

Waterfowl Kill on P.E.I.  
C.O. Bartlett - 1957

REPORT

Migratory Bird Kill-survey  
P.E.I. 1960-62, C.O. Bartlett

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REPORT

## COMPLETION REPORT

Title: Summary of the migratory bird kill-survey on Prince Edward Island for the years 1960, 1961 and 1962

Designation: 02-1-22(formerly 0-11-1), 1963

Prepared by: C. O. Bartlett

Personnel: C. O. Bartlett with stenographic and clerical assistance in Sackville and Ottawa offices

### OBJECTIVES:

The objectives of the survey were to determine hunter success, species composition, sex and age composition and trends in the waterfowl kill.

### METHODS:

A waterfowl-kill survey, similar to that carried out in New Brunswick, Quebec and Ontario was initiated on Prince Edward Island during the 1960 hunting season and continued with some modification in 1961 and 1962. Names of urban hunters<sup>1</sup> were obtained from the previous year's licence stubs made available by the P.E.I. Department of Industry and Resources. Standard-type questionnaires were

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<sup>1</sup> Farmers and fishermen on Prince Edward Island are not required to have a licence to hunt migratory birds.

mailed to every tenth licence holder in 1960; this was increased to every third licence holder in the 1961 and 1962 hunting seasons. First mailings were sent out during the first half of October; the second, two months later or during the first half of December.

To supplement information obtained from the kill-survey questionnaire and to obtain precise information on the species, sex and age composition, and temporal distribution of the waterfowl kill, a sample of waterfowl hunters were also asked to supply wings of waterfowl shot during each of the 1960, 1961 and 1962 hunting seasons. The names of the majority of hunters contacted were obtained from band-recovery reports submitted by Prince Edward Island hunters in the ten-year period from 1953 to 1962. Additional names were obtained through hunter contacts made in the field by the R.C.M.P. and the writer in the period from 1958 to 1962. Thus some names have been added each year while others (the non-respondents) were deleted each year as the survey progressed.

## RESULTS:

### Hunter success

The number of waterfowl wings received per respondent obtained from the wing collections (Table 1), and the kill per reporting hunter obtained from the kill-survey

Table 1. Hunter success as indicated by Waterfowl-wing collections, P.E.I., 1960, 1961, and 1962

	1960	1961	1962
Mail contacts	135	107	101
Field contacts(respondents only)	13	27	
Total contacts	148	134	
Total respondents	70	75	72
Respondents as percent of total contacts	47	56	
Total wings received	483	456	362
Wings received/respondent	6.9	6.1	5.0

questionnaire (Table 2), both provide an index to hunter success. The drop of 0.8 wings received per respondent ~~in~~ between the 1960 and 1961 seasons and the reduction in the kill per reporting hunter from 10.1 in the 1960 kill to 6.2 birds in the 1961 kill, suggest a much reduced kill of ducks during the 1961 season. This bears out the writer's impressions obtained from visits to Prince Edward Island study areas during both hunting seasons, ~~1960~~, that considerably fewer ducks were available to hunters during the 1961 season.

Although the number of wings received per respondent is not available for 1962, the kill of 5.6 birds per reporting hunter, obtained from the 1962 kill-survey questionnaires, suggests that the kill in 1962 was not appreciably different from 1961.

#### Species Composition

The species composition of the 1960 and 1961 waterfowl kills are shown in Table 3. Of particular significance is the change in the relative numbers of black ducks and green-winged teal in the 1960 and 1961 kills. In 1960 black ducks represented 45.3 percent of the wings sent in by Prince Edward Island waterfowl hunters; green-winged teal represented 33.5 percent. This situation was reversed in the 1961 wing collection; black ducks taking second place to green-winged teal.

Table 2. Hunter success as indicated by waterfowl-kill survey questionnaires, P.E.I., 1960, 1961 and 1962

	1960	1961	1962
Questionnaires mailed	361	1159	1142
Questionnaires delivered	340	1122	1104
Respondents	96	267	326
Respondents as percent of questionnaires delivered	28.2	23.8	29.5
Hunted migratory game birds	55	124	197
Hunters as percent of respondents	57.3	46.4	60.3
Percent successful	93	77	81
Total duck kill	557	768	1099
Kill per hunter	10.1	6.2	5.6

Table 3. Species composition of waterfowl wing collection, obtained from P.E.I. waterfowl hunters, 1960, 1961 and 1962

Species	1960		1961		1962	
	No. of wings received	Percent of total	No. of wings received	Percent of total	No. of wings received	Percent of total
Black duck	219	45.3	153	33.5	117	32.3
Green-winged Teal	160	33.1	197	43.2	124	34.3
Blue-winged Teal	43	9.9	38	8.3	73	20.2
Ring-necked duck	15	12.7	18	15.0	14	13.2
Pintail	15		10			
American Goldeneye	13		8			
American Widgeon	9		13			
Common eider	2		1			
Lesser scaup	1		4			
Bufflehead	-		9			
Hooded Merganser	-		1			
Mallard	1		1			
Wood duck	-		1			
Unidentified duck	1		-			
Canada goose	4		2			
Totals	483		100		456	

Green-winged teal appeared to be very abundant during both the 1960 and 1961 seasons, suggesting that the reduction in kill of black ducks represents a reduction in the availability of this species during the 1961 waterfowl season. This is suggested also in the comparison of the black duck and other duck composition of the kill (Table 4). A downward trend in the availability of black ducks is indicated for the three-year period under consideration, with the biggest drop occurring in 1961.

The relatively large reduction in the duck kill per hunter from 1960 to 1961 plus the drop from 45 to 33 percent of the hunter bag in the same period, points up the importance of black duck in the local waterfowl kill. Although green-winged teal apparently acted to some extent as a buffer species, the reduction in black duck availability was still very apparent in the total waterfowl kill.

Two new species records for Prince Edward Island are available from the wing collections. One immature Lesser Scaup was recorded in 1960 and 4 immatures in 1961. One adult male, one adult female, and five immature buffleheads were recorded in the 1961 wing collection.



Table 4. Composition of black ducks and other ducks in the waterfowl-kill on P.E.I. obtained from (a) waterfowl wing collection, and (b) kill-survey questionnaires, 1960, 1961 and 1962

Species	1960		1961		1962	
	(a)	(b)	(a)	(b)	(a)	(b)
Black duck	45	52	33	42	32	37
Others	55	48	66	58	68	63

Sex and age composition

Black ducks and green-winged teal are the only two species for which samples of 100 or more wings are available for the years 1960 and 1961.

The drop of 16 percent in the black duck immature-adult ratio from 1960 to 1961 (Table 5 ) is in keeping with the 17 percent decrease in the immature-adult ratio obtained by Carney and Godin (1962) for black ducks in the entire Atlantic Flyway for the 1960 and 1961 kill.

As has been shown elsewhere (Bartlett, 1960), migrant and wintering black ducks do not arrive on Prince Edward Island until after the middle of October so that wing collections made prior to October 15th would be largely from local breeding birds. <sup>It was</sup>

~~It has also been shown elsewhere (Bartlett, <sup>in this same paper</sup> ibid)~~ that two-thirds of the black duck kill on Prince Edward Island ~~does~~ takes place during the first half of October. Thus age ratios of black ducks obtained from Prince Edward Island hunters ~~does~~ provide an index to local black duck production. It suggests that the reduced kill in black ducks during the 1961 hunting season on Prince Edward Island could be attributed in part to a decrease in local black duck production. The low production elsewhere in the black duck breeding range in 1961 (Carney and Godin, op. cit.), superimposed on the reduced local production could account for the 39 percent drop in the 1961 black duck kill on Prince Edward Island, as suggested by the kill survey data (Table 2).

Table 5. <sup>2</sup> Sex and age composition of black duck and green-winged teal in the 1960 and 1961 P.F.I. waterfowl kill as obtained from wing collections

Species	1960		1961		1962	
	Number received	Imm. per Ad.	Number received	Imm. per Ad.	Number received	Imm. per Ad.
Black duck	213	3.1	153	2.6	117	1.7
Green-winged teal	159	12.7	198	2.9	124	2.0

Trends in the waterfowl population

The combined data from the questionnaire survey and the wing collection, all point to a reduction in the availability and kill of black ducks on Prince Edward Island in the three-year period from 1960 to 1962. They also indicate an increase in the availability of green-winged teal. The large number of green-winged teal in the kill during the 1961 season is considerably out of proportion to the number that one would expect from its status as a local breeder (Bartlett, op. cit.). It suggests that there was a considerable movement of migrants into the area prior to October 1st, and during the hunting season.

From where?

FUTURE PROGRAM:

As farmers and fishermen are not required to have a licence to hunt migratory birds on Prince Edward Island there is presently no means of obtaining an estimate of the total waterfowl kill on the Island. However, the combination of the questionnaire survey and the wing collection <sup>does</sup> provide usable information on the year to year variation in hunter success, species composition and local production. I feel that the value of the wing collection could be increased considerably by increasing the number of wings received, either through increased field contacts during the hunting season or/and by sending out an additional supply of envelopes to current respondents about midway through the waterfowl season.

The larger percentage of birds in the "other duck" classification in the wing collection, as compared to the questionnaire survey (Table 4), suggests that species composition obtained from wing collection, as presently carried out, tend to reflect early season conditions. One would expect that black ducks would become more important in the kill later in the season after such species as blue-winged teal, pintail, widgeon and ring-necked duck have migrated south. This, I feel, accounts for the discrepancy between the black duck and "other duck" classification as obtained from wing collections and the questionnaire survey, in the present study.

I would recommend that the surveys be continued with emphasis on increasing the wing collection sample by one or both of the methods suggested.

#### LITERATURE CITED

- Bartlett, C.O. 1960. Some characteristics of black duck populations on Prince Edward Island. Paper presented at the N.E. Wildl. Conf., Halifax, N.S., June, 1961. 21 pp. mimeo.
- Carnay, Samuel M., and Alfred J. Codin. 1962. Age ratios of Ducks Killed during the 1959-60, 1960-61, and 1961-62 Hunting Seasons. Adm. Report No. 8, Bur. Sports Fisheries & Wildl., U.S. Dept. Int., Laurel, Md., 8 pp. mimeo.

APPENDIX (continued)

- A. Letter to hunters requesting cooperation in wing collection.
- B. Card requesting additional envelopes.
- C. Envelope for mailing wings to Ottawa.
- D. Acknowledgment and thank you letter to cooperating hunters.

3/13/63.

C. O. Bartlett,  
Wildlife Biologist.

CANADA  
DEPARTMENT  
of  
NORTHERN AFFAIRS and NATIONAL RESOURCES

Canadian Wildlife Service

P.O. Box 180,  
Sackville, N.B.,  
September 23, 1961.


Dear Waterfowl Hunter:

By answering one of the waterfowl questionnaires or by returning a band, you have indicated that you were a successful hunter with an interest in the future of our waterfowl. This year, you can help again by donating a wing from each duck you shoot. It is important that we receive wings from birds killed throughout the entire season, so please continue to send wings as long as you hunt. If the enclosed supply of envelopes is not adequate, please fill out and mail the enclosed post card and we will send you additional envelopes. From these wings, we can determine the percent of young birds among those bagged and thus obtain a measure of hatching success. This information is being collected and used in connection with waterfowl investigations being carried out by members of the Canadian Wildlife Service in the Maritime provinces. Your help will provide information required for better management of our waterfowl resources.

Please follow the procedures outlined on the wing envelopes.

Good hunting!

Sincerely yours,

  
C.O. Bartlett,  
Wildlife Biologist.

Encs.

APPENDIX-B

Postage  
not required  
if mailed  
in  
Canada

THE CHIEF

CANADIAN WILDLIFE SERVICE

OTTAWA





Please send.....wing envelopes to:

NAME

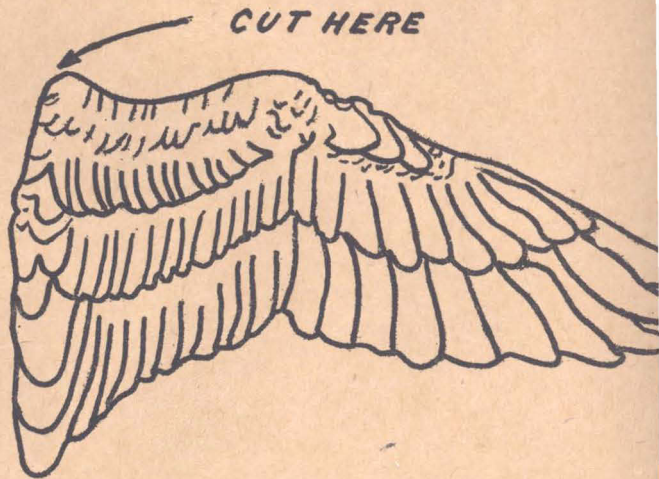
ADDRESS

## DUCK HUNTERS

The Canadian Wildlife Service needs a wing from each duck you kill this season. From the wing we can tell the kind (species) of duck and whether it was hatched this past summer or was an adult bird. The Service will compare the number of young birds shot with the number of adult birds killed, and this information will help us to manage your waterfowl better.

### PROCEDURE

1. Cut the least damaged wing close to the body.
2. Use one envelope for each bird and send only one wing from each bird. Do not wrap wings as this causes moldiness.
3. Fill in blanks below.
4. Mail as soon as possible (no postage required).
5. Return post card to Canadian Wildlife Service, Ottawa if more envelopes are needed.
6. Please continue sending wings throughout the entire hunting season.



### PLEASE COMPLETE

Where Shot:

Province \_\_\_\_\_

County \_\_\_\_\_

Town \_\_\_\_\_

When Shot:

Date \_\_\_\_\_

Time (hour) \_\_\_\_\_ A.M.  P.M.

If banded list number \_\_\_\_\_

Name of Hunter \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_



Postage  
Not  
Required  
if Mailed  
in Canada

**Chief, Canadian Wildlife Service,  
Department of Northern Affairs and National Resources,  
Ottawa, Ontario.**

CANADA  
DEPARTMENT  
of  
NORTHERN AFFAIRS AND NATIONAL RESOURCES

Canadian Wildlife Service  
P. O. Box 180,  
Sackville, N.B.

Dear Waterfowl Hunter:

This is to thank you for your cooperation in supplying the wings of waterfowl that you shot during the recent waterfowl season.

The species and the numbers of each that you sent in are as follows:

- Black Duck \_\_\_\_\_
- Green-winged Teal \_\_\_\_\_
- Blue-winged Teal \_\_\_\_\_
- Pintail \_\_\_\_\_
- Ring-necked Duck \_\_\_\_\_
- American Widgeon (Baldpate) \_\_\_\_\_
- American Goldeneye \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Please accept the enclosed copy of "Waterfowl Hunter's Guide" as a small token of our appreciation.

Yours sincerely,

C. O. Bartlett  
Wildlife Biologist.

Enc.





CANADA  
DEPARTMENT  
of  
NORTHERN AFFAIRS AND NATIONAL RESOURCES

Canadian Wildlife Service  
P. O. Box 180,  
Sackville, N.B.

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The species and the numbers of each that you sent in are as follows:

Black Duck	_____
Green-winged Teal	_____
Blue-winged Teal	_____
Pintail	_____
Ring-necked Duck	_____
American Widgeon (Baldpate)	_____
American Goldeneye	_____
_____	_____
_____	_____
_____	_____

Please accept the enclosed copy of "Waterfowl Hunter's Guide" as a small token of our appreciation.

Yours sincerely,

C. O. Bartlett  
Wildlife Biologist.

Enc.



1957 WATERFOWL KILL ON  
PRINCE EDWARD ISLAND

Introduction

With waterfowl-kill statistics available for Nova Scotia and New Brunswick this year, similar statistics were needed for P.E.I. to complete the waterfowl-kill survey in the Maritime Provinces. Consequently information on the waterfowl kill on P.E.I. was made available to the Canadian Wildlife Service through the courtesy of Mr. P.A. Murnahan, Deputy-Minister of the Department of Industry and Natural Resources, Charlottetown.

This report contains an analysis of resident-hunter returns that were made available to the Service and outlines some of the problems involved in estimating the waterfowl kill on P.E.I.

Methods

According to the statistics provided by the Department of Industry and Natural Resources, there were 2,506 resident and 77 non-resident hunting licences sold during the 1957 hunting season. Such licences permit the holder to shoot migratory and non-migratory game birds such as pheasants, ruffed grouse and Hungarian partridge.

Sixty-four or roughly 2.6 percent of the resident hunters returned the questionnaire that accompanied the licence. The waterfowl-kill estimates contained in this report were obtained from an analysis of these returns. No returns were available from the 77 non-resident hunters.

As resident farmers, rural labourers and commercial fishermen (wives and sons included) are not required to have a licence to hunt game birds on P.E.I., no information is available on the kill of migratory birds by people in these occupations. However, I have attempted, in a rather roundabout fashion, to obtain an estimate of the waterfowl killed by this non-licenced element of the population.

According to statistics provided by the Provincial Department of Agriculture, there were 9,432 farms on P.E.I. in 1956. From statistics provided by the Federal Fisheries Department, I have estimated that there were roughly 2,500 licenced commercial fishermen on the island in 1957. The total of 11,932 farmers and commercial fishermen compares favourably with the 11,997<sup>1</sup> householders on rural mail delivery routes in January, 1958.

Assuming that, with few exceptions, the 10,844 remaining householders served from post offices<sup>2</sup> in January, 1958 represent the non-farming and non-fishermen element of the population, the 2,506 hunters who purchased licences in 1957 represents roughly 23 percent of this group. Assuming further that the ratio of hunters to non-hunters is the same for both groups, there would be approximately 2,540 hunters in the farmer and fishermen group. This gives an estimated 5,046 hunters for the island.

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<sup>1</sup>The Public Relations Division, Post Office Department, January, 1958.

<sup>2</sup>Includes letter carrier offices in Charlottetown.



## Results

### (a) Ducks.

An analysis of the 64 hunter returns (Table 1) shows that the hunters on P.E.I. averaged 6.6 ducks for the entire season or, roughly, one duck short of the daily bag limit of eight. Of the reporting hunters, thirty-four was the largest number shot by any one hunter during the entire season; seventy-two percent shot less than the daily bag limit.

Although the hunter return cards do not indicate the species of ducks shot, R.C.M.P. field checks carried out during the open season indicated that black ducks constituted nearly 50 percent of the kill.<sup>1</sup> Other species taken included blue- and green-winged teal, pintail, American widgeon and mallard.

### (b) Canada Geese.

Only nine of the 64 hunters who submitted returns were successful in bagging a goose giving an average kill per reporting hunter of 0.5. Eighteen was the largest number shot by any one hunter. The ratio of 13.2 ducks shot for each Canada Goose compares favourably with the 15.4 to 1 ratio obtained from the R.C.M.P. field checks<sup>1</sup>.

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<sup>1</sup>Carter, B.C., 1958. Hunting Season Report - Maritime Provinces, 1957-58. Unpub., 8 pp.

Table 1. Estimates of Waterfowl Kill on Prince Edward Island during the 1958 Season.

Estimates based on a sample of 64 hunter returns.

	Number in Sample	Percent- age of Total Bag	Kill per Reporting Hunter	Estimated Kill		Estimated Total Kill
				Licenced Hunters (2,506)	Unlicenced Hunters (2,540)	
Ducks	421	85.0	6.6	16,539	16,764	33,303
Canada Geese	32	6.5	0.50	1,253	1,270	2,523
Woodcock	8	1.6	0.125	313	317	630
Snipe	34	6.9	0.53	1,338	1,346	2,684
Total	495	100		19,443	19,697	39,140

4



(c) Woodcock and Snipe.

The above two species constituted 8.5 percent of the total waterfowl bag. Little significance can be attached to the difference between the woodcock and snipe kill due to the small sample size and the possibility that some hunters confusing<sup>ed</sup> woodcock with snipe when reporting their kill.

Discussion

As this constitutes the first year that waterfowl-kill statistics from hunter returns have been available for P.E.I., it is not possible to make any comparisons with the previous year's kill. However, from personal observations and contacts with hunters, both during and following this and last year's season, I would judge that, on the whole, P.E.I. hunters enjoyed a better season than last year. Canada Geese, in particular, were quite plentiful and some stubble hunters succeeded in getting their bag limits on opening day.

The estimates of the kill, which at the present time are the only ones available to us, can be used in estimating the kill in the Maritime Provinces and, indirectly, the national waterfowl kill. With 1957 kill statistics available for both Nova Scotia and P.E.I. this year, it will be possible to compare the kill in the three provinces.

In using and comparing the estimates given in this report, consideration should be given to the methods used. The assumptions made in estimating the number of non-licenced hunters

are open to question. Also, the sample size, 2.6 percent of the licenced hunters, is small. Information on the proportion of licenced and non-licenced hunters on the island can be obtained in future field checks carried out during the open season. Such checks will also be useful for supplementing and comparing the data obtained from the return cards. Increased publicity on the value of the return cards in computing the waterfowl kill might increase the number of returns and give a larger sample on which to base our estimates.

June 20, 1958.

C.O. Bartlett,  
Wildlife Biologist.