



2015 SMALL GAME HUNTER MAIL SURVEY

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INTRODUCTION

The Minnesota Department of Natural Resources (DNR), 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 (Fig. 1) was mailed in early March and respondents who returned it within three weeks were eliminated from follow-up mailings. The sampling frame consisted of individuals who purchased a small game hunting license (any type) for the 2015-16 small game hunting season (N=258,216). A stratified random sample (n=7,000, 2.7%), allocated proportionally by license type, was drawn from the Minnesota DNR electronic database. Small game license types included the following: 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= 251,453) and "Nonresident" (N= 6,763) (Fig. 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 that harvest estimates and license sales are comparable among years. The percent of respondents who said they hunted or did not hunt is reported in Table 1. License sales and survey response rate are shown in Figure 2.

Recipients were asked if they hunted small game in 2015-16 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 was tabulated using Viking Data Entry VDE+ software and analyzed using R programming language (ver. 3.1.2 (2014-10-31); R Development Core Team [RDCT] 2014).

RESULTS

Of the 7,000 mailed surveys, 174 surveys were undeliverable; 3,485 surveys were returned for an adjusted response rate of 51%. Summaries of the top four small game species (ducks- all species, Canada geese, pheasants, and ruffed grouse) harvested in Minnesota are shown in Figure 3. License sales were fairly similar to the previous year (Fig. 2, Table 5). Estimated number of hunters increased slightly for woodcock and pheasant, remained stable for ducks, but declined for most other species (Table 2). With the exception of pheasant (41% increase), the estimated harvest per active hunter remained relatively stable for all species (Table 3). Mean harvest for successful hunters and hunter success rates also showed no statistically significant changes (Table 4). License sales and estimated hunter harvest are presented in Table 5. Estimated ring-necked pheasant harvest showed an increase to 243,176 birds, similar to 2012 levels. Ruffed grouse harvest decreased from 301,190 in 2014 to 267,997 in 2015. Duck harvest declined from 699,620 in 2014 to 663,811 in 2015 with hunters taking 8.7 ducks/active hunter compared to 9.3 in 2014. Canada goose harvest continued its downward slide to an estimated 185,012 birds harvested. Although nonresident license sales increased, the number

of non-resident duck and goose hunters declined last year (Table 6). However, the harvests for ducks, grouse and pheasants were up. Once again, no nonresident hunters reported hunting or harvesting raccoons.

This project was funded in part by the Wildlife Restoration Program.

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 2015-2016 small game hunting season (**March 2015-February 2016**). We need information to estimate the season's harvest and to help set future small game seasons. Answer only for your Minnesota 2015 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

2015 Small Game Hunter Report

1. Did you hunt small game, listed below, in Minnesota this year (March 2015 - Feb 2016)? ☐ 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 You bagged	Days 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		
Pheasants	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.

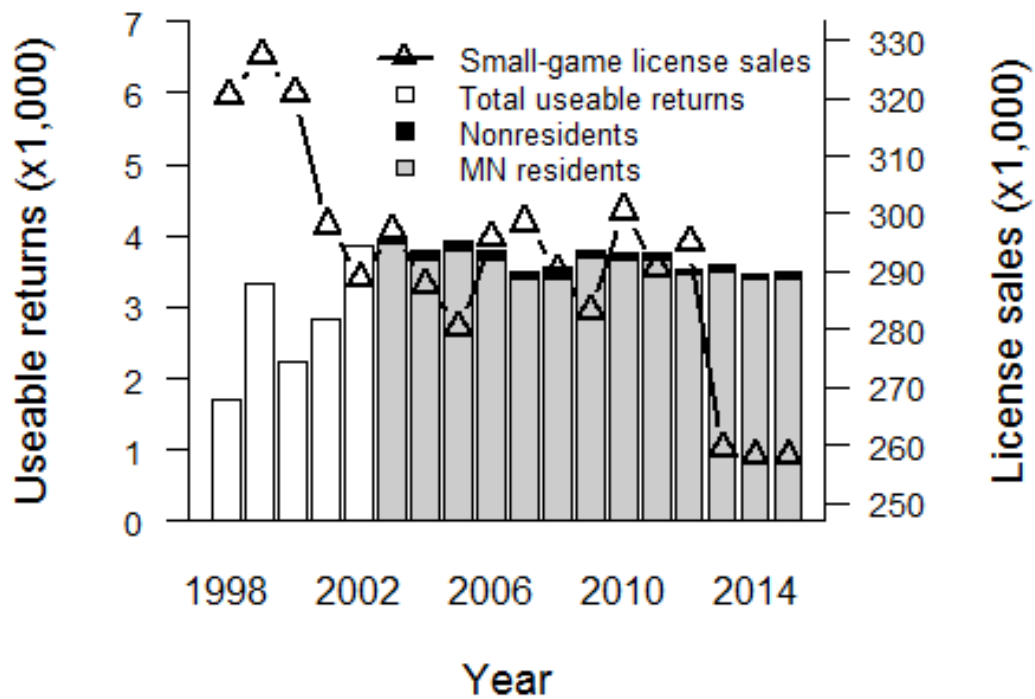


Figure 1. Number of Minnesota small game licenses sold and usable returned surveys, 1998-2015. Includes resident and non-resident licenses, and excludes duplicate and free licenses.

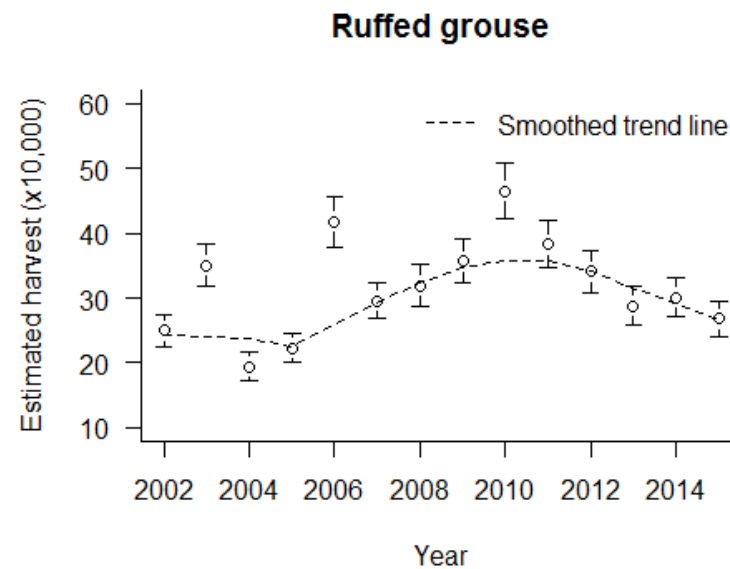
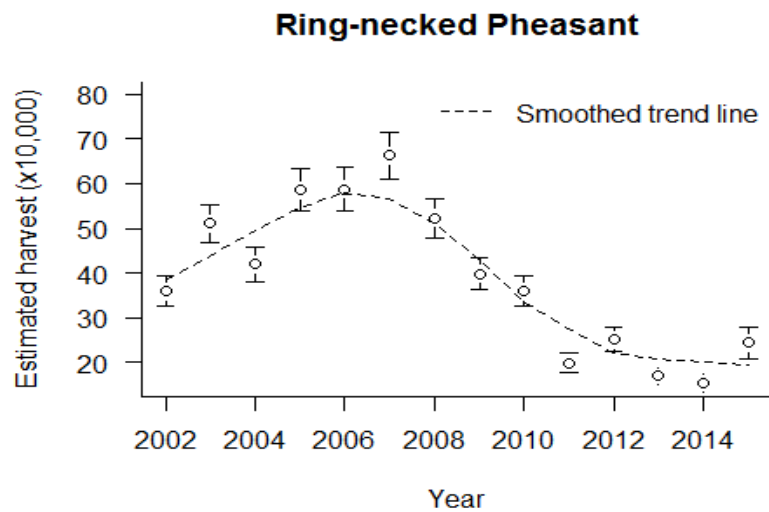
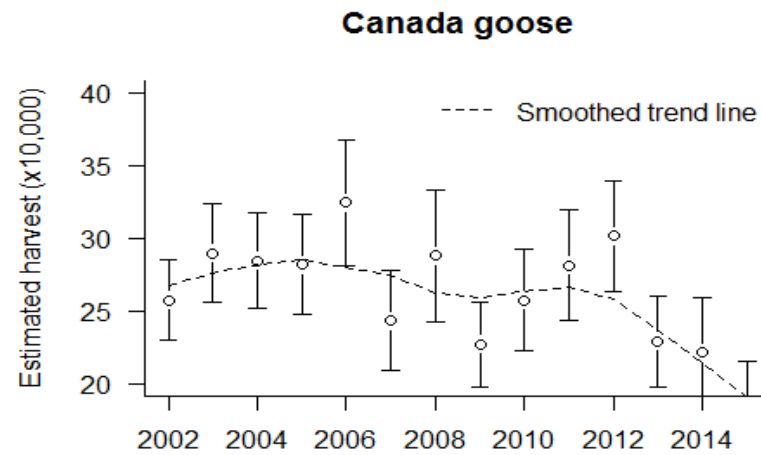
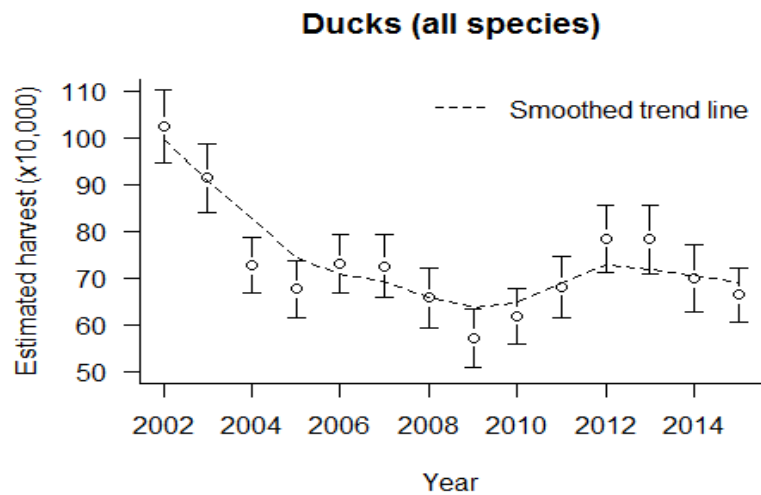


Figure 2. Summary of top four small game species harvested in Minnesota, 2002-2015.

Table 1. Percent of respondents who hunted small game, 2005-06 through 2015-2016 ^a.

		Returns from mail survey	Projections from license sales
2005-06	Hunted Did not hunt	3,035 (77%) <u>900 (23%)</u> 3,935 (100.0%)	216,000 <u>64,156</u> 280,156
2006-07	Hunted Did not hunt	2,994 (79%) <u>795 (21%)</u> 3,789 (100.0%)	233,759 <u>62,139</u> 295,898
2007-08	Hunted Did not hunt	2,894 (78%) <u>822 (22%)</u> 3,716 (100.0%)	232,505 <u>65,961</u> 298,467
2008-09	Hunted Did not hunt	2,678 (75%) <u>873 (25%)</u> 3,551 (100.0%)	218,753 <u>71,311</u> 290,064
2009-10	Hunted Did not hunt	2,850 (75%) <u>952 (25%)</u> 3,802 (100.0%)	212,126 <u>70,857</u> 282,983
2010-11	Hunted Did not hunt	2,824 (75%) <u>953 (25%)</u> 3,777 (100.0%)	210,129 <u>70,911</u> 281,040
2011-12	Hunted Did not hunt	2,761 (74%) <u>987 (26%)</u> 3,748 (100.0%)	214,137 <u>76,549</u> 290,686
2012-13	Hunted Did not hunt	2,669 (76%) <u>851 (24%)</u> 3,520 (100%)	223,808 <u>71,360</u> 295,168
2013-14	Hunted Did not hunt	2,586 (72%) <u>1,003 (28%)</u> 3,589 (100%)	186,317 <u>72,264</u> 258,581
2014-15	Hunted Did not hunt	2,476 (72%) <u>975 (28%)</u> 3,451 (100%)	185,186 <u>72,923</u> 258,109
2015-16	Hunted Did not hunt	2,505 (72%) <u>980 (28%)</u> 3,485 (100%)	185,604 <u>72,612</u> 258,216

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

Table 2. Estimated number of statewide hunters by species, 2005-06 through 2015-16.

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 ^β	2012-13 ^β	2013-14	2014-15	2015-16
Ducks	92,634	87,075	87,468	81,358	77,480	72,770	76,090	80,770	76,950	75,170	76,243
Canada goose	69,416	66,224	62,649	59,222	55,520	53,430	57,220	58,900	51,160	48,240	45,938
Other geese	4,628	4,529	3,695	4,411	3,280	3,650	2,710	3,830	2,810	2,770	2,520
American coot	4,129	4,529	3,454	4,166	4,090	4,610	3,480	3,990	3,820	4,410	3,261
Common snipe	1,210	2,187	1,928	1,797	1,340	1,340	1,160	1,160	1,370	820	667
Rails / gallinules	0	547	482	408	370	220	230	500	140	300	445
Crow *	11,890	10,777	8,514	10,047	10,640	9,380	10,360	11,480	8,570	7,400	7,410
American woodcock	11,035	13,510	10,843	12,171	11,760	10,790	9,430	13,310	12,030	9,650	12,596
Mourning dove ^γ	11,107	12,886	13,172	11,599	10,500	10,640	8,970	9,230	10,380	9,950	8,966
Ring-necked pheasant	110,852	118,703	118,311	106,763	99,440	89,140	72,840	76,950	62,110	57,590	63,350
Ruffed grouse	76,037	91,682	90,600	86,505	87,230	92,490	88,620	91,260	81,130	83,020	79,058
Spruce grouse	7,048	9,840	10,602	8,332	9,750	8,860	10,210	7,400	10,810	10,320	8,225
Sharp-tailed grouse	4,913	6,560	6,827	6,616	5,510	7,140	6,190	6,570	6,700	5,460	5,113
Gray partridge	6,265	6,013	6,667	4,411	4,240	3,720	2,400	3,080	2,450	2,540	2,075
Gray squirrel	24,563	25,459	25,863	22,382	22,260	23,740	23,280	24,710	21,690	21,240	22,303
Fox squirrel	15,094	15,619	14,779	13,233	13,180	15,630	12,060	14,220	12,030	12,790	13,411
Eastern cottontail	20,148	20,070	19,598	17,644	16,300	15,030	12,300	16,390	14,550	13,160	11,633
White-tailed jackrabbit	2,065	2,577	2,891	2,451	1,790	2,230	2,320	1,750	1,220	1,350	890
Snowshoe hare	3,346	5,545	4,257	4,574	3,500	3,800	3,250	4,820	3,750	4,560	4,076
Raccoon (Sept - Feb)	4,841	8,747	9,558	7,433	7,300	8,260	8,040	8,570	7,640	6,880	5,632
Raccoon [‡] (March -Aug)	2,705										
Red fox (Sept -Feb)	5,980	6,248	5,783	5,800	7,820	7,220	6,030	5,820	5,910	4,560	4,150
Red fox [‡] (March -Aug)	1,282										
Gray fox	997	2,030	1,928	1,879	1,790	1,640	1,390	1,580	1,730	1,050	1,186
Coyote	18,653	17,024	16,064	19,278	19,280	19,420	17,940	21,050	17,650	17,580	18,302
Badger	783	859	482	490	370	600	310	330	500	80	297

* Crow season added in 1989. [‡] Raccoon and red fox season continuous May 1994 thru March 15, 2006. ^γ Mourning dove season added 2004. ^β Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

Table 3. Estimated harvest per active hunter by species, 2005-06 through 2015-16.

	Estimated harvest per hunter										
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 ^β	2012-13 ^β	2013-14	2014-15	2015-16
Ducks	7.3	8.4	8.1	8.1	7.4	8.5	9.0	9.7	10.2	9.3	8.7
Canada geese	4.1	4.9	3.9	4.9	4.1	4.8	4.9	5.1	4.5	4.6	4.0
Other geese	1.9	1.5	2.1	3.2	1.9	1.1	1.8	2.3	2.5	2.4	1.8
American coot	3.9	5.6	4.6	5.7	3.6	5.7	3.0	4.2	4.0	3.9	4.9
Common snipe	4.4	1.9	2.0	1.2	1.1	1.4	1.2	1.2	1.7	0.6	0.3
Rails/gallinules	0	2.4	5.3	0.4	0.8	0.3	1.7	0.2	0.5	0.2	2.3
Crow*	7.8	6.4	6.4	5.2	5.3	6.1	7.9	7.9	7.9	7.6	7.8
American woodcock	2.5	3.2	2.6	2.4	3.0	2.8	2.6	2.3	2.7	2.7	3.0
Mourning dove ^γ	7	6.7	7.7	11.4	10.5	9.4	8.2	10.0	7.8	10.4	10.8
Ring-necked pheasant	5.3	4.9	5.5	4.9	4.0	4.0	2.7	3.3	2.7	2.7	3.8
Ruffed grouse	2.9	4.5	3.2	3.7	4.1	5.0	4.3	3.7	3.6	3.6	3.4
Spruce grouse	1.4	2.7	1.7	2.0	2.0	1.7	1.8	1.6	1.2	1.4	1.2
Sharp-tailed grouse	1.3	1.8	2.0	2.1	1.7	2.4	1.9	1.6	1.1	1.6	1.6
Gray partridge	2.6	1.9	1.6	2.2	1.9	2.5	1.6	1.7	1.0	1.4	1.5
Gray squirrel	5.0	5.5	5.2	5.4	4.9	5.9	5.0	5.1	3.9	4.3	4.3
Fox squirrel	4.1	4.2	3.2	3.9	4.1	3.9	4.0	3.5	2.8	3.2	3.5
Eastern cottontail	4.5	3.9	4.0	4.5	3.5	3.6	2.8	3.9	2.8	2.9	3.6
White-tailed jackrabbit	2.7	1.6	3.3	2.6	1.5	3.2	2.2	1.1	1.5	0.8	0.8
Snowshoe hare	3.1	3.0	1.4	2.5	1.5	1.8	2.6	3.5	1.7	1.7	1.6
Raccoon (Sept - Feb)	6.0	7.2	4.9	9.7	9.1	9.4	5.5	5.6	6.1	7.7	6.8
Raccoon [‡] (March -Aug)	2.7										
Red fox (Sept -Feb)	1.7	1.3	1.1	0.8	1.3	1.2	1.2	1.4	0.9	0.7	0.9
Red fox [‡] (March -Aug)	0.9										
Gray fox	0.9	1.8	0.3	1.3	1.0	1.5	0.8	0.2	0.2	0.6	0.7
Coyote	2.1	1.2	2.1	2.4	2.4	2.3	1.9	2.5	1.3	1.0	1.9
Badger	1.2	1.3	0.3	1.0	2.0	1.0	0.8	1.0	0.6	1.0	0.5

* Crow season added in 1989. [‡] Raccoon and red fox season continuous May 1994 thru March 15, 2006. ^γ Mourning dove season added 2004. ^β Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

Table 4. Mean harvest for successful hunters and hunter success rates (%), 2005-06 through 2015-16.

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 ^β	2012-13 ^β	2013-14	2014-15	2015-16
Ducks	8.9 (83)	9.9 (84)	9.5 (85)	9.8 (83)	9.2(80)	10.3 (83)	10.5 (85)	11.1 (87)	11.7 (87)	11.0 (85)	10.6 (82)
Canada geese	5.5 (74)	6.3 (78)	5.5 (71)	6.4 (77)	5.6 (73)	6.1 (80)	6.3 (78)	6.5 (78)	5.8 (77)	6.6 (69)	5.7 (71)
Other geese	4.5 (43)	2.7 (55)	4.2 (50)	6.3 (50)	3.5 (55)	2.6 (41)	3.4 (51)	4.4 (52)	5.5 (46)	4.3 (54)	4.0 (44)
American coot	5.1 (76)	7.2 (78)	6.3 (74)	6.9 (82)	5.5 (65)	7.2 (79)	4.4 (69)	5.2 (81)	5.2 (75)	5.0 (78)	6.7 (73)
Common snipe	4.7 (94)	2.6 (75)	2.9 (71)	1.7 (73)	1.8 (61)	2.2 (67)	1.6 (73)	2.1 (57)	2.1 (79)	1.4 (45)	1.0 (33)
Rails / gallinules	0.0 (0)*	4.3 (57)	6.4 (83)	1.0 (40)	1.3 (60)	1.0 (33)	5.0 (33)	1.0 (17)	1.0 (50)	1.0 (25)	3.5 (67)
Crow	9.1 (86)	7.2 (89)	7.3 (88)	5.9 (88)	5.9 (90)	6.7 (91)	8.9 (88)	8.8 (90)	9.4 (84)	8.7 (87)	8.3 (94)
American woodcock	3.6 (70)	3.9 (83)	3.7 (69)	3.3 (74)	4.1 (73)	3.6 (76)	3.8 (70)	3.4 (68)	3.8 (70)	4.2 (64)	4.4 (67)
Mourning dove ^γ	8.7 (80)	8.2 (81)	9.8 (79)	13.2 (87)	11.4 (92)	11.1 (85)	10.5 (78)	12.5 (80)	9.2 (85)	12.5 (83)	13.3 (81)
Ring-necked pheasant	7.0 (76)	6.6 (75)	7.1 (78)	6.4 (77)	5.8 (69)	5.6 (72)	4.4 (63)	4.9 (67)	4.2 (64)	4.3 (61)	5.4 (71)
Ruffed grouse	4.4 (68)	5.9 (77)	4.7 (69)	5.0 (74)	5.5 (74)	6.6 (76)	5.9 (74)	5.2 (71)	5.2 (68)	5.1 (71)	4.9 (69)
Spruce grouse	2.4 (61)	3.8 (71)	3.1 (54)	3.0 (68)	3.1 (64)	2.4 (71)	3.0 (61)	2.8 (57)	2.4 (51)	2.5 (56)	2.4 (50)
Sharp-tailed grouse	2.4 (55)	3.3 (56)	4.4 (46)	3.2 (64)	3.0 (58)	3.5 (68)	3.1 (61)	3.4 (48)	3.2 (33)	3.8 (41)	3.1 (51)
Gray partridge	5.0 (52)	2.8 (69)	3.0 (55)	3.4 (65)	3.3 (58)	4.2 (58)	3.2 (52)	3.1 (54)	2.5 (38)	4.4 (32)	2.7 (57)
Gray squirrel	5.8 (86)	6.4 (87)	5.9 (88)	6.2 (88)	5.8 (86)	7.0 (84)	6.3 (78)	6.3 (80)	5.0 (77)	5.5 (78)	5.3 (81)
Fox squirrel	5.0 (83)	5.0 (85)	3.9 (83)	4.6 (83)	4.8 (85)	4.6 (86)	5.4 (74)	4.4 (80)	3.7 (75)	4.3 (75)	4.9 (71)
Eastern cottontail	5.4 (83)	4.6 (85)	4.8 (84)	5.3 (85)	4.3 (83)	4.4 (81)	4.1 (69)	5.5 (71)	3.5 (79)	4.1 (73)	5.0 (72)
White-tailed jackrabbit	3.2 (83)	2.5 (64)	4.5 (72)	3.8 (70)	2.1 (71)	4.6 (70)	3.5 (63)	2.3 (48)	5.2 (29)	1.8 (44)	2.0 (42)
Snowshoe hare	4.6 (68)	3.8 (80)	2.2 (62)	3.5 (71)	2.6 (60)	2.6 (69)	3.8 (69)	5.0 (69)	2.9 (58)	3.0 (57)	3.0 (53)
Raccoon (Sept -Feb)	6.5 (93)	7.7 (94)	5.4 (90)	10.6 (91)	9.6 (95)	10.0 (94)	6.1 (89)	6.1 (93)	6.9 (89)	8.5 (90)	7.7 (88)
Raccoon [‡] (March -Aug)	3.1 (87)										
Red fox (Sept -Feb)	3.7 (46)	2.1 (60)	2.3 (46)	1.5 (49)	2.4 (54)	2.3 (54)	2.4 (49)	2.7 (50)	2.0 (44)	1.7 (41)	1.6 (57)
Red fox [‡] (March -Aug)	1.6 (56)										
Gray fox	1.9 (50)	2.7 (65)	1.0 (29)	3.3 (39)	2.5 (42)	4.0 (36)	2.5 (33)	1.0 (16)	1.5 (17)	2.0 (29)	1.4 (50)
Coyote	4.1 (50)	2.4 (51)	4.4 (49)	4.4 (54)	4.6 (52)	4.0 (57)	4.0 (47)	5.1 (49)	2.7 (50)	2.4 (41)	3.4 (57)
Badger	1.2 (100)	1.6 (82)	1.0 (33)	1.2 (83)	2.5 (80)	1.0 (100)	1.5 (50)	1.0 (100)	1.0 (57)	1.0 (100)	1.0 (50)

[‡] Raccoon and red fox season continuous May 1994 thru March 15, 2006. ^γ Mourning dove season added 2004. * No hunters surveyed reported Rails/Gallinules in bag.

^β Estimates from these years were recomputed without license type 99- free youth license to be consistent with other years of data.

Table 5. Statewide (resident and non-resident) small game hunting license sales and estimated hunter harvest, 2005-06 through 2015-16.

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 ^β	2012-13 ^β	2013-14	2014-15	2015-16
Small game license sales ^a	280,156	295,898	298,467	290,064	282,983	282,227	271,768	264,063	258,581	258,109	258,208
State duck stamp sales	102,143	101,792	100,134	95,675	89,942	88,069	89,681	90,052	93,412	94,265	92,176
Pheasant stamp sales	117,301	129,546	129,315	123,270	110,456	104,286	86,868	90,541	77,597	74,295	77,750
Estimated harvest ^b											
Ducks	676,741	730,559	708,491	658,186	572,220	619,600	681,550	784,360	782,810	699,620	663,811
Canada geese	281,829	324,498	243,705	288,411	227,160	257,530	281,630	301,550	229,120	221,620	185,012
Other geese	9,025	6,658	7,723	13,895	6,250	3,940	4,800	8,820	7,130	6,510	4,448
American coot	15,938	24,909	16,061	23,871	14,810	26,340	10,520	16,720	15,130	17,050	15,861
Common snipe	5,336	4,221	3,933	2,210	1,490	1,940	1,390	1,420	2,310	520	223
Rails / gallinules	0	1,329	2,569	163	300	80	390	80	70	80	1,039
Crow	92,742	69,188	54,319	51,742	56,350	57,300	81,500	90,260	67,440	56,020	57,576
American woodcock	27,919	39,907	27,866	29,210	35,430	29,770	24,980	30,360	31,920	25,810	37,270
Mourning dove ^d	77,749	85,950	101,161	132,577	109,940	100,230	74,000	92,760	80,480	103,370	96,552
Ring-necked pheasant	585,299	587,580	655,443	522,071	398,130	359,400	198,500	250,140	169,100	152,800	243,176
Ruffed grouse	224,309	417,153	293,544	318,338	357,420	465,580	383,150	341,320	288,410	301,190	267,997
Spruce grouse	10,079	26,568	17,705	16,997	19,130	14,960	18,640	11,980	13,110	14,590	9,856
Sharp-tailed grouse	6,387	11,939	13,790	13,695	9,530	16,820	11,600	10,650	7,130	8,530	7,929
Gray partridge	16,289	11,545	11,000	9,660	8,040	9,150	3,950	5,160	2,380	3,590	3,187
Gray squirrel	122,078	140,788	133,194	121,534	109,790	138,920	115,840	126,110	84,010	91,250	96,400
Fox squirrel	62,187	66,068	47,736	51,079	53,970	61,690	48,100	49,750	33,940	40,840	46,383
Eastern cottontail	90,062	77,872	78,588	79,927	57,760	53,870	34,640	64,140	40,710	38,820	41,716
White-tailed jack rabbit	5,493	4,149	9,482	6,446	2,610	7,220	5,180	1,910	1,870	1,050	742
Snowshoe hare	10,406	16,801	5,789	11,343	5,360	6,770	8,430	16,800	6,200	7,860	6,374
Raccoon (Sept -Feb)	29,191	62,891	46,739	72,026	66,700	77,690	44,080	48,340	46,690	52,800	38,387
Raccoon ^c (Mar –Aug)	7,331										
Red fox (Sept –Feb)	10,166	7,872	6,188	4,408	10,270	8,780	7,120	7,990	5,190	3,220	3,780
Red fox ^c (Mar –Aug)	1,141										
Gray fox	927	3,593	559	2,443	1,860	2,380	1,160	250	430	600	816
Coyote	38,612	20,769	34,377	45,689	46,070	44,050	33,410	51,990	23,630	17,430	35,123
Badger	924	1,091	159	490	750	600	230	330	290	80	149

Harvest estimates in this table, and the number of hunters and mean take per hunter in Table 5, 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 (e.g., 1985) 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. A youth-free license was part of the sampling frame for the 2011-12 and 2012-13 seasons but was discontinued for 2013-14. The harvest statics for those years have been recomputed by removing the youth free license from both the sampling frame and the respondents' database. The estimates are now more comparable over time.

^a Includes all types of Small game licenses. Duplicate and free licenses not included.

^b Estimates based upon response of hunters to questionnaires.

^c Raccoon and red fox seasons were year round from May, 1994 through March 16, 2006.

^d Mourning dove season added 2004.

Table 6. Mail survey results of nonresident small game hunters, 2005-06 through 2015-16.

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Nonresident licenses issued ^a	5,897	7,356	7,858	7,114	6,934	6,695	6,312	6,456	6,031	6,056	6,755
Questionnaires:											
Number mailed	210	185	185	226	196	163	169	166	162	165	169
Number not delivered	10	11	11	15	10	6	11	11	10	12	5
Number (percent) returned	134 (67)	115 (62)	101 (58)	89 (42)	105 (54)	107 (66)	91 (54)	71 (43)	81 (50)	70 (42)	73 (43)
Estimated nonresidents and (percent) of all licensed nonresidents hunting:											
Ducks	2,040 (35)	2,344 (32)	2,256 (29)	2,293 (32)	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)
Canada goose	1,818 (31)	2,083 (28)	934 (12)	1,587(22)	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)
Ruffed grouse	1,774 (30)	1,953 (26)	1,867 (24)	1,940 (27)	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)
Ring-necked pheasant	2,572 (44)	3,776 (51)	2,645 (34)	3,116 (44)	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)
Raccoon ^{b, c}	44 (0.7)	0 (0)	78 (1.0)	0 (0)	0 (0)	63 (0.9)	0 (0)	0 (0)	80 (1.2)	0 (0)	0 (0)
Estimated nonresident take:											
Ducks	12,149	12,173	22,718	15,463	11,755	17,055	13,840	20,380	20,410	13,060	16,863
Canada goose	3,946	3,580	3,501	5,762	3,698	6,334	4,050	2,270	3,650	2,680	1,484
Ruffed grouse	6,429	11,522	7,236	6,938	8,651	12,600	8,980	10,090	4,990	9,090	13,805
Ring-necked pheasant	13,656	16,079	17,661	10,642	6,274	8,076	4,860	6,820	3,430	3,720	6,581
Raccoon ^{b, c}	887	0	3,268	0	0	593	0	0	1,280	0	0

^a Excludes duplicate licenses and nonresident shooting preserve licenses.

^b In 2002, 2003, 2004, 2006, 2008, 2009, 2011, 2012, 2014, and 2015 no non-residents reported hunting/harvesting raccoons.

^c In 2013 only one non-resident reported hunting/harvesting raccoons. The extrapolated estimate is not reliable.