE-W. TEAL		SHOVELER	
Newfoundland	tr	(3)	6.63	(229)	--	--	--	--	17.57	(130)	tr	(3)	--	--
Prince Edward Island	tr	(2)	4.67	(68)	--	--	--	--	10.45	(126)	7.11	(73)	--	--
Nova Scotia	tr	(8)	2.37	(449)	--	--	--	--	5.82	(232)	31.00	(32)	--	--
New Brunswick	tr	(5)	5.54	(347)	--	--	tr	(18)	9.10	(101)	4.00	(105)	--	--
Quebec	12.88	(360)	8.27	(1076)	tr	(7)	7.11	(128)	14.08	(543)	4.43	(592)	11.75	(51)
Ontario	5.71	(2095)	6.32	(1318)	2.50	(35)	3.92	(241)	8.81	(579)	3.87	(570)	tr	(16)
Manitoba	2.29	(697)	tr	(1)	4.77	(75)	9.13	(162)	8.00	(144)	10.73	(176)	6.12	(121)
Saskatchewan	1.79	(1108)	tr	--	7.41	(185)	12.18	(145)	4.10	(51)	6.00	(56)	6.20	(72)
Alberta	3.60	(1117)	--	--	4.94	(214)	21.14	(155)	11.00	(48)	5.93	(97)	8.83	(118)
British Columbia	3.50	(2381)	--	--	tr	(17)	4.50	(1041)	7.00	(773)	13.30	(43)	4.40	(92)

( ) = indicates sample size

tr = sample size less than 20

TABLE 5 IMMATURE TO ADULT RATIOS FOR NUMERICALLY IMPORTANT SPECIES OF DUCKS

PROVINCE	SPECIES											
	PINTAIL		WOOD DUCK		REDHEAD		CANVASBACK		GREATER SCAUP		LESSER SCAUP	
Newfoundland	tr	(2)	--	--	--	--	--	--	tr	(3)	tr	(5)
Prince Edward Island	tr	(14)	--	--	--	--	--	--	--	--	--	--
Nova Scotia	tr	(10)	tr	(8)	--	--	--	--	tr	(4)	tr	(8)
New Brunswick	25.00	(26)	2.11	(28)	--	--	--	--	tr	(10)	tr	(6)
Quebec	20.46	(279)	1.73	(175)	12.66	(41)	tr	(4)	2.20	(192)	7.35	(142)
Ontario	8.78	(225)	1.69	(916)	2.29	(207)	4.08	(61)	2.66	(348)	3.30	(370)
Manitoba	5.04	(169)	tr	(8)	2.50	(161)	2.94	(67)	tr	(6)	2.83	(134)
Saskatchewan	4.44	(87)	--	--	tr	--	7.20	(33)	--	--	tr	--
Alberta	8.21	(221)	--	--	5.83	(41)	8.33	(28)	--	--	2.45	(38)
British Columbia	4.10	(67)	10.00	(55)	tr	(8)	2.10	(22)	3.30	(34)	4.20	(62)

( ) - indicates sample size

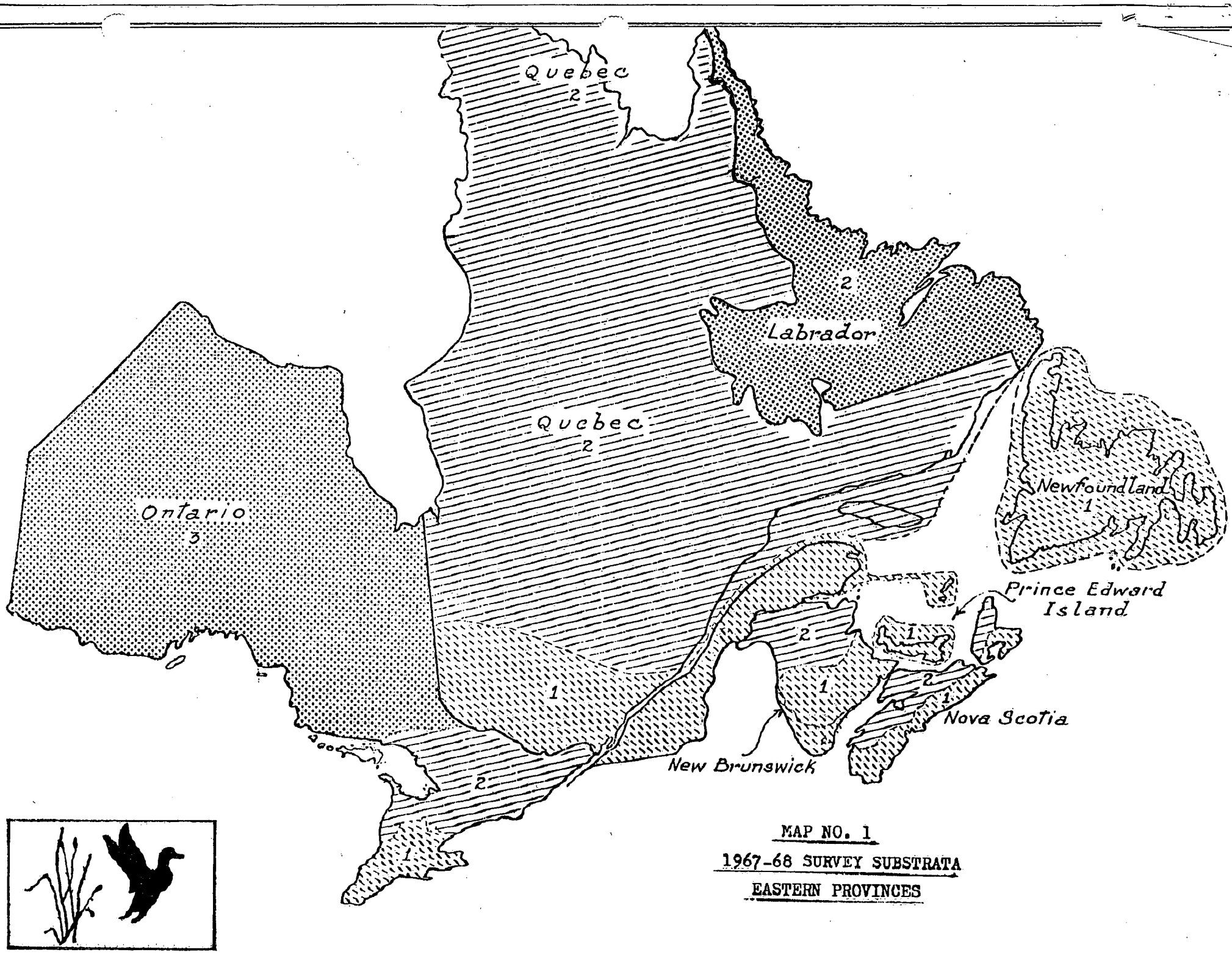
tr - sample size less than 20

TABLE 5 IMMATURE TO ADULT RATIOS FOR NUMERICALLY IMPORTANT SPECIES OF DUCKS

PROVINCE	SPECIES													
	RING-N. DUCK		COMMON GOLDENEYE		BARROW'S GOLDENEYE		BUFFLEHEAD		COMMON MERGANSER		RED-B. MERGANSER		HOODED MERGANSER	
Newfoundland	10.0	(22)	12.0	(78)	--	--	--	--	tr	(11)	2.44	(55)	tr	(5)
Prince Edward Island	tr	(7)	tr	(4)	--	--	--	--	--	--	tr	(3)	--	--
Nova Scotia	4.86	(41)	5.08	(79)	--	--	tr	(9)	1.67	(32)	3.71	(66)	--	--
New Brunswick	9.30	(103)	2.86	(81)	--	--	tr	(7)	--	--	--	--	tr	(7)
Quebec	7.37	(149)	4.34	(251)	--	--	6.33	(44)	3.73	(56)	3.87	(39)	10.57	(81)
Ontario	4.39	(674)	3.09	(360)	--	--	1.47	(232)	2.27	(49)	2.13	(25)	4.06	(258)
Manitoba	13.40	(72)	tr	(16)	--	--	tr	(9)	--	--	--	--	tr	(11)
Saskatchewan	tr	--	tr	--	--	--	--	--	--	--	--	--	tr	--
Alberta	tr	(2)	tr	(3)	--	--	tr	(7)	--	--	--	--	tr	(1)
British Columbia	5.00	(30)	1.20	(20)	11.50	(100)	3.10	(95)	tr	(7)	--	--	tr	(8)

( ) - indicates sample size

tr - sample size less than 20



MAP NO. 1

1967-68 SURVEY SUBSTRATA

EASTERN PROVINCES

MAP NO. 2

1967-68 SURVEY SUBSTRATA

WESTERN PROVINCES