



## 2019 SMALL GAME HUNTER MAIL SURVEY

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### INTRODUCTION

The Minnesota Department of Natural Resources (MNDNR), Division of Fish and Wildlife, Wildlife Research unit annually conducts a mail survey of small game hunters. The small game mail survey was initiated in 1976 as a means to gather small game harvest information, which is used to inform our constituency and guide decisions about hunting regulations and season structure.

### METHODS

A postcard survey (Figure 1) was mailed in early March following the close of the small game hunting season. Hunters who returned it within three weeks were eliminated from a follow-up mailing to non-respondents. The sampling frame consisted of individuals who purchased a small game hunting license (any type) for the 2019-20 small game hunting season (N=224,413). A stratified random sample (n=7,000, 3.1%), allocated proportionally by license type, was drawn from the MNDNR electronic licensing system (ELS) database. Small game license types included: Resident Senior Citizen, Resident Youth, Resident Adult, Resident Individual Sport, Resident Combination Sport, Resident Lifetime, Resident Lifetime Sport, Nonresident Youth, and Nonresident Adult. For analysis, license types were pooled into "Resident" (N=217,526) and "Nonresident" (N=6,887) (Figure 2). A free youth license was added to the sampling frame for 2010-13 but that license has since been discontinued. Estimates for those years have been recalculated without the youth license so harvest estimates and license sales are comparable among years. Also, beginning in 2017, license holders <18-yrs old at the time of the survey were excluded from the sampling frame but included in the overall expansion for sampling. This group comprised <3% of license holders and thus estimates should be comparable among years.

Recipients were asked if they hunted small game in 2019-20 and if not, they were instructed to return the survey. Respondents who hunted were asked: (1) total number of days they hunted small game, (2) number bagged by species, (3) number of days hunted by species and (4) the county in which they hunted most for each species listed. Returned surveys were checked for completeness, consistency, and biological practicability. Dual key-entry and quality control checks were used to minimize transcription errors. Data were tabulated using Viking Data Entry VDE+ software and analyzed using R programming language (R version 4.0.0 (2020-04-24); 2; R Core Team 2020).

### RESULTS

#### Survey Response and Overall License Sales Trends

Statewide (resident and nonresident) small game license sales and survey response rate are shown in Figure 2. Of the 7,000 mailed surveys, 126 surveys were returned as undeliverable; 3,435 surveys were completed and returned for an adjusted response rate of 50%. The percent of respondents who said they hunted or did not hunt is reported in Table 1. Overall, statewide

license sales (224,413 small game licenses) declined 0.7% from the previous year and were 14% below the 10-year average (259,736 licenses; Figure 2, Table 2). Nonresident small game license sales (6,887 licenses) increased 2.5% in 2019 and was slightly above the 10-year average (6,551 licenses; Table 3).

### **Estimates by Species**

Harvest trends for the four most sought-after small game species (ducks – all species, Canada geese, ruffed grouse, and ring-necked pheasants) in Minnesota since 2002 are shown in Figure 3 and discussed separately below. For most other species, estimated harvest (Table 2) and number of statewide hunters (Table 4) showed increases compared to 2018. Similarly, the estimated harvest per active hunter increased for most species except crow and gray partridge, which decreased slightly (Table 5).

#### *Ducks – all species*

The number of state duck stamps sold in 2019 (86,568 stamps) was similar to 2017 but still below the 10-year average (89,572 stamps; Table 2). The 2019 duck harvest (949,928 ducks) was significantly higher than 2018 (614,780 ducks; Table 2) or any harvest since the early 2000s. An estimated 84,801 hunters pursued ducks in 2019 compared to an average of 72,782 duck hunters in the previous 10 years (Table 4). The estimated harvest was 11.2 ducks/active hunter which was higher than the 10-year average of 9.2 ducks/active hunter (Table 5). Duck hunter success rate (85%) was similar to the 10-year average, but successful hunters harvested more ducks in 2019 than their 10-year average (13.1 vs. 10.9 ducks/successful hunter, respectively; Table 6). More non-residents (3,040) hunted ducks in 2019, an 81% increase from 2018, and the nonresident duck harvest (21,228 ducks) also increased 34% as a result (Table 3).

#### *Canada geese*

The 2019 Canada goose harvest (457,192 geese) was well-above the 10-year average (236,322 geese; Table 2) and was the highest harvest total in at least 25 years. An estimated 65,985 hunters pursued geese in 2019 compared to the 10-year average of 49,431 goose hunters (Table 4). The estimated harvest per active hunter was 6.9 geese/hunter which was higher than the 10-year average (4.8 geese/hunter; Table 5). The hunter success rate (81%) and the mean harvest per successful hunter (8.5 geese) were also higher than their respective 10-year averages (75%; 6.3 geese/successful hunter; Table 6). The number of nonresident goose hunters increased by 148% and their estimated goose harvest (15,060 geese; Table 3) exceeded the 2001 record high of 13,400 geese.

#### *Ruffed grouse*

The 2019 ruffed grouse harvest increased 15% from the 2018 estimate (225,200 vs. 195,515 grouse, respectively; Table 2) while the estimated number of grouse hunters (61,608; Table 4) was the lowest on record (spanning more than 40 years). The harvest per active hunter (3.7 grouse/hunter) was above the 2018 estimate (2.9 grouse/hunter) and close to the 10-year average (3.8 grouse/hunter; Table 5), and the mean harvest for successful hunters (5.2 grouse/successful hunter) was above the 2018 estimate (4.3 grouse/successful hunter) and the 10-year average (5.3 grouse/successful hunter; Table 6). The 2019 ruffed grouse hunter success rate was 71%, which was above 2018 (67%) but the same as the 10-year average (71%; Table 6). Although fewer nonresidents hunted ruffed grouse in 2019 (1,760 hunters) compared to the previous year (2,270 hunters), they harvested 51% more grouse (4,325 grouse in 2019 compared to 2,856 grouse in 2018; Table 3).

### *Ring-necked pheasants*

Pheasant stamp sales increased 3.8% in 2019 from the previous year (74,921 vs. 72,192 stamps, respectively) but were still 11% below the 10-year average (84,283 stamps; Table 2). The pheasant harvest increased 10% with 226,639 roosters harvested in 2019 compared to 205,395 roosters the previous year and was closer to the 10-year average (234,467 roosters; Table 2). The estimated number of pheasant hunters (52,854) decreased slightly from 2018 (55,861 hunters) and was still well-below the 10-year average of 68,251 hunters (Table 4). The estimated harvest per active hunter was 4.3 pheasants/hunter which was higher than 2018 (3.7 pheasants/hunter) and above the 10-year average (3.4 pheasants/hunter; Table 5). The mean harvest per successful hunter in 2019 was slightly higher than 2018 (6.0 vs. 5.4 roosters, respectively) and above the 10-year average (5.1 roosters; Table 6). Pheasant hunter success in 2019 (71%) was slightly higher than 2018 (68%) and the 10-year average (67%; Table 6). The number of nonresident pheasant hunters decreased 52% (1,120 hunters in 2019 vs. 2,350 hunters in 2018) and their harvest also declined 56% from last year (2,645 roosters in 2019 vs. 6,048 roosters in 2018; Table 3).

### **ACKNOWLEDGMENTS**

This project was funded in part by the Federal Aid in Wildlife Restoration Program. John Giudice analyzed the data and Tim Lyons provided comments on a previous draft of this report.

**Dear Small Game Hunter:**

You have been selected at random from among Minnesota's small game hunting license buyers to assist us in evaluating the 2019-2020 small game hunting season (**March 2019-February 2020**). We need information to estimate the season's harvest and to help set future small game seasons. Answer only for your Minnesota 2019 hunting experience.

**YOUR RESPONSE IS NEEDED  
EVEN IF YOU DID NOT HUNT OR HARVEST SMALL GAME**

Please fill out the attached questionnaire and mail as soon as possible. A reminder will be sent to individuals not returning the questionnaire within three weeks. No envelope or stamp is necessary; just tear along the perforation and drop into a mailbox.

THANK YOU FOR YOUR COOPERATION

Lou Cornicelli, Wildlife Research Program Manager  
Division of Fish and Wildlife  
Department of Natural Resources

**2019 Small Game Hunter Report**

1. Did you hunt small game, listed below, in Minnesota this year (March 2019 - Feb 2020)?  No  Yes (Please check box)
2. Indicate the **total number of days** spent hunting small game of all species listed below, in Minnesota. \_\_\_\_\_
3. For the species you hunted indicate your harvest, number of days hunted, and county in which you hunted most for each species, even if **None** were bagged. Report only game **you personally** bagged and retrieved in Minnesota. **Do not** include birds taken on shooting preserves or game farms.

	Number	Days	
	You bagged	Hunted	County
Ducks (all species)	01	_____	_____
Coots (mud hens)	50	_____	_____
Canada geese	40	_____	_____
Other geese	41	_____	_____
Snipe (jacksnipe)	51	_____	_____
Rails and gallinules	52	_____	_____
Crows	53	_____	_____
Woodcock	60	_____	_____
Mourning Dove	65	_____	_____
Pheasant	70	_____	_____
Ruffed grouse (Forest partridge)	71	_____	_____
Spruce grouse	72	_____	_____
Sharp-tailed grouse	73	_____	_____
Hungarian (Gray) partridge	74	_____	_____
Fox squirrel	89	_____	_____
Gray squirrel	90	_____	_____
Cottontail rabbit	91	_____	_____
Jackrabbit	92	_____	_____
Snowshoe hare	93	_____	_____
Badger	35	_____	_____
Coyote (brush wolf)	97	_____	_____
Gray fox	96	_____	_____
Raccoon	94	_____	_____
Red fox	95	_____	_____

Figure 1. Sample of Small Game Hunter survey card.

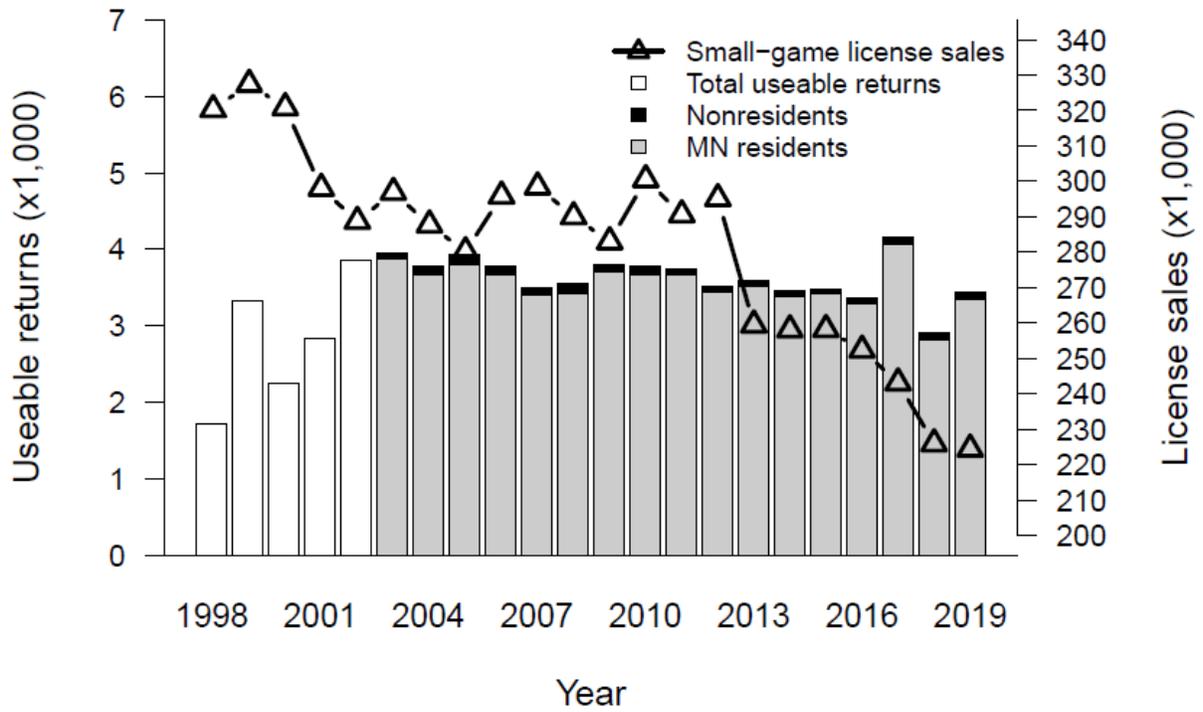


Figure 1. Number of Minnesota small game licenses sold and usable returned surveys, 1998-2019. Includes resident and non-resident licenses, and excludes duplicate and free licenses.

Harvest trends for top four small game species harvested in Minnesota, 2002-2019. Top left - Ducks (all species), Top right - Canada goose, Bottom left - Ring-necked pheasant, Bottom right - Ruffed grouse.

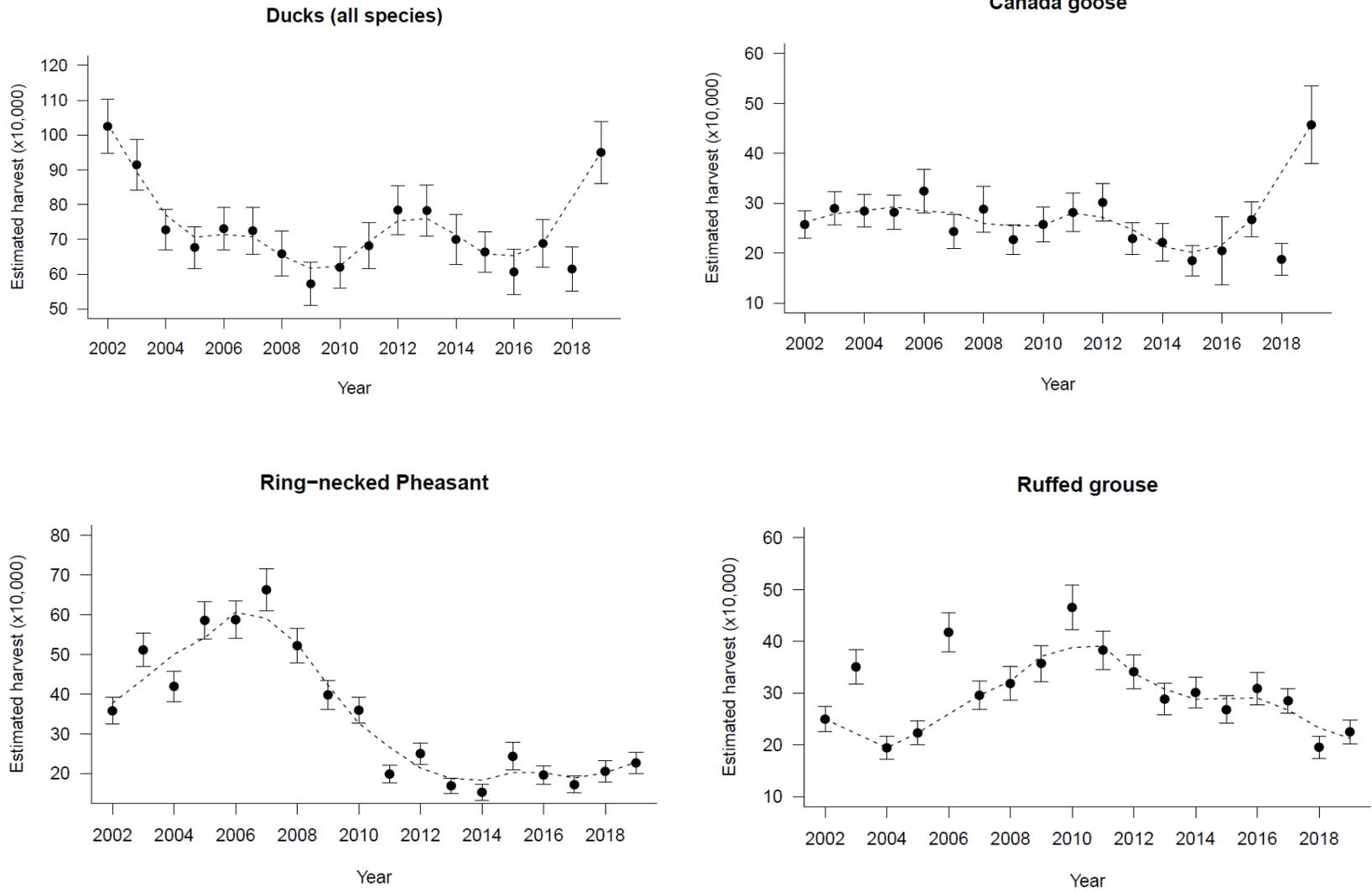


Figure 3. Harvest trends for top four small game species harvested in Minnesota, 2002-2019.

Table 1. Percent of respondents who hunted small game, 2009-10 through 2019-2020<sup>a</sup>.

		Returns from mail survey	Projections from license sales
2009-10	Hunted	2,850 (75%)	212,126
	Did not hunt	<u>952 (25%)</u>	<u>70,857</u>
		3,802 (100.0%)	282,983
2010-11	Hunted	2,824 (75%)	210,129
	Did not hunt	<u>953 (25%)</u>	<u>70,911</u>
		3,777 (100.0%)	281,040
2011-12	Hunted	2,761 (74%)	214,137
	Did not hunt	<u>987 (26%)</u>	<u>76,549</u>
		3,748 (100.0%)	290,686
2012-13	Hunted	2,669 (76%)	223,808
	Did not hunt	<u>851 (24%)</u>	<u>71,360</u>
		3,520 (100%)	295,168
2013-14	Hunted	2,586 (72%)	186,317
	Did not hunt	<u>1,003 (28%)</u>	<u>72,264</u>
		3,589 (100%)	258,581
2014-15	Hunted	2,476 (72%)	185,186
	Did not hunt	<u>975 (28%)</u>	<u>72,923</u>
		3,451 (100%)	258,109
2015-16	Hunted	2,505 (72%)	185,604
	Did not hunt	<u>980 (28%)</u>	<u>72,612</u>
		3,485 (100%)	258,216
2016-17	Hunted	2,426 (72%)	181,614
	Did not hunt	<u>945 (28%)</u>	<u>70,744</u>
		3,371 (100%)	252,358
2017-18	Hunted	2,768 (66%)	161,658
	Did not hunt	<u>1,395 (34%)</u>	<u>81,472</u>
		4,163 (100%)	243,130
2018-19	Hunted	2,000 (69%)	155,601
	Did not hunt	<u>904 (31%)</u>	<u>70,331</u>
		2,904 (100%)	225,932
2019-20	Hunted	2,524 (73%)	164,896
	Did not hunt	<u>911 (27%)</u>	<u>59,517</u>
		3,435 (100%)	224,413

<sup>a</sup> Includes resident and non-resident information. Excludes duplicates and free licenses (youth under 16, active-duty military and disabled veterans).

Table 2<sup>a</sup>. Statewide (resident and non-resident) small game hunting license sales and estimated hunter harvest, 2009-10 through 2019-20.

	2009-10	2010-11	2011-12 <sup>b</sup>	2012-13 <sup>b</sup>	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Small game license sales <sup>c</sup>	282,983	282,227	271,768	264,063	258,581	258,109	258,208	252,358	243,130	225,932	224,413
State duck stamp sales	89,942	88,069	89,681	90,052	93,412	94,265	92,176	88,905	86,258	82,955	86,568
Pheasant stamp sales	110,456	104,286	86,868	90,541	77,597	74,295	77,750	76,920	71,925	72,192	74,921
<b>Estimated harvest<sup>d</sup></b>											
Ducks	572,220	619,600	681,550	784,360	782,810	699,620	663,811	606,458	688,225	614,780	949,928
Canada geese	227,160	257,530	281,630	301,550	229,120	221,620	185,012	204,825	267,192	187,578	457,192
Other geese	6,250	3,940	4,800	8,820	7,130	6,510	4,448	7,188	8,062	1,557	11,566
American coot	14,810	26,340	10,520	16,720	15,130	17,050	15,861	21,564	19,976	10,663	15,680
Common snipe	1,490	1,940	1,390	1,420	2,310	520	223	1,948	1,928	1,401	1,764
Rails / gallinules	300	80	390	80	70	80	1,039	n.a. <sup>e</sup>	1,697	n.a. <sup>f</sup>	n.a. <sup>g</sup>
Crow	56,350	57,300	81,500	90,260	67,440	56,020	57,576	48,590	110,034	34,940	27,377
American woodcock	35,430	29,770	24,980	30,360	31,920	25,810	37,270	46,867	38,546	30,500	27,116
Mourning dove	109,940	100,230	74,000	92,760	80,480	103,370	96,552	58,618	88,021	54,623	89,834
Ring-necked pheasant	398,130	359,400	198,500	250,140	169,100	152,800	243,176	196,141	171,883	205,395	226,639
Ruffed grouse	357,420	465,580	383,150	341,320	288,410	301,190	267,997	308,955	285,180	195,515	225,200
Spruce grouse	19,130	14,960	18,640	11,980	13,110	14,590	9,856	15,348	12,032	7,081	7,319
Sharp-tailed grouse	9,530	16,820	11,600	10,650	7,130	8,530	7,929	8,610	11,097	5,681	6,273
Gray partridge	8,040	9,150	3,950	5,160	2,380	3,590	3,187	3,745	4,557	3,893	3,399
Gray squirrel	109,790	138,920	115,840	126,110	84,010	91,250	96,400	95,374	105,712	71,888	101,069
Fox squirrel	53,970	61,690	48,100	49,750	33,940	40,840	46,383	39,603	41,994	28,398	35,672
Eastern cottontail	57,760	53,870	34,640	64,140	40,710	38,820	41,716	49,187	47,135	32,057	33,647
White-tailed jack rabbit	2,610	7,220	5,180	1,910	1,870	1,050	742	1,124	585	623	393
Snowshoe hare	5,360	6,770	8,430	16,800	6,200	7,860	6,374	5,990	10,864	3,191	3,855
Raccoon	66,700	77,690	44,080	48,340	46,690	52,800	38,387	22,312	68,685	29,332	33,908
Red fox	10,270	8,780	7,120	7,990	5,190	3,220	3,780	2,247	9,229	1,868	5,358
Gray fox	1,860	2,380	1,160	250	430	600	816	225	3,798	78	1,438
Coyote	46,070	44,050	33,410	51,990	23,630	17,430	35,123	24,481	56,184	22,408	41,095
Badger	750	600	230	330	290	80	149	375	760	78	66

<sup>a</sup> Harvest estimates in this table, and the number of hunters and mean take per hunter in Table 4, are calculated from different questions on the survey form. The sample used in calculations differs from one estimator to the next. This is because some respondents give specific answers to one question but not to a related one. A formula is used to calculate the total estimated take for each species that appear in this table. In most years the formula produces results rather close to those obtained by multiplying the average take per hunter times the number of hunters. However, in other years results of the two methods are quite divergent, perhaps as a result of an unusual sample. This is being investigated further, and as a result, numbers may change somewhat in future reports. The most current report of survey findings will have the best data available at that time.

<sup>b</sup> Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

<sup>c</sup> Includes all types of small game licenses. Duplicate and free licenses not included.

<sup>d</sup> Estimates based upon response of hunters to questionnaires.

<sup>e</sup> Only 1 respondent indicated they hunted rails and they reported 0 bagged.

<sup>f</sup> No respondents indicated they hunted rails.

<sup>g</sup> Only 3 respondents indicated they hunted rails and they reported 0 bagged.

Table 3. Mail survey results of nonresident small game hunters, 2009-10 through 2019-20.

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
<b>Nonresident licenses issued</b> <sup>a</sup>	6,934	6,695	6,312	6,456	6,031	6,056	6,755	6,701	6,854	6,718	6,887
<b>Questionnaires:</b>											
Number mailed	196	163	169	166	162	165	169	190	200	200	213
Number not delivered	10	6	11	11	10	12	5	15	19	16	18
Number (percent) returned	105 (54)	107 (66)	91 (54)	71 (43)	81 (50)	70 (42)	73 (43)	78 (41)	99 (50)	80 (40)	86 (40)
<b>Estimated nonresidents and (percent) of all licensed nonresidents hunting:</b>											
Ducks	1,849 (27)	2,003 (29.9)	2,430 (38.5)	2,360 (36.6)	2,010 (33.3)	2,340 (38.6)	1,850 (27.4)	2,320 (34.6)	2,350 (34.3)	1,680 (25)	3,040 (44.2)
Canada goose	726 (10)	1,314 (19.6)	1,620 (25.6)	1,360 (21.1)	1,270 (21.0)	1,300 (21.4)	650 (9.6)	770 (11.5)	1,730 (25.3)	1,260 (18.8)	3,120 (45.3)
Ruffed grouse	1,915 (28)	2,503 (37.4)	1,460 (23.1)	2,820 (43.7)	2,010 (33.3)	2,600 (42.9)	2,870 (42.5)	3,520 (52.6)	2,280 (33.3)	2,270 (33.8)	1,760 (25.6)
Ring-necked pheasant	1,519 (22)	2,003 (29.9)	1,780 (28.2)	1,910 (29.6)	1,420 (23.5)	1,380 (22.9)	1,480 (21.9)	1,550 (23.1)	1,520 (22.2)	2,350 (35)	1,120 (16.3)
Raccoon <sup>b,c</sup>	0 (0)	63 (0.9)	0 (0)	0 (0)	80 (1.2)	0 (0)	0 (0)	170 (2.6)	70 (1.0)	0	0
<b>Estimated nonresident take:</b>											
Ducks	11,755	17,055	13,840	20,380	20,410	13,060	16,863	17,701	15,717	15,792	21,228
Canada goose	3,698	6,334	4,050	2,270	3,650	2,680	1,484	1,462	6,994	2,940	15,060
Ruffed grouse	8,651	12,600	8,980	10,090	4,990	9,090	13,805	11,772	6,994	2,856	4,325
Ring-necked pheasant	6,274	8,076	4,860	6,820	3,430	3,720	6,581	4,040	7,274	6,048	2,645
Raccoon <sup>b,c</sup>	0	593	0	0	1,280	0	0	172	770	0	0

<sup>a</sup> Excludes duplicate licenses and nonresident shooting preserve licenses.

<sup>b</sup> In 2009, 2011, 2012, 2014, 2015, 2018 and 2019 no non-residents reported hunting/harvesting raccoons.

<sup>c</sup> In 2013 and 2017 only one non-resident reported hunting/harvesting raccoons. The extrapolated estimate is not reliable.

Table 4. Estimated number of statewide hunters by species, 2009-10 through 2019-20.

	2009-10	2010-11	2011-12 <sup>a</sup>	2012-13 <sup>a</sup>	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Ducks	77,480	72,770	76,090	80,770	76,950	75,170	76,243	67,301	63,426	61,618	84,801
Canada goose	55,520	53,430	57,220	58,900	51,160	48,240	45,938	40,950	44,678	38,278	65,985
Other geese	3,280	3,650	2,710	3,830	2,810	2,770	2,520	2,321	2,512	1,323	3,071
American coot	4,090	4,610	3,480	3,990	3,820	4,410	3,261	3,519	3,446	3,113	3,332
Common snipe	1,340	1,340	1,160	1,160	1,370	820	667	899	1,285	934	1,176
Rails / gallinules	370	220	230	500	140	300	445	75	234	n.a. <sup>b</sup>	196
Crow	10,640	9,380	10,360	11,480	8,570	7,400	7,410	7,412	11,564	4,669	5,227
American woodcock	11,760	10,790	9,430	13,310	12,030	9,650	12,596	12,877	12,615	10,737	9,866
Mourning dove	10,500	10,640	8,970	9,230	10,380	9,950	8,966	7,636	8,878	6,536	10,780
Ring-necked pheasant	99,440	89,140	72,840	76,950	62,110	57,590	63,350	59,965	45,263	55,861	52,854
Ruffed grouse	87,230	92,490	88,620	91,260	81,130	83,020	79,058	82,348	80,654	67,765	61,608
Spruce grouse	9,750	8,860	10,210	7,400	10,810	10,320	8,225	9,658	8,819	7,314	6,142
Sharp-tailed grouse	5,510	7,140	6,190	6,570	6,700	5,460	5,113	6,214	5,198	4,202	4,443
Gray partridge	4,240	3,720	2,400	3,080	2,450	2,540	2,075	2,097	2,103	1,479	2,614
Gray squirrel	22,260	23,740	23,280	24,710	21,690	21,240	22,303	23,806	20,967	17,972	18,097
Fox squirrel	13,180	15,630	12,060	14,220	12,030	12,790	13,411	13,625	11,798	9,803	10,192
Eastern cottontail	16,300	15,030	12,300	16,390	14,550	13,160	11,633	16,096	14,368	12,449	11,368
White-tailed jackrabbit	1,790	2,230	2,320	1,750	1,220	1,350	890	1,423	643	623	523
Snowshoe hare	3,500	3,800	3,250	4,820	3,750	4,560	4,076	3,369	4,439	2,101	1,960
Raccoon	7,300	8,260	8,040	8,570	7,640	6,880	5,632	5,840	8,936	4,746	5,880
Red fox	7,820	7,220	6,030	5,820	5,910	4,560	4,150	3,594	5,549	3,035	4,247
Gray fox	1,790	1,640	1,390	1,580	1,730	1,050	1,186	899	2,103	623	1,176
Coyote	19,280	19,420	17,940	21,050	17,650	17,580	18,302	15,871	22,193	14,394	16,464
Badger	370	600	310	330	500	80	297	375	701	234	66

<sup>a</sup> Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

<sup>b</sup> No respondents indicated they hunted rails.

Table 5. Estimated harvest per active hunter by species, 2009-10 through 2019-20.

	2009-10	2010-11	2011-12 <sup>a</sup>	2012-13 <sup>a</sup>	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Ducks	7.4	8.5	9.0	9.7	10.2	9.3	8.7	9.0	10.9	10.0	11.2
Canada geese	4.1	4.8	4.9	5.1	4.5	4.6	4.0	5.0	6.0	4.9	6.9
Other geese	1.9	1.1	1.8	2.3	2.5	2.4	1.8	3.1	3.2	1.2	3.8
American coot	3.6	5.7	3.0	4.2	4.0	3.9	4.9	6.1	5.8	3.4	4.7
Common snipe	1.1	1.4	1.2	1.2	1.7	0.6	0.3	2.2	1.5	1.5	1.5
Rails/gallinules	0.8	0.3	1.7	0.2	0.5	0.2	2.3	n.a. <sup>b</sup>	7.2	n.a. <sup>c</sup>	n.a. <sup>d</sup>
Crow	5.3	6.1	7.9	7.9	7.9	7.6	7.8	6.6	9.5	7.5	5.2
American woodcock	3.0	2.8	2.6	2.3	2.7	2.7	3.0	3.6	3.1	2.8	2.7
Mourning dove	10.5	9.4	8.2	10.0	7.8	10.4	10.8	7.7	9.9	8.4	8.3
Ring-necked pheasant	4.0	4.0	2.7	3.3	2.7	2.7	3.8	3.3	3.8	3.7	4.3
Ruffed grouse	4.1	5.0	4.3	3.7	3.6	3.6	3.4	3.8	3.5	2.9	3.7
Spruce grouse	2.0	1.7	1.8	1.6	1.2	1.4	1.2	1.6	1.4	1.0	1.2
Sharp-tailed grouse	1.7	2.4	1.9	1.6	1.1	1.6	1.6	1.4	2.1	1.4	1.4
Gray partridge	1.9	2.5	1.6	1.7	1.0	1.4	1.5	1.8	2.2	2.6	1.3
Gray squirrel	4.9	5.9	5.0	5.1	3.9	4.3	4.3	4.0	5.0	4.0	5.6
Fox squirrel	4.1	3.9	4.0	3.5	2.8	3.2	3.5	2.9	3.6	2.9	3.5
Eastern cottontail	3.5	3.6	2.8	3.9	2.8	2.9	3.6	3.1	3.3	2.6	3.0
White-tailed jackrabbit	1.5	3.2	2.2	1.1	1.5	0.8	0.8	0.8	0.9	1.0	0.8
Snowshoe hare	1.5	1.8	2.6	3.5	1.7	1.7	1.6	1.8	2.4	1.5	2.0
Raccoon	9.1	9.4	5.5	5.6	6.1	7.7	6.8	3.8	7.7	6.2	5.8
Red fox	1.3	1.2	1.2	1.4	0.9	0.7	0.9	0.6	1.7	0.6	1.3
Gray fox	1.0	1.5	0.8	0.2	0.2	0.6	0.7	0.2	1.8	0.1	1.2
Coyote	2.4	2.3	1.9	2.5	1.3	1.0	1.9	1.5	2.5	1.6	2.5
Badger	2.0	1.0	0.8	1.0	0.6	1.0	0.5	1.0	1.1	0.3	1.0

<sup>a</sup> Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

<sup>b</sup> Only 1 respondent indicated they hunted rails and they reported 0 bagged.

<sup>c</sup> No respondents indicated they hunted rails.

<sup>d</sup> Only 3 respondents indicated they hunted rails and they reported 0 bagged.

Table 6. Mean harvest for successful hunters and hunter success rates (%), 2009-10 through 2019-20.

	2009-10	2010-11	2011-12 <sup>a</sup>	2012-13 <sup>a</sup>	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Ducks	9.2(80)	10.3 (83)	10.5 (85)	11.1 (87)	11.7 (87)	11.0 (85)	10.6 (82)	10.9 (83)	12.5 (87)	11.3 (89)	13.1 (85)
Canada geese	5.6 (73)	6.1 (80)	6.3 (78)	6.5 (78)	5.8 (77)	6.6 (69)	5.7 (71)	7.1 (70)	7.4 (81)	6.3 (77)	8.5 (81)
Other geese	3.5 (55)	2.6 (41)	3.4 (51)	4.4 (52)	5.5 (46)	4.3 (54)	4.0 (44)	8.0 (39)	8.6 (37)	3.3 (35)	8.0 (47)
American coot	5.5 (65)	7.2 (79)	4.4 (69)	5.2 (81)	5.2 (75)	5.0 (78)	6.7 (73)	7.6 (81)	8.1 (71)	5.3 (65)	7.5 (63)
Common snipe	1.8 (61)	2.2 (67)	1.6 (73)	2.1 (57)	2.1 (79)	1.4 (45)	1.0 (33)	3.2 (67)	2.5 (59)	2.6 (58)	1.9 (78)
Rails / gallinules	1.3 (60)	1.0 (33)	5.0 (33)	1.0 (17)	1.0 (50)	1.0 (25)	3.5 (67)	n.a. <sup>b</sup>	14.5 (50)	n.a. <sup>c</sup>	n.a. <sup>d</sup>
Crow	5.9 (90)	6.7 (91)	8.9 (88)	8.8 (90)	9.4 (84)	8.7 (87)	8.3 (94)	7.6 (86)	11.0 (86)	9.4 (80)	6.1 (86)
American woodcock	4.1 (73)	3.6 (76)	3.8 (70)	3.4 (68)	3.8 (70)	4.2 (64)	4.4 (67)	5.4 (67)	4.5 (69)	4.4 (65)	3.8 (72)
Mourning dove	11.4 (92)	11.1 (85)	10.5 (78)	12.5 (80)	9.2 (85)	12.5 (83)	13.3 (81)	10.3 (75)	11.6 (86)	10.2 (82)	10.3 (81)
Ring-necked pheasant	5.8 (69)	5.6 (72)	4.4 (63)	4.9 (67)	4.2 (64)	4.3 (61)	5.4 (71)	5.0 (65)	5.5 (69)	5.4 (68)	6.0 (71)
Ruffed grouse	5.5 (74)	6.6 (76)	5.9 (74)	5.2 (71)	5.2 (68)	5.1 (71)	4.9 (69)	5.3 (70)	4.8 (73)	4.3 (67)	5.2 (71)
Spruce grouse	3.1 (64)	2.4 (71)	3.0 (61)	2.8 (57)	2.4 (51)	2.5 (56)	2.4 (50)	2.7 (58)	2.4 (57)	1.9 (50)	2.3 (51)
Sharp-tailed grouse	3.0 (58)	3.5 (68)	3.1 (61)	3.4 (48)	3.2 (33)	3.8 (41)	3.1 (51)	2.9 (47)	4.0 (53)	3.0 (44)	2.5 (56)
Gray partridge	3.3 (58)	4.2 (58)	3.2 (52)	3.1 (54)	2.5 (38)	4.4 (32)	2.7 (57)	3.3 (54)	4.3 (50)	4.5 (58)	3.7 (35)
Gray squirrel	5.8 (86)	7.0 (84)	6.3 (78)	6.3 (80)	5.0 (77)	5.5 (78)	5.3 (81)	5.1 (79)	5.7 (89)	4.8 (83)	6.2 (90)
Fox squirrel	4.8 (85)	4.6 (86)	5.4 (74)	4.4 (80)	3.7 (75)	4.3 (75)	4.9 (71)	3.8 (76)	4.3 (83)	3.6 (81)	4.4 (80)
Eastern cottontail	4.3 (83)	4.4 (81)	4.1 (69)	5.5 (71)	3.5 (79)	4.1 (73)	5.0 (72)	4.0 (77)	4.0 (83)	3.6 (71)	3.6 (83)
White-tailed jackrabbit	2.1 (71)	4.6 (70)	3.5 (63)	2.3 (48)	5.2 (29)	1.8 (44)	2.0 (42)	1.9 (42)	1.7 (55)	1.6 (62)	1.5 (50)
Snowshoe hare	2.6 (60)	2.6 (69)	3.8 (69)	5.0 (69)	2.9 (58)	3.0 (57)	3.0 (53)	3.2 (56)	3.9 (63)	2.7 (56)	2.8 (70)
Raccoon	9.6 (95)	10.0 (94)	6.1 (89)	6.1 (93)	6.9 (89)	8.5 (90)	7.7 (88)	4.1 (92)	8.2 (93)	7.4 (84)	6.2 (93)
Red fox	2.4 (54)	2.3 (54)	2.4 (49)	2.7 (50)	2.0 (44)	1.7 (41)	1.6 (57)	1.4 (44)	2.6 (63)	1.2 (51)	2.2 (58)
Gray fox	2.5 (42)	4.0 (36)	2.5 (33)	1.0 (16)	1.5 (17)	2.0 (29)	1.4 (50)	1.0 (25)	2.8 (64)	1.0 (12)	3.1 (39)
Coyote	4.6 (52)	4.0 (57)	4.0 (47)	5.1 (49)	2.7 (50)	2.4 (41)	3.4 (57)	3.1 (49)	4.3 (59)	2.9 (53)	4.3 (58)
Badger	2.5 (80)	1.0 (100)	1.5 (50)	1.0 (100)	1.0 (57)	1.0 (100)	1.0 (50)	1.2 (80)	1.6 (67)	1.0 (33)	1.0 (100)

<sup>a</sup> Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

<sup>b</sup> Only 1 respondent indicated they hunted rails and they reported 0 bagged.

<sup>c</sup> No respondents indicated they hunted rails.

<sup>d</sup> Only 3 respondents indicated they hunted rails and they reported 0 bagged.