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AERIAL SURVEY SPECIAL BLACK DUCK STUDY

Date - April 28, 1954  
 Weather - mild, clear, slight wind  
 Aircraft - Piper cub - Pilot Dave Hoyt  
 Flight Time - 1 hr. 53 minutes  
 Altitude - 25 to 100 feet  
 Air Speed - 100 MPH  
 Pilot and aircraft were kindly furnished by the Department of Lands and Forests of Nova Scotia. The flight was made from Debert Air Field.

The flight covered the south shore of Cobequid Bay from Maitland to the mouth of the Avon River up the east side of the Avon River to Windsor and then down the west side of this river to Avon port. Minas Basin, including the Boot Island area, the marshes at Grand Pre and Canard as far as Cape Blomidon were covered. The north shore of Minas Basin and Cobequid Bay were also covered.

In the following table are listed the number of waterfowl seen at various locations during ten minute intervals.

It will be noted that nearly all black ducks observed were in small groups. Out of a total of 495 black ducks counted, at least 55 pairs were observed. No groups containing more than 60 individuals were seen.

Some of the larger groups shown in the table were actually made up of several small flocks. It was not always possible to list each individual flock and still observe the birds.

The tide was well out during the time of the survey and the birds were easily observed on the mud flats. It is doubtful if a ground count would have been possible at this time.

TABLE

<u>Time</u>	<u>Location</u>	<u>Black Duck</u>	<u>Canada Goose</u>	<u>Others</u>
1405-1415	S. Side Cobequid Bay	1,3,4,2,20 2,2,2,2,2,2	-	-
1415-1425	" "	40,2,3,5,2 2,3,27,2,1,2	-	11 Scoters
1425-1430	" "	2,2,2,2,1,2 2,8,1,2,2,2,2	-	
1430-1435	Mouth Avon River to Windsor (E. Side)	2,2,2,2,2	-	12 Scoters
1435-1445	Windsor to Mouth Avon River (W. Side)	1,2,2	-	-
1445-1450	" "	2,1		
1450-1455	Boot Island area	60,8,2,3,2, 2,5,5	30,300	-
1455-1505	Grand Pre and Cornwallis River to Kentville	1,30,50,2,5, 2,1,5	90,7,50,15 50,6,20,10,20 11	-

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<u>Time</u>	<u>Location</u>	<u>Black Duck</u>	<u>Canada Goose</u>	<u>Others</u>
1505-1510	Kentville Sanctuary	-	-	-
1510-1517	Starr Point Canard, Cape Blomidon	2,2,1,2,2, 2,2,4,2,3, 2,2,5,3,3,2, 14,50,2,2,2,2, 2,2	7,15,200, 30,25	
1520-1530	Parrsboro to Five Islands	2,2,2,2		4 Prs. Eiders 10 White-winged scoters.
1530-1540	Five Islands to Economy Point	1,1,3	-	1 male eider 50 Brant ?
1540-1550	Economy Point to Portapique	-	-	-
<b>TOTAL: -----</b>		<b>490</b>	<b>886</b>	<b>33 Scoters 9 Eiders 50 Brant ?</b>

G.F. Boyer,  
Wildlife Management Officer



CANADA

SUMMARY OF WINTER WATERFOWL SURVEY

January 7 to January 15, 1963

Summary and Evaluation of Waterfowl Survey

Newfoundland

Weather during the survey period was generally clear. The majority of observers carried out their surveys on the first day of the period. The coverage, all in coastal waters, was comparable to 1962.

More Canada geese and green-winged teal were recorded than in 1962, but the number of black ducks remained unchanged. Fewer scoters but more mergansers were recorded. This year eider ducks were included in the final report for the first time. The total birds seen this year, less eider ducks, is 12,682, which is less than the total for 1962 (16,855) and 1961 (13,797).

New Brunswick, Nova Scotia and Prince Edward Island

Aerial surveys were carried out in all three provinces. The 1963 surveys were comparable with those of 1962.

The weather, during December 1962, was generally milder than during the same period the previous year. As a result there were more open water areas along the coast and the ducks were more generally dispersed. Most inland ponds were frozen over at the time of the surveys, so the flights were restricted to coastal areas.

Weather conditions were very favourable for observing waterfowl during the surveys in New Brunswick and Prince Edward Island on January 7th and 8th. Nova Scotia surveys were carried out under less favourable conditions in the period from January 10th to 15th inclusive.

From the tabulation below it may be seen that waterfowl populations, with the exception of Prince Edward Island's, have been rather stable during the past three winters.

Total Birds

	<u>Prince Edward Island</u>	<u>New Brunswick</u>	<u>Nova Scotia</u>
1963	2,452	2,566	13,144
1962	1,930	2,198	12,063
1961	6,080	1,884	13,386



## Quebec

The weather was mainly clear with temperatures ranging from 0°F. to 35°F. during the inventory.

Seventeen areas, comparable to those surveyed last year, were surveyed on the ground by the R.C.M. Police. The total number of birds in 1963 was 8,703, of which 2,000 were eiders. The totals for 1962 and 1961 were 436 and 2,018 birds, eiders not included.

## Ontario

Additional coverage in 1963 over 1962 in the Lake Erie-St. Clair region is included in this report on Form "B". This region was covered in 1962, but not included in last year's report because the data arrived at our Ottawa office after the deadline.

Weather conditions were good throughout the census area.

Total birds for this year is 56,370 of which 10,397 are goldeneyes. Last year's reported total was 27,936 birds but the total populations observed, including the Lake Erie-St. Clair region, numbered 41,342. This year's total compares favourably with last year's and with that of 1961 (55,754).

## British Columbia

The weather in this province was mild during the time of the survey. It is believed that a large number of ducks were inland on fresh water, and were not seen by aerial observers along the coast.

Not all areas covered in 1962 by ground surveys were surveyed again in 1963. Form "C" accounts for the numbers of waterfowl seen in 1962 on areas not surveyed in 1963. The total number of birds reported in 1963 is 71,580. Last year's total was 136,440. Over a comparable area the total for 1962 would have been 102,204 birds. We assume that the difference between the total birds seen in 1963 and 1962 is a result of the concentrations of ducks which moved inland.

The Canadian Wildlife Service wishes to thank the provincial game branches, the R.C.M. Police and the numerous naturalists for their excellent co-operation.



CANADA

SUMMARY OF WINTER WATERFOWL SURVEY

January 7 to January 15, 1963

Participation Summary

Province	CMS	Province	Other	Air-Craft	Flight Hours	Miles Flown	Cars	Miles Driven	Boat	Miles Traveled
British Col.	1	5	1	2	4	500	4	?	-	-
Ontario	1	5	56	1	7.4*	592*	16	106	0	0
Quebec	-	-	16	-	-	-	x	?	-	-
Newfoundland	1	7	36	-	-	-	15	150	13	260
New Brunswick	1	-	-	1	5½	600	-	-	-	-
P. E. Island	1	-	-	1	7½	720	-	-	-	-
Nova Scotia	-	1	-	?	?	?	-	-	-	-

\*Hours and miles flown are approximate census figures and do not include dead heading or portal to portal time.

## CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastal	Total Birds
Province	Observers: Observers: Observers: Observers: Observers: Observers:	
Newfoundland	44	
<u>Species</u>		
Mallard		
Black Duck	918	918
Mottled Duck		
Gadwall		
Baldpate		
G.W. Teal	650	650
B.W. Teal		
Shoveller		
Pintail		
Hood Duck		
TOTAL PUDDLE DUCKS	1,568	1,568
Redhead		
Canvasback		
Scaup		
Ringneck		
Goldeneye	807	807
Bufflehead	11	11
Oldsquaw	4,755	4,755
Elder	64,070	64,070
Scooter	1,235	1,235
Ruddy		
Merganser	2,128	2,128
TOTAL DIVING DUCKS	73,006	73,006
Unid. & Misc.	1,365	1,365
TOTAL DUCKS	75,939	75,939
Snow Goose		
Blue Goose		
W.F. Goose		
Can. Goose	813	813
TOTAL GEESE	813	813
Brant		
Coot		
Whist. Swan		
GRAND TOTAL	76,752	76,752



CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastal - Bay of Fundy					Total Birds
<u>Province</u>	Observers	Observers	Observers	Observers	Observers	
New Brunswick	C.N.S.					
<u>Species</u>						
Mallard						
Black Duck	878					878
Mottled Duck						
Gadwall						
Baldpate						
G.W. Teal						
B.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	878					878
Redhead						
Canvasback						
Seaup						
Ringneck						
Goldeneye	510					510
Bufflehead	321					321
Oldsquaw	15					15
Eider	91					91
Scooter	591					591
Buddy						
Merganser	96					96
TOTAL DIVING DUCKS	1,624					1,624
Unid. and Miss.	66					66
TOTAL DUCKS	2,568					2,568
Snow Goose						
Blue Goose						
W.F. Goose						
Can. Goose						
TOTAL GEESE						
Brant						
Coot						
Whist. Swan						
GRAND TOTAL	2,568					2,568

## CANADA

## WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastal - South Shore and Bay of Fundy					Total Birds
Province	Observers	Observers	Observers	Observers	Observers	
Nova Scotia	Provincial					
<u>Species</u>						
Mallard						
Black Duck	6,186					6,186
Mottled Duck						
Cadwall						
Baldpate						
G.W. Teal	84					84
R.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL HULLDLE DUCKS	6,270					6,270
Redhead						
Parakeet	1,748					1,748
Osprey						
Kingfisher	2,168					2,168
Goldeneye						
Bufflehead						
Oldsquaw	30					30
Bitter	306					306
Scaup	85					85
Ruddy						
Merganser	29					29
TOTAL DIVING DUCKS	4,366					4,366
Unid. and Misc.	10					10
TOTAL DUCKS	10,646					10,646
Snow Goose						
Blue Goose						
W.F. Goose	2,498					2,498
Can. Goose						
TOTAL GEESE	2,498					2,498
Brant						
oot						
Dist. Swan						
GRAND TOTAL	13,144					13,144



CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastline of Queens and Kings Co.					Total Birds
<u>Province</u>	Observers	Observers	Observers	Observers	Observers	
Prince Edward Island	C.W.S.					
<u>Species</u>						
Mallard Black Duck	1,274					1,274
Mottled Duck						
Gadwall						
Baldpate						
G.W. Teal						
B.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	1,274					1,274
Redhead Canvasback						
Scamp						
Ringneck						
Goldeneye	372					372
Bufflehead						
Oldsquaw						
Eider						
Scoter						
Ruddy						
Merganser	600					600
TOTAL DIVING DUCKS	972					972
Unid. and Misc.	6					6
TOTAL DUCKS	2,252					2,252
Snow Goose						
Blue Goose						
W.F. Goose						
Can. Goose	200					200
TOTAL GEESE	200					200
Brant						
Foot						
Whist. Swan						
GRAND TOTAL	2,452					2,452

## CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

## PROVINCES SUMMARY SHEET

Ecological Survey Area	St. Georges de Beauce	Rimouski	Three Rivers	Bedford	Lake St. Louis	Boucherville
Province	Observers:	Observers:	Observers:	Observers:	Observers:	Observers:
Quebec	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.

Species

Mallard						
Black Duck					35	
Mottled Duck						
Gadwall						
Baldpate						
G.W. Teal						
B.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	nil	nil	nil	nil	35	nil
Redhead						
Canvasback						
Scaup						
Ringneck						
Goldeneye					50	
Bufflehead						
Oldsquaw						
Eider						
Scoter						
Ruddy						
Merganser						
TOTAL DIVING DUCKS	nil	nil	nil	nil	50	nil
Unid. & Misc.	nil	nil	nil	nil	nil	nil
TOTAL DUCKS	nil	nil	nil	nil	85	nil
Snow Goose						
Blue Goose						
W.F. Goose						
Can. Goose						
TOTAL GEESE	nil	nil	nil	nil	nil	nil
Brant						
Coot						
Whist. Swan						
GRAND TOTAL	nil	nil	nil	nil	85	nil



## WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

## PROVINCES SUMMARY SURVEY

Ecological Survey Area	Lake St. John	Baie de Chaleurs	Rivière du Loup	Seven Islands	Quebec	Chicoutimi	Gaspé
Province	Observers:	Observers:	Observers:	Observers:	Observers:	Observers:	Observer:
Quebec	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.
<u>Species</u>							
Mallard							
Black Duck				200			37
Mottled Duck							
Gadwall							
Baldpate							
G.W. Teal							
B.W. Teal							
Shoveller							
Pintail							
Wood Duck							
TOTAL PUDDLE DUCKS	nil	nil	nil	200	nil	nil	37
Redhead							
Canvasback							
Scaup							
Ringneck							
Goldeneye							
Bottlehead							
Old Squaw				350			
Eider				1,000			
Scoter							
Ruddy							
Merganser							
TOTAL DIVING DUCKS	nil	nil	nil	1,350	nil	nil	nil
Unid. & Misc.	nil	nil	nil	nil	nil	nil	nil
TOTAL DUCKS	nil	nil	nil	1,550	nil	nil	37
Snow Goose							
Blue Goose							
W.F. Goose							
Can. Goose							
TOTAL GEESE	nil	nil	nil	nil	nil	nil	nil
Brant							
Coot							
Whist. Swan							
GRAND TOTAL	nil	nil	nil	1,550	nil	nil	37

## CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

## PROVINCES SUMMARY SHEET

Ecological Survey Area	Verdun	Haute Rive	St. Jean	Sherbrooke	Total Birds
Province	Observers:	Observers:	Observers:	Observers:	
Quebec	R.C.M.P.	R.C.M.P.	R.C.M.P.	R.C.M.P.	
<u>Species</u>					
Mallard					
Black Duck	50			2	32
Mottled Duck					
Gadwall					
Baldpate					
G.W. Teal					
B.W. Teal					
Shoveller					
Pintail					
Wood Duck					
TOTAL PUDDLE DUCKS	50	nil	nil	2	324
Red-head					
Canvasback					
Scaup					
Ringneck					
Goldeneye	155			250	455
Buffhead					
Oldsquaw		5,000			5,350
Eider		1,000			2,000
Scoter					
Ruddy					
Merganser				150	150
TOTAL DIVING DUCKS	155	6,000	nil	400	7,955
Unid. & Misc.	nil	nil	100	nil	100
TOTAL DUCKS	205	6,000	100	402	8,379
Snow Goose					
Blue Goose					
W.F. Goose					
Can. Goose					
TOTAL GEESE	nil	nil	nil	nil	nil
Brant					
Swan					
West. Swan					
GRAND TOTAL	205	6,000	100	402	8,379



## CANADA

WINTER WATERFOWL SURVEY - January 3 to January 15, 1963

## PROVINCES SUMMARY SHEET

Ecological Survey Area	Oshawa to Newcastle	Grand River Galt	Guelph Sanct.	Stoney Cr.-Clarkson	Port Stanley Burlington
Province	Observers:	Observers:	Observers:	Observers:	Observers
Ontario	Oshawa Nat. Club	Wildl. Sch. Guelph	Wildl. Sch. Guelph	Hamilton Nat. Club	lands and Forests
<u>Species</u>					
Mallard		146	173	258	910
Black Duck	50	255	161	526	1670
Mottled Duck					
Godwall					
Baldpate					
G.W. Teal					
B.W. Teal					
Shoveller					
Pintail				1	
Wood Duck					
TOTAL PUDDLE DUCKS	50	401	334	785	2580
Redhead				4	2200
Canvasback					1970
Scaup	50			1396	175
Ringneck					
Goldeneye	250	66		546	1190
Bufflehead				42	215
Oldsquaw	150			426	240
Eider					
Scoter				5	
Ruddy				2	
Merganser	25			91	1470
TOTAL DIVING DUCKS	475	66		2512	7460
Unid. & Misc.					920
TOTAL DUCKS	525	467	334	3297	10960
Snow Goose					
Blue Goose					
W.P. Goose					
Can. Goose					
TOTAL Geese					
Brant					
Coot					
Whist. Swan					
GRAND TOTAL	525	467	334	3297	10960

Ecological Survey Area	Port Stanley Grand Bend	P.E. Co.- Howe Isl.	Howe Isl.- St. Francis	Tor. Isl.- Whitby-Bronte	Total Birds
Province Ontario	Observers: Lands and Forests	Observers: Lands and Forests	Observers: Lands and Forests	Observers: Tor. Ornith. Club	
<u>Species</u>					
Mallard	330		30	1667	3514
Black Duck	2550	100	700	958	6970
Mottled Duck					
Gadwall					
Baldpate					
G.W. Teal				2	2
B.W. Teal					
Shoveller					
Pintail					1
Wood Duck					
TOTAL PUDDLE DUCKS	2880	100	730	2627	10487
Redhead	50		600		2854
Canvasback	350	300	100	4	2724
Scaup		2000	1200	5064	9885
Ringneck					
Goldeneye	210	700	7000	435	10397
Bufflehead		200	200	99	756
Oldsquaw		4000	40	2883	7739
Eider					
Scoter					5
Ruddy					2
Merganser	3330	300	1200	44	6460
TOTAL DIVING DUCKS	3940	7500	10340	8529	40822
Unid. & Misc.	310	400	400	25	2055
TOTAL DUCKS	7130	8000	11470	11181	53364
Snow Goose					
Blue Goose					
W.F. Goose					
Can. Goose	3000				3000
TOTAL GEESE	3000				3000
Crant oot					
Whist. Swan	6				6
GRAND TOTAL	10136	8000	11470	11181	56370



CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Lower Mainland	E. Coast Vanc. Is.	S.E. Coast Vanc. Is.				Total Birds
<u>Province</u>	Observers	Observers	Observers	Observers	Observers	Observers	
British Columbia	2 (aerial)	2 (aerial)	4 (ground)				
<u>Species</u>							
Mallard	13,000	980	1,425				15,405
Black Duck							
Mottled Duck							
Gadwall							
Baldpate	25,800	1,525	405				27,730
G.W. Teal	2,000	560	5				2,565
B.W. Teal							
Shoveller							
Pintail	4,000	280	160				4,440
Wood Duck							
TOTAL PUDDLE DUCKS	44,800	3,345	1,995				50,140
Redhead							
Canvasback	50		45				95
Scaup	170	2,520	765				3,455
Ringneck							
Goldeneye	30	310	790				1,130
Bufflehead		610	395				1,005
Oldsquaw		40					40
Elder							
Scoter	200	5,040	1,395				6,635
Ruddy			265				265
Merganser			155				155
TOTAL DIVING DUCKS	450	8,520	3,810				12,780
Unid. and Misc.		5	5,840				5,845
TOTAL DUCKS	45,250	11,870	11,645				68,765
Snow Goose							
Blue Goose							
W.F. Goose							
Can. Goose	22		520				542
TOTAL GEESE	22		520				542
Went Coot	50		1,800				1,850
Whist. Swan	23		400				423
GRAND TOTAL	45,345	11,870	14,365				71,580

## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963

## FORM A

TOTAL ALL AREAS

## PROVINCE

Species	B. Columbia	Ontario	Quebec	P.E. Island	New Brunswick
Mallard	15,405	3,514			
Black Duck		6,970	324	1,274	878
Mottled Duck					
Gadwall					
Baldpate	27,730				
G.W. Teal	2,565	2			
B.W. Teal					
Shoveller					
Pintail	4,440	1			
Wood Duck					
TOTAL PUDDLE DUCKS	50,140	10,487	324	1,274	878
Redhead		2,854			
Canvasback	95	2,724			
Scaup	3,455	9,885			
Ringneck					
Goldeneye	1,130	10,397	455	372	510
Bufflehead	1,005	756			321
Old Squaw	40	7,739	5,350		15
Eider			2,000		91
Scoter	6,635	5			591
Ruddy	265	2			
Merganser	155	6,460	150	600	96
TOTAL DIVING DUCKS	12,780	40,822	8,279	972	1,624
Unid. & Misc.	5,845	2,055	100	6	66
TOTAL DUCKS	68,765	53,364	8,379	2,252	2,568
Snow Goose					
Blue Goose					
W.F. Goose					
Can. Goose	542	3,000		200	
TOTAL GEESE	542	3,000		200	
Went Wot	1,850				
Whist. Swan	423	6			
GRAND TOTAL	71,580	56,370	8,703	2,452	2,568



## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963.

## FORM A

TOTAL ALL AREAS

## PROVINCE

Species	Nova Scotia	Newfoundland	Total
Mallard			18,919
Black Duck	6,186	918	16,550
Mottled Duck			
Gadwall			
Baldpate			27,730
G. W. Teal	84	650	3,361
B. W. Teal			
Shoveller			
Pintail			4,441
Wood Duck			
TOTAL PUDDLE DUCKS	6,270	1,568	70,941
Redhead			2,854
Canvasback			2,819
Scaup	1,748		15,088
Ringneck			
Goldeneye	2,168	807	15,839
Bufflehead		11	2,093
Oldsquaw	30	4,755	17,929
Eider	306	64,070	66,467
Scoter	85	1,235	8,551
Ruddy			267
Merganser	29	2,128	9,618
TOTAL DIVING DUCKS	4,366	73,006	141,525
Unid. & Misc.	10	1,365	9,447
TOTAL DUCKS	10,646	75,939	221,913
Snow Goose			
Blue Goose			
W. F. Goose			
Can. Goose	2,498	813	7,053
TOTAL GEESE	2,498	813	7,053
Brant			
Coot			1,850
Whist. Swan			429
GRAND TOTAL	13,144	76,752	231,245



## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963.

FORM BADDITIONAL COVERAGE IN 1963 over 1962

## PROVINCE

Species	B. Columbia	Ontario	Quebec	P.E. Island	N. Brunswick
Mallard		1,240			
Black Duck		4,220			
Mottled Duck					
Gadwall					
Baldpate					
G.W. Teal					
B.W. Teal					
Shoveller					
Pintail					
Wood Duck					
TOTAL PUDDLE DUCKS		5,460			
Redhead		2,250			
Canvasback		2,320			
Scaup		175			
Ringneck					
Goldeneye		1,400			
Bufflehead		215			
Old Squaw		240			
Eider					
Scoter					
Ruddy					
Merganser		4,800			
TOTAL DIVING DUCKS		11,400			
Unid. & Misc.		1,230			
TOTAL DUCKS		18,090			
Snow Goose					
Blue Goose					
W.F. Goose					
Can. Goose		3,000			
TOTAL GEESE		3,000			
Brant					
Coot					
Whist. Swan		6			
GRAND TOTAL	NIL	21,096	NIL	NIL	NIL



## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963.

## FORM B

ADDITIONAL COVERAGE IN 1963 over 1962

Species	PROVINCE		Total
	Nova Scotia	Newfoundland	
Mallard			1,240
Black Duck			4,220
Mottled Duck			
Gadwall			
Baldpate			
G. W. Teal			
B. W. Teal			
Shoveller			
Pintail			
Wood Duck			
TOTAL PUDDLE DUCKS			5,460
Redhead			2,250
Canvasback			2,320
Scaup			175
Ringneck			
Goldeneye			1,400
Bufflehead			215
Oldsquaw			240
Eider			
Scoter			
Ruddy			
Merganser			4,800
TOTAL DIVING DUCKS			11,400
Unid. & Misc.			1,230
TOTAL DUCKS			18,090
Snow Goose			
Blue Goose			
W. F. Goose			
Can. Goose			3,000
TOTAL GEESE			3,000
Brant			
Coot			
Whist. Swan			6
GRAND TOTAL	NIL	NIL	21,096



## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963.

FORM CCOVERED in 1962 BUT NOT in 1963

## PROVINCE

Species	B. Columbia	Ontario	Quebec	P.E. Island	N. Brunswick
Mallard	3,836				
Black Duck					
Mottled Duck					
Gadwall					
Baldpate	3,700				
G.W. Teal	150				
B.W. Teal					
Shoveller					
Pintail	555				
Wood Duck	108				
TOTAL PUDDLE DUCKS	8,349				
Redhead	100				
Canvasback	206				
Scaup	3,975				
Ringneck	100				
Goldeneye	1,150				
Bufflehead	751				
Old Squaw	50				
Eider					
Scoter	6,800				
Ruddy					
Merganser	675				
TOTAL DIVING DUCKS	14,107				
Unid. & Misc.	3,395				
TOTAL DUCKS	25,851				
Snow Goose					
Blue Goose					
W.F. Goose					
Can. Goose	88				
TOTAL GEESE	88				
Brant	3				
Coot	8,175				
Whist. Swan	119				
Grand TOTAL	34,236	NIL	NIL	NIL	NIL



## CANADA

WINTER WATERFOWL SURVEY - Jan. 7 to Jan. 15, 1963.

FORM C

COVERED in 1962 BUT NOT in 1963

## PROVINCE

Species	Nova Scotia	Newfoundland	Total
Mallard			3,836
Black Duck			
Mottled Duck			
Gadwall			
Baldpate			3,700
G. W. Teal			150
B. W. Teal			
Shoveller			
Pintail			555
Wood Duck			108
TOTAL PUDDLE DUCKS			8,349
Redhead			100
Canvasback			206
Scaup			3,975
Ringneck			100
Goldeneye			1,450
Bufflehead			751
Oldsquaw			50
Eider			
Scoter			6,800
Ruddy			
Merganser			675
TOTAL DIVING DUCKS			14,107
Unid. & Misc.			3,395
TOTAL DUCKS			25,851
Snow Goose			
Blue Goose			
W. F. Goose			
Can. Goose			88
TOTAL GEESE			88
Brant			3
Coot			8,175
Whist. Swan			119
GRAND TOTAL	NIL	NIL	34,236



# MEMORANDUM

CLASSIFICATION

TO  
A

**Chief, Canadian Wildlife Service**

YOUR FILE No.  
Votre dossier

OUR FILE No.  
Notre dossier

FROM  
De

**Acting Superintendent,  
Eastern Region**

DATE

**April 1, 1963**

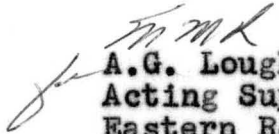
FOLD

SUBJECT  
Sujet

**Annual Job Progress Reports**

--  
Attached are Dr. Erskine's annual job progress reports for projects O-1-1 - Midwinter inventory and O2-1-22 - Migratory bird kill survey, New Brunswick, 1962-63.

These reports have been reviewed and are forwarded to you for your information and comments.

  
A.G. Loughrey,  
Acting Superintendent,  
Eastern Region.



## MEMORANDUM

CLASSIFICATION

TO  
A

Chief, Canadian Wildlife Service

YOUR FILE No.  
Votre dossierOUR FILE No.  
Notre dossierFROM  
De

David A. Munro

DATE

June 20, 1963

FOLD

SUBJECT  
Sujet

I have made a cursory review of A.J. Erskine's progress report on project <sup>02-1-1</sup> midwinter waterfowl inventory, Maritime Provinces, 1963.

In commenting on W.F. Munro's report on the midwinter waterfowl inventory in Quebec, I recommended a review of the usefulness and desirability of continuing or modifying the midwinter waterfowl inventory in all parts of Canada. Dr. Erskine's report refers to some obvious limitations in the midwinter waterfowl inventory in the Maritime Provinces. These should be considered when the whole question is reviewed next autumn.

David A. Munro,  
Chief Ornithologist.



# MEMORANDUM

CLASSIFICATION

TO  
A

Chief, Canadian Wildlife Service

YOUR FILE No.  
Votre dossier

OUR FILE No.  
Notre dossier  
WL.U. 60 - Erskine, A.

FROM  
De

D.A. Benson

DATE  
July 16, 1963

FOLD

SUBJECT  
Sujet

The Midwinter Inventory of Waterfowl  
in the Maritime Provinces

This memorandum was prepared in response to your annotation on a memorandum to you from Dr. David A. Munro, dated June 20, 1963. Your question was: "Have you any comments on the validity of the results from midwinter inventories?"

In his memorandum, Dr. Munro recommended "... a review of the usefulness and desirability of continuing or modifying the midwinter waterfowl inventory in all parts of Canada. Dr. Erskine's report refers to some obvious limitations in the midwinter waterfowl inventory in the Maritime Provinces. These should be considered when the whole question is reviewed next autumn."

In view of the forthcoming review of the subject (of which I learned from Dr. Munro's memorandum), and because there was nothing pertaining to mathematical statistics to discuss, I refrained from comment. Your request has opened the door to a wider consideration of the subject.

Our midwinter inventory is, as the name indicates, an inventory or total count, rather than a survey or a series of representative samples that may be used to calculate an estimate.

Dr. Erskine, in his report of January 29, 1963 of the maritime midwinter inventory, illustrated the situation on the maps that form a part of the report. The design of the inventory is excellent for obtaining a count along specified flight lines. In other words, an observer flies over waterfowl

... 2



habitat in the best available weather and at the best height for observing, both criteria being largely subjective. However, Dr. Erskine's proposals for improvement are worded as a plea for a "Truly representative sample (p.3)", when, in effect, they are a plea for an expansion of the inventory to include more areas. Each flight line, or the count made from it is "representative" only of itself. The only meaning that can be placed on his use of the word "sample" is that the areas concerned do not constitute the total waterfowl habitat of the Maritimes.

We might as well accept the known and demonstrated fact that "Our conclusions regarding the midwinter waterfowl inventory are restricted to assessment of changes in waterfowl numbers from year to year, in view of the counts of birds seen, and a subjective assessment of the relative conditions under which the surveys were made. (Erskine, p.2)".

Returning to the question of the validity of the results from midwinter inventory, I will place a fairly broad meaning on the word "valid".

Precision, or the degree of variability in counts over the same route between different observers, between different weather conditions, times, heights and so on has been the subject of many investigations in many aerial surveys. In general, precision increases with the square root of the number of times the flight is repeated. From a single flight we can obtain no statistical estimate of precision.

The counts are as accurate as the particular observer makes them under the conditions existing at the time of the flights. There exists no statistical method of estimating how close the count is to the true number of birds on the ground or water unless other data is available, such as ground "beat-outs".

The conclusion must be that the count of waterfowl made by an observer on a midwinter inventory flight in the Maritime Provinces is just that: a count of waterfowl. It has no other meaning. It is not a statistical sample. It is of unknown precision and of unknown accuracy. It is not an objective datum.

Such counts may be interpreted subjectively, as Erskine concluded. Such interpretation will be made much more simple and much less frustrating when we cease confusing the issue by discussing them in terms of statistical jargon.

If we accept that premise, then we proceed to assess the value of midwinter inventories. Undoubtedly "inspection flights" are of value to a management biologist. He gets a birds-eye view of waterfowl habitat.

I have no knowledge of any other use that is made of data arising from midwinter inventories. If such data has any value outside the region of its origin, such value must be assessed in terms of the cost in the men, money and time used to procure them, and in terms of possible alternative employment of the men, money and time.



D.A. Benson,  
Biometrician.



PROJECT HISTORY SHEET.

Project No. 0 - 1 - 1 Date January 29, 1963.

Title Midwinter Waterfowl Inventory, 1963.

Investigators C. O. Bartlett and A. J. Erskine.

Date of approval of project plan. 1947 ? ? ?

Date for submission of progress report requested in memorandum of Jan.22/63.

THIS HISTORY SHEET ACCOMPANIES:

Project plan \_\_\_\_\_ Progress Report X \_\_\_\_\_

Completion report \_\_\_\_\_ Draft manuscript \_\_\_\_\_

Proposal for shift of emphasis \_\_\_\_\_

Other (describe) \_\_\_\_\_

PUBLICATIONS ARISING FROM THE PROJECT: (Bibliographic references; proposed titles)

None from this office.

FINANCIAL STATUS (to be completed at Ottawa)

Year	Investigator	Estimate	Disbursement	Cost to date.

## ANNUAL JOB PROGRESS REPORT

Title: Midwinter Waterfowl Inventory 1963.

Project: 0-1-1, 1963

Prepared by: A. J. Erskine (from data on official report forms completed and submitted earlier by C.O. Bartlett).

Personnel: Aerial surveys made by C. O. Bartlett and A. J. Erskine, C.W.S.; and by Ian Moss, Department of Lands and Forests, Nova Scotia. For Ground surveys, see Appendix.

Objectives: (as in past years) To sample the wintering waterfowl populations in the Maritimes during January, to provide population indices to indicate trends in numbers from year to year.

### Location of Study Areas:

The aerial coverage was essentially the same as in past years (see map). In P.E.I., Bartlett covered the shoreline and major rivers in Kings and Queens Counties, and in Prince County west to Summerside. In N.S., Moss covered the shoreline from St. Margaret's Bay to Yarmouth, from Digby to Annapolis, and from Cape Blomidon to Windsor to Onslow to Five Islands. In N. B., Erskine covered the shoreline from Hillsborough to Alma, from Musquash Harbour to St. Andrews, and Deer Island, Campobello Island, and Grand Manan Island

### Distances travelled:

by air (guess) - in P. E. I. 720 miles; in N. B. 600 miles; in N. S. no distances stated; by car - in P. E. I. 180 miles; in N. B. 70 miles; in N. S., not stated.

### Time involved:

by air (total flying time, of which survey time was about 60% in P. E. I. and N. B.) - in P. E. I. 15 hours; in N. B. 5½ hours; in N. S. not stated; by car, driving to and from



airport only.

Cost involved: for air charter - in P. E. I., Cessna 150 @ \$19/hour, \$285; in N. B., Apache @ \$50/hour, \$285; in N. S., not stated (survey probably used Apache as in 1962; aircraft are under standing charter to province for pre-arranged number of hours - if that number of hours has not previously been exceeded, no additional cost for charter is entailed by that survey). Car travel - by C.W.S. biologists, estimated on \$0.03/mile, in P. E. I. \$10; in N. B. \$3; in N. S., no way of guessing.

Conclusions:

Our conclusions regarding the midwinter waterfowl inventory are restricted to assessment of changes in waterfowl numbers from year to year, in view of the counts of birds seen, and a subjective assessment of the relative conditions under which the surveys were made. Changes in populations of the major species are tabulated below.

( + increase, - decrease, x no change).

Status by Provinces.

<u>Species</u>	<u>P.E.I.</u>	<u>N.S.</u>	<u>N.B.</u>
Canada Goose	x †	x	x †
Black Duck	†	†	-
Scaup	x †	†	x †
Goldeneyes, Bufflehead, Mergansers (combined)	-	-	†

~~† species absent, or counted in inconsequential numbers only.~~ Observing conditions were considered to have been rather better in 1963 than in 1962, in P.E.I. and N.S., and were more or less comparable in both years in N.B.

Proposals for improvement of the Midwinter Waterfowl Inventory:

As has been stated in the past, our surveys do not sample the wintering waterfowl populations in the Maritimes to the same extent each year. Due to climatic variations, the extent of ice cover varies, particularly on Northumberland Strait and the Gulf of St. Lawrence; waterfowl may be present in large numbers in some areas in mild winters, and totally lacking there in other years. Due to the cost of charter aircraft in the Maritimes, we have not included in our surveys areas which often would produce nothing at all. To obtain a truly representative sample, one should of course sample each year portions of all areas where waterfowl in some years occur in large numbers, but we question whether the increase in numbers of waterfowl reported would be commensurate with the cost. To obtain such a representative sample our coverage would have to include, besides those areas now covered, the east shore of N.B. north to Miramichi Bay, and portions of the Eastern Shore, and southern Cape Breton, in N. S. We estimate that the cost of such increased coverage would run to as much again as the present cost, say \$1000. in all, and the time to ensure the completion of the aerial surveys would need to be substantially greater than at present. Even now, we can barely count on completing the surveys before the deadline, except under particularly favourable flying conditions, with the number of competent observers available. In alternate years, when C.W.S. biologists are absent at the staff meetings in Ottawa, the aerial surveys are not completed until late January.



We must also point out the variability of coverage resulting from changing pilots and makes of aircraft every year. Even though we deal with the same charter services each year, the pilots change with bewildering frequency; during my three years with the C. W. S., I have flown seven surveys, each one with a different pilot. Such a turnover in personnel makes still more questionable the economics of any expanded coverage in the Maritimes.

We feel that additional manpower and aircraft for an expanded coverage in the Maritimes could be provided by the Fish and Wildlife Branch, Department of Lands and Mines, New Brunswick. At one time, that branch provided the aircraft in which C. W. S. observers carried out the surveys in that province, but in recent years any suggestion that they might assist in waterfowl survey work has been rejected. At present, the province of New Brunswick takes no part in waterfowl surveys at any season.

January 29, 1963

A. J. Erskine,  
Wildlife Biologist.

Appendix.

In connection with the Midwinter Waterfowl Inventory, we annually send out questionnaires to observers in all three Maritime Provinces. Persons contacted include R.C.M.P. officers, Fisheries Officers, Provincial Rangers, duckhunters, and bird-watchers. Their data are in most years used only to check on the trends indicated by the aerial surveys, and are not included in the tabulation; their coverage tends to be more variable than that of the aerial counts, and some of their results were obviously unrepresentative. We maintain the ground observer coverage primarily as insurance against the possibility that the aerial survey is unavoidably omitted or postponed, as was the P. E. I. survey in 1961.



Mid-Winter Waterfowl Inventory

Maritime Provinces

January, 1960

Aerial coverage of the three Maritime Provinces in 1960 is again comparable to those made in previous years.

Surveys in New Brunswick and Prince Edward Island were made by C.W.S. personnel, and that in Nova Scotia by Mr. Ian Moss of the N.S. Department of Lands and Forests.

Just prior to the dates when the surveys were made the weather in the Maritime Provinces was bad, with heavy snow falls and high winds which lasted about a week. These storms might have had an effect on the numbers of waterfowl wintering in the area.

The survey figures show that there is no change from 1959 in total number of waterfowl wintering in the Maritimes.

There is a decrease from 1959 in the number of black ducks wintering in the area, with the largest reduction along the south shore of Nova Scotia. The total decrease in the Maritimes amounted to a 19 per cent decline from 1959.

Practically no scaup were observed this year - a total of 30 were tallied compared with 4125 in 1959. Scoters had also decreased noticeably.

Both goldeneyes and mergansers increased considerably from 1959.

The number of Canada geese showed a 50 per cent increase over that for 1959 - the increase showing along the south shore of Nova Scotia.

February 5, 1960.

B. C. Carter,  
Wildlife Biologist.



MID-WINTER WATERFOWL INVENTORY - 1960

AERIAL COMPARISON, 1959-1960

Species	P. E. I.		N. B.		N. S.		TOTALS		% CHANGE
	1960	1959	1960	1959	1960	1959	1960	1959	
Canada Geese	28	30	-	-	9500	6385	9528	6415	+ 50
Black Duck	4641	4763	1271	1422	6100	8731	12012	14916	- 19
Golden-eyes	14	408	770	877	5300	3491	6084	4776	+ 27
Buffleheads	-	-	81	58	-	-	81	58	+ 40
Hiders	20	20	172	128	-	51	192	199	-
Old Squaw	177	154	-	-	90	130	267	284	- 6
Scaup	-	-	-	-	30	4125	30	4125	Inc.
Scoters	-	-	287	319	-	170	287	489	- 41
Mergansers	3198	2361	450	411	1500	50	5148	2822	+ 82
Others	41	167	40	14	255	222	336	403	Decr.
	8119	7903	3071	3229	22775	23355	33965	34487	- 1

WL.U. 145-1-2

P. O. Box 180,  
Sackville, N. B.  
January 26, 1959

Chief,  
Canadian Wildlife Service,  
Department of Northern Affairs  
and National Resources,  
Ottawa, Canada

Midwater Waterfowl Inventory

Enclosed are four copies of the 1959 Midwinter  
Waterfowl Inventory for the Maritime Provinces.

B. C. Carter,  
Wildlife Biologist

Encl (4)



Chief

C. O. Bartlett

January 23, 1962

WL.U. 62-15

Mid-winter Waterfowl Inventory, 1962.

Enclosed are four copies of the results  
of the mid-winter waterfowl inventory 1962 in the  
Maritimes.

D.  
Encs.

C. O. Bartlett,  
Wildlife Biologist.

DATE: May 16, 1960.

LOCATION: Saint John River (Special Transects)

METHODS USED IN SURVEY: Beaver aircraft; ave. alt., 250 feet;  
ave. ground speed, 75-80 m.p.h.

OBSERVER: C.O. Bartlett. PILOT: P. DeGiaccio CO-PILOT: P. Chalmers

TIME OFF: 1435 hrs.; END OF SURVEY: 1652 hrs.

TOTAL SURVEY TIME: 1 hour, 18 minutes.

TRANSECT	Blacks	Golden-eye	B.W. Teal	Ring-neck	Scaup	Others	Remarks
#1	2,3						Water all along trans.
#2	2	1	1				
#3	2						Very little water last 1/3 of trans.
#4	2						
#5	6,8	7,12		1		1 p-tail	Water levels high. Portoballo Creek a lake
#6	2,2						
#7							
#8	2	4,2		3		1 Bald Eagle	Lodres Creek
#9							25 min. recess trying to contact Haswell by radio
#10	1						
#11							
#12	6					1 Marsh Hawk	
#13	1			7			
#14							
#15	1,1	2		2,2		7 Can. Goose	
#16	1						
#17	2			2		1 Unidentified	
#18	3,3,2	3					
#19	2						
#20	1,1,1,1				55,2	7 G.W. Teal	Gagetown ferry not operating, water over highway
#21	22,16,3,2,2,1,2		2,2			2 P'tail	
#22	1	2	2,1			1 Can. Goose	
#23	2				6		
#24							
#25				6	2,1,2,2	1 Unid.	
TOTALS	14/11 70	3/1 26	3/2 0	3/1 16	4/1 61	P'tail 1/1 0 G.W. Teal 0/0 7	



goldeneye show the largest decreases. Mergansers were the only species which showed an increase.

It is impossible to estimate, with the present methods of survey, how much of the decrease is attributable to the difference in weather conditions between 1957 and 1958. It is believed that a large percentage of waterfowl were on inland waters which were not accessible to them in 1957, and which were not covered by the aerial or ground surveys.

*B. C. Carter*

Brian C. Carter,  
Wildlife Biologist.

February 5, 1958.

Mid-Winter Waterfowl Inventory

Aerial Comparison 1957-1958.

Species	Prince Edward Island		New Brunswick		Nova Scotia		Totals					
	1958	1957	# 1958	1957	# 1958	1957	# 1958	1957				
Canada Geese	362	26	# -	-	# 5030	8125	# 5392	8151				
Black Duck	3733	5548	1251	2225	2687	4799	7671	12572				
Goldeneyes	874	3177	1212	446	1382	3354	3468	6977				
Buffleheads	39	36	-	-	-	-	39	36				
Eiders	53	47	281	23	-	610	334	680				
Old Squaw	132	62	-	-	191	405	323	467				
Scaup	220	29	-	-	3340	5000	3560	5029				
Scoters	98	73	29	213	-	110	127	396				
Mergansers	1607	26	276	339	2	16	1885	381				
Others	91	103	-	-	24	72	115	175				
Totals	7209	9127	3049	3246	12656	22491	22914	34864				
Percentage increase or decrease from 1957			-21%			-6%			-44%			-34%

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4 copies please



Comments on the January Waterfowl Inventory, 1955

Newfoundland. Weather conditions prior to the inventory were mild but deteriorated during the inventory period so that aerial coverage was possible. Only six hours of sunshine were recorded in January. The number of observers reporting was reduced from 61 in 1954 to 38 in 1955. Eiders, old squaw and mergansers decreased considerably, other species remained at approximately the same level.

Maritime Provinces. Prince Edward Island and New Brunswick were again surveyed from the air, while Nova Scotia was covered by both aerial and ground surveys. Total birds seen increased by 9,000 over 1954 but were approximately the same as in 1953. Canada geese increased by 96 per cent and black ducks by 38 per cent, other species remained at approximately the same level as 1954.

Quebec. Weather during the inventory was generally clear and cold, temperatures ranged from  $-10^{\circ}$  F to  $+18^{\circ}$  F. The 80 per cent increase in the number of waterfowl recorded is attributed to the addition of a survey conducted by the Seven Islands Detachment, R.C.M.P. Otherwise populations remained at nearly the same level as in 1954.

Ontario. All rivers and small bays were frozen over but the Great Lakes were largely open. Ice on Lake St. Clair extended about a mile from the shore. Waterfowl wintering in Ontario decreased for the second consecutive year. Mallards and black duck showed a considerable decrease, although scaup increased by 58 per cent.

Alberta. Weather during the winter has been unusually mild, temperatures averaging  $10^{\circ}$  F above normal. Mallards (preponderantly drakes) increased by about 25 per cent over 1954 counts.

British Columbia. The weather during the survey was mild and calm. Birds congregated in huge flocks off-shore, which made conduct of ground surveys difficult. The number of ducks recorded increased by 12 per cent. Baldpate (37 per cent), green-winged teal (50 per cent) and pintail (78 per cent) all showed increases. Canada geese (20 per cent), mallard (12 per cent) and scoters (15 per cent) all decreased.

General Comments. The number of waterfowl reported wintering in Canada during the 1955 January Inventory was approximately the same as in 1954. Newfoundland, New Brunswick and Ontario were the only provinces reporting a decrease in numbers of wintering waterfowl. Most of the decrease in Newfoundland (54,000 birds) is attributed to poor weather which made aerial surveys of eider ducks impossible.



	Nfld.	N.S.	P.E.I.	N.B.	Que.	Ont.	Alta.	B.C.	Total
T. Swan								780	780
W. Swan								270	270
Brant								762	762
C. Goose	1,300	7,385	1,657			1,800	25	8,350	20,517
S. Goose								3,700	3,700
B. Duck	1,025	19,890	7,076	2,445	106	13,006			43,548
Baldpate					20			137,320	137,340
B.-w. Teal									
Buffle-head	108	25	148			140		16,750	17,171
Canvas-back					8	12,791		870	13,669
Eiders	80,070	400	4	11	1,167				81,652
Golden-eyes	1,247	5,131	3,565	575	584	15,283	50	29,940	56,375
G.-w. Teal	150		32					39,850	40,032
Mallard					10	1,132	14,225	87,700	103,067
Old Squaw	3,454	125	71		1,415	7,662		1,880	14,607
Pintail					50	1		80,540	80,591
Redhead						2,209		1,000	3,209
Ring-n. duck						150			150
Ruddy						4		400	404
Scaup		3,030	34			30,194		57,400	90,658
Scoters	5,919	584	585	106	30	110		75,500	82,834
Shovellers								1,220	1,220
Wood Duck								50	50
Mergansers	892	1,055	156		263	4,396		5,950	12,712
Coot						15	3	16,300	16,318
Unidentified	550	3,331	389	50	210	2,374	10	118,500	125,414
Total, 1955	94,715	40,956	13,717	3,187	3,863	91,267	14,313	685,032	947,050
Total, 1954	148,490	30,289	11,480	7,387	2,121	105,782	9,445	613,316	928,310

# MID-WINTER WATERFOWL INVENTORY

## MARITIME PROVINCES

January 1962

### METHODS

Aerial and ground surveys were carried out in all three provinces of New Brunswick, Nova Scotia and Prince Edward Island during the 1962 mid-winter inventory. However, comparative aerial data are available this year for all three provinces and aerial survey data only have been utilized for this report.

Attendance of field biologists at staff meetings in Ottawa in early January delayed surveys of Prince Edward Island and Nova Scotia until January 17th and 20th respectively. Aerial surveys in Nova Scotia were carried out again this year by Mr. Ian Moss of the Nova Scotia Department of Lands and Forests on January 7th and 8th, using a Department of Lands and Forests aircraft. A Cessna - 180 was used for the Prince Edward Island survey and a twin engine Piper Apache for the New Brunswick survey. Both aircraft were chartered from Atlantic Central Airlines, Ltd., Moncton, N. B.

Approximately one third of the total shoreline of all three provinces was covered by aerial surveys in 1961 and 1962. Although the areas covered have in the past represented the most productive areas in terms of numbers of waterfowl observed, we presently have no idea what percent of the total population the 1961 and 1962 figures represent. Consequently the counts obtained here should be considered as being relative only.

### WEATHER

January was much milder this year than last and there were no snow storms preceding this year's count paralleling those that occurred last year in December and January. However, some cold weather preceded this year's inventory in New Brunswick and Prince Edward Island and ice conditions along the coastline were comparable with last year. Salt water bays and estuaries and most inland fresh water ponds were frozen over at the time of the New Brunswick and Prince Edward Island surveys

RESULTS

The species and numbers of waterfowl observed in the individual provinces is shown in Table I. A comparison of 1961 and 1962 data for the entire Maritimes shows that there was an 11 percent decrease from last year in the total number of waterfowl observed. Canada Geese numbers were down 21 percent, black ducks were down 13 percent, American goldeneye and mergansers together were down 27 percent from 1961 counts. Changes in the numbers of other species observed were not significant.

Sackville, N. B.,  
January 23, 1962.

C. O. Bartlett,  
Wildlife Biologist.



TABLE I. Waterfowl observed during mid-winter waterfowl inventories in the Maritime Provinces, January, 1961 and 1962 (Aerial surveys only)

Species	P. E. I.		N. B.		N. S.		Totals		Percent change
	1961	1962	1961	1962	1961	1962	1961	1962	
Canada Goose	50	15	-	-	3166	2520	3216	2535	-681 -21
Black Duck	756	645	844	1141	5670	4523	7270	6309	-961 -13
Scamp	-	-	-	-	433	1274	433	1274	+841 +195
Goldeneye and Mergansers	2448	1230	697	510	4114	3555	7259	5295	-1964 -27
Bufflehead	-	-	3	159	-	-	3	159	+156 -
Old Squaw	-	40	41	-	2	30	43	70	+27 -
Eiders	-	-	79	94	3	167	82	261	+179 -
Scoters	-	-	-	384	1	85	1	469	+468 -
Unidentified	-	-	299	4	-	76	299	80	-219 -
<b>Total</b>	<b>3254</b>	<b>1930</b>	<b>1963</b>	<b>2292</b>	<b>13389</b>	<b>12230</b>	<b>18606</b>	<b>16452</b>	<b>-2154</b> <b>-11</b>

MID-WINTER WATERFOWL INVENTORY

MARITIME PROVINCES

January 1961

The Mid-Winter Waterfowl Inventory was carried out on January 9-19, in 1961. Aerial coverage in Nova Scotia and New Brunswick was comparable to that in 1960. Aerial surveys in N.B. were made by Canadian Wildlife Service personnel, and that in Nova Scotia by Mr. Ian A. Moss of the N.S. Department of Lands and Forests. No aerial coverage of Prince Edward Island was made in 1961, and the results of ground surveys made by the Royal Canadian Mounted Police and the sanctuary caretakers are substituted in the tabulation.

Weather conditions in the Maritimes were typical of January. High winds and snow delayed completion of the aerial surveys, while the very heavy snowfall of Jan. 3-4 may have hampered ground coverage.

The tabulated data indicate a substantial decrease in numbers of waterfowl wintering in the Maritimes in 1961, compared to those present in 1960. Numbers in all three provinces declined by 35-40 percent.

The tabulated numbers of Black Ducks paralleled the total decline, with decreases of 30, 35, and 7 percent, in P.E.I., N.B., and N.S., respectively. However, three of four ground surveys in Nova Scotia for which comparable data were available, two in areas not sampled by the aerial coverage in that province, indicated increases in Black Ducks. The decline in that species may thus be partly a result of inadequate sampling. It is also quite possible that the change in pilot and observer on the N.B. aerial survey may have been partly responsible for the apparent decrease there.

The tabulated numbers of Goldeneye and Mergansers also showed decreases in all three provinces, and ground surveys in Nova Scotia do not conflict for those species.

The tabulated numbers of Canada Geese were only one-third of the 1960 value, but were 50-60 percent of the values in 1958 and 1959. Two of three N.S. ground surveys reporting Canada Geese, both in areas outside the aerial coverage, reported markedly increased goose numbers.

To sum up, numbers of wintering waterfowl in the Maritimes in 1961 are probably significantly decreased from 1960, but the decline may well be less serious than that shown in the tabulation. I suspect that sampling techniques here leave much to be desired.

January 23, 1961.

*A. J. Erskine*

A. J. Erskine  
Wildlife Biologist

Mid-Winter Waterfowl Inventory

Maritime Provinces

January, 1960

Aerial coverage of the three Maritime Provinces in 1960 is again comparable to those made in previous years.

Surveys in New Brunswick and Prince Edward Island were made by C.W.S. personnel, and that in Nova Scotia by Mr. Ian Moss of the N.S. Department of Lands and Forests.

Just prior to the dates when the surveys were made the weather in the Maritime Provinces was bad, with heavy snow falls and high winds which lasted about a week. These storms might have had an effect on the numbers of waterfowl wintering in the area.

The survey figures show that there is no change from 1959 in total number of waterfowl wintering in the Maritimes.

There is a decrease from 1959 in the number of black ducks wintering in the area, with the largest reduction along the south shore of Nova Scotia. The total decrease in the Maritimes amounted to a 19 per cent decline from 1959.



Practicaly no scaup were observed this year - a total of 30 were tallied compared with 4125 in 1959. Scoters had also decreased noticeably.

Both goldeneyes and mergansers increased considerably from 1959.

The number of Canada Geese showed a 50 per cent increase over that for 1959 - the increase showing along the south shore of Nova Scotia.

February 5, 1960.

B. C. Carter,  
Wildlife Biologist.

MID-WINTER WATERFOWL INVENTORY - 1960

AERIAL COMPARISON, 1959 & 1960

Species	P. E. I.		N. B.		N. S.		TOTALS		% CHANGE
	1960	1959	1960	1959	1960	1959	1960	1959	
Canada Geese	28	30	-	-	9500	6385	9528	6415	+ 50
Black Duck	4641	4763	1271	1422	6100	8731	12012	14916	- 19
Goldeneyes	14	408	770	877	5300	3491	6084	4776	+ 27
Buffleheads	-	-	81	58	-	-	81	58	+ 40
Eiders	20	20	172	128	-	51	192	199	-
Old Squaw	177	154	-	-	90	130	267	284	- 6
Seaup	-	-	-	-	30	4125	30	4125	Inc.
Scoters	-	-	287	319	-	170	287	489	- 41
Mergansers	3198	2361	450	411	1500	50	5148	2822	+ 82
Others	41	167	40	14	255	222	336	403	Deer.
	8119	7903	3071	3229	22775	23355	33965	34487	- 1

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Mid-Winter Waterfowl Inventory

Maritime Provinces

January 1959

Aerial coverage of the three Maritime Provinces in 1959 is again comparable with those made in 1957 and 1958.

At the time of the inventory the weather was clear and bright with the temperature near 10 degrees F. Ice conditions were more severe this year than in 1958 especially in the Northumberland Strait area between the northeast shore of Nova Scotia and Prince Edward Island.

The survey figures show that in general there was little or no change from 1958 in the waterfowl populations wintering in the Maritime Provinces.

For the second consecutive year, there was a decrease in goldeneyes and an increase in mergansers. However it is difficult to tell these two species apart when they are together in flocks as they are on the wintering grounds. The combined population figures of these two ducks for 1958 and 1959 show no change in numbers which would appear to be a more reasonable population estimate.



Canada geese and black duck show no appreciable change from 1958.

The general wintering population trend in the Maritimes over the past several years shows a slow but steady decline. At present, there are no discernable circumstances which would appear to account for the decline.

*Brian C. Carter*  
Brian C. Carter,  
Wildlife Biologist

January 26, 1959

Mid-Winter Waterfowl Inventory  
Aerial Comparison 1958 & 1959

<u>Species</u>	<u>Prince Edward Island</u>		<u>New Brunswick</u>		<u>Nova Scotia</u>		<u>Totals</u>		<u>% Change</u>
	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	
Canada Geese	30	362	-	-	<sup>6</sup> <del>5</del> 385	6230	5415	6592	-3
Black Duck	4763	3733	1422	1251	8731	9055	14916	14039	+6
Goldeneyes	408	874	877	1212	3491	4676	4776	6762	-29
Buffleheads	-	39	58	-	-	-	58	39	Incr.
Eiders	20	53	128	281	51	-	199	334	Decr.
Old Squaw	154	132	-	-	130	193	284	325	-13
Scaup	-	220	-	-	4125	4190	4125	4410	-6
Scoters	-	98	319	29	170	22	489	129	Incr
Mergansers	2361	1607	411	276	50	8	2822	1891	+49
Others	167	91	14	-	222	109	403	200	Incr
<b>Totals</b>	<u>7903</u>	<u>7209</u>	<u>3229</u>	<u>3049</u>	<u>22355</u>	<u>24463</u>	<u>33487</u>	<u>34721</u>	<u>-3</u>

## ANNUAL JOB PROGRESS REPORT

Title: Midwinter Waterfowl Inventory 1963.

Project: 0-1-1, 1963

Prepared by: A. J. Erskine (from data on official report forms completed and submitted earlier by C.O. Bartlett).

Personnel: Aerial surveys made by C. O. Bartlett and A. J. Erskine, C.W.S.; and by Ian Moss, Department of Lands and Forests, Nova Scotia. For Ground surveys, see Appendix.

Objectives: (as in past years) To sample the wintering waterfowl populations in the Maritimes during January, to provide population indices to indicate trends in numbers from year to year.

### Location of Study Areas:

The aerial coverage was essentially the same as in past years (see map). In P.E.I., Bartlett covered the shoreline and major rivers in Kings and Queens Counties, and in Prince County west to Summerside. In N.S., Moss covered the shoreline from St. Margaret's Bay to Yarmouth, from Digby to Annapolis, and from Cape Blomidon to Windsor to Onslow to Five Islands. In N. B., Erskine covered the shoreline from Hillsborough to Alma, from Musquash Harbour to St. Andrews, and Deer Island, Campobello Island, and Grand Manan Island

### Distances travelled:

by air (guess) - in P. E. I. 720 miles; in N. B. 600 miles; in N. S. no distances stated; by car - in P. E. I. 180 miles; in N. B. 70 miles; in N. S., not stated.

### Time involved:

by air (total flying time, of which survey time was about 60% in P. E. I. and N. B.) - in P. E. I. 15 hours; in N. B. 5½ hours; in N. S. not stated; by car, driving to and from



airport only.

Cost involved: for air charger - in P. E. I., Cessna 150 @ \$19/hour, \$285; in N. B., Apache @ \$50/hour, \$285; in N. S., not stated (survey probably used Apache as in 1962; aircraft are under standing charter to province for pre-arranged number of hours - if that number of hours has not previously been exceeded, no additional cost for charter is entailed by that survey). Car travel - by C.W.S. biologists, estimated on \$0.03/mile, in P. E. I. \$10; in N. B. \$3; in N. S., no way of guessing.

Conclusions:

Our conclusions regarding the midwinter waterfowl inventory are restricted to assessment of changes in waterfowl numbers from year to year, in view of the counts of birds seen, and a subjective assessment of the relative conditions under which the surveys were made. Changes in populations of the major species are tabulated below. ( + increase, - decrease, x no change).

Status by Provinces.

<u>Species</u>	<u>P.E.I.</u>	<u>N.S.</u>	<u>N.B.</u>
Canada Goose	x †	x	x †
Black Duck	†	†	-
Scaup	x †	†	x †
Goldeneyes, Bufflehead, Mergansers (combined)	-	-	+

† species absent, or counted in inconsequential numbers only. Observing conditions were considered to have been rather better in 1963 than in 1962, in P.E.I. and N.S., and were more or less comparable in both years in N.B.

Proposals for improvement of the Midwinter Waterfowl Inventory:

As has been stated in the past, our surveys do not sample the wintering waterfowl populations in the Maritimes to the same extent each year. Due to climatic variations, the extent of ice cover varies, particularly on Northumberland Strait and the Gulf of St. Lawrence; waterfowl may be present in large numbers in some areas in mild winters, and totally lacking there in other years. Due to the cost of charter aircraft in the Maritimes, we have not included in our surveys areas which often would produce nothing at all. To obtain a truly representative sample, one should of course sample each year portions of all areas where waterfowl in some years occur in large numbers, but we question whether the increase in numbers of waterfowl reported would be commensurate with the cost. To obtain such a representative sample our coverage would have to include, besides those areas now covered, the east shore of N.B. north to Miramichi Bay, and portions of the Eastern Shore, and southern Cape Breton, in N. S. We estimate that the cost of such increased coverage would run to as much again as the present cost, say \$1000. in all, and the time to ensure the completion of the aerial surveys would need to be substantially greater than at present. Even now, we can barely count on completing the surveys before the deadline, except under particularly favourable flying conditions, with the number of competent observers available. In alternate years, when C.W.S. biologists are absent at the staff meetings in Ottawa, the aerial surveys are not completed until late January.

We must also point out the variability of coverage resulting from changing pilots and makes of aircraft every year. Even though we deal with the same charter services each year, the pilots change with bewildering frequency; during my three years with the C. W. S., I have flown seven surveys, each one with a different pilot. Such a turnover in personnel makes still more questionable the economics of any expanded coverage in the Maritimes.

We feel that additional manpower and aircraft for an expanded coverage in the Maritimes could be provided by the Fish and Wildlife Branch, Department of Lands and Mines, New Brunswick. At one time, that branch provided the aircraft in which C. W. S. observers carried out the surveys in that province, but in recent years any suggestion that they might assist in waterfowl survey work has been rejected. At present, the province of New Brunswick takes no part in waterfowl surveys at any season.

January 29, 1963

A. J. Erskine,  
Wildlife Biologist.



Appendix.

In connection with the Midwinter Waterfowl Inventory, we annually send out questionnaires to observers in all three Maritime Provinces. Persons contacted include R.C.M.P. officers, Fisheries Officers, Provincial Rangers, duck hunters, and bird-watchers. Their data are in most years used only to check on the trends indicated by the aerial surveys, and are not included in the tabulation; their coverage tends to be more variable than that of the aerial counts, and some of their results were obviously unrepresentative. We maintain the ground observer coverage primarily as insurance against the possibility that the aerial survey is unavoidably omitted or postponed, as was the P. E. I. survey in 1961.

PROJECT HISTORY SHEET.

Project No. 0 - 1 - 1 Date January 29, 1963.

Title Midwinter Waterfowl Inventory, 1963.

Investigators C. O. Bartlett and A. J. Erskine.

Date of approval of project plan. 1962 2 2 7

Date for submission of progress report requested in memorandum of Jan. 22/63.

THIS HISTORY SHEET ACCOMPANIES:

Project plan \_\_\_\_\_ Progress Report X

Completion report \_\_\_\_\_ Draft manuscript \_\_\_\_\_

Proposal for shift of emphasis \_\_\_\_\_

Other (describe) \_\_\_\_\_

PUBLICATIONS ARISING FROM THE PROJECT: (Bibliographic references; proposed titles)

None from this office.

FINANCIAL STATUS (to be completed at Ottawa)

Year	Investigator	Estimate	Disbursement	Cost to date.

Summary of Winter Waterfowl Survey  
New Brunswick, Nova Scotia and Prince Edward Island  
January 7 to January 15, 1963

Aerial surveys were carried out in all three provinces, and the 1963 surveys were comparable with those in 1962.

The weather during December 1962 was generally milder than during the same period the previous year. As a result there were more open water areas along the coast and the ducks were more generally dispersed. Most inland ponds were frozen over at the time of the surveys, so the flights were restricted to coastal areas.

Weather conditions were very favourable for observing waterfowl during the surveys in New Brunswick and Prince Edward Island on January 7 and 8. Nova Scotia surveys were carried out under less favourable conditions in the period from January 10 to January 15 inclusive.

From the tabulation below it may be seen that waterfowl populations, with the exception of Prince Edward Island's, have been rather stable during the past three winters.

Total Birds

	<u>Prince Edward Island</u>	<u>New Brunswick</u>	<u>Nova Scotia</u>
1963	2,452	2,568	13,144
1962	1,930	2,198	12,063
1961	6,080	1,884	13,386



CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastal - Bay of Fundy					Total Birds
<u>Province</u>	Observers	Observers	Observers	Observers	Observers	
New Brunswick	C.M.S.					
<u>Species</u>						
Mallard						
Black Duck	878					878
Mottled Duck						
Gadwall						
Baldpate						
G.N. Teal						
B.N. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	878					878
Head						
Canvasback						
Scamp						
Ringneck						
Goldeneye	510					510
Bufflehead	321					321
Oldsquaw	15					15
Fider	91					91
Scoter	591					591
Ruddy						
Merganser	96					96
TOTAL DIVING DUCKS	1,624					1,624
Unid. and Misc.	66					66
TOTAL DUCKS	2,568					2,568
Snow Goose						
Blue Goose						
W.F. Goose						
Can. Goose						
TOTAL GEESE						
Brant						
Cost. Swan						
GRAND TOTAL	2,568					2,568

CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastal - South Shore and Bay of Fundy					Total Birds
	Observers	Observers	Observers	Observers	Observers	
<u>Province</u>	Provincial					
Nova Scotia						
<u>Species</u>						
Mallard Black Duck	6,186					6,186
Mottled Duck						
Gadwall						
Baldpate						
G.W. Teal	84					84
B.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	6,270					6,270
Bufflehead						
Canvasback						
Scaup	1,748					1,748
Ringneck						
Goldeneye	2,168					2,168
Bufflehead						
Oldsquaw	30					30
Eider	306					306
Scoter	85					85
Ruddy						
Merganser	29					29
TOTAL DIVING DUCKS	4,366					4,366
Unid. and Misc.	10					10
TOTAL DUCKS	10,646					10,646
Snow Goose						
Blue Goose						
W.F. Goose						
Can. Goose	2,498					2,498
TOTAL GEESE	2,498					2,498
Trant Coot						
Whist. Swan						
GRAND TOTAL	13,144					13,144

CANADA

WINTER WATERFOWL SURVEY - January 7 to January 15, 1963

PROVINCES SUMMARY SURVEY

Ecological Survey Area	Coastline of Queens and Kings Co.					Total Birds
<u>Province</u>	Observers	Observers	Observers	Observers	Observers	
Prince Edward Island	C.W.S.					
<u>Species</u>						
Mallard						
Black Duck	1,274					1,274
Mottled Duck						
Gadwall						
Baldpate						
G.W. Teal						
B.W. Teal						
Shoveller						
Pintail						
Wood Duck						
TOTAL PUDDLE DUCKS	1,274					1,274
Bufflehead						
Canvasback						
Scaup						
Ringneck						
Goldeneye	372					372
Bufflehead						
Oldsquaw						
Eider						
Scoter						
Ruddy						
Merganser	600					600
TOTAL DIVING DUCKS DUCKS	972					972
Unid. and Misc.	6					6
TOTAL DUCKS	2,252					2,252
Snow Goose						
Blue Goose						
N.F. Goose						
Can. Goose	200					200
TOTAL GEESE	200					200
Went oot Whist. Swan						
GRAND TOTAL	2,452					2,452



# MID-WINTER WATERFOWL INVENTORY

## MARITIME PROVINCES

January 1962

### METHODS

Aerial and ground surveys were carried out in all three provinces of New Brunswick, Nova Scotia and Prince Edward Island during the 1962 mid-winter inventory. However, comparative aerial data are available this year for all three provinces and aerial survey data only have been utilized for this report.

Attendance of field biologists at staff meetings in Ottawa in early January delayed surveys of Prince Edward Island and Nova Scotia until January 17th and 20th respectively. Aerial surveys in Nova Scotia were carried out again this year by Mr. Ian Moss of the Nova Scotia Department of Lands and Forests on January 7th and 8th, using a Department of Lands and Forests aircraft. A Cessna - 180 was used for the Prince Edward Island survey and a twin engine Piper Apache for the New Brunswick survey. Both aircraft were chartered from Atlantic Central Airlines, Ltd., Moncton, N. B.

Approximately one third of the total shoreline of all three provinces was covered by aerial surveys in 1961 and 1962. Although the areas covered have in the past represented the most productive areas in terms of numbers of waterfowl observed, we presently have no idea what percent of the total population the 1961 and 1962 figures represent. Consequently the counts obtained here should be considered as being relative only.

### WEATHER

January was much milder this year than last and there were no snow storms preceding this year's count paralleling those that occurred last year in December and January. However, some cold weather preceded this year's inventory in New Brunswick and Prince Edward Island and ice conditions along the coastline were comparable with last year. Salt water bays and estuaries and most inland fresh water ponds were frozen over at the time of the New Brunswick and Prince Edward Island surveys

RESULTS

The species and numbers of waterfowl observed in the individual provinces is shown in Table I. A comparison of 1961 and 1962 data for the entire Maritimes shows that there was an 11 percent decrease from last year in the total number of waterfowl observed. Canada Geese numbers were down 21 percent, black ducks were down 13 percent, American goldeneye and mergansers together were down 27 percent from 1961 counts. Changes in the numbers of other species observed were not significant.

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January 23, 1962.

C. C. Bartlett,  
Wildlife Biologist.



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Old Squaw	-	40	41	-	2	30	43	70	+27	-
Eiders	-	-	79	94	3	167	82	261	+179	-
Scoters	-	-	324	384	1	85	1	469	+468	-
Unidentified	-	-	299	4	-	76	299	80	-219	-
<b>Total</b>	<b>3254</b>	<b>1930</b>	<b>1963</b>	<b>2292</b>	<b>13389</b>	<b>12230</b>	<b>18606</b>	<b>16452</b>	<b>-2154</b>	<b>-11</b>



## MID-WINTER WATERFOWL INVENTORY

### MARITIME PROVINCES

January 1961

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The tabulated numbers of Black Ducks paralleled the total decline, with decreases of 30, 35, and 7 percent, in P.E.I., N.B., and N.S., respectively. However, three of four ground surveys in Nova Scotia for which comparable data were available, two in areas not sampled by the aerial coverage in that province, indicated increases in Black Ducks. The decline in that species may thus be partly a result of inadequate sampling. It is also quite possible that the change in pilot and observer on the N.S. aerial survey may have been partly responsible for the apparent decrease there.

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To sum up, numbers of wintering waterfowl in the Maritimes in 1961 are probably significantly decreased from 1960, but the decline may well be less serious than that shown in the tabulation. I suspect that sampling techniques here leave much to be desired.

January 23, 1961.

A.J. Erskine  
Wildlife Biologist

MID-WINTER WATERFOWL INVENTORY - 1961

Comparison, 1960-61

Species	P.E.I.(ground)		N.B.(aerial)		N.S.(aerial)		Totals		Percent Change
	1961	1960	1961	1960	1961	1960	1961	1960	
Canada Goose	50	107	-	-	3166	9500	3216	9607	- 66
Black Ducks	3068	4383	844	1271	5670	6100	9582	11754	- 18
Scup	-	2	-	-	433	30	433	32	+ 1253
Goldeneye	1400	2227	673	770	4029	5300	6102	8297	- 27
Bufflehead	100	100	3	81	-	-	103	181	- 43
Oldsquaw	600	1162	41	-	2	90	643	1252	- 49
Eiders	100	-	79	172	3	-	182	172	+ 6
Scoters	150	2	-	287	1	-	151	289	- 48
Mergansers	312	597	24	450	85	1500	421	2547	- 83
Others	400	862	299	40	-	255	699	1157	- 40
	6130	9335	1963	3071	13389	22775	21532	35288	- 39



Head Office

A. J. Erskine

WL-U-62-15

Supplementary Information Bearing on the  
Mid-Winter Waterfowl Inventory - 1961

Feb. 2, 196

N.B.: In addition to the aerial survey of the south shore of New Brunswick, reports were received from 13 ground observers, seven in areas reported on in 1960, three indicated marked decreases and seven little or no change. Those data support the decrease indicated by the aerial survey. The decrease was most marked in the Gulf of St. Lawrence and Northumberland Strait, due to increased ice areas there.

N.S.: 24 ground observers provided data in Nova Scotia in addition to the aerial survey, while a visit to the Port Joli area in late January gathered further data. The data are grouped by areas:

	Increase	No Change	Decrease
South Shore	4	2	
Eastern Shore	3	1	1
Cape Breton	1	3	
North Shore		2	1
Bay of Fundy		5	1
<hr/>			
Totals	8	13	3

Data from the Port Joli area indicated that the duck numbers had been little changed, but that an exceedingly large number of Canada Geese had been present in the area from about January 1 until about January 15-20, when most had moved away (to the south-west?). Those data tend to refute the indicated decrease in Geese shown by the aerial survey, and probably also that shown for Black Ducks.

In the overall picture for the Maritime Provinces, there seems little doubt that numbers of wintering waterfowl decreased in the Gulf of St. Lawrence and Northumberland Strait, probably birds wintering in Nova Scotia, but the grand total is most likely somewhat down.

A. J. Erskine  
Wildlife Biologist

AJE/bs



Mid-Winter Waterfowl Inventory

Maritime Provinces

January, 1960

Aerial coverage of the three Maritime Provinces in 1960 is again comparable to those made in previous years.

Surveys in New Brunswick and Prince Edward Island were made by C.W.S. personnel, and that in Nova Scotia by Mr. Ian Moss of the N.S. Department of Lands and Forests.

Just prior to the dates when the surveys were made the weather in the Maritime Provinces was bad, with heavy snow falls and high winds which lasted about a week. These storms might have had an effect on the numbers of waterfowl wintering in the area.

The survey figures show that there is no change from 1959 in total number of waterfowl wintering in the Maritimes.

There is a decrease from 1959 in the number of black ducks wintering in the area, with the largest reduction along the south shore of Nova Scotia. The total decrease in the Maritimes amounted to a 19 per cent decline from 1959.

Practically no scaup were observed this year - a total of 30 were tallied compared with 4125 in 1959. Scoters had also decreased noticeably.

Both goldeneyes and mergansers increased considerably from 1959.

The number of Canada geese showed a 50 per cent increase over that for 1959 - the increase showing along the south shore of Nova Scotia.

February 5, 1960.

B. C. Carter,  
Wildlife Biologist.

MID-WINTER WATERFOWL INVENTORY - 1960

AERIAL COMPARISON, 1959-1960

Species	P. E. I.		N. B.		N. S.		TOTALS		% CHANGE
	1960	1959	1960	1959	1960	1959	1960	1959	
Canada Geese	28	30	-	-	9500	6385	9528	6415	↑ 50
Black Duck	4641	4763	1271	1422	6100	8731	12012	14916	- 19
Golden-eyes	14	408	770	877	5300	3491	6084	4776	↑ 27
Buffleheads	-	-	81	58	-	-	81	58	↑ 40
Eiders	20	20	172	128	-	51	192	199	-
Old Squaw	177	154	-	-	90	130	267	284	- 6
Scaup	-	-	-	-	30	4125	30	4125	Inc.
Scoters	-	-	287	319	-	170	287	489	- 41
Mergansers	3198	2361	450	411	1500	50	5148	2822	↑ 82
Others	41	167	40	14	255	222	336	403	Decr.
	8119	7903	3071	3229	22775	23355	33965	34487	- 1



Mid-Winter Waterfowl Inventory

Maritime Provinces

January 1959

Aerial coverage of the three Maritime Provinces in 1959 is again comparable with those made in 1957 and 1958.

At the time of the inventory the weather was clear and bright with the temperature near 10 degrees F. Ice conditions were more severe this year than in 1958 especially in the Northumberland Strait area between the northeast shore of Nova Scotia and Prince Edward Island.

The survey figures show that in general there was little or no change from 1958 in the waterfowl populations wintering in the Maritime Provinces.

For the second consecutive year, there was a decrease in goldeneyes and an increase in mergansers. However it is difficult to tell these two species apart when they are together in flocks as they are on the wintering grounds. The combined population figures of these two ducks for 1958 and 1959 show no change in numbers which would appear to be a more reasonable population estimate.

Canada geese and black duck show no appreciable change from 1958.

The general wintering population trend in the Maritimes over the past several years shows a slow but steady decline. At present, there are no discernable circumstances which would appear to account for the decline.

*Brian C. Carter*  
Brian C. Carter,  
Wildlife Biologist

January 26, 1959

Mid-Winter Waterfowl Inventory

Aerial Comparison 1958 & 1959

<u>Species</u>	<u>Prince Edward Island</u>		<u>New Brunswick</u>		<u>Nova Scotia</u>		<u>Totals</u>		<u>% Change</u>
	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	
Canada Geese	30	362	-	-	<sup>6</sup> 385	6230	5415	6592	-3
Black Duck	4763	3733	1422	1251	8731	9055	14916	14039	+6
Goldeneyes	408	874	877	1212	3491	4676	4776	6762	-29
Buffleheads	-	39	58	-	-	-	58		39 Iner.
Eiders	20	53	128	281	51	-	199	334	Decr.
Old Squaw	154	132	-	-	130	193	284	325	-13
Scaup	-	220	-	-	4125	4190	4125	4410	-6
Scoters	-	98	319	29	170	22	489	129	Iner.
Mergansers	2361	1607	411	276	50	8	2822	1891	+49
Others	167	91	14	-	222	109	403	200	Iner.
<b>Totals</b>	<b>7903</b>	<b>7209</b>	<b>3229</b>	<b>3049</b>	<b>22355</b>	<b>24463</b>	<b>33487</b>	<b>34721</b>	<b>-3</b>



1

Mid-Winter Waterfowl Inventory

Maritime Provinces

January 1958

This year, 1958, aerial surveys were made with complete coverage in all three Provinces. The results are therefore directly comparable with 1957, insofar as area is concerned. There was, however, no similarity in the weather conditions between 1957 and 1958. The location of the waterfowl on their wintering areas in the Maritime Provinces is influenced to a large extent by the weather conditions prevalent at the time of the surveys.

In 1957, the inventory was made when the temperature was well below zero and all the inland water areas were frozen. In 1958, the weather was very mild, temperatures were between 30 and 40° F., and many of the inland water areas were accessible to waterfowl.

However, it is felt that in spite of the differences in weather between the 1957 and 1958 surveys, the wintering waterfowl population in the Maritimes is considerably lower than in 1957.

The survey figures show an overall decrease from 1957 of 34 per cent, with Nova Scotia showing the largest decrease of 44 per cent. Canada geese, black ducks and

Mid-Winter Waterfowl Inventory  
Aerial Comparison 1957-1958.

Species	Prince Edward Island		New Brunswick		Nova Scotia		Totals	
	1958	1957	1958	1957	1958	1957	1958	1957
Canada Geese	362	26	-	-	5030	8125	5392	8151
Black Duck	3733	5548	1251	2225	2687	4799	7671	12572
Goldeneyes	874	3177	1212	446	1382	3354	3468	6977
Buffleheads	39	36	-	-	-	-	39	36
Eiders	53	47	281	23	-	610	334	680
Old Squaw	132	62	-	-	191	405	323	467
Scaup	220	29	-	-	3340	5000	3560	5029
Scoters	98	73	29	213	-	110	127	396
Mergansers	1607	26	276	339	2	16	1885	381
Others	91	103	-	-	24	72	115	175
<b>Totals</b>	<b>7209</b>	<b>9127</b>	<b>3049</b>	<b>3246</b>	<b>12656</b>	<b>22491</b>	<b>22914</b>	<b>34864</b>
Percentage increase or decrease from 1957								
	-21%		-6%		-44%		-34%	

REPORT ON MIGRATORY BIRDS IN THE  
MARITIME PROVINCES, 1958

by  
C. O. Bartlett

Canadian Wildlife Service, Sackville, N.B.

A midwinter waterfowl inventory was carried out in all three provinces during the third week of January, 1958. Aerial and ground surveys were used to obtain a numerical estimate of the wintering population. The aircraft used for this purpose in Nova Scotia was again provided through the courtesy of the Nova Scotia Department of Lands and Forests. The R.C.M.P. and a small number of interested observers assisted in the inventory.

N/e  
e<sub>n</sub>  
e<sub>x</sub>  
Our estimates indicated that <sup>the</sup> waterfowl populations wintering in the Maritimes in January, 1958 <sup>as</sup> were down considerably from 1957 (Table 1). The total waterfowl population was down about <sup>4</sup>~~4~~ percent in Nova Scotia, <sup>5</sup> percent in New Brunswick and <sup>2</sup>~~2~~ percent on Prince Edward Island. An estimated 22,914 waterfowl were observed during the aerial survey in 1958 as compared to 34,864 during the 1957 aerial survey.<sup>1</sup> Decreases in the order of 30 to 50 percent were indicated for Canada Geese, black duck, goldeneye and scaup.

Increases in the number of black ducks observed in Newfoundland and Quebec during the 1958 inventory suggests

<sup>1</sup> Ground surveys in 1957 showed slightly fewer birds present: 27,217.



that, as a result of the very mild winter, more than the usual number of black ducks wintered north of Nova Scotia, New Brunswick and Prince Edward Island. This could explain in part the decrease in the wintering population that was apparent in the Maritimes. However, the decrease of 39 percent for this area is very close to the 40 percent decrease indicated for black ducks in the Atlantic flyway as a whole. Although the counts of Canada geese wintering in the Maritimes were down about 34 percent from 1957, a decrease of only 14 percent was indicated for the entire Atlantic flyway.

Unfortunately the reasons for the decrease in the duck populations <sup>wintering</sup> in the Maritime Provinces and the Atlantic flyway are, at the present, obscure. Breeding and production surveys are not available for a large portion of the black duck breeding area in northern Canada, particularly in Quebec and Labrador. Also, ~~except for the records of birds banded on the breeding grounds,~~ we lack information on the <sup>total kill of</sup> ~~extent of the~~ black ducks ~~kill~~ in the Maritimes. In Nova Scotia, for example, we have no knowledge of the number of waterfowl hunters let alone the number of waterfowl killed. It is not possible therefore to determine whether the decrease has been due to below average reproduction or to overharvest.

The decrease in the wintering population was reflected only slightly in the 1958 spring breeding population in the Maritime Provinces. Breeding-pair surveys, carried out by the Canadian Wildlife Service in May, indicated a six percent decrease in the black duck breeding population and a three percent decrease in goldeneyes (Table 2). The ring-necked duck still appears to be increasing in the Maritimes although fewer birds of this species were observed on the wintering grounds in 1958.

2/2/2  
Our summer brood surveys indicated that 1958 was a fairly good year for breeding waterfowl in the Maritimes (Table 3). The increased <sup>production</sup> ~~population~~ in the black duck appeared to compensate for the reduction in the spring breeding population ~~and~~, <sup>On</sup> the basis of our brood surveys, we predicted an increase in the fall flight of locally raised birds.

Although all the reports on the 1958 hunting season in the Maritimes are not available at this writing, field checks carried out by biologists of the Canadian Wildlife Service and members of the R.C.M.P., indicated that waterfowl hunting in most areas in the Maritimes was superior to last year. Black ducks and

green-winged teal were available in good numbers to hunters on Prince Edward Island and along the north shore of Nova Scotia and eastern New Brunswick. †  
~~adjacent to Prince Edward Island.~~ The Canada Goose flight in this area was considerably larger than last year and many hunters shared the opinion that it was the best flight of geese that they had observed in a number of years.

Through the use of hunter return cards and the licence stubs available from the sale of resident ~~guns~~ <sup>§</sup> licenced in New Brunswick and Prince Edward Island, we will be able to obtain an estimate of the total waterfowl kill in these provinces. Unfortunately, we still lack information of this nature for Nova Scotia. The attempt to obtain an estimate of the waterfowl kill in Nova Scotia during the 1957-58 season was not successful. Hunter questionnaires were distributed to 60,000 householders through the householder distribution system provided by the Post Office Department. The response from the public at large was very small. Of the 60,000 questionnaires distributed only 1,455, or a little better than 2 percent, were returned.



Research on merganser-salmon relationships in the Margaree River area of Nova Scotia was continued in 1958. This is a cooperative study between the Canadian Wildlife Service, the Department of Fisheries and the Fisheries Research Board of Canada. Techniques are presently being developed for color marking and noting the movements of mergansers. The influence of <sup>the</sup> merganser population on the number of grilse and salmon returning to the river is being studied. ^

^ [ Waterfowl research studies as described in the 1957 report are continuing on Prince Edward Island and New Brunswick.

Table 1. Comparison of Midwinter Waterfowl Inventories  
(Aerial), 1957 and 1958, Maritime Provinces.

<u>Species</u>	Prince Edward Island		New Brunswick		Nova Scotia		Totals	
	<u>1958</u>	<u>1957</u>	<u>1958</u>	<u>1957</u>	<u>1958</u>	<u>1957</u>	<u>1958</u>	<u>1957</u>
Canada Geese	362	26	-	-	5030	8125	5392	8151
Black Duck	3733	5548	1251	2225	2687	4799	7671	12572
Goldeneyes	874	3177	1212	446	1382	3354	3468	6977
Buffleheads	39	36	-	-	-	-	39	36
Eiders	53	47	281	23	-	610	334	680
Old Squaw	132	62	-	-	191	405	323	467
Scaup	220	29	-	-	3340	5000	3560	5029
Scoters	98	73	29	213	-	110	127	396
Mergansers	1607	26	276	339	2	16	1885	381
Others	91	103	-	-	24	72	115	175
Totals	7209	9127	3049	3246	12656	22491	22914	34864
Percentage increase or decrease from 1957	-21%		-6%		-44%		-34%	

Table 2. Spring waterfowl inventory, Maritime Provinces, 1957 and 1958 (Comparable data for principal breeding species)

Type of <u>Survey</u>	<u>Year</u>	Species				
		<u>Black Duck</u>	<u>Ring-n. Duck</u>	<u>Golden- eye</u>	<u>B.W. Teal</u>	<u>Pin- tail</u>
Aerial	1957	1,257	134	136	77	79
	1958	968	185	132	43	4
Ground	1957	679	148	145	71	39
	1958	855	220	140	63	57
Total	1957	1,936	282	281	148	118
	1958	1,823	405	272	106	61
Percentage Change		-6	+44	-3	-28	-48

For distribution by species see Appendices 1 and 2.

Table 3. Summer brood survey, Maritime Provinces, 1956, 1957 and 1958 (Comparable data for principal breeding species)

Type of Survey	Area	Year	Species													
			Black Duck			Ring-n. Duck			Goldeneye			Teal				
			Ad.	Br.	Yg./100	Ad.	Br.	Yg.	Ad.	Br.	Yg.	Ad.	Br.	Yg.		
Ground	N.B.	1956	271	27	175	64	59				44	8	50	69	13	93
	and	1957	223	21	172	77	51				49	12	85	37	4	36
	N.S.	1958	131	25	195	149	81	5	51		77	16	77	93	11	87
Aerial	P.E.I.	1956	406	36	234	58	89				45	5	40	123	15	103
		1957	268	24	170	63	84	2	13		6			83		
		1958	345	42	314	91	95	1	4					60		



## Mid-Winter Waterfowl Inventory

### Maritime Provinces

January, 1957

This year, 1957, aerial surveys were made with complete coverage in New Brunswick and Prince Edward Island, but only a partial one in Nova Scotia because of weather conditions. Because of bad weather, there are no 1956 aerial surveys for New Brunswick and Nova Scotia for comparison with the aerial surveys carried out in 1957. Comparisons are based on ground surveys made by co-operators distributed throughout the two provinces.

The inventory was made in 1957 during the lowest temperatures experienced this winter. For example, in New Brunswick, the temperature was between 20 and 25°F. below zero. Many of the coastal marshes, usually holding wintering waterfowl, were frozen solid. Observation was also hampered by vapour drifting on the surface of the sea.

Fog curtailed the aerial survey in Nova Scotia, especially in the Yarmouth area.

The inventory figures show a 10 per cent increase in Nova Scotia, a 4.5 per cent increase in Prince Edward Island and a 44 per cent decrease in New Brunswick. Taking the region as a whole, there is no change in the total number of waterfowl wintering in the Maritime Provinces. Canada Geese increased from 1956 by 35 per cent; Black Ducks decreased by 10 per cent; and Goldeneyes increased by 24 per cent.

Table I  
Mid-Winter Waterfowl Inventory 1957

PROVINCE	CANADA GEESE	BLACKS	GOLDEN- EYES	BUFFLE- HEADS	KIDERS	OLD SQUAW	SCAUP	SCOTERS	MER- GANSERS	OTHERS	TOTALS
Prince Edward Island (AIR)	26	5548	3177	36	47	62	29	73	26	103	9127
New Brunswick (Ground)	-	1533	1213	128	30	53	200	-	90	143	3390
Nova Scotia (Ground)	4677	5772	803	219	6	552	1276	143	164	1088	14700
TOTALS	4703	12853	5193	383	83	667	1505	216	280	1334	27217

Table II

Comparison of Mid-Winter Waterfowl Inventory1957 and 1956

YEAR	CANADA GESE	BLACKS	GOLDEN- EYES	BUFFLE- HEADS	ELDERS	OLD SQUAW	SCAUP	SCOTERS	MER- CANSERS	OTHERS	TOTALS
1957	4703	12853	5193	383	83	667	1505	216	280	1334	27217
1956	3479	14285	4182	309	638	576	776	651	313	1933	27142

MID-WINTER INVENTORY  
MARITIME PROVINCES  
JANUARY, 1956.

For the past number of years the greater part of the data for the mid-winter inventory have been collected by aerial survey. Ground surveys were also carried out where possible as a safe-guard. This year, adverse weather conditions prevented the arial surveys of New Brunswick and Nova Scotia and considerably delayed the flying in th Prince Edward Island. Material used in this report was gathered by ground surveys in the first two of the above mentioned provinces. Air surveys data was again used for Prince Edward Island as this is the only method of coverage possible for that area.

The total count for this years surveys is outlined on table # 1. The Wolfville and Annapolis River, Anapolis Co. areas of Nova Scotia had to be omitted this year and it is felt that the coverage of Grand Manan was not complete. These are all good wintering areas for black ducks and consequently the numbers of that species may be more than is indicated in the table.

As this years coverage was not normal it is felt that a word of explanation concerning the coverage is needed. This may help in evaluating next years count. Therefore, the names and addresses of all observers, and approximate areas covered appear in Table 11. Detailed information concerning the number of waterfowl in each of these areas will be found on the appropriate inventory field sheet completed by individuals taking part.



TABLE 1  
ACCEPTABLE MID-WINTER INVENTORY RESULTS  
MARITIME PROVINCES 1956.

PROVINCE	CANADA GOOSE	BLACK	O. W. TITL.	COLLARED-SHUFFLE- -eye	HEAD	SCAUP	FIBER	SCOTER	OLD SQUAN	NEBC- ANSAL	OTHERS TOT	
P.E.I. (AIR)	7	5869	---	2,634	---	---	---	55	22	101	33	8728
H.B. (Ground)	---	2535	9	466	100	200	283	10	35	---	410	4041
H.B. (Swamp)	3922	14056	---	2,600	268	820	505	691	664	211	1586	---
TOTAL	3929	22,460	9	5,700	368	1,020	788	756	721	312	2,029	38092

TABLE 11

LIST OF CO-OPERATORS 1956.

Name and Address of Observer	Approximate Area Covered
1.a) Nova Scotia-R.C.M.P. Police' Detachment Amherst, Cumberland Co.	Tantramar Marshes, Tidnish to Port Howe.
Tatamouche, Colchester Co. New Glasgow, Pictou Co.	North Shore, Colchester Co. Sutherlands River & Pictou Landing.
Sheet Harbour, Halifax Co.	Clam Point to Sucum Secum (east County Line)
Dartmouth, Halifax Co.	Lawrencetown and Cole Harbour
Halifax, Halifax Co.	Pegg's Cove, etc., not used in present report. Lewis's Port Joli ( Dr. <del>xxxxx</del> report used for this area.)
Liverpool, Queens Co.	
Shelburne, Shelburne Co.	All Port Joli Sanctuary (Accom- panied Dr. Lewis.
Barrington Passage, Shelb. Co.	Yarmouth Co. line to Cape Sable and Port Clyde
Meteghan River, Digby Co.	New Edinburgh to Beaver River (C. shore St. Mary's Bay.)
Digby, Digby Co.	Head of St. Mary's Bay,
Windsor, Hants. Co.	Shoreline, Windsor to Moel (Avon R. & Mines Basin)
Cumberland Pandboro, <del>XXXXX</del> Co.	Bass River to Parrsboro (Colchester & Cumberland Co. shoreline)
Sherbrooke, Guysboro Co.	St. Mary's Municipality-shore- line, estuaries & Bays.
Guysboro, Guys Co.	Milford Haven River.
(b) <u>Cape Breton</u> R.C.M.P. Police	
Baddeck, Victoria Co.	Nyanza Bay and Baddeck Bay.
St. Peters, Richmond Co.	St. Peters Bay and Lennox Co.
North Sydney, C. Breton Co.	N.W. Cape Breton Co. S.E. Victoria Co., shoreline & lakes.

(c) Other Co-operators:  
Address & Name

Approximate Area Covered

R.A. Mc Adams, Fort Joli, Queens Co.	All Port Joli Sanctuary (Dr. Lewis reports used)
Dr. H.F. Lewis, W. Mid, Sable, Shel. Co.	All Port Joli Sanctuary Queens- Shelburne.
Arthur Weir, Digby, Digby Co.	Western and Annapolis basin, Digby Co.
Alex Grant, Harbour Centre, Antigonish Co.	Antigonish to Harbour Centre.
W. E. Gann, Yarmouth	Yarmouth Co. Area.

2. Prince Edward Island:

R.C.M.P. & E. Woodside- by air-approx. All habitat, 13 hrs.  
1200 Miles Flying time.

3. New Brunswick- R.C.M.P. Police  
Detachment

Buctouche, Kent Co.	Buctouche Bay, Cocagne Bar, Cocagne Areas.
Richibucto, Kent Co.	St. Louis Cape, Richibucto Cape. S. Tip Gulf St. Lawrence
Shediac, Westmorland Co.	Cocagne R. to Little Cape, Northumberland St. (Kent & West Co's)
Sackville, Westmorland Co.	Eastern Westmorland Co.
Saint John, St. John Co.	Coast St. John, St. John Co. to Charlotte Co. Line.
St. George, Charlotte Co.	Letang River, Macés Bay, Charlotte Co, SixxStephen.
St. Stephen, Charlotte Co.	Bocoboc Bridge-St. Andrews and along St. Croix River to St. Stephen.

(b) New Brunswick -Department of Lands And Mines.

Warden or Ranger

Lister Dixon -Alma, Albert Co.;	Coast Albert Co.
G.M. DeLong -R.R.#1 St. John ;	St. Martins Area, St. John Co
J.F. Kane, Depper Harbour, Charlotte, Co.	Pt. Lepreau to Musquash (18mi shoreline and marsh).
G.H. Linton, Castalia, Grand Manan	Grand Manan, doubtful if very complete.

\* used for comparison with 1955, see TABLE 111

Note:::: Areas covered by R.C.M.P. Saint John and St. George Detachments overlapped J.F. Kane's area. Not much could be done to straighten this out, so all figures were used, as in past.

Comparison with 1955.

Table # 111 will give some idea of the wintering bird between 1955 and 1956. All available ground survey data were used for N.B. and N.S. Aerial coverage was used for P.E.I. Unfortunately, in 1955, ground coverage of N.B. was not done by the Mounted Police through oversight. Although a request was sent out from this office. This matter has been straightened out locally. As has also been mentioned, this year's survey did not cover the Wolfville and Annapolis Co. Area of N.S. and Grand Manan counts were felt to be incomplete. Therefore, these areas have not been used for comparison. All these differences will account for the discrepancy in total figures for this table as compared with TABLE 1. The areas used for comparison have all been marked with an asterick in TABLE 11

Estimated trend as expressed by observers in Nova Scotia  
Number of observers reporting (ducks only)

No Change	Increase	Decrease	No experience
6	5	7	5

Estimates of decrease ranged from 1590 to 7590. The decreases appeared to occur principally in the marginal areas. Apparently, these areas play a large part in bringing the population up during a year with a heavy wintering population. There were reports of movements from these areas before or during the bad storms of this winter. The main winter areas such as Port Joli and Yarmouth co. reported "no change" or a "slight increase"

One good wintering area reported a decrease of 50 percent in ducks (467 in 1956.)

A decrease in geese was reported by the Dartmouth Detachment R.C.M.P., while Barrington Passage reported at 50 percent increase (2161 in 1956.) Dr. Lewis reported no appreciable change in geese. Last year 1000 geese were reported in Northern Cumberland Co. Apparently, none were present this year.

One observer in New Brunswick (Albert Co) reported "No change" (1200 Blacks, 1956.) At St. Martins a 1090 increase was reported (400 Blacks, 1956.) While in the Pt. Lepreau to Musquash area, a ~~reliable~~ reliable observer Mr. J. F. Kane reported "the poorest year I have ever known for 300 years". His count of blacks was 60 in 1956 and 300 in 1955. Other species were correspondingly lower in this area.

In Prince Edward Island seven geese were counted 1956, compared to 1,657 in 1955. Blacks were 5,869 in 1956 and 7,076 in 1955. All other species showed a corresponding decrease. The total decrease for P.E.I. was 38 percent.

Generally speaking for the maritimes it would seem that the Northern or marginal areas were for the most part affected, while the more Southern areas and those not affected severely by the storms in late December and early January were much the same or showed a slight increase. Poor weather also curtailed observation.



TABLE III  
COMPARISON 1955- 1956.

PROVINCE COMPARISON FIGURES	CANADA 20088	BLACK	G.W TEAL.	GOLDEN - EYE	PUFFLE HEAD	SCAUP	EIDER	SCOTER	DUCK	WING- WING	OTHERS	TOT.
1956.		21,585	—	5,241	268	820	585	752	686	512	1619	35,797
1955	4874	20,495	32	5,344	196	1286	367	790	436	1574	3748	58,942

TABLE I

Acceptable Mid-winter Inventory Results - Maritime Provinces, 1955.

<u>PROVINCE</u>	<u>Canada Goose</u>	<u>Black Duck</u>	<u>G.W.Teal</u>	<u>Golden- eye</u>	<u>Buffle- head</u>	<u>Scaup</u>	<u>Eider</u>	<u>Scoter</u>	<u>Old Squaw</u>	<u>Merganser</u>	<u>Others</u>	<u>Total</u>
P.E.I. (Air)	1,657	7,076	32	3,565	148	34	4	585	71	156	389	13,717
N.B. (Air)		2,445	-	575			11	106			50	3,187
N.S. (Air 1) )	5,935	10,591		3,539		2,700	225	583		23	155	23,751
(Air 2) )	450	8,200		1,512		262						10,424
(Ground)	<u>1,000</u>	<u>1,099</u>		<u>80</u>	<u>25</u>	<u>68</u>	<u>175</u>	<u>1</u>	<u>125</u>	<u>1032</u>	<u>3176</u>	<u>6,781</u>
N.S.Total:	7,385	19,890		5,131	25	3,030	400	584	125	1055	3331	40,956
Maritime Total.												
1955:	9,042	29,411	32	9,271	173	3,064	415	1,275	196	1,211	3,770	57,860
1954:	4,655	21,451	135	8,326	55	5,075	3,456	1,513	807	1,533	1,150	48,156

1955

MID-WINTER INVENTORY, MARITIME PROVINCES, 1954.

The results of this year's mid-winter inventory are included in the attached table. It will be noted that the acceptable inventory includes complete aerial coverage for New Brunswick and Prince Edward Island and partial coverage for Nova Scotia.

It is impracticable to cover Nova Scotia completely by air therefore it has been the custom to use ground counts for the least important and the more isolated areas. Ground counts are also carried out in all the important wintering areas of New Brunswick and Nova Scotia. These counts form a safeguard in case of inability to conduct with part or all of aerial coverage in those two provinces. No ground counts are carried out in Prince Edward Island due to impracticability of that type of coverage resulting from poor road conditions in winter and lack of a sufficient number of co-operators. It is felt that aerial coverage can always be carried out in that province providing the sum of approximately \$100 is available for aircraft charter.

A full explanation of the method of arriving at acceptable counts is contained in my 1953 report.

This year in as far as was possible aerial coverage was completed.

The following outline gives details of this coverage:

Province	Date	Flying Time	Observer	Cost to Can. Wildlife Service.
P. E. I.	Jan. 14 & 16	8 hr 20 min.	Cpl. Johnston R.C.M.P.	Woodside Fly. Serv. \$100.00
N.S. (except Yarm. Co.)	Jan. 14	3 hr 40 Min	G. F. Boyer	N.S. Dep. Lands & Forests Nil
N.S. (Yarm. Co.)		1 hr 50 min.	W. E. Cann - vol. co-op.	A/G charter \$ 25.00
N.B.	Jan. 16	2 hr 43 min	B. C. Carter	N.S. Dept. Lands & Mines Nil
N.B.	Jan. 23	5 hr 18 min	G. F. Boyer	N.S. Dept. Lands & Mines Nil
Total Time		21 hr 51 min		Total Cost to GWS \$125.00

Tables are being prepared to show, in detail, the various localities covered by air and ground for New Brunswick and Nova Scotia. These will be forwarded at a later date. Table I, included in this report will furnish all the information needed for inclusion of the Maritime results in the Canada-wide inventor

George F. Boyer  
Wildlife Management Officer

TABLE I

Acceptable Mid-winter Inventory, Maritime Provinces, 1954.

Province	Canada Goose	Black Duck	Green-w. Teal	Golden- eye	Buffle- head	Scaup	Eider	Scoter	Old Squaw	Merg- anser	Unid.	Total	
P. E. I. (Air)	538	5,436	-	3,791	-	410	8	297	457	474	69	11,480	
N. B. (Air)	10	5,408	60	580	-	250	48	766	110	66	89	7,387	
N. S. (Air & Gnd)	4,107	10,607	75	4,955	55	4,415	3,400	450	240	993	992	29,289	
<b>Total</b>	<b>1954</b>	<b>4,655</b>	<b>21,451</b>	<b>135</b>	<b>8,326</b>	<b>55</b>	<b>5,075</b>	<b>3,456</b>	<b>1,513</b>	<b>807</b>	<b>1,533</b>	<b>1,150</b>	<b>48,156</b>
"	1953	6,806	23,670	101	7,443	100	4,261	6,675	765	6,211	581	1,694	58,319



MIDWINTER INVENTORY - MARITIME PROVINCES, 1953.

GENERAL.

An attempt was made to carry out the inventory in a similar manner to last year. This was not entirely successful due to bad flying conditions and our staff shortage in the Maritimes.

Aerial coverage was completed in Prince Edward Island and New Brunswick. Although the more important areas of Nova Scotia were done, the aerial survey of this province was not finished and certain ground counts had to be substituted to make up for these deficiencies. Details of the aerial coverage are found in tables II and IV and APPENDIX A.

Ground coverage in Nova Scotia and New Brunswick was carried out by the Royal Canadian Mounted Police and private co-operators. Personnel of the New Brunswick Forest Service, Game Division, also participated.

WEATHER CONDITIONS.

The winter, in this region, has been exceptionally mild and many lakes, rivers and harbours normally frozen over, were open during the inventory. As a result the birds were more scattered than during severe weather. This, no doubt, affected the ground counts.

RESULTS.

The results of this years inventory, together with a comparison with 1952 are found in TABLE NO. I. This should give reasonably comparable results except in the case of Nova Scotia where a certain substitution of ground results above those of last year had to be used. There was not sufficient information available to break down the 1952 results so that an a highly accurate comparison could be made in this province. It is hoped that the detailed tables contained in this report will enable more accurate comparisons in the future should substitution of ground counts become necessary.

It will be seen from TABLE NO. I that there was a general increase in total number of wintering birds. Although the degree of accuracy of these inventories is an unknown factor, this table shows an increase of about 15 percent. An inspection of the table will show the changes in status of the various species.

It is felt that the goal to-wards which we should strive should be complete aerial coverage except possibly odd areas in Nova Scotia. For reasons already mentioned this was not achieved. Sources of the information used in TABLE NO. I are detailed in the following:

TABLE NO. II - NEW BRUNSWICK AERIAL COUNT.

TABLE NO. III - NOVA SCOTIA COMBINED AIR AND GROUND COUNT.

APPENDIX "A" - R. C. M. P. REPORT ON P. E. I. AERIAL COUNT.

Data sources of TABLE NO. III are contained in:

TABLE NO. IV - NOVA SCOTIA AERIAL COUNT.

TABLE NO. V - NOVA SCOTIA GROUND COUNT (in part)

COMMENTS.

~~PROCESSED BY THE NATIONAL ARCHIVES~~

There has always been a difficulty in obtaining a set of figures for this region which would inspire any degree of confidence in its accuracy.

It appears to the writer that the following method would approach, most nearly, an accurate count:

1. The Major waterfowl areas should be done by air. A tabulation of the most efficient method for doing this is outlined below.

<u>Province</u>	<u>Observer</u>	<u>Aircraft Supplied By</u>	<u>Approximate Cost</u>
P.E.I.	R.C.M.P.	Charter *	\$100
N.B.	Can. Wildlife Ser.	N.B. Govt.	Nil
N.S.	" "	" N.S. Govt.	"
N.S. (Yarmouth Area)	Mr. W.E. Cann	Charter **	\$30

\*Woodside's Flying Service, Clinton Airport, P.E.I.

\*\*Gateway Flying Club, Yarmouth Airport, N.S.

Certain isolated areas of Nova Scotia cannot conveniently be reached by aircraft. These include St. Peters Bay and Baddeck in Cape Breton, and in Guysboro County to the Halifax County line on the south shore and eastern Pictou County and Antigonish County on the north shore. These areas are not important enough to adversely influence the aerial count if included in it.

2. The ground count should be continued in its present manner as a safeguard in event of non completion of the aerial survey.

3. Complete tabular information should be contained in subsequent reports in order that proper comparisons may be made in event of the necessity to use combined ground and air results, i.e. If the the aerial survey in Nova Scotia differs in the amount of area covered in two successive years, material gained by this aerial survey alone are not comparable. Areas omitted in the aerial survey in one year may be deleted from those of the other year and the same substitutions from ground surveys be made. In this way a combined table could be made in any one year to compare with the next. It is of course understood that these combined figures would not be as accurate as a purely aerial count but would be, I believe, better than an entire ground count. If complete aerial coverage is obtained it should be tabulated irregardless of the figures used in the report for comparative purposes.

4. In the opinion of the writer aerial coverage offers the following advantages:

- a) A competent observer carrying out the count.
- b) Minimum time to cover all areas provided enough personnel are available.
- c) Better and more uniform coverage.

In connection with the above statements it would be well to say that the fewer observers engaged in work of this nature the less chance there is for error and personal differences in estimation of numbers. It can be readily seen that ground coverage, where a large number of observers is involved, suffers greatly. Many of

the participants are not sufficiently reliable in their identification of species or estimation of numbers.

This writer is not familiar with the action taken towards eiders, scoters and old squaws in the inventory as a whole. If species are not included in the United States figures it would seem that it is a waste of our time to count them unless some satisfactory arrangement could be made to obtain figures for their major wintering areas. A very small proportion of them winter in the Maritimes and a count in this region alone would give no indication of their fluctuations. It is essential, however, to obtain more information on these species.

George F. Boyer  
Wildlife Management Officer.

TABLE NO. I

## ACCEPTABLE MIDWINTER COUNT - MARITIME PROVINCES, 1953.

Province	Canada Goose	"Dabblers"		"Divers"		"Sea Ducks"			Merg- anser	Unident. & others	Total	
		Black Duck	G-winged Teal	Golden- eye	Buffle- head	Scaup	Eider	Scoter				Old Squaw
Prince Edward Island(air)	106	3,787	1	1,488	-	771	-	-	781	26	23	6,983
New Brunswick (air)	-	3,525	100	1,050	-	5	150	350	100	175	175	5,630
Nova Scotia (gnd.& air)	6,700	16,358	-	4,907	100	3,485	6,525	415	5,330	380	1,496	45,696
<b>Total</b>	<b>6,806</b>	<b>23,670</b>	<b>100</b>	<b>7,445</b>	<b>100</b>	<b>4,261</b>	<b>6,675</b>	<b>765</b>	<b>6,211</b>	<b>581</b>	<b>1,694</b>	<b>58,309</b>
<b>Total, 1952</b>	<b>6,075</b>	<b>20,906</b>	<b>-</b>	<b>6,730</b>	<b>194</b>	<b>2,003</b>	<b>4,190</b>	<b>6,610</b>	<b>390</b>	<b>428</b>	<b>1,309</b>	<b>48,835</b>

NOVEMBER 1953

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TABLE NO. II  
NEW BRUNSWICK AERIAL MIDWINTER WATERFOWL INVENTORY, 1953.

Date..January 20, 1953. Flying Time..4 hrs. 25 min.  
Weather - Mild, slight overcast, calm.  
Aircraft Used - Anson. Altitude 100 - 200 feet. Air Speed 100 mph.  
Pilot - Doug. Stults. Observer - George F. Boyer

Locality	Black Duck	G-w Teal	Gold. eye	Scaup	Old Squaw	Eider	Scoter	Merganser	Unid. & Others
<u>Morning</u>									
Mispec-Lorneville	85	-	150	-	-	-	-	-	-
Musquash Harb.	450	-	-	-	-	-	-	25	40
Musq. Harb -Pt. Lepreau	25	-	-	-	-	-	-	10	3
Mace's Bay	140	-	25	-	-	-	60	28	1
Mace's Bay-Black's Harb.	25	-	1	-	10	-	-	5	10
Black's Harb.-Frye's Island	95	-	46	-	5	-	-	48	50
Passamaquoddy Bay	544	-	265	-	-	60	280	5	4
Deer Island	-	-	30	-	30	-	-	6	20
Campobello Island	95	-	-	-	50	-	-	5	5
Grand Manan	725	50	235	5	10	75	-	23	-
<u>AFTERNOON</u>									
St. John River, Grand Bay area	30	-	292	-	-	-	-	13	12
Mispec-St. Martin's	89	25	-	-	-	-	10	-	18
St. Martin's (Quaco Bay)	40	-	5	-	-	-	-	4	-
St. Martin's-Alma	-	-	-	-	-	-	-	-	-
Alma-St. Mary's Pt. (Salisbury B. Shepody R.)	176	-	-	-	-	-	-	-	-
St. Mary Pt., Grindstone I., Raw Haw Bay.	470	-	-	-	-	-	-	-	-
St. Mary Pt.-mouth	539	25	-	-	-	-	-	-	-
Peticodiac. (E. side Shepody Bay)	-	-	-	-	-	-	-	-	-
Peticodiac R. from mouth to Moncton	-	-	-	-	-	-	-	-	-
<sup>1</sup> Total (round figures)	3,525	100	1,050	5	100	150	350	175	175

Included in "Unident. & Others" were two mallards (St. John River) and three harlequins (Mispec - St. Martins).

Use FREDERICTON - MONCTON and YARMOUTH - WINDSOR sheets,  
Scale 8 miles to 1 inch for place names.

TABLE NO. VIII

COMBINED GROUND AND AIR FIGURES FOR NOVA SCOTIA.

	Canada Goose	Black Duck	Golden- eye	Buffle- head	Scaup	Eider	Scoter	Old Squaw	Merg- anser	Unident & Others	Total
Aerial (Boyer)	6,170	4,200	1,380	-	150	100	410	-	120	50	12,580
Aerial Yarmouth	25	6,300	1,922	-	335	-	-	-	-	-	8,582
Aerial Total	6,195	10,500	3,302	-	485	100	410	-	120	50	21,162
Other Areas not Covered by Air	505	5,858	1,605	100	3,000	6,425	15	5,330	260	1,446	24,544
Total - Used for Final Figures, TABLE NO. I	6,700	16,358	4,907	100	3,485	6,525	425	5,330	380	1,496	45,706
Total, 1952	6,025	14,706	4,080	160	1,195	4,100	6,350	260	230	1,120	38,226

Note:- The ground counts used in this table for 1953 data include all those localities not marked by a star in TABLE NO. V NO. VII. The data contained in this table are used for the final inventory figures in TABLE NO. I.

TABLE NO. IV.  
NOVA SCOTIA AERIAL MIDWINTER WATERFOWL INVENTORY, 1953.

Date..January 13, 1953. Flying Time..3 hrs. 15 min.  
Weather - AM mild, calm & clear started to cloud up at 1300 hrs over Shelburne. Ran into fog & heavy snow over Barrington Bay at 1315 hrs. Tide about 5 hrs on flood.  
Aircraft Used - Cub Cruiser. Alt. 100 feet (900 over Port Joli Sanct)  
Air Speed 70 mph. Pilot Dauphinie, Pulsifer Bros. Obs. G. F. Boyer.

Locality	Canada Goose	Black Duck	Golden eye	Scaup	Eider	Scoter	Merganser	Unident
Mahone Harbour	-	-	30	-	100	-	-	-
Bayport	-	-	150	-	-	-	-	-
Riverport	-	-	-	-	-	-	-	-
LaHave I.	-	500	250	100	-	-	-	-
Medway Harbour	-	-	10	-	-	-	-	-
Blueberry Bay	-	-	-	-	-	-	-	-
Port Mouton	-	-	-	-	-	-	-	-
Port Joli Harbour	200	500	-	-	-	100	-	-
Port l'Hebert Har.	4,000	500	-	-	-	-	-	-
Sable River	1,550	2,000	15	-	-	10	10	-
Lockport Harbour	-	-	100	-	-	-	-	-
Jordan Bay	200	-	-	50	-	300	-	-
Shelburne Harbour	-	-	300	0	-	-	-	-
Negro Harbour	-	20	75	-	-	-	100	-
Port Latour	-	-	300	-	-	-	-	-
Barrington Bay	Incomplete Count - not used							

Date..January 14, 1953. Flying Time 40 min.  
Weather - High overcast, slight haze, calm, mild. Tide 2 hrs on flood  
Aircraft - Seabee. Alt. 100 feet. Airspeed 70-80 mph  
Pilot - Dauphinie, Pulsifer Bros. Observer - G. F. Boyer

Cole Harbour	220	280	-	-	-	-	-	-
Lawrencetown	-	130	-	-	-	-	-	-
Chezetcook	-	70	-	-	-	-	10	-
Petpeswick	-	-	-	-	-	-	-	-
Musquodoboit Harbour	-	-	-	-	-	-	-	-
Jeddore Bay	5-	200	150	-	-	-	-	50

Yarmouth County Area

Date..January 23, 1953 Flying Time..1 hr. 35 min.  
Weather - Very clear and calm, temp 42 deg.F. Tide 4 hrs on flood.  
Aircraft - Gateway Flying Club. Pilot Gerald MacKay. Alt 150-700 ft  
Observer - Winslow E. Cann

Yarmouth Harbour	-	-	-	-	-	-	-	-
Chebogue River	-	-	10	20	-	-	-	-
Little River Har.	-	-	12	15	-	-	-	-
Goose Bay	-	1,200	600	200	-	-	-	-
Tusket River	-	2,500	300	-	-	-	-	-
Morris I., Roberts I & Abrahams R.	-	1,500	500	100	-	-	-	-
Argyle Sound	-	100	100	-	-	-	-	-
Onico Bay	25	6,300	1,922	335	-	-	-	-

TABLE NO. V.  
NOVA SCOTIA GROUND COUNTS, 1953 INVENTORY.

Locality	Can. Goose	Black Duck	Gold-eye	Buff-head	Scaup	Eider	Scoter	Old Squaw	Merganser	Unid.
St. Peters Bay & Lennox Pass. Baddeck	-	-	600	-	-	-	-	-	-	200
Guysboro Har.	-	300	300	-	-	-	-	25	-	-
Hal.-Guys Cty. Line to S. west Cove	-	2,000	500	-	-	2,500	-	5,000	10	-
Antigonish Har.	50	40	-	-	-	-	-	-	-	-
Eastern Pictou Co.	-	-	-	-	-	-	-	-	-	-
* E. Passage-Three Fathom Har.	300	500	100	-	500	-	25 200	200	150	-
McNabs I. Bed. Basin, Herring Cove, Dover St Marg. Bay	95	75	-	-	-	-	25 -	-	60	120
* St. Marg. Bay - Marriotts Cove	-	3,200	100	-	-	-	1,000/2,000	-	-	600
* Port Joli Sanct	3,035	1,900	37	-	-	-	-	-	3	130
Yar. Co. Line - Port Clyde & Cape Sable Light	300	100	-	-	3,000	1,500	-	-	-	-
* Goose Bay & Tusket, Yar. Co.	500	3,000	500	-	-	-	-	300	-	-
St. Mary Bay, from Beaver Har. to Waymouth	-	3,000	50	-	-	2,500	-	90	200	700
W. End Annapolis Basin, Digby Co.	-	975	150	400	-	-	-	100	-	5
N-w Hants Co.	-	10	-	-	-	-	5	15	-	5
Chignecto Bay - Minas Basin	-	3	-	-	-	-	-	-	-	51
Stewiacke R. to Green's Creek	-	10	-	-	-	-	-	-	-	-
Digby Co., RCMP	10	50	5	-	-	-	10	100	-	65
The following returns arrived late and are not in order										
* Musquodoboit Har Halifax Co.	-	1,000	-	-	-	-	-	-	-	-
* Chezetcook Har. Halifax Co.	-	1,000	-	-	-	-	-	-	-	-
* Petpeswick Har. Halifax Co.	-	1,500	-	-	-	-	-	-	-	-
Lake Major, Halifax Co.	-	800	-	-	-	-	-	-	-	-
Mouth Canard, Gasp. - Chau R's Minas Basin at Wolfville	50	2,000	-	-	-	-	-	-	-	-
<b>Total</b>	<b>4,340</b>	<b>17,958</b>	<b>2,342</b>	<b>100</b>	<b>3,500</b>	<b>7,550</b>	<b>2,215</b>	<b>5,830</b>	<b>413</b>	<b>2,176</b>

\* Not included in Table No III



TABLE NO. VI  
NEW BRUNSWICK GROUND COUNTS, 1953 INVENTORY.

Locality	Canada Goose	Black Duck	Gold-eye	Scalp head	Buff- head	Eider	Old Squaw	Merg- anser	Unident
Grand Manan	-	2,000	200	-	-	300	500	-	-
Campobello	Co-operator unable to take count this year								
Deer Island	-	150	-	-	-	-	200	-	-
Bocobee Bridge- St. Andrews, St. Stephen	+	200	-	200	100	-	±	-	100
Letang R. & Maces Bay	-	75	100	-	50	-	150	-	100
Musquash R. & Har.	-	420	-	-	-	-	92	-	2
Musquash R. & Har. )	-	420	-	-	-	-	92	-	200
Chance Harbour )	-	32	-	-	-	-	30	-	-
Mace's Bay )	-	-	-	-	-	-	10	-	4
Pt. Lepreau - Musquash	-	1,000	300	-	50	100	200	-	220
Alma - St. Marys Pt	100	1,000	-	-	-	-	-	-	-
Baie Verte to Tidnish	-	-	-	-	-	-	-	-	-
Northumberland Strait, Kent & Westmorland Cos	-	-	20	-	-	-	-	20	-
<b>Total 1953</b>	<b>100</b>	<b>4,897</b>	<b>620</b>	<b>200</b>	<b>200</b>	<b>400</b>	<b>1,182</b>	<b>20</b>	<b>624</b>

Total Air	G/w Teal	Scoter							
	100	3,525	1,050	5	350	150	100	175	175

It will be noted from the above comparison that there is little agreement between the aerial and ground figures. I would personally place far more trust in the aerial count.

TABLE NO. VII  
COMPARISON GROUND COUNTS BY PROVINCES - 1952 & 1953.

Province	Canada Goose	Black Duck	Golden- eye	"Divers" Buffle- head	Scaup	Eider	"Sea Ducks" Scoter	Old Squaw	Merg- anser	Unident & Others	Total
N. B.	4	4,445	1,640	490	400	2,600	910	665	160	400	11,714
1952	100	4,877	200	200	200	400	-	1,182	20	624	7,803
1953						66					
N. S.	8,265	20,975	3,910	185	6,370	8,235	11,575	1,025	1,270	110	61,920
1952	4,340	21,258	3,764	100	3,835	7,550	2,215	5,830	413	2,176	51,481
1953											
P. E. I.	There are no ground data available for this province as winter conditions here do not permit a competent regular survey.										
Total, N.B. & N.S.	8,269	25,420	5,550	675	6,770	10,835	12,480	1,690	1,430	510	73,634
1952	4,440	26,127	3,964	300	4,035	7,950	2,215	7,012	433	2,800	59,284
1953											

Note:- The Nova Scotia figures include the Yarmouth aerial count except that 500 Canada geese obtained in the ground count for 1953 were added as these birds had left before the aerial survey was made.

TABLE NO. VIII

## COMPARISON AERIAL COUNTS BY PROVINCES - 1952 &amp; 1953.

Province	Canada Goose	"Dabblers" Black Duck	G-winged Teal	Golden- eye	"Divers" Buffle- head	Scaup	Eider	"Sea Ducks" Scoter	Old Squaw	Merg- anser	Unident. & Others	Total
P. E. I.	50	3,000	-	2,430	34	808	10	-	-	178	9	6,519
1952	106	3,787	1	1,488	-	771	-	-	781	26	23	6,983
N. B.	-	3,200	-	220	-	-	80	260	130	20	180	4,090
1953	-	3,525	100	1,050	-	5	150	350	100	175	175	5,630
N. S.	(There are not sufficient data available to give intelligent comparisons for this province. For full details of the 1953 aerial count in Nova Scotia see "TABLE NO. )											
Total	50	6,200	-	2,650	34	808	90	260	130	198	189	10,609
P. E. I. & N. B.	106	7,312	101	2,538	-	776	150	350	881	201	198	12,613

Note:- Detailed summaries for the 1953 aerial counts are available for New Brunswick and Nova Scotia. These are shown in "TABLE NO. 7" and "TABLE NO. 14". The ground counts in these two provinces have also been tabulated in "TABLE NO. 11" and "TABLE NO. 12". This information may be used when composite tables are necessary to make up for deficiencies in aerial coverage as was the case in Nova Scotia this year and also to include areas not normally covered by air.

1953  
Mid-winter Inventory - Aerial Coverage  
George F. Boyer

January 13, 1953. Left Dartmouth Airport 1105 Inventory time 1 hr 40m  
 Began Inventory 1135 Flying time 3 " 15m  
 Stopped " 1315  
 Landed Dartmouth 1420

Aircraft - Cub Cruiser Pilot Dauphinee  
 Weather - Day started out mild, calm and clear began to cloud up at 1300 hrs., when we over Shelburne. A fog and heavy snow storm caused us to quit at Barrington Bay at 1315 hrs.

Tally

Place	Time	Species						
		Can. Goose	Black	Whistler	Scaup	Eider	Scoter	Merg
Mahone Har.	1135	-	-	30	-	100	-	-
Bayport	1150	-	-	150	-	-	-	-
Riverport	1152	-	-	-	-	-	-	-
LaHave I.	1152	-	500	250	100	-	-	-
Medway Har.	1200	-	-	-10	-	-	-	-
Blueberry Bay	1210	-	-	-	-	-	-	-
Port Mouton		-	-	-	-	-	-	-
Port Joli	1220	200	500	-	-	-	100	-
Port Hebert		4000	500	-	-	-	-	-
Sable R.	1240	1550	2000	15	-	-	10	10
Lockport	1243	-	-	100	-	-	-	-
Jordan Bay	1250	200	-	-	50	-	300	-
Shelburne H.	1255	-	-	300	-	-	-	-
Negro H.	1305	-	20	75	-	-	-	100
Port Latour		-	-	300	-	-	-	-
Barrinton Bay	1315	-	-	-	-	-	300	-
Bay (Incomplete)		-	-	-	-	-	-	-
<b>Total</b>		<b>5950</b>	<b>3520</b>	<b>1230</b>	<b>150</b>	<b>100</b>	<b>710</b>	<b>110</b>

January 14, 1953. Left Dartmouth 1000 Total flying Time 40 min  
 Back " 1040 Inventory Time 40 min

Aircraft - Seabee. Pilot Dauphinee  
 Weather - High overcast, slight haze, calm mild.  
 From Cole Harbour to Jeddore Head.

Cole Har.	1000	220	280	-	-	-	-	-
Lawrencetown		-	130	-	-	-	-	-
Chezecook		-	70	-	-	-	-	10
Petpeswick H.		-	-	-	-	-	-	-
Musquosobit H.		-	-	-	-	-	-	-
Jeddore Bay		-	200	150	-	-	50	-
							(unident)	
<b>Total</b>		<b>220</b>	<b>680</b>	<b>150</b>	<b>-</b>	<b>-</b>	<b>50</b>	<b>10</b>



MIDWINTER INVENTORY REPORT FOR THE  
MARITIME PROVINCES, JANUARY 7-19, 1952

In 1952 the inventory in this district was conducted in almost an identical manner to that in 1951. The inventory was taken from both the ground and the air.

The ground coverage was not as complete this year as it was last year; three of the co-operators, all in New Brunswick, have not yet submitted their returns. In many of the areas in Nova Scotia and New Brunswick general poor weather and inaccessible roads restricted travel and resulted in some areas being only partly covered or not covered at all, and in others being covered at varying dates after January 7th. It is felt that these conditions have had some effect on the returns, the results probably being too small a count for the inaccessible areas and perhaps a duplicate count of birds that may have shifted from one area to another and were counted more than once on different dates.

The aerial coverage with one exception was the same as that for 1951. The exception being that owing to poor flying weather it was not possible to complete the coastal area between Weymouth and Yarmouth, Nova Scotia. Owing to unfavourable weather conditions the aerial counts in the three provinces were made at varying dates between January 7th and January 19th.

In Prince Edward Island the aerial count was made by Cpl. A.M. Johnston of the R. C. M. Police, "L" Division Headquarters, Charlottetown, Prince Edward Island. The inventory was taken on January 13th and a total flying time of eight hours and five minutes was used.

In New Brunswick Mr. G. F. Boyer, Canadian Wildlife Management Officer, made the aerial count. Owing to unfavourable weather conditions met with in Charlotte County on January 7th it was not possible to complete the count on that date and the count was finished on January 9th. A total flying time of approximately nine to ten hours was utilized, of which approximately six hours was spent over the waterfowl areas.

In Nova Scotia I did the aerial observing this year. General and local, unfavourable weather conditions throughout the province made it impossible to complete the count in one or two successive days. It was, therefore, necessary to take advantage of good flying weather as it occurred and do small sections of the coastline at a time. The Windsor to Weymouth area was covered on January 7th, Jeddore Harbour to the LeHave River on January 14th, and the Yarmouth to LeHave area on January 19th. A total flying time of approximately ten hours and thirty-five minutes was required. Of this time approximately seven hours was spent over the waterfowl areas.

In contrast to conditions last year, the inventory period was preceded by a spell of very cold weather which resulted in all of the fresh water areas being frozen over and the waterfowl were consequently found concentrated in the coastal areas. For this reason it is felt that the aerial counts at least provide a better estimate of the waterfowl wintering in this district this year.

The following tables give the results for the ground count for this year, a comparison of the numbers of the imported species for the past three years, and a comparison of the aerial results for the past two years:

Table 1

1952 Waterfowl Inventory Returns

Ground Count<sup>1</sup>

Province	Surface Feeding		Diving Ducks					Other Geese	Other Waterfowl Recorded		Total all species per province
	Black Duck	Scaup	Golden Eye	Buffle Head	Eiders	Scoters	Old Squaw	Canada Geese	Mer-gansers	Uniden-tified and Others	
P.E.I.	3,000	808	2,430	34	10	--	--	50	178	9 <sup>2</sup>	6,519
N.S.	20,975	6370	3,910	185	8,235	11,575	1,025	8,265	1,270	<sup>3105</sup> <del>110</del> <sup>3</sup>	<sup>64915</sup> <del>61,920</del>
N.B.	4,445	400	1,640	490	2,600	910	665	4	160	400 <sup>4</sup>	11,714
Totals	28,420	7,578	7,980	709	10,845	12,485	1,690	8,319	1,608	<sup>3,514</sup> <del>519</del>	<sup>83,148</sup> <del>80,153</del>
	28,420			41,287				8,319		<sup>5,122</sup> <del>2,127</del>	
				80,153							83,148

<sup>1</sup>Including Air Counts for P.E.I. and Warmouth Area, N.S.

<sup>2</sup>Including as reported (a) 9 Green-winged Teal

<sup>3</sup>Including as reported (a) 40 Mallard (?)  
 (b) 10 Redheads  
 (c) 500 Baldpate (?)  
 (d) 25 Woodduck

<sup>4</sup>Including as reported (a) 6 Green-winged Teal

Table 2

Comparison of Important Species by Provinces  
for Past Three Years

P. E. I.

Species	1950	1951	1952
Black Duck	2,820	3,740	3,000
Golden Eye	900	540	2,430
Canada Geese	--	11	50
Totals	3,720	4,291	5,480

N. S.

Species	1950	1951	1952
Black Duck	28,650	25,900	20,975
Green W. Teal	50	50	--
Scaup	7,450	6,500	6,370
Golden Eye	8,140	2,825	3,910
Buffle Head	--	--	185
Canada Geese	19,050	19,165	8,265
Eiders	420	6,325	8,235
Totals	63,760	60,765	47,940

N. B.

<u>Species</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
Black Duck	20,920	6,900	4,445
GreenW. Teal	100	120	6
Scaup	600	200	400
Golden Eye	4,760	2,830	1,640
Buffle Head	950	580	490
Eider	1,725	2,710	2,600
<u>Totals</u>	<u>29,055</u>	<u>13,340</u>	<u>9,581</u>

Totals for  
the three  
provinces 102,175 90,222 <sup>83,148</sup>  
for each year ~~80,153~~  
as per Table 1

Reference to the above tables indicates a further decrease in the total number of waterfowl wintering in the Maritimes this winter. A comparison of the totals by provinces shows another decrease in New Brunswick this year, a slight decrease in Nova Scotia, and little change in Prince Edward Island.

Black Ducks showed a further decrease this year. The number of geese recorded is less than one half of those recorded for 1951. Scoters, Old Squaw and Golden Eye showed substantial increases in the order mentioned, partially offsetting the decreases recorded for Black Ducks and Canada Geese. Once again just over half of the geese recorded for the district were reported from Port Joli Bird Sanctuary.

Table 3

## Comparison of Aerial Counts by Provinces 1951-1952

	Surface Feeding	Diving Ducks						Geese	Other Waterfowl Recorded		Totals
	Black Ducks	Scaup	Golden Eye	Buffle Head	Eiders	Scoters	Old Squaw	Canada Geese	Mergansers	Unidentified and others	
P.E.I.											
1951	3,740	--	540	50	--	50	620	11	1,615	--	6,626
1952	3,000	808	2,430	34	10	--	--	50	178	9	6,519
N.B.											
1951	2,170	--	340	--	530	780	510	--	--	40	4,370
1952	3,200	--	220	--	80	260	130	--	20	180	4,090
N.S.											
1951	4,080	--	520	--	150	--	1900	240	--	125	7,015
1952	10,300	175	2,370	10	50	5,750	85	1,800	10	360	20,910
Total by Species											
1951	9,990	--	1,400	50	680	830	3030	251	1,645	165	18,011
1952	16,500	983	5,020	44	140	6,010	215	1,850	208	549	31,519

GRAND  
TOTALS

1951

17,991 18,011

1952

31,519



Table 4

Inventory Results for N.S. by Aerial and Ground Coverage, 1952

	Surface Feeding	Diving Ducks						Geese	Other Waterfowl Recorded		Totals
	Black Ducks	Seaup	Golden Eye	Buffle Head	Eiders	Scoters	Old Squaw	Canada Geese	Mergansers	Unidentified and others	
N.S. Aerial	10,300	175	2,370	10	50	5,750	85	1,800	10	360	20,910
Other areas not covered by plane	4,406	1,020	1,710	150	4,050	600	175	4,225	220	760	17,316
TOTAL	14,706	1,195	4,080	160	4,100	6,350	260	6,025	230	1,120	38,226

Table III gives a comparison of the aerial count by provinces for 1951-1952. It is my opinion that with the exception of the results for Nova Scotia these represent the closest estimate of the wintering population of waterfowl in the Maritime provinces during the periods in which the inventory was taken. As was mentioned last year, a certain amount of accuracy as to speciation with some of the species is sacrificed for greater accuracy of the total count. To the results of the aerial count for Nova Scotia should be added the estimates by ground counts for the Port Joli Bird Sanctuary area, and possibly the results of the ground count for those districts which were not covered by plane. These would include those areas east of Jeddore Harbour, including Cape Breton Island, as well as the results from Meteghan River. Should it be decided to use the aerial results this year, the results in Table IV provide, in my estimation, the best available estimate of the wintering waterfowl in Nova Scotia. They are a combination of aerial and ground counts.

With reference to the aerial counts it is noted that the totals for New Brunswick and Prince Edward Island are fairly constant for 1951 and 1952. The results for Nova Scotia show a large increase in the number of wintering waterfowl. Although this is not indicated in the results of the ground counts, I think it indicates the true picture. While speaking to various sportsmen from different parts of the province during recent weeks, most of them at the annual meeting of the Nova Scotia Fish and Game Association, the increase in wintering waterfowl was mentioned by a number of them. The increase in the number of Black Ducks was apparently particularly noticeable all winter.

The composite results for Nova Scotia show a total Canada Goose population approximating that for the ground counts. Somewhere in the neighborhood of these figures I think is a close estimate of the number of geese that were wintering in the province during the inventory period. Despite last year's figures I don't think there has been much change in their numbers this year as compared to last year.

H. R. Webster,  
Dominion Wildlife Officer

CANADIAN WILDLIFE SERVICE

W 44-145-1-2

COMMENTS ON THE JANUARY WATERFOWL INVENTORY,

1952

*N.B. forgot to mention these in the letter Joe.*

NEWFOUNDLAND:

Winter weather conditions in Newfoundland were similar to those experienced in 1951. Except in northern areas, there was very little snow during January, and although the lakes and ponds were generally frozen over, there were large areas of open water in the interior. Most of the survey was done around the 15th of January, as the previous week was generally stormy. Most species observed were found around or near the coast.

The number of waterfowl for the interior was less than in 1951. There was an increase in totals for all species except green-winged teal, eiders, and old-squaw. Eider ducks frequent coastal waters where observers rarely see them so that, although the count was lower, there is no evidence that there is any decrease in that species. The data show a 15% increase in black ducks, a 266% increase in golden-eye, and a 28% increase in Canada geese. Mergansers show an increase roughly the same as that of the golden-eye, but it is unlikely that in either case the actual increase is as great as that shown.

MARITIME PROVINCES:

Because of poor weather conditions and impassable roads, many areas of the Maritimes were not surveyed by ground observers. The aerial survey was the same as last year except that, due to poor flying conditions, the coastal area between Weymouth and Yarmouth, Nova Scotia, was missed, and the survey for other areas had to be extended over the period January 7th to 19th. Aerial counts only were used in the inventory for Prince Edward Island and New Brunswick, with aerial and ground coverage for Nova Scotia. This has made the total population of waterfowl appear abnormally low, but it is felt the totals are a closer approximation to the true population than those obtained in previous years.

Comparison of the totals by provinces shows a decrease in New Brunswick this year, a slight decrease in Nova Scotia, and little change in Prince Edward Island. Black ducks showed a further decrease this year. The number of geese recorded was less than one-half of that recorded for 1951.

Scoters, old-squaw and golden-eye showed substantial increases in the order mentioned.

QUEBEC:

During the mid-winter inventory period weather conditions in the Province of Quebec were generally clear and cold. Most bodies of water were frozen, but the Lachine Rapids and the St. Lawrence River below Three Rivers were open.

The total number of waterfowl in Quebec showed a slight decrease from the total recorded for 1951. A substantial increase in eiders was shown, but there were decreases in all other recorded species.

ONTARIO:

Ice conditions in the St. Lawrence River and the Great Lakes were not quite as severe as last year but there was a large amount of shifting ice in most locations. Inland lakes and marshes were frozen; only a few of the larger and swifter rivers contained open water. The increase in the waterfowl population this year over the 1951 estimate is not believed to be due to the greater amount of open water on the Great Lakes Waterways system.

Increases in the populations of redheads, canvas-backs, scaups, golden-eye, bufflehead, old-squaw and mergansers are reported. Decreases in the numbers of mallards and black ducks were found. The other species showed little change in numbers from the 1951 estimates.

MANITOBA AND SASKATCHEWAN:

On account of the insignificant numbers of waterfowl that spend the winter in these Provinces a survey was not considered to be worth the time and effort required or the expense involved.

ALBERTA, YUKON AND NORTHWEST TERRITORIES:

Adverse weather during the autumn seriously affected the harvesting of crops throughout Alberta with the result that large quantities of ducks remained in the southern part of the Province, where feed was plentiful in the fields. Severe sub-zero temperatures that developed in mid-December drove out all but a few of these birds, so that the total remaining at the time of the inventory was considerably lower than in 1951. The mallard population was



reduced to less than half of the number recorded for the previous year.

The number of Canada geese, though small, was higher than it was last year.

No mid-winter inventory of waterfowl was taken in the Yukon and Northwest Territories.

BRITISH COLUMBIA:

At the time of inventory, the weather was mild in the coastal region of British Columbia, but in the preceding period it was quite severe. As a result the fields and marshes were blanketed with snow and ice, greatly limiting waterfowl feeding areas. These conditions presumably account for the large reduction in waterfowl numbers recorded this year, as the snow and ice had just disappeared from the fields at the time of inventory. Severe weather conditions in the interior of the Province were also responsible for a decrease in the total estimate of waterfowl numbers in that region.

All species except scoters, bufflehead, snow geese, and trumpeter swans showed substantial decreases in numbers. The decreases are large enough to bring the total reported population down close to the total for 1950.

Species	Newfoundland	Nova Scotia	Prince Edward Island	New Brunswick	Quebec	Ontario	Alberta Yukon N.W.T.	British Columbia	TOTAL
Trumpeter Swan	-	-	-	-	-	-	-	750	750
Whistling Swan	-	-	-	-	-	1	-	30	31
Brant	-	-	-	-	-	-	-	2,000	2,000
Canada Goose	1,307	6,025	50	-	-	1,302	25	7,200	15,909
Snow Goose	-	-	-	-	-	-	-	250	250
Baldpate	-	-	-	-	-	-	-	95,400	95,400
Black Duck	431	14,706	3,000	3,200	23	5,161	-	-	26,521
Blue-winged Teal	-	-	-	-	-	-	-	-	-
Bufflehead	50	160	34	-	-	1,568	40	93,300	95,152
Canvasback	-	-	-	-	35	7,420	-	700	8,155
Eiders	20,685	4,100	10	80	800	-	-	-	25,675
Goldeneye	1,087	4,080	2,430	220	483	20,725	200	46,400	75,625
Green-winged Teal	15	-	-	-	2	-	-	8,700	8,717
Mallard	-	-	-	-	-	2,210	3,167	86,000	91,377
Old Squaw	2,323	260	-	130	80	2,863	-	-	5,656
Pintail	-	-	-	-	-	515	-	93,800	94,315
Redhead	-	-	-	-	-	2,110	-	-	2,110
Ring-necked Duck	-	-	-	-	-	500	-	-	500
Ruddy Duck	-	-	-	-	-	-	-	-	-
Scaup	-	1,195	808	-	-	9,868	-	70,700	82,571
Scoters	863	6,350	-	260	-	252	-	145,800	153,525
Shoveller	-	-	-	-	-	100	-	-	100
Wood Duck	-	-	-	-	-	65	-	-	65
Mergansers	1,737	230	178	20	28	7,608	-	1,600	11,401
Coot	-	-	-	-	-	-	-	6,900	6,900
Unidentified	-	1,120	9	180	535	1,975	-	26,000	29,819
<b>TOTAL:</b>	<b>28,498</b>	<b>38,226</b>	<b>6,519</b>	<b>4,090</b>	<b>1,986</b>	<b>64,243</b>	<b>3,432</b>	<b>685,530</b>	<b>832,524</b>

BIRD NOTES FROM THE MARITIME PROVINCES  
Dec. 1, 1948 to March 31, 1949.

Weather Conditions

The winter was mild with a minimum of ice and snow. Many of the harbours were open, resulting in a wide dispersal of wintering waterfowl. In the New Brunswick-Nova Scotia border region the freeze-up occurred around December 10th. This date probably holds true for much of the Maritimes except southern Nova Scotia. It might be well to add, at this point that southern Nova Scotia (including the coastal regions of Yarmouth, Queens and Shelburne Counties) has a climate somewhat similar to the Cape Cod region. Here are normally found, wintering, large numbers of Canada Geese, various ducks and also species of small passerine birds such as the robin, myrtle warbler, slate-coloured junco and song sparrow. The chief wintering ground of the Canada goose, in the Maritime Provinces is at the Port Joli Sanctuary, in Queens and Shelburne Counties (containing about 90% of the population). A well known, local ornithologist, Dr. H. F. Tufts, informed me that the wintering population in southern Nova Scotia was much below normal this year. He attributed this to the heavy mortality during the hard winter of 1947-48.

Throughout the Maritimes the heaviest snowfall occurred during the first two or three weeks of March. This was climaxed by a period of freezing rain during which time a layer of ice covered the ground and vegetation for about a week.

Species Accounts

American Bittern - Mr. J. I. Pothier of Lower Wedgeport, Yarmouth Co., N. S., reports one wintering in his neighborhood. This is a most unusual record.

Waterfowl - Reports from the midwinter inventory indicated a good general waterfowl population. Due to the mild weather during January the birds were dispersed far more than ordinarily. The Canada Geese wintering at the Port Joli Sanctuary were well up in numbers over the previous years. This year these were approximately 10,000. Geese were also reported from P.E.I. and many areas of Nova Scotia. On Dec 7th I saw 10 Baldpates at the Amherst Point Bird Sanctuary in Nova Scotia.

Black Ducks and Green-winged Teal were seen in the N.B./N.S. border marshes during the first week of January. This is unusual in the case of the latter. The first returning Black Ducks were seen in this area on March 18th. Although ducks do not winter normally in this region it is not far from their wintering grounds.

Diurnal Birds of Prey- Marsh Hawks were seen in the N.B.-N.S. border area as late as January 23rd. Very few hawks of other species were noted, except for an occasional Rough-leg.

Woodcock.- I saw my first two Woodcock of the year at my home on March 29th. This is the usual arrival time.

Purple Sandpiper - A small flock was seen near St. George, Charlotte Co. N.B. on March 1st. A small number normally winter off the coast of Charlotte Co. and at Grand Manan.

Snowy Owl.- A few were reported from York Co., N.B.

Prairie Horned Lark - First seen in the N.B.-N.S. border area on March 10th. This species seems to be in good numbers this year.

Swallows.- The late appearance of Barn and Cliff Swallows has



already been noted. The last were seen in Yarmouth Co. around Dec 17th.

Red-breasted Nuthatch - This species appears to be becoming scarce in the Maritimes. My only observations during the past year were made near Woodstock N.B. in November and again during Christmas week.

Mockingbird - one was observed during the first part of March near Memramcook N.B. by Reid McManus Mnr, Dr. Tufts reported one in Queens Co., N.S.

Northern Shrike - appeared to be in normal numbers. The first observation of the year was made on Jan 17th. The first probable Northern migrant of this species was seen on March 17th.

Myrtle Warbler - I saw a flock of 12 at Port Joli, Queens Co., N.S. during February. (This is not unusual)

Icteridae - Cowbirds and Red-winged Blackbirds were first observed in the Sackville area on March 6th. This is very early. There were approximately 25 Cowbirds, an unusually large flock for this area, during spring migration. Bronzed Grackles and Rusty Blackbirds were first seen on March 26 and 27 respectively.

Fringillidae. - A number of winter visitors were seen in various parts of the Maritimes. These included Pine and Evening Grosbeaks, Redpolls, White-winged Crossbills, Tree Sparrows and Snow Buntings. Neither the Pine or Evening Grosbeaks approached the great flights of 1945 and 1946, but both species made a good showing. The Redpolls were very numerous after Jan 1st. The White-winged Crossbills were well below the 1947-48 level. Snow Buntings were very good. A few Juncos were observed during Christmas week at Woodstock and two spent the winter at my feeding station at West Sackville. This is unusual. Fox Sparrows arrived in the N.B.-N.S. border area around March 26th. Numbers here at present indicate a good spring flight. A few good fall flight of Lapland Longspur in the N.B.-N.S. border region. Seventy-nine were seen on Dec. 22, 1948. The last observation was on January 12th when 4 were seen.

George F. Boyer.



CHRISTMAS BIRD COUNT, 1948-49.

Woodstock, N. B. (Golf Links, Paynter's Pasture  
Meduxnekeag River as far as dam, woods along  
road to Kilmarnock Deadwater; coniferous  
forest 30%, mixed forest 40%, cultivated land  
and overgrown pasture 20%, river shore line 10%).

- Dec. 26; 8.00 a.m. to 4.30 p.m. Overcast;  
temp. 10 to 20 deg. with 2 inches of snow, some  
of fields bare; extensive patches of open water  
in rivers. Two observers in one party. Total  
hours 17 (on foot); total miles 30 (on foot)  
Am. golden-eye, 15; Am. merganser, 1; goshawk, 1;  
ring-necked pheasant, 4; blue jay, 2; Am. crow, 1;  
black-capped chickadee, 60; brown-capped  
chickadee (Acadian), 7; red-breasted nuthatch, 10;  
brown creeper, 2; starling 553 (500 est., 53);  
house sparrow, 48; common redpoll, 8; white-winged  
crossbill, 3; slate-coloured junco, 3. Total 15  
species; about 718 individuals. - Joan and George  
Boyer.

Winter Waterfowl Inventory from Air, 1951 - Southern N. B.

Location	Black	Eider	Golden- Eye	Old Squaw	Scoters	Mergs	Unid- ent
<u>January 7, 1952</u>							
Peticodiac River	-	-	-	-	-	-	-
Mouth Shepody R.	70	-	-	-	-	-	-
Salisbury Bay	430	-	-	-	-	-	-
Quaco Bay (St.Martins)	30	-	-	-	-	-	-
St. John Harbour & mouth of River	-	-	-	-	-	-	-
Lorneville	340	-	-	-	-	-	-
Musquash Harbour & River	245	-	-	-	-	-	-
Mace's Bay etc from Pt. Lepreau to Blacks Harbour	650	-	50	20	20	15	-
<u>January 9, 1952</u>							
Black's Harbour west to Lambertville	50	-	22	30	-	5	71
Passamaquoddy Bay from Lambertville to St. Andrews	70	16	110	4	240	-	8
Campobello	2	26	8	25	-	-	18
Grand Manan & Islands	1305	37	30	52	-	1	80
Deer Island	-	-	-	-	-	-	-
<b>Total</b>	<b>3192</b>	<b>79</b>	<b>220</b> <b>220</b>	<b>131</b>	<b>260</b>	<b>21</b>	<b>177</b>

Midwinter inventory ...

DATA FILE

119.30

CWS-AR

1948-

1963

Midwinter inventory of waterfowl - Maritimes.

Name

Date