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PROJECT HISTORY SHEET

Project No. 02-1-6 Date June 1, 1966

Title Waterfowl Wing Collection, Nova Scotia - Prince Edward Island

Investigator Richard Fyfe

Date of approval of project plan 1962?

Date of submission of progress report June 1, 1966

THIS HISTORY SHEET ACCOMPANIES: (check one)

Project Plan \_\_\_\_\_ Progress report X

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

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

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

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

No publications.

b) PAPERS DELIVERED: \_\_\_\_\_

c) PUBLICATIONS OR PAPERS PROPOSED: \_\_\_\_\_

FINANCIAL STATUS (to be completed at Ottawa)

Year	Investigator	Estimate	Disbursement	Cost to date

NOVA SCOTIA - PRINCE EDWARD ISLAND

WATERFOWL WING SURVEY - 1965-66

Project 02 - 1 - 6

Richard Fyfe

June, 1966

NOVA SCOTIA - PRINCE EDWARD ISLAND  
WATERFOWL WING SURVEY - 1965-66

OBJECTIVE: To obtain data on age, sex ratios and species composition from the sample of waterfowl wings collected in Nova Scotia and Prince Edward Island during the 1965-66 hunting season on migratory waterfowl.

INTRODUCTION: Prior to the 1965-66 hunting season on migratory waterfowl, wing envelopes were sent to 193 known waterfowl hunters in Nova Scotia and to 59 known waterfowl hunters in Prince Edward Island together with the request that the hunters return one wing from each duck killed during the open season. Waterfowl wings have been previously collected in both Nova Scotia and Prince Edward Island.

METHODS: Mailing lists of known waterfowl hunters were obtained from the biologists of the provinces of Nova Scotia and Prince Edward Island in co-operation with the local rangers and sportsmen. Earlier surveys had resulted in a low response from the waterfowl hunters therefore in 1965-66 it was decided to send wing envelopes only to those hunters who had responded to previous surveys plus a small number to hunters whose names had only recently been placed on the mailing list. The hunters were requested to return one wing from each duck killed with one wing per envelope. The envelopes were to be sent to Ottawa



where they were stored until such time as we were able to examine them following the annual "wingding" at the Patuxent Wildlife Research Centre, Laurel, Maryland, U.S.A. After examination the wing envelopes were marked to indicate the species, age and sex of the birds from which the wings were taken. The information presented in this report is based on the information obtained at Patuxent.

The report is presented in two parts (a) The Nova Scotia Wing Survey, (b) The Prince Edward Island Wing Survey.

(a) NOVA SCOTIA WING COLLECTION

RESULTS: Wing envelopes were sent to 193 waterfowl hunters immediately prior to the hunting season. Seventy-four hunters responded and returned one or more wings. In addition, 22 persons who had not been originally contacted sent wings, bringing the total to 96 respondents. Table 1 gives the number of hunters contacted, the number of respondents, and the number of wings received by county.

A total of 563 wings was received giving a mean kill of  $\frac{563}{96} = 5.86$  birds per respondent. This seems not too unreasonable and compares favourably with the mean kill of 6.79 birds per hunter in the 1964-65 wing collection and 4.5 mean kill in the 1965 New Brunswick Kill Survey. By county the 1965-66 mean kill per hunter varies widely between 1.3 in Victoria County and infinity (63:0) in Inverness County. In the latter case, 63 wings were collected by hunters who were

Table 1. Hunter response and wings collected, by county.

County	No. of hunters Contacted	No. of Hunters Responded	Total Wings Received by county
Annapolis	2	0	3
Antigonish	5	3	24
Cape Breton	27	13	22
Colchester	6	3	10
Cumberland	27	15	88
Digby	0	0	22
Guysborough	12	6	32
Halifax	23	13	34
Hants	8	3	8
Inverness	2	0	63
Kings	22	12	24
Lunenburg	4	1	9
Pictou	7	1	15
Queens	7	5	16
Richmond	4	1	7
Shelburne	11	8	49
Victoria	9	7	65
Yarmouth	17	5	72
Totals	193	96	563



not resident in the county, whereas we received no response from resident hunters.

Of the total sample of 563 wings, 435 were from dabbling ducks, 126 from diving ducks and two from unidentified species. As in previous years, black ducks (300) and green-winged teal (112) are the two major species and represent 73.2 per cent of the sample. Common golden-eye (36), and surf scoter (26) are next in importance with ring-neck (22), common eider (17), common merganser (11), blue-winged teal (6), wood duck (6), baldpate (5), and pintail (5), making up most of the remainder of the kill.

The counties in Table 2 are grouped into six zones to give an indication of the species distribution by area within the province of Nova Scotia. Figure 1 shows the basis for this grouping.

Table 3 gives the total wings received and the corresponding percentages by family for the six zones in the province.



Table 2.

Zone	County	Total wings received; by county	Dabbling Ducks						
			Mallard-Bl.	Black Duck	Baldpate	Gr.-w.Teal	Bl.-w.Teal	Pintail	Wood Duck
1.	Yarmouth	72		32	1	17			1
	Digby	22		14		1			
	Shelburne	49		20		6			
	Queens	16		6		4			
	Lunenburg	9		8				1	
2.	Halifax	34		18					
	Guysborough	32		15		1		1	4
3.	Richmond	7		6					
	Cape Breton	22		20		2			
	Victoria	65		35		20			
	Inverness	63		34		13	3	2	
4.	Antigonish	24		15					
	Pictou	15		6		1			
	Colchester(N)	4		4					
	Cumberland(N)	36		25		9	1		
5.	Cumberland(S)	52		15	4	27	1	1	1
6.	Colchester(S)	6		5		1			
	Hants	8		8					
	Kings	24	1	14		7	1		
	Annapolis	3				3			
Total		563	1	300	5	112	6	5	6

Total Dabbling Ducks: 435

Grand Total: 563



Diving Ducks

Gt. Scaup	King-neck	Goldeneye (Common)	Barrow's Goldeneye	Bufflehead	Com. Merg.	R.-b.Merg.	Oldsquaw	Com.Eider	Com.Scoter	W.W.Scoter	Surf Scoter	Unidentified
	6	15										
		6						1				
	2						3	7	2	4	5	
									1		5	
	2	5			1			8				
1	1	1		1							7	
											1	
	4	1			1	1					3	
	3	1			7							
	2	2									5	
		5	1		2							
												1
	2											1
								1				
1	22	36	1	1	11	1	3	17	3	4	26	2

Total Diving Ducks: 126

Unidentified: 2



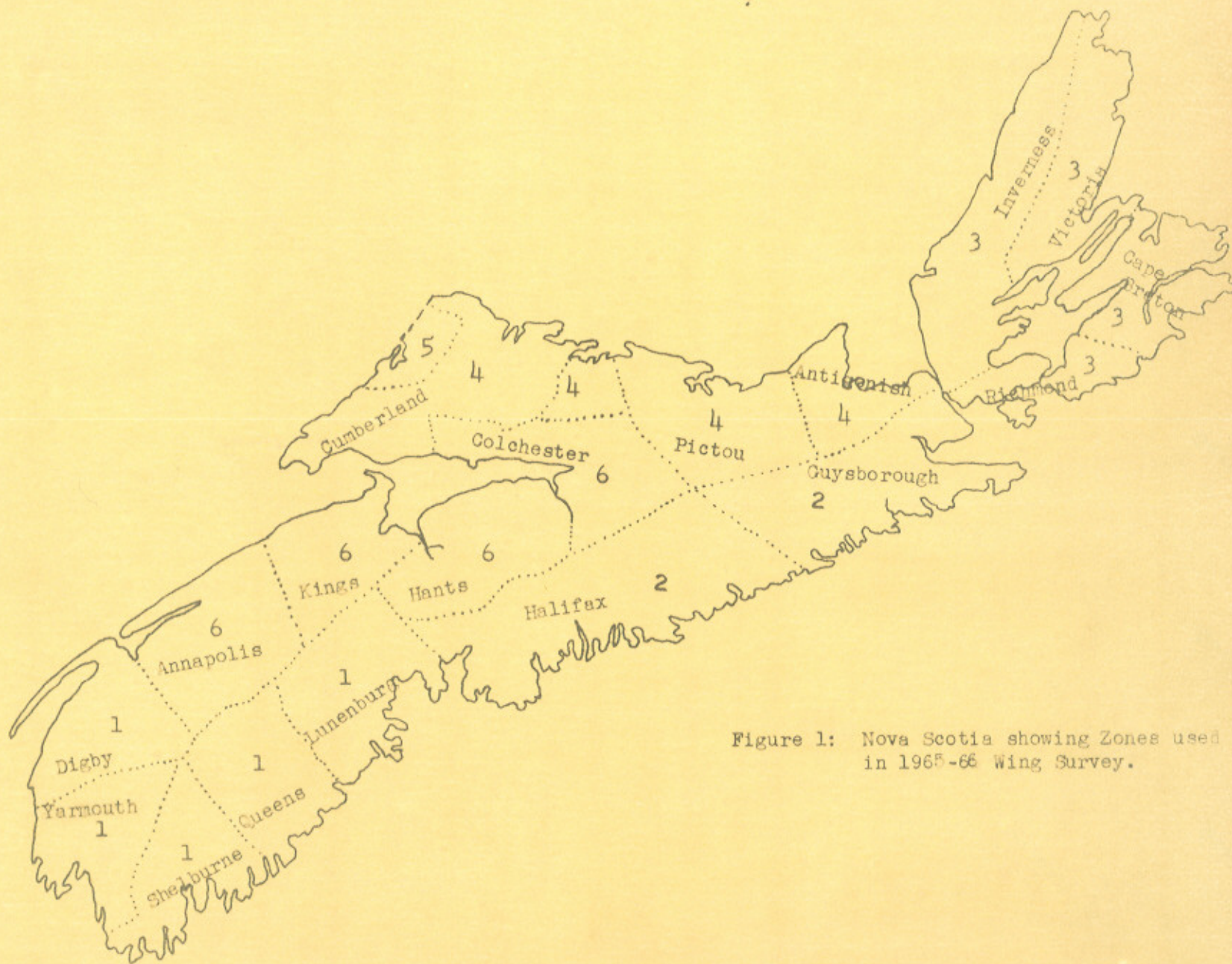


Figure 1: Nova Scotia showing Zones used in 1965-66 Wing Survey.



Table 3. Number of wings received, by zones, showing totals and percentages of total for both diving and dabbling ducks.

Zone	Area	Dabbling Ducks		Diving Ducks	
		Total	% of total	Total	% of total
1.	South-western N.S.	111	25.52	57	45.24
2.	South coast of N.S.	39	8.97	27	21.43
3.	Cape Breton Island	135	31.03	22	17.46
4.	Northumberland Coast	61	14.02	17	13.49
5.	Border Area	49	11.26	2	1.59
6.	Minas Basin	40	9.20	1	0.79
	Total	435		126	

It is at once apparent that the dabbling ducks are hunted with success throughout Nova Scotia while the bulk of the diving ducks were obtained along the south and south-west coasts. The 1965-66 wing collection shows a larger percentage of diving ducks on the Northumberland coast than in previous years.

Tables 4 and 5 show the age and sex of the three major species as determined from the 1965-66 wing collection.

Table 4. Total wings indicating age and sex of the three major species.

Species	Adult Male	Adult Female	Immature Male	Immature Female	Immature Sex Unknown	Unknown
Black Duck	41	50	1	1	165	41
Green-w. Teal	25	19	19	34	1	13
Goldeneye 2 sp.	8	7	10	10	2	0





Figure 2: Prince Edward Island showing counties used  
in 1965-66 Wing Survey.



Table 5. Sex and age ratios determined by the wing sample.

Species	Males per 100 females	Immatures per Adult (sexes combined)
Black Duck	82.0 (Adults only)	1.8
Green-winged Teal	33.0 (Both age classes)	1.2
Goldeneye (2 sp.)	105.9 (Both age classes)	1.5

(b) PRINCE EDWARD ISLAND WING COLLECTION

RESULTS: Wing envelopes were sent to 59 waterfowl hunters prior to the open season. Of these hunters 28 responded and returned one or more wings. An additional 10 persons who had not received envelopes returned wings for a total of 38 respondents.

Table 6 shows, by county, the number of hunters contacted, the number of hunters responding, the total wings received and the resulting mean kill.

Table 6. Hunter response and wings collected by county.

County	Number of hunters Contacted	Number of hunters Responded	Total wings received by county	Mean Kill per Hunter
Kings	11	5	17	3.40
Queens	34	21	112	5.33
Prince	14	12	42	3.33
Total	59	38	171	4.50



A total of 171 wings was received from the 38 respondents for a mean kill of  $\frac{171}{38} = 4.5$  per respondent.

By county, the mean kill per hunter varies between 3.4 in King's County and 5.3 in Queen's County. Of the total 171 wings, 155 (90.64%) were from dabbling ducks, 9 (5.26%) from diving ducks and 3 (1.75%) from Canada Geese.

Table 7. Prince Edward Island wing collection 1965-66, wings returned by county and species.

County	Dabbling Ducks					Diving Ducks				
	Black Duck	Baldpate	Gr.-w. Teal	Bl.-w. Teal	Pintail	Ring-n. Duck	C. Goldeneye	Canada Goose	Pied-b. Grebe	Unidentified
King's	3		11				1	1		1
Queen's	18	2	79	1	1	5	2	2		2
Prince	20		17		3		1		1	
<b>Total</b>	<b>41</b>	<b>2</b>	<b>107</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>3</b>
Total dabbling ducks: 155 Total diving ducks: 9 Total geese: 3 Total other: 1 Total unidentified: 3										
<b>Grand Total: 171</b>										

As in Nova Scotia, Black Ducks and Green-winged Teal were the two major species represented and comprised 86.5% of the total sample.

Tables 8 and 9 show the age and sex ratio of the two major species as determined by the 1965-66 wing collection.

Table 8. Wings shown by age and sex for the two major species.

Species	Adult Male	Adult Female	Immature Male	Immature Female	Immature Sex Unknown	Unknown
Black Duck	10	9	1	0	7	4
Green-w. Teal	15	18	32	35	1	6

Table 9. Sex and age ratios obtained from waterfowl wings.

Species	Males per 100 females	Immatures per Adult (sexes combined)
Black Duck	111.11 (Adults only)	0.42
Green-w. Teal	88.68 (Both age classes)	2.06

Table 10. Total wings received by county and the corresponding percentages for the three counties in Prince Edward Island.

County	Total wings received	Percentage of total returns
Kings	17	9.94
Queens	112	65.50
Prince	42	24.56



DISCUSSION: In 1965, 0.4 immature birds were killed for each adult harvested in contrast to 1.7 immature birds killed for each adult harvested in 1964. The decrease in the ratio of immatures killed per adult harvested is worth noting as it could be an indication of the effect of the late season on the island. If our objective is to increase the breeding stock in a given area such decrease in the kill of local ducks is highly desirable. Unfortunately, the wing collection provides only a limited sample and does not provide an indication of the origin of the adults harvested or of the number of Prince Edward Island birds harvested elsewhere.

The data from the wing collection should be presented as is and should not be extrapolated to give an indication of hunter success or waterfowl kill for the provinces of Nova Scotia or Prince Edward Island. The sample is undoubtedly biased by the fact that, for the most part, only those hunters who had responded in previous years were contacted in 1965-66, and because only hunters known to biologists and the provincial rangers were on the mailing list. The mean kill figure for this group of respondents (5.9 in Nova Scotia; 4.5 in P.E.I.) would again seem too high for the average hunter and suggests that the respondents are a highly selected group representing the better and more dedicated waterfowl hunters.

It would also appear that the mean kill figures by county vary so widely that they can not be used. However, this was to be expected as hunters are highly mobile and the residence of a hunter does not mean that he hunts in that particular area.

The wing collection is considered to have a definite value in public relations as both the provincial authorities and the individual hunters are pleased that the Canadian Wildlife Service is interested in collecting data on the waterfowl kill composition in the provinces. It is also significant that these wing collections are the only Canadian contribution to the annual wing collections made in the Atlantic Flyway.