

Environment Canada / Environnement Canada
 0022722 F S
 PROGRESS NOTES. CANADIAN WILDLIFE SERVICE

Aussi disponible en français

No. 98, April 1979

The 1977 kill of migratory game birds other than waterfowl by hunters in Canada

by K. Newell,¹ F.G. Cooch,¹ and S. Wendt¹

Introduction

In the National Harvest Survey (NHS), the Canadian kill of migratory game birds is estimated from the returns of mail questionnaires sent to hunters purchasing Migratory Game Bird Hunting Permits (MGBHP). Migratory game birds are classified in this survey as either "waterfowl" or "other migratory game birds". Results of the 1977 NHS for waterfowl are described elsewhere (Newell, Cooch, and Wendt, in press). This note presents the estimates for the non-waterfowl category.

Methods

The sport kill of migratory game birds other than waterfowl and the associated hunting effort are estimated from responses to questions 8 and 9 of the NHS questionnaire. Hunters are requested to indicate their kill of woodcock, snipe, coots or mudhens, Sandhill Cranes, Mourning Doves and Band-tailed Pigeons. Only about 15% of the hunters returning NHS questionnaires respond to the questions on these species (Cooch, Wendt, Smith and Butler 1978). Consequently there is a considerably smaller sample available and the standard error on the estimates is larger than for waterfowl.

The NHS is designed primarily to estimate the harvest of waterfowl, and the numbers and method of distribution of questionnaires are not necessarily those that would be selected for a non-waterfowl survey.

Special surveys of Sandhill Crane, Common Snipe and woodcock hunters have been conducted with more intensive sampling to obtain more reliable information about these species. Reports on the results of these surveys may be found in Smith and Cooch (1978) and Dobell and Cooch (1976).

A detailed description of the sampling scheme and methods employed in conducting the NHS is given in Cooch, Wendt, Smith, and Butler (1978). The purpose of this note is to make the results of the 1977 survey available.

Results

The distribution and trends in sport kill of the non-waterfowl species are described in Cooch, Wendt, Smith, and Butler (1978). Substantial departures from previous survey results occurred in the 1977 estimates (Table 1). Both the number of hunters and the total non-waterfowl kill were below the levels of earlier years (Cooch, Newell, and Wendt 1978).

In excess of 5000 fewer hunters reported that they were successful in the 1977 survey. The national kill of birds other

than waterfowl dropped by 75 000 from the 1976 level and by 30 000 from the 1972-76 average. Estimates of woodcock, snipe and coots, the three major species in the kill, were well below the 1976 figures (Tables 2-4). Major changes from the five-year average occurred in both the snipe and coot kill in 1977. While the woodcock harvest dropped by close to 34 000 in 1977, this was only marginally below the 1972-76 average.

Changes in other non-waterfowl species were minor and well within the confidence intervals calculated for these estimates (Table 5-7). The 90% confidence intervals for the 1977 non-waterfowl harvest estimates are as follows: American Woodcock ±13.3%, Common Snipe ±10.6%, American Coot ±17.3%, Sandhill Crane ±74.4%, Mourning Dove ±42.8% and Band-tailed Pigeon ±37.2%. The wide confidence intervals for non-waterfowl species are attributed to the small number of responses available in this portion of the NHS.

Table 8 gives an indication of the amount and quality of recreation provided by waterfowl hunting in 1977.

Acknowledgements

The work done by R. Baroni, L. Teevens and S. Quinn in preparing and editing the NHS questionnaires, and by the Production Division, Computing and Applied Statistics Directorate was essential in providing the information included in this note. D. Karlin and S. Bradford prepared the tables.

References

Cooch, F.G.; Newell K.; Wendt, S. 1978. The 1976 kill of migratory game birds other than waterfowl by hunters in Canada. CWS Prog. Notes No. 83. 6 pp.

Cooch, F.G.; Wendt, S.; Smith, G.E.J.; Butler, G. 1978. The Canada Migratory Game Bird Hunting Permit and associated surveys. Pages 8-39 in H. Boyd and G. Finney, eds. Migratory game bird hunters and hunting in Canada. Can. Wildl. Serv. Rep. Ser. No. 43.

Newell, K.L.; Cooch, F.G.; Wendt, S. in press. Report on 1977 sales of the Canada Migratory Game Bird Hunting Permit, waterfowl harvest, and hunter activity. Can. Wildl. Serv. Prog. Notes No. 95. 10 pp.

Smith, G.E.J.; Cooch, F.G. 1978. Experimental Sandhill Crane Survey 1974-76. Pages 110-120 in H. Boyd and G. Finney, eds. Migratory game bird hunters and hunting in Canada. Can. Wildl. Serv. Rep. Ser. No. 43.

Dobell, J.V.; Cooch, F.G. 1976. Report on the first Common Snipe wing survey in Canada, 1974 and 1975, and results of some recent harvest surveys. Can. Wildl. Serv. Prog. Notes No. 69. 5 pp.

SK
471
C8271
No: 98

¹CWS, Ottawa, Ont. K1A 0E7.



Table 1
Estimated retrieved kill of migratory game birds other than waterfowl in Canada, 1972-77

Species	1972	1973	1974	1975	1976	1977	1972-77 average
American Woodcock	121 824	108 897	113 297	130 898	159 094	125 530	126 590
Common Snipe	92 002	86 242	107 420	97 998	106 977	84 711	95 892
American Coot	27 734	42 294	48 931	53 407	47 981	26 941	41 215
Sandhill Crane	2 143	4 275	6 699	6 165	1 636	367	3 548
Mourning Dove	5 133	1 156	1 593	2 348	3 700	5 388	3 220
Band-tailed Pigeon	9 458	8 211	5 822	5 197	3 286	4 736	6 118
Total	258 294	251 075	283 762	296 013	322 668	247 673	276 581

Table 2
Estimated number of successful hunters of woodcock and of their retrieved kill, 1975-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
PEI	1	208	262	215	389	1 022	566	1.9	3.9	2.6
NS	1	692	620	546	7 176	7 591	3 105	10.4	12.2	5.7
	2	588	473	418	3 669	5 539	2 896	6.2	11.7	6.9
	Total	1 280	1 093	964	10 845	13 130	6 001	8.5	12.0	6.2
NB	1	940	1 048	942	8 590	9 811	9 149	9.1	9.4	9.7
	2	310	449	375	5 683	4 221	3 941	18.3	9.4	10.5
	Total	1 250	1 497	1 317	14 273	14 032	13 090	11.4	9.4	9.9
Que.	1	4 636	6 032	4 549	35 690	48 459	26 910	7.7	8.0	5.9
	2	864	1 001	985	4 231	7 653	3 700	4.9	7.7	3.8
	Total	5 500	7 033	5 534	39 921	56 112	30 610	7.3	8.0	5.5
Ont.	1	4 590	3 845	3 998	35 721	22 919	26 179	7.8	6.0	6.6
	2	5 765	7 165	7 797	22 344	45 662	44 500	3.9	6.4	5.7
	3	1 798	1 410	984	7 402	6 216	4 581	4.1	4.4	4.7
	Total	12 153	12 420	12 779	65 467	74 797	75 260	5.4	6.0	5.9
Canada	Total	20 345	22 306	20 812	130 898	159 094	125 532	6.4	7.1	6.0
No. sampled		623	731	663						
% sampled		3.05	3.28	3.19						

Table 3
Estimated number of successful hunters of Common Snipe and of their retrieved kill, 1975-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
Nfld.	1	3 410	3 070	4 128	17 351	17 627	19 043	5.1	5.7	4.6
	2	213	129	183	612	504	1 935	2.9	3.9	10.6
	Total	3 623	3 199	4 311	17 963	18 131	20 978	5.0	5.7	4.9
PEI	Total	314	227	287	2 070	808	1 203	6.6	3.6	4.2
NS	1	496	560	382	3 374	2 442	1 862	6.8	4.4	4.9
	2	797	530	491	4 624	3 330	2 329	5.8	6.3	4.7
	Total	1 293	1 090	873	7 998	5 772	4 191	6.2	5.3	4.8
NB	1	291	292	297	1 106	798	1 089	3.8	2.7	3.7
	2	191	190	173	1 382	1 202	802	7.2	6.3	4.6
	Total	482	482	470	2 488	2 000	1 891	5.2	4.2	4.0
Que.	1	4 991	4 685	4 654	31 091	33 884	20 004	6.2	7.2	4.3
	2	1 027	1 601	982	7 752	13 414	6 964	7.6	8.4	7.1
	Total	6 018	6 286	5 636	38 843	47 298	26 968	6.5	7.5	4.8
Ont.	1	705	871	572	2 170	4 141	2 865	3.1	4.8	5.0
	2	1 322	2 621	2 227	6 218	9 110	7 212	4.7	3.5	3.2
	3	514	625	521	2 649	2 217	2 999	5.2	3.5	5.8
	Total	2 541	4 117	3 320	11 037	15 468	13 076	4.3	3.8	3.9
Man.	1	472	508	284	1 910	1 561	715	4.0	3.1	2.5
	2	184	98	204	1 179	413	1 057	6.4	4.2	5.2
	Total	656	606	488	3 089	1 974	1 772	4.7	3.3	3.6
Sask.	1	181	422	403	599	1 281	1 755	3.1	3.0	4.4
	2	112	144	99	660	536	432	5.9	3.7	4.4
	3	269	274	266	1 822	911	1 475	6.8	3.3	5.5
	Total	562	840	768	3 041	2 728	3 662	5.4	3.2	4.8
Alta.	1	351	397	600	1 327	1 532	2 863	3.8	3.9	4.8
	2	658	1 061	683	3 485	7 121	4 649	5.3	6.7	6.8
	Total	1 009	1 458	1 283	4 812	8 653	7 512	4.8	5.9	5.9
BC	1	300	130	228	1 413	484	1 024	4.7	3.7	4.5
	2	495	549	309	5 203	3 552	2 403	10.5	6.5	7.8
	Total	795	679	537	6 616	4 036	3 427	8.3	5.9	6.4
Canada	Total*	17 331	18 995	17 990	97 998	106 977	84 715	5.7	5.6	4.7
No. sampled		664	647	622						
% sampled		3.83	3.41	3.46						

*Total includes small sample of Common Snipe kill and successful hunters in Yukon and NWT.

Table 4
Estimated number of successful hunters of American Coot and of their retrieved kill, 1976-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/ successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
Que.	1	1 815	1 524	1 472	5 330	4 731	3 802	2.9	3.1	2.6
	2	122	361	155	294	2 208	280	2.4	6.1	1.8
	Total	1 937	1 885	1 627	5 624	6 939	4 082	2.9	3.7	2.5
Ont.	1	1 301	729	448	5 630	2 176	907	4.3	3.0	2.0
	2	1 431	1 991	574	5 323	5 333	1 289	3.7	2.7	2.2
	3	937	1 009	319	5 602	5 177	1 551	6.0	5.1	4.9
	Total	3 669	3 729	1 341	16 555	12 686	3 747	4.5	3.4	2.8
Man.	1	1 049	892	419	4 166	4 021	2 237	4.0	4.5	5.3
	2	226	111	183	1 551	277	1 103	6.8	2.5	6.0
	Total	1 275	1 003	602	5 717	4 299	3 340	4.5	4.3	5.5
Sask.	1	925	670	403	5 443	4 769	1 594	5.9	7.1	3.9
	2	487	382	244	2 752	2 314	1 564	5.7	6.1	6.4
	3	731	599	487	7 617	3 670	3 105	10.4	6.1	6.4
	Total	2 143	1 651	1 134	15 812	10 753	6 263	7.4	6.5	5.5
Alta.	1	606	462	513	3 835	1 083	2 347	6.3	2.3	4.6
	2	756	1 495	1 056	5 000	9 658	4 898	6.6	6.5	4.6
	Total	1 362	1 957	1 569	8 835	10 741	7 245	6.5	5.5	4.6
BC	1	137	167	248	258	1 158	1 556	1.9	6.9	6.3
	2	141	286	72	603	1 399	613	4.3	4.9	8.5
	Total	278	453	320	861	2 557	2 169	3.1	5.6	6.8
Canada	Total	10 671	10 686	6 642	53 407	47 980	26 945	5.0	4.5	4.1
No. sampled		327	288	216						
% sampled		3.06	2.70	3.25						

Table 5
Estimated number of successful hunters of Sandhill Crane and of their retrieved kill, 1975-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/ successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
Man.	Total	126	119	183	164	210	367	1.3	1.8	2.0
Sask.	1	419	121	—	1 045	270	*	2.5	2.2	—
	2	—	53	—	—	53	*	—	1.0	—
	3	1 158	437	—	4 955	1 102	*	4.3	2.5	—
	Total	1 577	611	—	6 000	1 425	*	3.8	2.3	—
	Total	1 704	731	183	6 165	1 636	367	3.6	2.2	2.0
No. sampled		58	25	7						
% sampled		3.40	3.42	3.83						

*No open season in 1977.

Table 6
Estimated number of successful hunters of Mourning Dove and of their retrieved kill, 1975-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/ successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
BC	1	217	106	282	546	903	2 858	2.5	8.5	10.1
	2	118	210	188	1 801	2 797	2 530	15.2	13.3	13.4
	Total	335	316	470	2 347	3 700	5 388	7.0	11.7	11.5
No. sampled		13	16	22						
% sampled		3.87	5.06	4.68						

Table 7
Estimated number of successful hunters of Band-tailed Pigeon and of their retrieved kill, 1975-77

Area	Survey stratum	Successful hunters			Birds killed			Average kill/ successful hunter		
		1975	1976	1977	1975	1976	1977	1975	1976	1977
BC	1	94	18	18	412	74	208	4.4	4.0	11.0
	2	660	527	671	4 784	3 212	4 527	7.2	6.1	6.7
	Total	754	545	689	5 196	2 286	4 735	6.9	6.0	6.9
No. sampled		35	20	33						
% sampled		4.64	3.67	4.78						

Table 8
 Estimated recreation activity provided by the hunting of
 birds other than waterfowl in 1977*

Area	Survey stratum	Total permit sales †	Active hunters	Successful hunters	Retrieved kill	Recreation days	S. bag (ave.)	D. bag (ave.)	R. days (ave.)
Nfld.	1	32 788	6 747	4 128	19 043	57 865	2.8	0.3	8.6
	2	3 400	468	183	1 935	3 257	4.1	0.6	7.0
	Total	36 188	7 215	4 311	20 978	61 122	2.9	0.3	8.5
PEI	Total	6 158	813	411	1 770	7 610	2.2	0.2	9.4
NS	1	9 986	2 579	773	4 968	24 194	1.9	0.2	9.4
	2	5 758	1 514	759	5 225	8 523	3.5	0.6	5.6
	Total	15 744	4 093	1 532	10 193	32 717	2.5	0.3	8.0
NB	1	9 785	1 945	1 079	10 238	12 246	5.3	0.8	6.3
	2	4 424	934	461	4 744	7 943	5.1	0.6	8.5
	Total	14 209	2 879	1 540	14 982	20 189	5.2	0.7	7.0
Que.	1	57 148	12 396	8 366	50 718	76 028	4.1	0.7	6.1
	2	15 680	2 891	1 699	10 945	22 646	3.8	0.5	7.8
	Total	72 828	15 287	10 065	61 663	98 674	4.0	0.6	6.5
Ont.	1	43 954	6 737	4 380	29 952	39 189	4.4	0.8	5.8
	2	84 298	16 165	9 027	53 003	93 879	3.3	0.6	5.8
	3	28 643	3 159	1 534	9 132	21 010	2.9	0.4	6.7
	Total	156 895	26 061	14 941	92 087	154 078	3.5	0.6	5.9
Man.	1	37 453	3 456	809	3 267	14 687	0.9	0.2	4.2
	2	8 985	868	366	2 214	4 045	2.6	0.5	4.7
	Total	46 438	4 324	1 175	5 481	18 732	1.3	0.3	4.3
Sask.	1	22 082	1 976	668	3 349	7 444	1.7	0.4	3.8
	2	11 853	956	315	1 997	3 501	2.1	0.6	3.7
	3	26 094	1 975	599	4 580	9 396	2.3	0.5	4.8
	Total	60 029	4 907	1 582	9 926	20 341	2.0	0.5	4.1
Alta.	1	31 644	2 723	976	5 210	13 407	1.9	0.4	4.9
	2	50 531	4 194	1 612	9 547	19 897	2.3	0.5	4.7
	Total	82 175	6 917	2 588	14 757	33 304	2.1	0.4	4.8
BC	1	13 060	1 033	646	5 647	5 259	5.5	1.1	5.1
	2	15 297	1 535	1 108	10 075	7 287	6.6	1.4	4.7
	Total	28 357	2 568	1 754	15 722	12 546	6.1	1.3	4.9
NWT	Total	902	416	22	67	3 024	0.2	—	7.3
Yukon	Total	607	48	24	48	155	1.0	0.3	3.2
Canada	Total	520 530	75 528	39 945	247 674	462 492	3.3	0.5	6.1

*S. bag, seasonal bag per average hunter; D. bag, daily bag per average hunter; R. days, recreation days per average hunter.

†Migratory game bird hunting permits.