

## **HUNTING HARVEST STATISTICS**

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## 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. This may be due in part to a “luck of the sample” draw that resulted in more waterfowl hunters being surveyed this year than in previous years. 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.

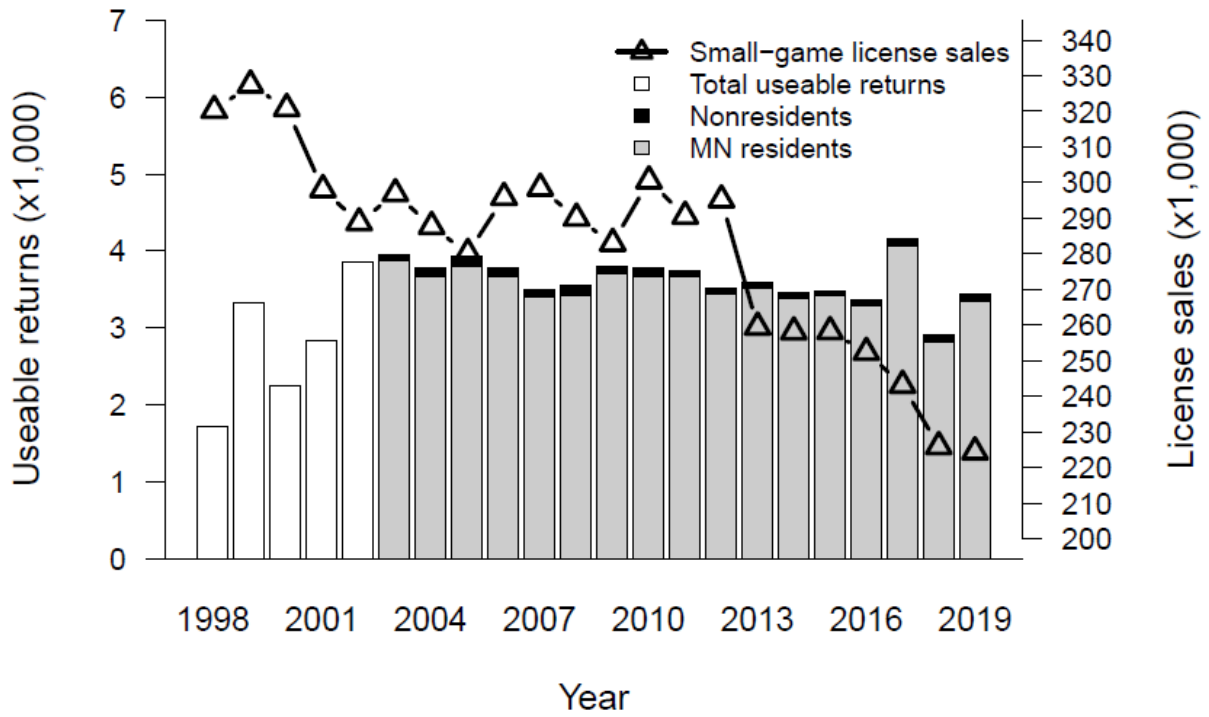


Figure 1. Number of Minnesota small game licenses sold and usable returned surveys, 1998-2019. Includes resident and non-resident licenses, and excludes duplicate and free licenses.

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.

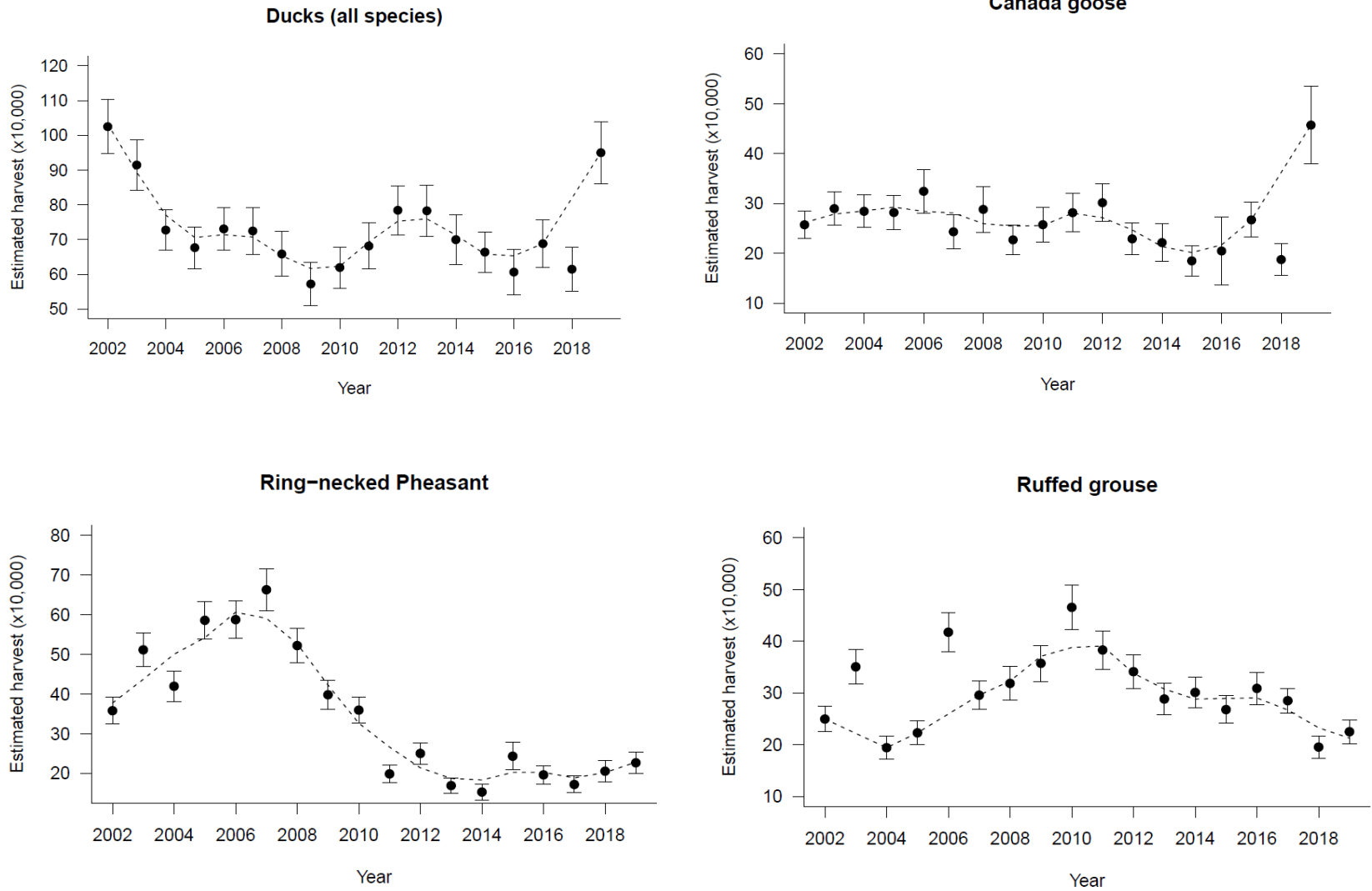


Figure 3. Harvest trends for top four small game species harvested in Minnesota, 2002-2019.



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

## **MIGRATORY BIRD HUNTING ACTIVITY AND HARVEST DURING THE 2018 - 2019 AND 2019-20 HUNTING SEASONS.**

The following information has been excerpted from: U.S. Fish and Wildlife Service. Migratory bird hunting activity and harvest during the 2018 - 2019 and 2019-20 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland, U.S.A. The entire report is available on-line at

<https://www.fws.gov/library/collections/migratory-bird-hunting-activity-and-harvest-reports>

Table 1. Species composition of the Minnesota waterfowl harvest, 2018 and 2019. (from: Raftovich, R.V., K.K. Fleming, S.C. Chandler, and C.M. Cain. 2020. Migratory bird hunting activity and harvest during the 2018-19 and 2019-20 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland. USA August, 2020. 75 pp).

Species	Minnesota Harvest					Mississippi Flyway Harvest		
	2018	% of Harvest	2019	% of Harvest	Percent change in Harvest 18-19	2018	2019	Percent change Harvest 18-19
Mallard	105,149	21.79	98,723	22.18	- 6	1,407,353	1,454,937	3
Domestic mallard	212	0.04	0	0.00	-100	1,397	839	-67
American black duck	212	0.04	636	0.14	200	16,032	20,357	21
Black x mallard	0	0.00	0	0.00		1,186	982	-21
Gadwall	22,471	4.66	29,447	6.62	31	421,296	537,060	22
American wigeon	10,812	2.24	11,652	2.62	8	65,348	69,814	6
Green-winged teal	37,947	7.86	22,668	5.09	-40	452,685	435,290	-4
Blue-winged /cinnamon teal	61,479	12.74	64,191	14.42	4	399,992	383,088	-4
Northern shoveler	5,724	1.19	6,356	1.43	11	127,236	141,962	10
Northern pintail	5,300	1.10	5,084	1.14	-4	68,949	74,589	8
Wood duck	85,010	17.62	80,716	18.13	-5	407,754	488,166	16
Redhead	13,144	2.72	11,016	2.47	-16	60,193	52,298	-15
Canvasback	6,148	1.27	4,661	1.05	-24	30,592	29,990	-2
Greater scaup	3,180	0.66	1,271	0.29	-60	35,375	23,101	-53
Lesser scaup	10,812	2.24	6,356	1.43	-41	86,568	75,001	-15
Ring-necked duck	81,618	16.92	66,945	15.04	-18	182,667	174,603	-5
Goldeneye	5,936	1.23	5,508	1.24	-7	44,721	27,855	-61
Bufflehead	16,960	3.52	16,313	3.67	-4	98,519	83,493	-18
Ruddy duck	848	0.18	847	0.19	0	6,721	15,506	57
Scoters	424	0.09	0	0.00	-100	5,740	3,125	-84
Hooded merganser	8,904	1.85	11,228	2.52	26	33,738	46,569	28
Other mergansers	212	0.04	1,483	0.33	600	7,334	7,916	7
Total Duck Harvest <sup>a</sup> (retrieved kill)	482,500 ±16%		445,100 ±15%		-8	3,979,000 ±9%	4,172,100 ±9%	5

<sup>a</sup> Sum of all species does not equal total because of rounding error.



Table 2. Top 10 states in number of **adult duck hunters**, 2019, and number of hunter-days and retrieved duck kill. (from: Raftovich, R.V., K.K. Fleming, S.C. Chandler, and C.M. Cain. 2020. Migratory bird hunting activity and harvest during the 2018-19 and 2019-20 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland. USA August, 2020. 75 pp).

State	Number of active duck hunters	Duck hunter days afield	Total duck harvest	Seasonal duck harvest per hunter
Arkansas	75,400 ± 10%	496,800 ± 17%	1,091,000 ± 12%	14.5 ± 16%
Texas	69,000 ± 24%	332,600 ± 21%	787,800 ± 13%	11.4 ± 28%
Minnesota	50,900 ± 13%	263,500 ± 12%	445,100 ± 15%	8.8 ± 20%
Louisiana	50,000 ± 14%	287,100 ± 23%	572,400 ± 20%	11.5 ± 24%
California	45,500 ± 13%	342,100 ± 12%	962,200 ± 12%	21.1 ± 18%
Wisconsin	43,100 ± 17%	254,500 ± 17%	365,300 ± 24%	8.5 ± 30%
Michigan	33,000 ± 16%	164,100 ± 14%	235,300 ± 14%	7.1 ± 21%
North Dakota	30,500 ± 10%	135,100 ± 12%	406,900 ± 15%	13.3 ± 18%
North Carolina	29,200 ± 17%	172,400 ± 22%	232,600 ± 20%	8.0 ± 26%
Missouri	26,600 ± 15%	158,200 ± 17%	273,600 ± 18%	10.3 ± 23%
Mississippi Flyway		2,348,200 ± 6%	4,172,100 ± 9%	
United States		5,002,200 ± 4%	9,720,800 ± 5%	

Table 3. Top 10 states in number of **adult goose hunters**, 2019, and number of hunter-days and retrieved goose kill (from: Raftovich, R.V., K.K. Fleming, S.C. Chandler, and C.M. Cain. 2020. Migratory bird hunting activity and harvest during the 2018-19 and 2019-20 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland. USA August, 2020. 75 pp).

State	Number of active goose hunters	Goose hunter days afield	Total goose harvest	Seasonal goose harvest per hunter
Minnesota	40,000 ± 12%	203,200 ± 20%	200,200 ± 29%	5.0 ± 32%
Texas	39,200 ± 19%	111,800 ± 27%	173,700 ± 29%	4.4 ± 35%
Wisconsin	36,700 ± 10%	225,900 ± 15%	131,100 ± 15%	3.6 ± 19%
California <sup>b</sup>	32,400 ± 10%	200,100 ± 13%	181,300 ± 15%	5.6 ± 18%
Michigan	31,000 ± 15%	191,200 ± 35%	153,000 ± 20%	4.9 ± 25%
Arkansas	30,700 ± 14%	127,000 ± 19%	128,700 ± 19%	4.2 ± 24%
North Dakota	22,100 ± 8%	88,400 ± 11%	159,600 ± 21%	7.2 ± 22%
Pennsylvania	18,600 ± 19%	91,100 ± 21%	99,300 ± 32%	5.3 ± 37%
North Carolina <sup>b</sup>	17,100 ± 22%	58,700 ± 28%	50,200 ± 65%	2.8 ± 68%
Illinois	16,700 ± 17%	128,200 ± 22%	105,000 ± 45%	6.3 ± 48%
Mississippi Flyway		1,291,100 ± 8%	1,023,200 ± 9%	
United States <sup>b</sup>		2,780,600 ± 5%	2,691,900 ± 5%	

<sup>b</sup>. Goose hunter statistics do not include brant hunter statistics for coastal states with brant seasons: Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, Virginia, California, Oregon, Washington, and Alaska.



## **2020 LIGHT GOOSE CONSERVATION ORDER HARVEST IN MINNESOTA**

Steve Cordts, Wildlife Populations and Regulations Unit

Margaret Dexter, Wildlife Populations and Research Unit

J. Giudice, MNDNR Biometrics Unit

### **INTRODUCTION**

This report documents results of the 2020 Light Goose Conservation Order hunter mail questionnaire survey.

### **METHODS**

Minnesota held a light goose Conservation Order harvest from 18 February - 30 April 2020. Participants were required to obtain a \$2.50 permit. No other license, stamp or permit was required. Shooting hours were 1/2 hour before sunrise to 1/2 hour after sunset. There were no daily or possession limits. Use of electronic calls and unplugged shotguns was allowed.

All permit holders (except for youth <18 years old) were sent a questionnaire after the season. Survey questions are listed in Figure 1.

### **RESULTS AND DISCUSSION**

A total of 1,002 permits were issued and 434 responses (44%) to the questionnaire were obtained (Table 1, Figure 2). In calculating harvest estimates, we assume that the 568 non-respondents participated in the conservation action and took light geese in the same manner as respondents. An estimated 430 hunters attempted to take light geese during the conservation order period. Active participants pursued light geese for 1,529 days and 785 light geese were shot and retrieved. This was an average retrieved take of 2 geese per active participant. An estimated 54 light geese were wounded and not retrieved.

### **ACKNOWLEDGMENTS**

This project was funded in part by the Wildlife Restoration (Pittman-Robertson) Program.

**MINNESOTA 2020 LIGHT GOOSE HARVEST SURVEY**  
 For the Period of February 18 - April 30, 2020 ONLY

You are being asked to provide information to help us evaluate the harvest of light geese (snow, blue, and Ross' geese) in Minnesota during February 18 - April 30, 2020. Your cooperation is important. Please return this survey card even if you did not hunt light geese. Please answer the following questions to the best of your ability. **Answer only for your Minnesota 2020 hunting experience.**  
 THANK YOU! Lou Cornicelli, Wildlife Research Program Manager, Division of Fish and Wildlife, MN DNR.

1. Did you hunt light geese in Minnesota during February 18 - April 30, 2020? Yes / No  
*If NO, please disregard all remaining questions and return this survey card.*
2. How many days did you hunt light geese in Minnesota during February 18 - April 30, 2020? \_\_\_\_\_
3. How many light geese did you personally shoot and retrieve in Minnesota? \_\_\_\_\_
4. How many light geese did you personally shoot, but were UNABLE to retrieve? \_\_\_\_\_

Figure 1. Light Goose Conservation Order hunter mail questionnaire, 2020.

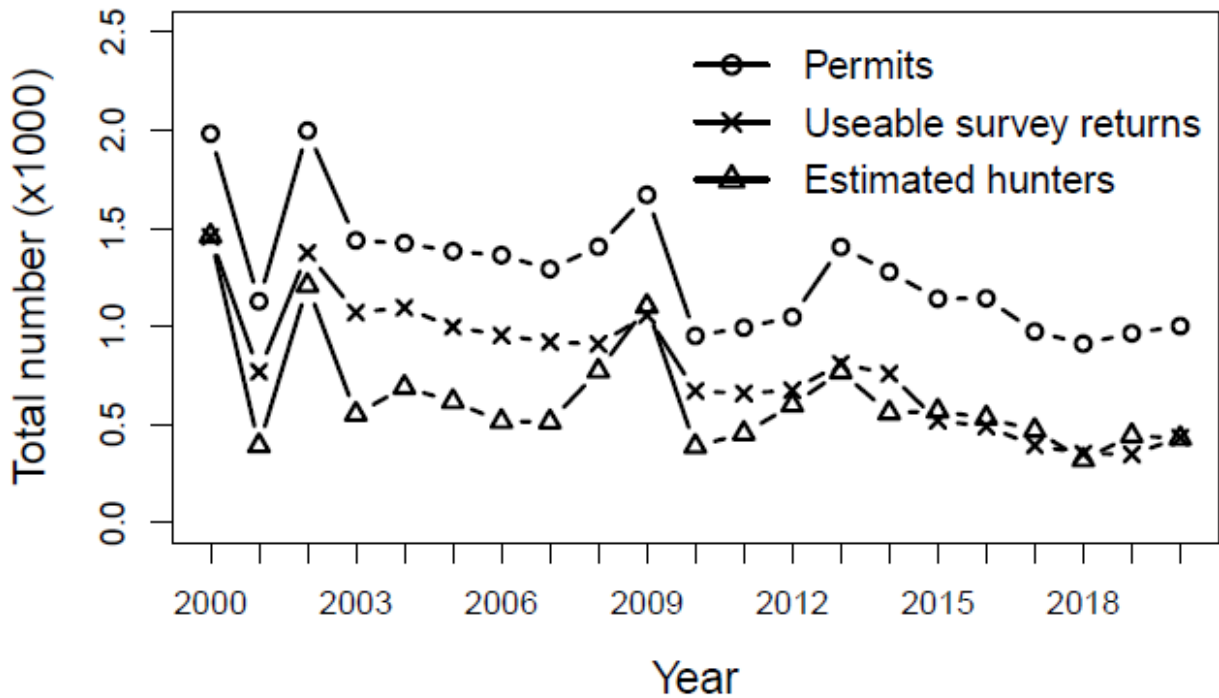


Figure 2. Light goose permits issued, survey response, and estimated hunters in Minnesota, 2000-2020.

Table 1. Summary of Light Goose Conservation Order harvest in Minnesota, 2008 – 2020.

Statistic	Year												
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total permits sold	1,406	1,670	952	994	1,048	1,405	1,278	1,141	1,143	974	912	965	1,002
Useable returns	910	1,057	671	659	675	810	759	520	491	393	353	348	434
Response rate (%)	65.0	63.0	72.3	67.1	65.3	58.3	60.0	46	43	41	43	41	44
Active hunters (%)	54.9	66.0	40.8	45.7	56.9	54.9	44.0	50	47	48	35	46	43
Estimated total hunters	773	1,103	389	455	600	770	560	569	534	471	321	444	430
Estimated hunter days	3,404	4,647	1,475	1,830	2,270	3,070	2,580	2,434	2,605	1,966	1,204	1,537	1,529
Mean days/hunter	4.4	4.2	3.8	4.0	3.8	4.0	4.6	4	5	4	3.8	4	4
Estimated harvest (shot & retrieved)	2,409	4,366	559	1,554	2,620	2,430	2,880	3,266	2,121	1,713	1,021	1612	785
Mean harvest/hunter	3.1	4.0	1.4	3.4	4.4	3.2	5.1	6	4	4	3.2	4	2
Estimated crippling losses	302	640	70	145	210	370	210	349	215	298	78	206	54
Percent using unplugged guns	46.7	46.8	44.9	44.2	43.0	49.4	48.8	NA	NA	NA	NA	NA	NA
Est. number hunters using unplugged guns	361	516	175	201	260	380	270	NA	NA	NA	NA	NA	NA
Est. number geese <b>shot</b> with unplugged guns	1,275	2,413	348	742	1,510	1,670	2,060	NA	NA	NA	NA	NA	NA
Est. harvest with shell 4-5-6	339	822	131	311	460	620	770	NA	NA	NA	NA	NA	NA
Percent using electronic calls	19.1	23.5	25.9	21.3	22.2	24.5	27.8	NA	NA	NA	NA	NA	NA
Est. number hunters using e-calls	148	260	101	97	130	190	160	NA	NA	NA	NA	NA	NA
Est. harvest while using e-calls	566	1,171	192	531	460	620	1,710	NA	NA	NA	NA	NA	NA
Percent hunting 1/2-hr after sunset	42.3	43.1	39.7	39.7	42.4	33.4	36.2	NA	NA	NA	NA	NA	NA
Est. number hunting after 1/2-hr sunset	326	475	154	180	250	260	200	NA	NA	NA	NA	NA	NA
Est. harvest 1/2-hr after sunset	511	713	87	238	240	260	550	NA	NA	NA	NA	NA	NA



## **MINNESOTA'S WILD TURKEY HARVEST – FALL 2019, SPRING 2020**

Tim Lyons, Farmland Wildlife Populations and Research Group

### **Summary of Season Structure**

The fall 2019 turkey season opened on September 28, 2019 and closed October 27, 2019. Though an unlimited number of permits were available, regulations limited hunters to the harvest of a single turkey (any sex) and required hunters to harvest their bird within a specific turkey permit area (TPA; Figure 1) declared at the time of purchase.

The spring 2020 hunting season was open April 14, 2020 through May 31, 2020. The season was comprised of 6 week-long time periods (A-F). General license hunters declared a TPA and were limited to a single time period during the first 5 weeks but unsuccessful hunters were able to hunt during the final (F) time period. Archery-only and youth licenses were valid during all time periods. All hunters were limited to a single bearded turkey (any sex). Beginning in 2020, the A and B lotteries were discontinued (with the exception of select Wildlife Management Area major units) and an unlimited number of general permits were available (C-F time periods already had unlimited permits available). Additionally, hunters had to declare a TPA at the time of purchase, but could harvest a bird within any TPA. Archery-only and youth licenses had already been valid in any permit area.

### **FALL 2019 SEASON**

#### **Permits Issued**

The number of fall turkey hunters in 2019 (6,481) was very similar to the 2018 fall season (6,719, declining only 3.5% (Table 1). The number of fall turkey hunters remains below the 10-year average (7,634; -16%). The proportion of youth licenses (23%) remained similar to 2018 (21%).

#### **Harvest**

The fall 2019 turkey harvest (855) and hunter success (13.2%) increased slightly compared to the previous season (Table 1). Permit areas 501, 507, 508, and 510 comprised 77% of the total fall harvest with total permit sales, harvest, and success being greatest in area 507 (Table 2). The fall 2019 total harvest (855) remained below the 10-year average (1,150) though success was only slightly lower than the 10-year average (15%). Long term, the number of permits has fallen since the quota system was ended in 2012, but still remain above the number issued following the permit area and quota increase enacted for the fall 2008 season (Figure 2). The total fall harvest has increased since the first fall season in 1990, but has fallen since its peak in 2012 (Figure 2).

### **SPRING 2020 SEASON**

#### **Permits Issued**

The number of permits issued across all license types increased in 2020 (Tables 3 and 4). The number of general permits issued increased by nearly 6,000 to 34,173 compared to 2019 and exceeded the 10-year average (32,555; Table 4). The increase in permits issued was greatest

for youth permits, which more than doubled, while the number of archery permits increased by 25% (Table 4). There were a similar total number of permits issued for youth and archery in 2020 (14,292 and 14,729, respectively; Table 3). The total number of permits issued in 2020 set a new record high for participation since the modern turkey season began in 1978 (Figure 3). All hunters had to declare a permit area in 2020, but were no longer restricted to harvesting a bird in the declared area. General permits issued increased in all TPA's, but increases were smaller in the three TPA's (502, 511, 512) that still instituted a lottery during the A/B time periods (Table 5.)

### **Harvest**

The 2020 spring turkey season set a new record high for total harvest for the modern turkey season (since 1978; Table 4, Figure 3). Harvest increased among most TPA's, but the increase was greatest in TPA's 507, 506, and 510 (Table 5). Harvest increased among all permit types and only general permits saw a slight decrease in success (Table 3). The number of youth permits issued in 2020 nearly doubled and youth harvest increased by more than 1,000 turkeys to 2,850 (Table 3) compared to 2019 (1,835) and success increased to almost 20% (Table 3). Although archery permit sales increased by 25%, harvest also increased by a similar amount and the success rate remained nearly the same (Table 3).

The number of hunters and harvest for each time period changed dramatically in 2020. Most of the increase in the number of general permit holders in 2020 occurred during the A and B periods (Table 6). Though the termination of the A and B period lottery in 2020 likely contributed to some of this increase, better weather and the increase in hunters due to COVID-19 may account for the majority of this pattern as many permit areas held unsold surplus permits during these two periods in previous years. The shift in time period selection by general permit holders resulted in a similar shift in the timing of harvest. Harvest during the A period increased to 41.7 % of the total spring 2020 harvest (Table 6) compared to 33.7% in 2019. Total harvest and the proportion of total harvest also increased during the B and F seasons but were offset by declines in both variables during C, D, and E (Table 6).

### **Factors influencing spring season participation and harvest**

Weather often has the greatest impact on spring turkey season participation and harvest. Long periods of deep snow can reduce overwinter survival of turkeys and spring snowstorms can lead to reductions in turkey activity and hunter participation. The winter across much of the turkey range in Minnesota was milder than the long-term average and the state was generally snow-free by the start of the spring turkey season. This likely contributed to greater hunter success and participation in spring 2020 compared to previous years. Regulation changes which allowed unlimited general permits during the A and B time periods may have led to greater hunter participation as well. Still, the greatest factor underlying the large increase in hunter participation was likely the COVID-19 safety orders. Closures of businesses, schools, and a state-wide "stay-at-home" order may have given many previous and new hunters more personal time to harvest a bird.

Table 1. Permits available, number of applicants, permits issued, registered harvest, and hunter success rates for the ten most recent fall wild turkey seasons in Minnesota, 2010-2019.

<b>Year</b>	<b>Permits available</b>	<b>Applicants</b>	<b>Permits issued</b>	<b>Registered harvest</b>	<b>Hunter success (%)<sup>a</sup></b>
2010	10,430	6,869	6,607	1,353	20.5
2011	10,430	3,538	5,382	953	17.7
2012 <sup>b</sup>	Unlimited	N/A	10,628	1,752	16.5
2013 <sup>b</sup>	Unlimited	N/A	8,060	1,137	14.1
2014 <sup>b</sup>	Unlimited	N/A	8,236	1,216	14.8
2015 <sup>b</sup>	Unlimited	N/A	8,109	1,213	15.0
2016 <sup>b</sup>	Unlimited	N/A	8,469	1,176	13.9
2017	Unlimited	N/A	7,650	1,015	13.3
2018	Unlimited	N/A	6,719	834	12.4
2019	Unlimited	N/A	6,481	855	13.2

<sup>a</sup> Total hunter success (all permits issued divided by registered harvest). Success rates not adjusted for non-participation or un-registered harvest.

<sup>b</sup> Permits issued, registered harvest, and derived hunter success (%) was reviewed and adjusted to address inconsistencies in data query and previous reporting.



Table 2. Permits issued, registered harvest and hunter success rates (non-youth licenses), total registered harvest, and registered harvest by sex during the 2019 fall wild turkey season in Minnesota.

Permit area	General permits issued <sup>a</sup>	General permit harvest <sup>b</sup>	General permit success rates (%) <sup>b</sup>	Total registered harvest <sup>c</sup>	Toms <sup>c</sup>	Jakes <sup>c</sup>	Hens <sup>c</sup>
501	703	89	12.7	100	43	14	43
502	79	13	16.5	13	4	2	7
503	468	59	12.6	75	25	9	41
504	119	13	10.9	18	5	4	9
505	249	36	14.5	41	12	6	23
506	184	25	13.6	27	10	3	14
507	1252	191	15.3	237	77	42	118
508	1164	159	13.7	193	73	31	89
509	168	38	22.6	59	19	11	29
510	502	72	14.3	88	37	13	38
511	58	1	1.7	1	0	0	1
512	30	2	6.7	3	1	0	2
<b>TOTAL</b>	<b>4,976</b>	<b>698</b>	<b>12.9</b>	<b>855</b>	<b>306</b>	<b>135</b>	<b>414</b>

<sup>a</sup> Youth permits were not included as there is no declared permit area (valid in all permit areas). No separate license type for archery hunters was available so archery hunters are included in general permits issued.

<sup>b</sup> All firearm and archery harvest, excluding youth.

<sup>c</sup> Total harvest for all license types.

Table 3. Total permits issued, harvest, and success rate by permit type during the spring 2020 wild turkey season in Minnesota.

	Total permits issued	Harvest	Success (%) <sup>a</sup>
<b>General</b>	34,173	9,007	26.4
<b>Youth</b>	14,292	2,850	19.9
<b>Archery</b>	14,729	2,139	14.5
<b>Total</b>	63,194	13,996	22.1

<sup>a</sup> Success rates not adjusted for non-participation.

Table 4. Permits issued, registered harvest, and hunter success rates for the ten most recent spring wild turkey hunting seasons in Minnesota, 2011-2020.

Year	General permits issued	Youth permits issued	Archery permits issued	Registered harvest <sup>a</sup>	Success (%) <sup>b</sup>
2011 <sup>c</sup>	34,835	8,828	2,246	10,055	21.9
2012 <sup>c</sup>	30,238	8,839	3,441	11,276	27.2
2013 <sup>c</sup>	35,202	5,965	4,014	10,321	23.3
2014 <sup>c</sup>	35,451	7,374	4,893	11,425	24.4
2015 <sup>c</sup>	34,554	7,042	5,046	11,694	25.6
2016 <sup>c</sup>	32,535	7,101	10,336	12,277	25.0
2017 <sup>c</sup>	31,605	6,984	11,237	11,803	24.1
2018 <sup>c</sup>	28,667	6,022	11,399	10,706	23.6
2019	28,295	6,169	11,794	10,699	23.0
2020	34,173	14,292	14,729	13,996	22.1

<sup>a</sup> Includes all license types.

<sup>b</sup> Total hunter success (registered harvest divided by all permits issued). Success rates not adjusted for non-participation or un-registered harvest.

<sup>c</sup> Permits issued, derived issued %, registered harvest, and derived hunter success (%) were reviewed and adjusted to address inconsistencies in data query and previous reporting.

Table 5. Permits issued by license type and registered harvest within each TPA during the 2020 spring wild turkey season in Minnesota<sup>a</sup>.

Permit area	Archery permits declared	General permits declared	Youth permits declared	Total registered harvest
501	2,130	6,714	2,227	2,363
502	229	549	167	185
503	1,373	3,850	1,416	1,424
504	486	907	412	371
505	747	2,099	696	712
506	625	1,394	696	532
507	3,911	8,615	4,347	3,960
508	2,571	6,200	2,578	2,426
509	468	812	516	498
510	1,827	2,676	1,023	1,350
511	216	199	111	77
512	146	158	103	39

<sup>a</sup> Beginning in 2020, all hunters declared but were not restricted to harvesting a turkey in their declared TPA.

Table 6. Permits available and issued by license type and time period for the spring 2020 wild turkey season in Minnesota.

<b>Time period</b>	<b>Archery permits issued<sup>a</sup></b>	<b>Youth permits issued<sup>a</sup></b>	<b>General permits issued</b>	<b>Registered harvest<sup>b</sup></b>	<b>Percent of total harvest<sup>b</sup></b>
Any	14,729	14,292			
A			12,395	5,833	41.7
B			10,398	3,504	25.0
C			6,112	1,919	13.7
D			2,520	830	5.9
E			1,900	529	3.8
F			848	1,381	9.9

<sup>a</sup> Archery and youth permits were valid during any time period.

<sup>b</sup> Includes harvest from all license types.

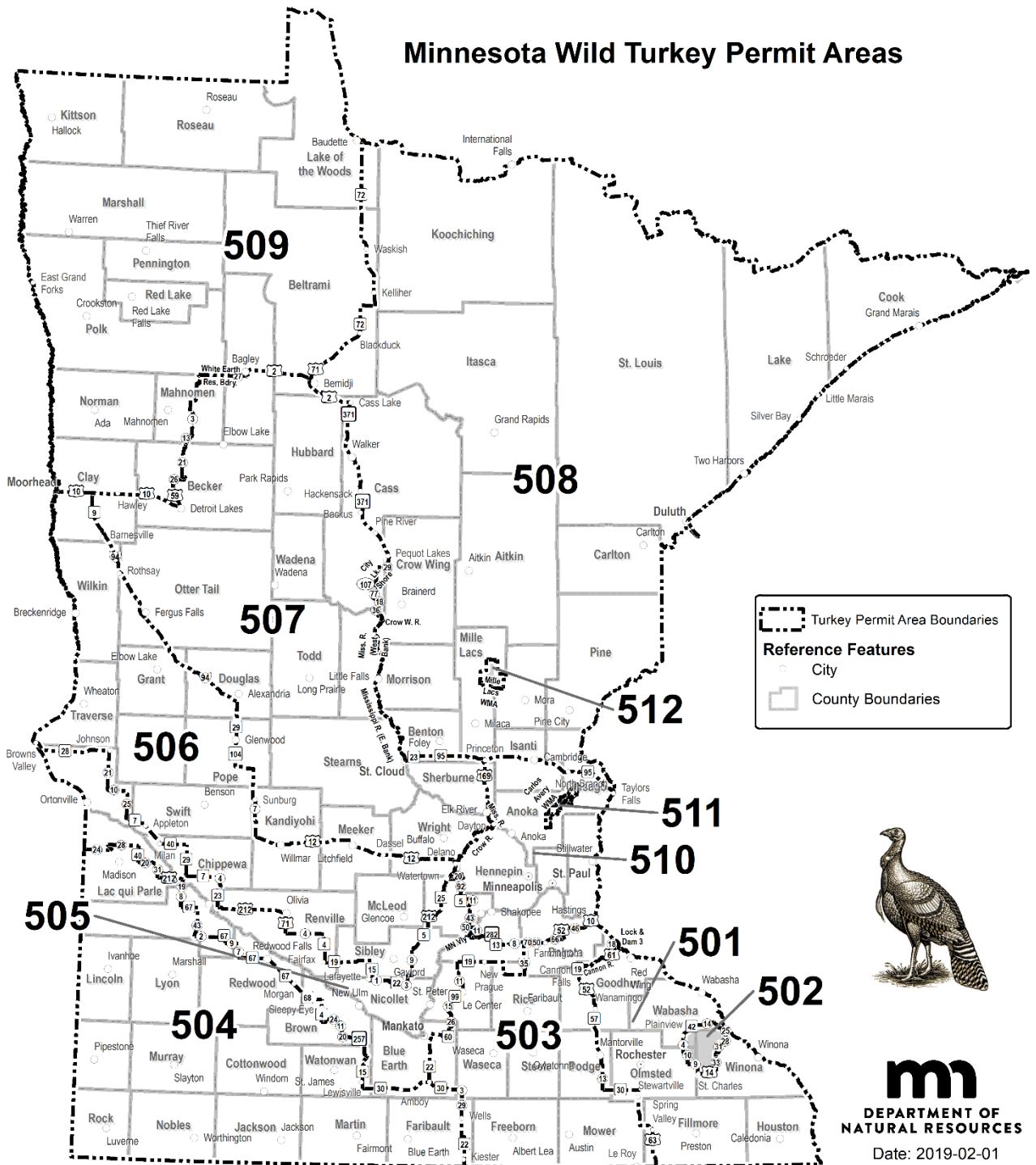


Figure 2. Permit areas open for hunting, fall 2019 and spring 2020 wild turkey seasons in Minnesota.

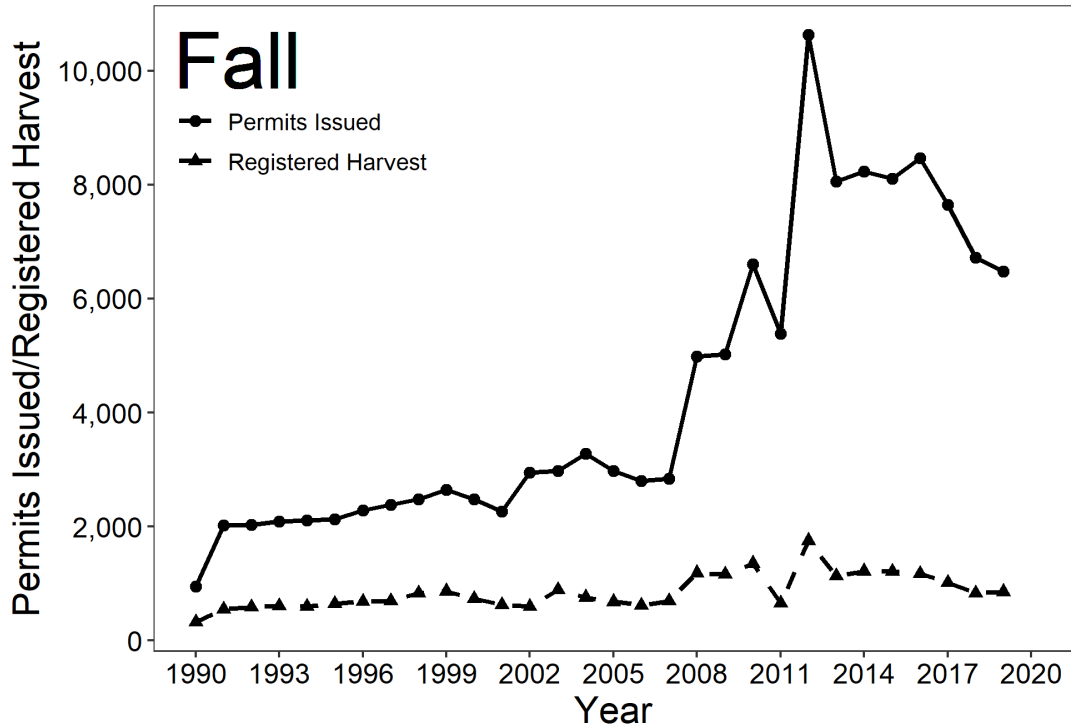


Figure 3. Permits issued and registered harvest for fall wild turkey seasons in Minnesota, 1990-2019.

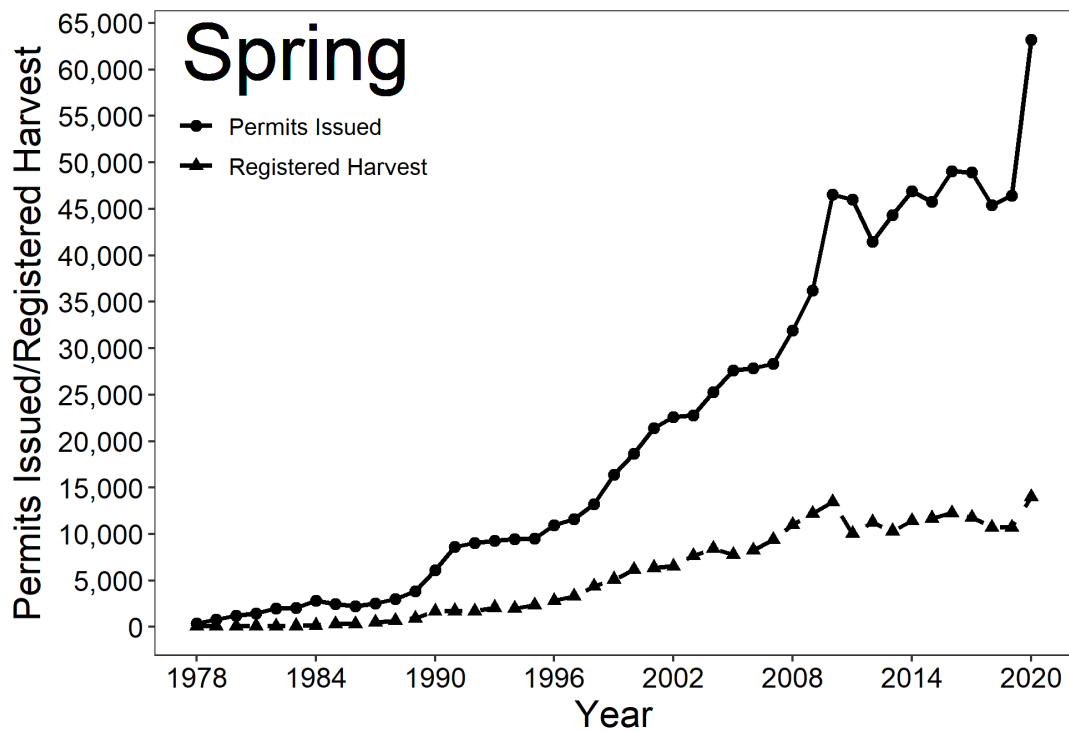


Figure 4. Permits issued and registered harvest for spring wild turkey seasons in Minnesota, 1978-2020.



## 2019 MINNESOTA PRAIRIE-CHICKEN HARVEST SURVEY

Charlotte Roy, Forest Wildlife Populations and Research Group

### SUMMARY OF FINDINGS

The Minnesota DNR conducts a postcard survey of Greater Prairie-chicken (*Tympanuchus cupido pinnatus*) hunters each year to estimate hunter numbers and harvest, and to evaluate hunter success and satisfaction. In 2019, 100 hunters were estimated to have gone afield and harvested 64 prairie-chickens and 25 sharp-tailed grouse (*Tympanuchus phasianellus*) during prairie-chicken hunts. Hunter success (0.37) was lower than recent years but satisfaction (3.8 on a scale of 1-5) was similar to recent years and consistent with improvement following changes to the permit areas and season (i.e., longer length and earlier dates) in 2013.

### INTRODUCTION

Prairie-chicken (*Tympanuchus cupido pinnatus*) hunting in Minnesota was closed in 1943 because of population declines resulting from habitat loss. However, hunting was reopened in 2003 because prairie-chicken populations were considered robust enough to allow a limited season. During 2003-2005, a limited-entry 5-day hunting season was opened in 7 permit areas in western Minnesota. Permits were awarded through a lottery system, with a bag and season limit of 2 prairie-chickens. In 2006, 4 new permit areas were added and the number of permits was increased in some areas. Surplus licenses were offered for sale after the lottery for the first time in 2011, and in 2013, the permit areas were revised again. These most recent changes eliminated 801A and 802A, modified 803A to include portions of the former 802A and 803A, and added 812A and 813A to expand hunting eastward (Figures 1 and 2). The number of available permits was also reduced in some permit areas to more closely reflect opportunities to harvest prairie-chickens in each permit area. The season was lengthened from 5 days to 9 days to provide hunting opportunity on >1 weekend and was moved from mid-October to open in late-September. The earlier season was an attempt to improve hunter success and satisfaction by providing hunting opportunities before pheasant season opened (to reduce hunter interference and flushing distance). These changes were based on hunter comments received by DNR Wildlife Managers during prior years and input received during a public input survey during March 2013. Responses of surveyed prairie-chicken hunters in 2015 provided additional evidence that the earlier season is preferred by most, although hunter preferences were clearly divided. In 2019, the prairie-chicken season opened 28 September and closed 6 October.

Prairie-chicken hunting in Minnesota is a privilege that is only available to residents. Landowners or tenants of  $\geq 40$  acres of grassland within a permit area are eligible to apply for a landowner lottery that awards  $\leq 20\%$  of the available permits in a permit area. Extra landowner permits are then included with the regular lottery. Any landowner not receiving a permit through the landowner lottery can participate in the regular lottery. The lottery gives preference to persons that have applied for a permit unsuccessfully for the most years. Upon selection, lottery winners must purchase a prairie-chicken hunting permit before hunting. Although sharp-

tailed grouse (*Tympanuchus phasianellus*) hunting is closed south of U.S. Highway 2 in the western part of the state (i.e., in permit areas 804A–813A), licensed prairie-chicken hunters may also take sharp-tailed grouse while hunting prairie-chickens. Harvest is documented each year in this annual report.

## **METHODS**

Lottery applicants, winners, and permit purchasers were recorded by the Electronic Licensing System (ELS). Registration of harvested birds has not been mandatory except during 2003–2006, so I determined harvest through a postcard survey. I sent a postcard to each lottery winner the week before hunting season. Five weeks later I sent another postcard to people who had not yet responded. Postcards contained 6 questions: did you purchase a permit, did you hunt, and if so, for how many days, how many prairie-chickens did you harvest, how many sharp-tailed grouse did you harvest during prairie-chicken hunts, and how satisfied were you (on a scale of 1–5)?

Only responses from lottery winners who purchased a hunting permit or reported hunting were considered in the analysis. I compared responses from the first mailing to responses from the second mailing to examine possible nonresponse bias. I did not detect a bias in the number of days afield, the number of respondents that hunted, or the number of sharp-tailed grouse harvested between respondents to the first and second mailings. However, a nonresponse bias was detected in the number of prairie-chickens harvested. Therefore, I calculated the number of birds harvested, birds per harvester, and hunter success (i.e., proportion of estimated hunters harvesting  $\geq 1$  prairie-chicken) for each permit area assuming that non-respondents were more similar to respondents from the second mailing than to those from the first mailing. Each of these metrics was calculated by permit area and summed for all areas.

## **RESULTS & DISCUSSION**

The combined quota for the 11 permit areas during 2019 was 125 permits, and 354 individuals applied in the lottery (Table 1). Of the 130 lottery winners, 101—including 2 landowners—later purchased a permit. All permit areas had more applicants than permits available, so surplus permits were not available.

Eighty-nine purchasers (88%,  $n = 101$ ) responded to the survey; 71 (70%) responded to the first mailing and 18 (18%) to the second mailing. This response rate is similar to survey response rates since 2010 (mean: 87%; range: 83–95%). Respondents to the first mailing reported harvesting prairie-chickens at higher rates (45% vs. 22%) and reported harvesting more chickens (0.8 vs. 0.3 birds per hunter). Thus, hunters that were more successful were more likely to respond to the survey. Respondents to the first mailing were as likely as respondents to the second mailing to have hunted (99% vs. 100% of respondents), they hunted a similar number of days (2.1 vs. 2.0), harvested a similar number of sharp-tailed grouse (0.3 vs. 0.2 birds per hunter), and reported similar satisfaction (mean 3.8 vs. 3.8, median 4.0 vs. 4.5), with 88% and 72% of respondents reporting satisfaction scores  $\geq 3$ , respectively.

To correct for the nonresponse bias in harvest this year, I assumed that non-respondents to the survey had similar success as respondents to the second mailing (i.e., class method of correction). This assumption may not eliminate nonresponse bias if non-respondents were less successful than respondents to the second mailing, but should more closely approximate the actual harvest than assuming similar responses of non-respondents and all respondents.

Eighty-eight respondents reported that they hunted prairie-chickens (Table 2). I estimated the total number of hunters to be 100 (i.e., purchasers who went afield) after accounting for hunting by non-respondents. Hunters reported harvesting 61 prairie-chickens and total harvest after

accounting for non-respondents was estimated as 64 prairie-chickens. An estimated 37 hunters bagged  $\geq 1$  chicken. Prairie-chicken hunter success during 2019 was lower than during 2013–2018, but comparable to 2010 and 2012. Lower success might be due in part to the 20% decline in number of active leks counted during spring surveys earlier this year, and perhaps also to rainy weather reported by respondents. Survey respondents also reported harvesting 25 sharp-tailed grouse while hunting prairie-chickens from permit areas 803A, 804A, 805A, 806A, and 807A (Figure 1). Successful hunters reported higher average satisfaction (4.4) than respondents that were not successful (3.4), but satisfaction of prairie-chicken hunters was high overall.

Prairie-chicken hunter satisfaction was similar to 2013–2018, which is consistent with improved satisfaction following changes to the season framework in 2013 to accomplish this goal (Table 3). Hunter survey responses in the 2013 Wildlife Public Input Survey and through this postcard survey in 2015 indicated that hunter preferences are split, but that the majority of hunters support the current season framework. Both the 2013 and 2015 surveys asked hunters about their preference for a season opening on the last Saturday in September or an opener on the Saturday nearest 20 October. The majority of respondents to the 2013 survey (64% of respondents who expressed an opinion) indicated a preference for the earlier season. Likewise, in the 2015 survey, 56% of respondents indicated a preference for the earlier season. Supporters of the early season indicated that the birds were less wary early in the season and pheasant hunting did not affect the hunt. Reasons provided in support of a later season included cooler weather for hunters and dogs, better plumage on birds, fewer standing crops, opportunity to harvest pheasants while hunting chickens, and no conflict with the waterfowl opener. Although a large minority still indicated a preference for a later season, the current season meets the timing preferences of the majority of responding prairie-chicken hunters.

## **ACKNOWLEDGMENTS**

This survey was funded in part by the Wildlife Restoration (Pittman-Robertson) Program. I would like to thank Laura Gilbert for preparing and mailing the postcards and entering data. I would also like to thank Lindsey Shartell for commenting on the report.



Table 1. Prairie-chicken hunt lottery applicants, winners, and hunting permit purchasers in Minnesota during 2019.

Permit area	Permits available	No. of applicants	Lottery winners		Permit purchasers <sup>a</sup>		Surplus purchasers <sup>c</sup>
			No. <sup>b</sup>	Proportion	No.	Proportion	
803A	8	20	9	0.45	9	1.00	0
804A	10	23	10	0.43	6	0.60	0
805A	10	55	11	0.20	8	0.72	0
806A	12	41	12	0.29	8	0.67	0
807A	20	50	20	0.40	15	0.75	0
808A	20	70	21	0.30	17	0.81	0
809A	15	25	16	0.64	15	0.94	0
810A	15	27	16	0.59	10	0.63	0
811A	5	9	5	0.56	4	0.80	0
812A	5	21	5	0.24	4	0.80	0
813A	5	13	5	0.38	5	1.00	0
All	125	354	130	0.37	101	0.78	0

<sup>a</sup> Lottery winners who purchased a hunting permit.

<sup>b</sup> The number of permits may exceed the quota when the last applicant selected in the lottery belongs to a hunting party.

<sup>c</sup> Number of people purchasing a surplus permit after the lottery because the permit quota was not met during the lottery. Surplus permits were not available in 2019, because more people applied for permits in each area than there were permits available.

Table 2. Prairie-chicken harvest in Minnesota during 2019.

Permit area	No. of hunters <sup>a</sup>		Birds harvested		Birds per harvester <sup>b</sup>	Success rate <sup>c</sup>
	Self-reported	Estimated	Self-reported	Estimated		
803A	8	9	1	1	1.0	0.11
804A	6	6	0	0	NA	0.00
805A	6	8	1	2	1.2	0.13
806A	7	8	5	5	1.7	0.38
807A	11	15	12	13	1.9	0.47
808A	16	16	19	19	1.9	0.63
809A	14	15	17	17	1.7	0.67
810A	10	10	3	3	1.0	0.30
811A	4	4	0	0	NA	0.00
812A	2	4	1	2	1.2	0.25
813A	4	5	2	2	1.9	0.20
All	88	100 <sup>d</sup>	61	64 <sup>d</sup>	1.7 <sup>d</sup>	0.37 <sup>d</sup>

<sup>a</sup> Permit purchasers who hunted.

<sup>b</sup> Estimated number of birds harvested per successful hunter, assuming non-respondents had success similar to that of respondents to the second mailing.

<sup>c</sup> Proportion of estimated hunters harvesting  $\geq 1$  prairie-chicken.

<sup>d</sup> Assumed that non-respondents were represented by respondents in the second mailing.

Table 3. Summary of prairie-chicken hunting in Minnesota during 2003–2019.

Year	Permits		Hunters <sup>a</sup>	Birds harvested	Success rate <sup>b</sup>	Hunter satisfaction <sup>c</sup>
	available	Applicants				
2003	100	853	92	130	0.75	4.4
2004	101	759	87	58	0.45	3.6
2005	110	500	86	94	0.63	4.0
2006	182	512	149	109	0.49	3.6
2007 <sup>d</sup>	187	519		122	0.53	
2008	186	535	137	133	0.58	3.9
2009	186	512	143	118	0.52	3.4
2010	186	421	136	78 <sup>e</sup>	0.32	3.0
2011	186	264	138	103	0.45	3.4
2012	186	298	158	86	0.39	3.4
2013	126	277	93 <sup>f</sup>	96 <sup>f</sup>	0.60 <sup>f</sup>	3.7 <sup>f</sup>
2014	126	305	102	95	0.54	3.7
2015	126	271	112	103	0.55	3.6
2016	126	304	111	102	0.58	3.8
2017	125	317	97	86 <sup>f</sup>	0.55 <sup>f</sup>	4.0 <sup>f</sup>
2018	125	303	104	82 <sup>f</sup>	0.51 <sup>f</sup>	3.9 <sup>f</sup>
2019	125	354	100	64 <sup>f</sup>	0.37 <sup>f</sup>	3.8 <sup>f</sup>

<sup>a</sup> Estimated number who went hunting, not permit purchasers.

<sup>b</sup> Proportion of hunters harvesting  $\geq 1$  prairie-chicken.

<sup>c</sup> Mean on a scale of 1–5.

<sup>d</sup> A hunter survey was not conducted during 2007; results are from the Electronic Licensing System, which documented 150 permit purchasers.

<sup>e</sup> One hunter reported harvesting 10 prairie-chickens in 2010.

<sup>f</sup> Assumed that non-respondents were represented by respondents in the second mailing in 2013, 2017, 2018, and 2019.

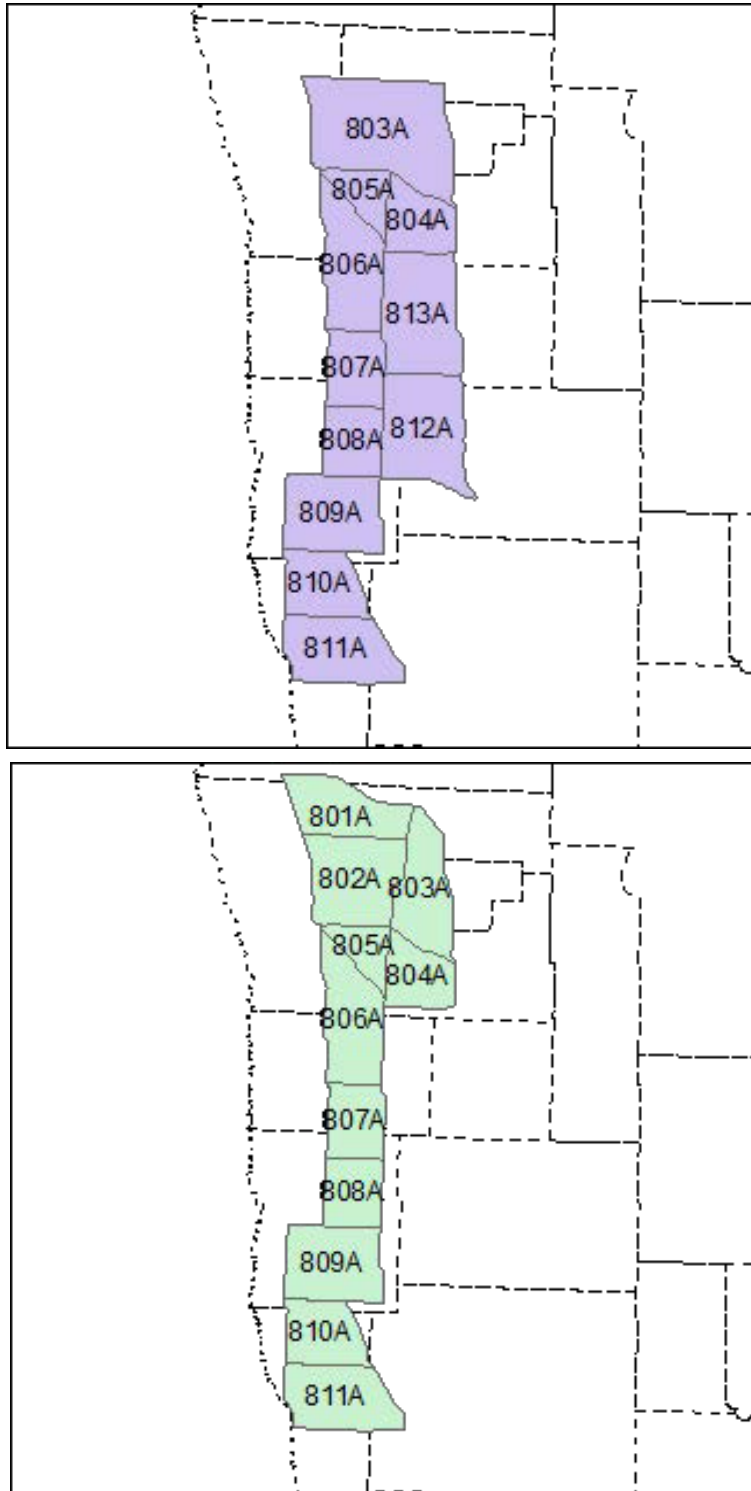


Figure 1. Prairie-chicken hunting permit area boundaries in northwestern Minnesota since 2013 (top) compared to during 2006–2012 (bottom). County boundaries are indicated by dashed lines. Permit areas 812A and 813A were added, 801A was eliminated, and 802A and portions of 803A were combined into a revised permit area 803A.

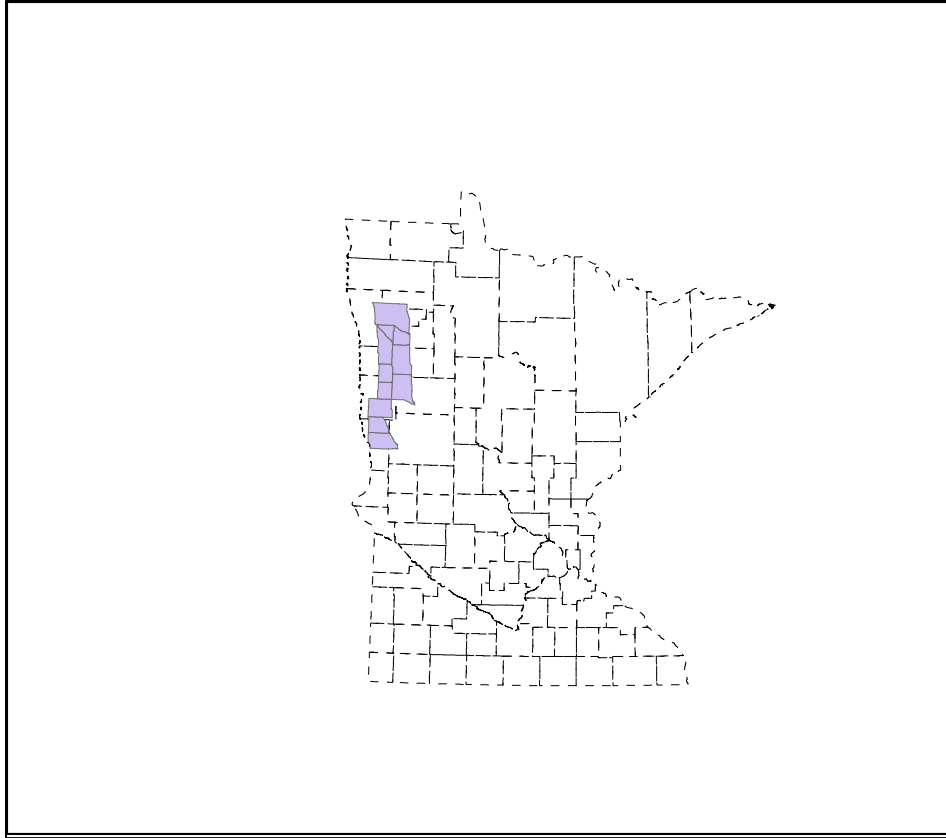


Figure 2. Northwestern location of prairie-chicken hunting permit areas within the state relative to county boundaries (dashed lines).



## **STATUS OF MINNESOTA BLACK BEARS, 2019**

Dave Garshelis and Andy Tri, Forest Wildlife Research Group

### **INTRODUCTION**

The Minnesota bear range has historically been divided into 13 bear management units (BMU). Each has a separate quota on hunting licenses, and hunters must enter a lottery (based on preference points) to obtain a license. Outside the primary bear range, where bear depredation to crops is a primary concern, license sales are unlimited (no-quota area), and hunters can purchase licenses right up to and through the season, over the counter. In all areas the season runs from September 1 through mid-October. About 80% of hunters use bait. This report summarizes status and trends in bear hunting and harvests.

### **METHODS**

Successful hunters must register their bears, in person at designated registration stations or electronically by internet or phone. Stations are not staffed by DNR personnel. Harvest data is a simple tally of these registrations. Hunters also are required to submit a tooth from harvested bears, which is used to estimate age, and thus harvest age structure. Tooth envelopes must be acquired at registration stations.

### **RESULTS**

#### **Permits, licenses, harvest, and success rates**

Permit applications for bear licenses exceeded 20,000 for the third straight year (although a slight drop from 2017 and 2018). Of these, >3,400 (16%), a record high number, applied for area 99, meaning that they only sought to raise their preference level for the permit system, but not hunt this year. Permit availability was higher than 2018 (increased in BMUs 41 and 45). Hunting success in the quota zone was the second highest ever. Hunting success is inversely related to the number of hunters but also strongly affected by fall foods (Figure 1).

#### **Bear Management Units**

There are currently 13 Bear Management Units (BMUs) where license sales are limited by a quota, and 4 BMUs with no quota. The BMU divisions in the no-quota zone are for internal data analysis purposes only: hunters do not have to choose a BMU in which to hunt within this zone. In the quota zone, hunters must apply for a certain BMU and are drawn through a preference lottery based on their number of previously unsuccessful applications (Table 4). The first digit in each BMU (1–5) refers to 5 larger BMUs in which each was previously a part (when numbering began in 1985). Since then several BMUs have been split, to better adjust hunting pressure. The most recent split was in 2016, when BMU 26 was divided into 27 and 28, and BMU 44 was split into 46 and 47 (BMUs 28 and 47 comprise the Leech Lake Reservation). This split, along former BMU lines, allows current data to be regrouped into these former BMUs and thereby compared to older data (which is done in this report).

### **Quota zone permits and licenses**

The number of quota zone permits available in 2019 was slightly higher than in 2017 and 2018 (25 permit increase in each of BMUs 41 and 45; Table 2). This is the 7<sup>th</sup> year (since 2013) that permits have been kept low (<3,900). This was the 9<sup>th</sup> year (since 2011) of a system whereby licenses for the quota zone that were not purchased by permittees selected in the lottery (>400) could be purchased later as surplus (Table 3)

### **Quota zone applicants**

Statewide, quota zone applications increased 11% over the past 10 years, but much of that increase was for area 99 (preference level application). Among applications for specific BMUs, only BMU 45 showed a significant, steady increase over the past 10 years, but this too has leveled out since 2017 (Figure 3).

### **Quota zone lottery**

The low quota zone permit availability over the past 7 years has made it increasingly difficult to succeed in the lottery (Table 4). This year, although quotas were about the same as last year, a higher level of preference was needed to secure a permit because a large number of hunters who had accumulated preference points by previously applying to area 99 entered the lottery for a BMU. First-time and second-time applicants were successful only in BMU 22 (wilderness area hunt). Four BMUs required a preference level of at least 4 for a chance of success, and BMU 45 required a preference level of 5 or above. This high threshold for BMU 45 is due to the increasing number of applicants (Figure 3), not a reduced number of available permits (Table 2).

### **Harvest by BMU**

The statewide harvest in 2019 was 33% higher than 2018 (Table 5). Most of this increase occurred in the southern portion of the bear range (BMUs 45, 51, and 52); harvest in these BMUs was 2–3 times higher than in 2018. The sex ratio of the harvest was  $\geq 60\%$  males in all BMUs except BMUs 45, 46, 47, and 51. BMUs with the highest increases in harvests tended to have a higher proportion of females in the harvest. The statewide harvest sex ratio has exceeded 60% in all years since 2013 (Table 1), when permits were reduced. However, these same highly male-biased sex ratios have also occurred in the no-quota area, suggesting that it is not just due to low hunter density.

### **Harvest by quota vs no-quota zones**

Permit availability continuously declined during the decade 2003–2013 (Table 1), and with that, total harvests declined and the percent of the harvest in the no-quota zone increased. The percent harvest in the no-quota zone has leveled off in recent years, with stabilization of the number of quota-zone permits available, but nevertheless was a record high this year (29%), most of it occurring in BMU 52 (16% of statewide harvest; Table 5). Nearly half the bear hunters were hunting with a no-quota license since 2017.

### **Hunting success by BMU**

Record-breaking success was experienced by hunters in 2016 and 2017, but dipped for most BMUs in 2018 (Table 6). In 2019, success was generally higher, reaching record or near-record levels in all but a few northern BMUs of the quota zone (>50% in BMUs 25, 27, 41, 45, 46, and 47; 65% in BMU 28 [which has a high proportion of guided hunters]). Success rate in the no-quota zone as a whole (20%) was less than one-half that in the quota zone (49%). The distribution of hunters within the no-quota zone is gleaned from where they said they would hunt when they purchased their license: a growing proportion indicated that they planned to hunt in BMU 10 (although the hunting success rate in this area is lowest in the state).

### **Harvest by date**

During years of normal fall food abundance, about 70% of the harvest occurs during the 1<sup>st</sup> week of the bear season, and ~83% occurs by the end of the 2<sup>nd</sup> week (Table 7). This year followed this normal pattern (whereas the harvest was delayed in 2018, due to more abundant foods).

### **Predictions of harvest**

The 2019 statewide harvest was nearly 20% higher than expected (2340 actual vs. 1959 predicted), based on regression of harvest as a function of hunter numbers and the fall food productivity index (Figure 5). This regression is nearly as strong (and has accurately predicted previous harvests) when only the past 15 years are considered. For the quota zone, the actual harvest in 2019 was also nearly 20% higher (1659 actual vs. 1391 predicted) than predicted by this regression.

### **Harvest sex ratios**

Harvest sex ratios within BMUs varied considerably year-to-year over the past 2 decades. In 2019, four BMUs in the northwestern part of the state (BMU 11, 12, 13, 41) all had harvest sex ratios very skewed to males (68–73%). Four BMUs farther east (BMU 24, 25, 26 [now 27, 28], 31) had consistently lower sex ratios (62–63%), yet still much higher than a decade ago, when it rarely exceeded 60% male. The southern tier of BMUs (BMU 44 [now 46, 47], 45, 51, 52) all had much lower harvest sex ratios in 2019 than in 2018. Statewide, the percent males in the harvest has been climbing since the late 1990s; it has exceeded 60% in all years since 2013. Sex ratios of harvested bears reflect both the sex ratio of the living population (which varies with harvest pressure) as well as the relative vulnerability of the sexes to hunters (which varies with natural food conditions, hunter selectivity, and possibly density of baits; Figure 6).

### **Harvest ages**

On a BMU-basis, median ages of harvested females has not shown an obvious temporal trend over the past 20 years (Figure 7). In 2019, median ages of females harvested in northwestern BMUs (BMU 11, 12, 13, 41) was only about 3 years old, whereas those farther east (BMU 24, 25, 26 [now 27, 28], 31) were 0.5–1.5 years older, and those in the southern tier of BMUs (BMU 44 [now 46, 47], 45, 51, 52) were about a half year younger (all <3 years old; Figure 8). Statewide, the median age of harvested females showed a steady drop until 2014. Since then it has climbed to 3.0 years old. Likewise, the proportion of harvested females aged 4–10 years has risen since 2014, while the proportion 1–2 years old has declined. The median age of harvested males has been creeping upward since 2013 (2.3 years in 2019; Figure 9)

### **Submission of bear teeth for aging**

Ages of harvested bears are used as the principal means of monitoring population trends. Although hunters are required to submit a tooth from their harvested bear, historically >25% did not comply. Reminder notices were sent to non-compliant hunters each year during 2014–2017, which spurred a higher initial compliance the following years (>80%). Since 2018, with no reminder mailing, compliance has been 85–87% (Figure 10). Since 2013, hunters could register by phone or internet, and pick up a tooth submission envelope later: tooth submission compliance by these hunters has been significantly less (83%) than for hunters who registered their bear in person and picked up a tooth envelope at that time (92% compliance). A decreasing proportion of hunters are registering their bear at a registration station (Figure 11). Compliance with tooth submission was higher in the quota zones than in the no-quota area, but was especially low (<80%) in BMUs 10 and 41 (in both 2018 and 2019).



### **Trends in harvest rates**

The sex ratio of harvested bears varies by age. Male bears are more vulnerable to harvest than females, so males always predominate among harvested 1-year-olds (67–75%). Males also predominate, but less strongly among 2 and 3-year-old harvested bears (Figure 12). However, older-aged harvested bears ( $\geq 8$  years) are nearly always dominated by females, because, although old females continue to be less vulnerable as individuals, there are far more of them than old males in the living population. The age at which the line fitted to these proportions crosses the 50:50 sex ratio is approximately the inverse of the harvest rate. Segregating the data into time blocks showed harvest rates increasing from 1980–1999, then declining with reductions in hunter numbers (Figure 1). Based on this method, harvest rates since 2015 have been significantly less than what they were in the early 1980s, when the bear population was increasing.

One problem in using this very simple method is that it assumes that the relative difference for males versus females in their vulnerability to harvest does not change systematically through time. This may not be true, given the steadily increasing male-skewed harvests since the late 1990s, and especially in recent years (Figure 9).

*Note: All data contained herein are subject to revision, due to updated information, improved analysis techniques, and/or regrouping of data for analysis.*

**Table 1. Bear permits, licenses, hunters, harvests, and success rates, 1999–2019.**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Permit applications <sup>a</sup>	29384	29275	26824	21886	16431	16466	16153	15725	16345	17362	17571	18647	19184	18103	18107	18885	18422	19958	21034	21184	20632
Permits available <sup>b</sup>	20840	20710	20710	20610	20110	16450	15950	14850	13200	11850	10000	9500	7050	6000	3750	3750	3700	3850	3350	3350	3400
Licenses purchased (total)	18355	19304	16510	14639	14409	13669	13199	13164	11936	10404	9892	9689	9555	8986	6589	6620	6962	7177	6655	6550	6801
Quota zone <sup>c</sup>	16563	17021	13632	12350	9833	10063	9340	9169	8905	7842	7342	7086	5684	4951	3188	3177	3257	3420	2954	2922	2988
Quota surplus/military <sup>c</sup>			235	209	2554	1356	1591	1561	526	233	77	83	1385	1070	578	583	446	441	401	428	417
No-quota zone <sup>c</sup>	1792	2283	2643	2080	2022	2238	2268	2434	2505	2329	2473	2520	2486	2965	2823	2860	3259	3316	3300	3200	3396 <sup>h</sup>
% Licenses bought																					
Of permits available <sup>d</sup>	79.5	82.2	67.0	60.9	61.6	69.4	68.5	72.3	71.4	67.7	73.4	74.6	100	100	100	100	100	100	100	100	100
Of permits issued <sup>d</sup>	87.2	83.9	69.8	66.3	65.7	68.3	67.1	68.9	70.0	67.2	73.8	74.5	80.7	82.7	85.0	84.7	87.9	88.7	88.2	87.2	87.8
Estimated no. hunters <sup>e</sup>	15900	16800	15500	13800	13600	12900	12500	12500	11300	9900	9400	9200	9200	8600	6300	6300	6700	6900	6400	6300	6700
Harvest	3620	3898	4936	1915	3598	3391	3340	3290	3172	2135	2801	2699	2131	2604	1866	1627	1971	2641	2040	1766	2340
Harvest sex ratio (%M) <sup>f</sup>	53	58	56	61	58	57	59	58	57	62	59	59	61	59	62	62	66 <sup>i</sup>	61	63	66 <sup>i</sup>	61
Success rate (%)																					
Total harvest/hunters <sup>g</sup>	23	23	29	14	26	26	26	26	28	21	30	29	23	30	30	26	30	38	32	28	35
Quota harvest/licenses	20	20	28	14	25	26	25	25	28	21	30	30	24	33	37	33	39 <sup>j</sup>	50 <sup>j</sup>	46	38	49 <sup>j</sup>

<sup>a</sup> From 2008 to 2019, includes area 99, a designation to increase preference but not to obtain a license (2008 = 528, 2009 = 835; 2010 = 1194; 2011 = 1626; 2012 = 1907; 2013 = 2129; 2014=2377; 2015=2455; 2016=2641; 2017=2803; 2018=3254, 2019=3450 (record high); additionally, area 88 nuisance-only bear license applications counted in this total in 2017=3, 2018=6, 2019= 5 (people who selected area 88 as 1<sup>st</sup> preference).

<sup>b</sup> Beginning in 2011 a procedure was implemented that ensures that all available licenses are purchased (see Table 2).

<sup>c</sup> Quota zone established in 1982. No-quota zone established in 1987. Surplus licenses from undersubscribed quota areas sold beginning in 2000; originally open only to unsuccessful permit applicants, but beginning in 2003, open to all. In 2011, surplus licenses offered for all lottery licenses not purchased by August 1. Free licenses for 10 and 11 year-olds were available beginning 2009.

<sup>d</sup> Quota licenses bought (including surplus)/permits available, or licenses bought (prior to surplus)/permits issued. Beginning in 2008, some permits were issued for area 99; these are no-hunt permits, just to increase preference, and are not included in this calculation. In 2011–19, all unpurchased licenses were put up for sale and were bought.

<sup>e</sup> Number of licensed hunters x percent of license-holders hunting. Percent hunting is based on data from bear hunter surveys conducted during 1981–91, 1998 (86.8%), 2001 (93.9%), 2009 (95.3%), and 2018 (92.7%). Beginning in 2011 all unpurchased quota licenses were sold as “surplus” in August, and this process is quick and competitive; thus, for 2011–19 all Surplus and Military license-holders were considered to have hunted.

<sup>f</sup> Sex ratio as reported by hunters; hunters classify about 10% of female bears as males, so the actual harvest has a lower %M than shown here. In good food years, the harvest is more male-biased.

<sup>g</sup> Success rates in 2001–2012 were calculated as number of successful hunters/total hunters, rather than bears killed/total hunters, because no-quota hunters could take 2 bears. After 2012, hunters could take 2 bears only if they bought 2 licenses (1 quota + 1 no-quota). In both 2016 and 2017, 5 hunters legally killed 2 bears. In 2018, 3 hunters shot 2 bears. In 2019, 2 hunters shot 2 bears.

<sup>h</sup> Record high number of no-quota zone licenses purchased in 2019; record high % of licenses in no-quota zone in 2017 (nearly 50%; see Fig. 4).

<sup>i</sup> Record high % males in statewide harvest.

<sup>j</sup> 2015: highest success rate in quota zone since very poor food year of 1995; 2016: record high success rate; 2019: second-highest success rate.

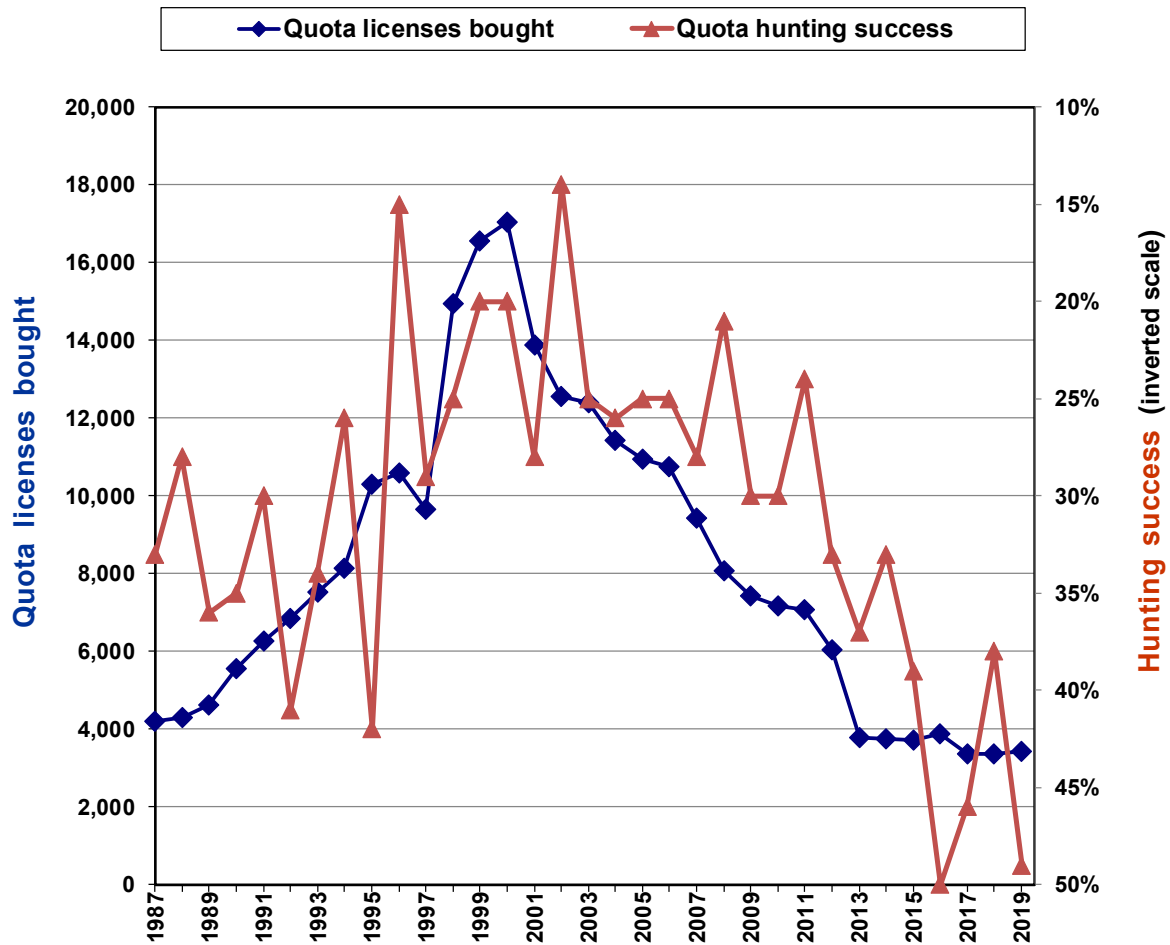


Figure 1. Relationship between licenses sold and hunting success (*note inverted scale*) in quota zone, 1987–2019 (quota and no-quota zones first partitioned in 1987). Number of licenses explains 53% of variation in hunting success during this period. Large variation in hunting success is also attributable to food conditions (e.g., during 2013–2019, when licenses were held relatively constant).

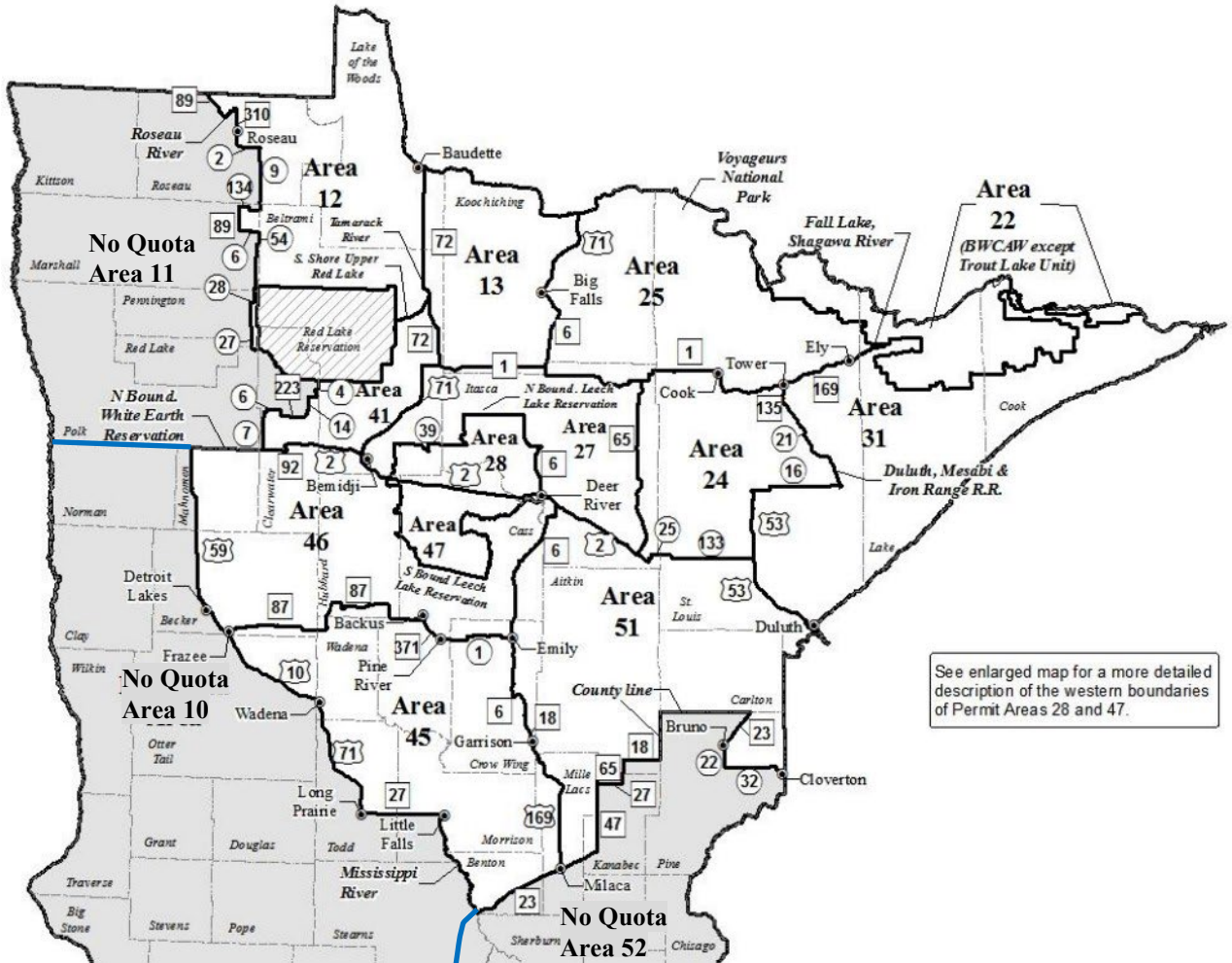


Figure 2. Bear management units (BMUs) within quota (white) and no-quota (gray) zones. Hunters in the quota zone are restricted to a single BMU. In 2016, BMU 26 was divided into 27 and 28, and BMU 44 was split into 46 and 47 (BMUs 28 and 47 comprise the Leech Lake Reservation). No-quota hunters can hunt anywhere within the gray-colored zone, including the southeast corner of Minnesota (not shown; designated area 60).

Table 2. Number of bear hunting quota area permits available, 2013–2018. Highlighted values show a change from the previous year. BMUs 26 and 44 were divided into 27/28 and 46/47, respectively, in 2016.

BMU	2014	2015	2016		2017	2018	2019
			Before BMU	After BMU			
			split <sup>a</sup>	split			
12	200	150	150	150	125	125	125
13	250	250	250	250	225	225	225
22	50	50	50	50	50	50	50
24	200	200	200	200	175	175	175
25	500	500	500	500	400	400	400
26	350	350	325				
27				250	225	225	225
28				75	60	60	60
31	550	550	550	550	500	500	500
41	150	150	125	125	125	125	150
44	450	450	450				
46				400	350	350	350
47				50	40	40	40
45	150	150	250	250	175	175	200
51	900	900	1000	1000	900	900	900
<b>Total</b>	<b>3750</b>	<b>3700</b>	<b>3850</b>	<b>3850</b>	<b>3350</b>	<b>3350</b>	<b>3400</b>

<sup>a</sup> In 2016, the Leech Lake Reservation was split from BMUs 26 and 44 to form BMUs 28 (north) and 47 (south), with the remaining area of BMU 26 renamed BMU 28 and remaining area of BMU 44 renamed BMU 46. The column shows permit allocation before the split in order to compare with previous years.

Table 3. Number of quota BMU permit applicants (Apps), licenses bought (after permits drawn) and surplus licenses bought, 2014–2019<sup>a</sup>. Shaded values indicate undersubscribed (applications less than permits available).

BMU	2014			2015			2016			2017			2018			2019		
	Apps	Bought license	Surplus bought	Apps	Bought license	Surplus bought	Apps	Bought license	Surplus bought	Apps	Bought license	Surplus bought	Apps	Bought license	Surplus bought	Apps	Bought license	Surplus bought
<b>12</b>	661	164	36	612	130	20	624	133	17	774	113	12	703	109	16	711	104	21
<b>13</b>	703	218	32	692	210	40	716	221	29	772	200	25	682	177	47	712	199	26
<b>22</b>	65	33	17	48	36	9 <sup>b</sup>	52	37	13	47	34	16	76	36	14	61	35	14
<b>24</b>	875	174	26	771	171	29	884	173	27	945	158	17	928	155	20	840	153	22
<b>25</b>	1533	424	76	1396	433	67	1443	440	60	1651	354	46	1561	355	44	1520	348	52
<b>26</b>	1696	298	52	1650	309	42												
<b>27</b>							1224	219	31	1297	197	28	1265	204	21	1280	200	25
<b>28</b>							325	72	3	330	52	8	309	52	8	318	51	9
<b>31</b>	2257	468	82	2021	488	62	2180	489	62	2076	441	59	2074	428	71	1907	432	67
<b>41</b>	561	129	21	570	129	21	618	114	11	614	109	16	648	114	11	661	143	7
<b>44</b>	2751	393	57	2626	402	48												
<b>46</b>							2690	370	30	2774	319	31	2769	317	33	2662	313	37
<b>47</b>							194	45	5	214	33	7	182	35	5	198	34	6
<b>45</b>	1403	127	23	1703	139	11	2046	227	23	2323	161	14	2383	160	15	2351	178	22
<b>51</b>	4003	748	152	3878	810	90	4321	880	121	4411	783	117	4344	779	123	3956	798	102
<b>Total<sup>c</sup></b>	16508	3176	574	15967	3257	439	17317	3420	432	18228	2954	396	17924	2921	428	17177	2988	410

<sup>a</sup> Beginning in 2011, all licenses not purchased by permittees were sold as “surplus”. In all cases but three (see footnote b), all of the surplus licenses were purchased. Surplus = Permits available (Table 2) minus Bought licenses (±5 to account for groups applying together).

<sup>b</sup> Even after purchase of surplus licenses, this BMU remained undersubscribed.

<sup>c</sup> Beginning in 2008, applicants could apply for area 99 in order to increase future preference, but not buy a license; these are not included in the total number of applications (unlike Table 1, where they are included).

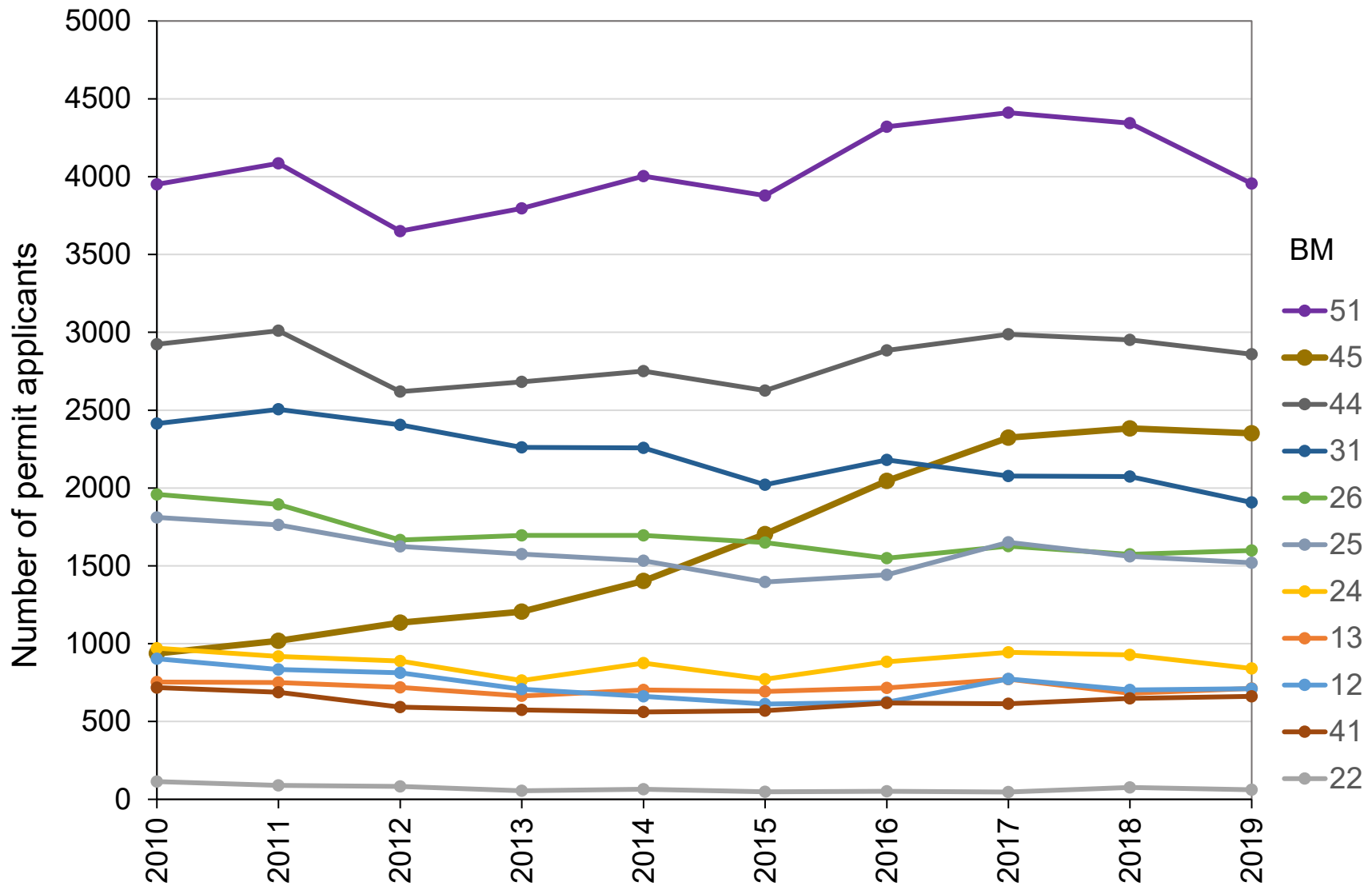


Figure 3. Trends in number of applicants for quota zone permits by BMU over past 10 years, 2010–2019. For 2016–2019, BMUs 27 and 28 were grouped into old BMU 26 and BMUs 46 and 47 were grouped into old BMU 44. BMU 45 is highlighted because applications there surged over this time period.

Table 4. Percent of quota BMU lottery applicants with preference levels 1 (1<sup>st</sup>-year applicants), 2, 3, 4, and 5 who were drawn for a bear permit during 2015–2019. Blank spaces indicate 100% of applicants were drawn. All preference level 2 applicants were drawn, except where 0 preference level 1 applicants were drawn. Likewise, all preference level 3 applicants were drawn, except where 0 preference level 2 applicants were drawn<sup>a</sup>.

BMU	2015				2016				2017				2018					2019				
	Pref 1	Pref 2	Pref 3	Pref 4	Pref 1	Pref 2	Pref 3	Pref 4	Pref 1	Pref 2	Pref 3	Pref 4	Pref 1	Pref 2	Pref 3	Pref 4	Pref 5	Pref 1	Pref 2	Pref 3	Pref 4	Pref 5
12	0	17			0	0	98		0	0	57		0	0	41		0	0	13			
13	0	56			0	38			0	16			0	11			0	0	92			
22	100				98				100				60				76					
24	0	2			0	0	86		0	0	57		0	0	26		0	0	11			
25	0	44			0	42			0	6			0	0	80		0	0	58			
26 <sup>b</sup>	0	0	51																			
27					0	0	30		0	0	2		0	0	0	85	0	0	0	66		
28					0	0	0	99	0	0	0	76	0	0	0	46	0	0	0	5		
31	0	0	87		0	0	75		0	0	67		0	0	48		0	0	38			
41	0	0	99		0	0	77		0	0	56		0	0	27		0	0	6			
44 <sup>b</sup>	0	0	18																			
46					0	0	0	85	0	0	0	51	0	0	0	24	0	0	0	1		
47					0	0	10		0	0	0	49	0	0	0	26	0	0	0	50		
45	0	0	0	81	0	0	0	63	0	0	0	16	0	0	0	0	72	0	0	0	0	42
51	0	0	89		0	0	72		0	0	54		0	0	35		0	0	22			

<sup>a</sup> As an example, in 2019: BMU 12: 0% of pref. level 1 and 2 applicants were drawn, 13% of pref. level 3, and 100% of pref. level 4 and above were drawn for a permit; BMU 22: 76% pref. level 1 applicants were selected, 100% all higher pref. levels; BMU 45: no pref. level 1–4 applicants were drawn, 42% of hunters with pref. 5 were drawn, and all with pref. 6 were drawn.

<sup>b</sup> BMU 26 was split into 27/28 and BMU 44 was split into 46/47 in 2016.



Table 5. Minnesota bear harvest tally for 2019 by Bear Management Unit (BMU)<sup>a</sup> and sex<sup>b</sup> compared to harvests during 2014–2018 and record high and low harvests (since establishment of each BMU, not counting current year).

BMU	2019				2018	2017	2016	2015	2014	5-year mean	Record low harvest (yr)	Record high harvest (yr)
	M	(%M)	F	Total								
<b>Quota</b>												
12	45	73	17	62	66	54	78	60	38 <sup>d</sup>	59	38 (14)	263 (01)
13	71	68	34	105	119	100	147	72 <sup>e</sup>	91	106	71 (88)	258 (95)
22	2	67	1	3 <sup>f</sup>	4	8	5	7	5	6	3 (03)	41 (89)
24	53	62	33	86	60	81	96	97	50 <sup>f</sup>	77	50 (14)	288 (95)
25	142	63	82	224	223	212	287	227	168 <sup>g</sup>	223	149 (96)	584 (01)
26	105	62	64	[169]	[141]	[162]	[171]	121	117 <sup>h</sup>	142	117 (14)	513 (95)
27	77	60	51	128	105	120	131					
28	28	68	13	41	36	42	40					
31	132	62	80	212	211	262	312	307	221	260	157 (88)	697 (01)
41	52	68	24	76	58	61	57	35 <sup>i</sup>	36	46	35 (15)	201 (01)
44	116	57	87	[203]	[154]	[158]	[215]	158	170	176	130 (11)	643 (95)
46	103	57	78	181	139	141	190					
47	13	59	9	22	15	17	25					
45	54	50	54	108	51	77	102 <sup>m</sup>	55	54	67	32 (11)	178 (01)
51	226	55	185	411	185 <sup>d</sup>	372	463	302	291	355	185 (18)	895 (01)
Total	998	60	661	1659	1272	1547	1933	1441	1241 <sup>j</sup>	1507	1192 (88)	4288 (01)
<b>No-Quota</b>												
11	182	68	87	269	287	179	291	195	77 <sup>k</sup>	176	38 (87)	351 (05)
10	18	68	8	26 <sup>n</sup>	21	18	15	11	8	12		26 (19)
52	233	60	153	386	186 <sup>p</sup>	295	402	324	301	334	105 (02)	405 (12)
60 <sup>c</sup>	0		0	0	0	1	0	0	0			
Total	433	64	248	681	494	493	708 <sup>n</sup>	530	386	522	198 (87)	708 (16)
<b>State</b>	1431	61	909	<b>2340</b>	1766	2040	2641	1971	1627 <sup>i</sup>	2029	1509 (88)	4956 (95)

<sup>a</sup> Some tooth envelopes were received from hunters who did not register their bear. These were added to the harvest tally:

2013:6; 2014:3; 2015:6; 2016:7; 2017:4; 2018:2; 2019:18

Some hunters with no-quota licenses hunted in the quota zone, and their kills were assigned to the BMU where they apparently hunted:

2013:11; 2014:4; 2015:12; 2016:9; 2017:2; 2018:4\*; 2019:4

\*None were authorized NQ license-holders hunting in quota zone.

Some quota area hunters also apparently hunted in the wrong BMU, based on the block where they said they killed a bear, but these were recorded in the BMU where they were assigned (presuming most were misreported kill locations).

<sup>b</sup> Sex recorded on tooth envelopes may differ from the registered sex. Sex shown on table is the registered sex.

<sup>c</sup> BMU 60 designates SE Minnesota, which is within No-quota zone. The only hunter-harvested bear in this area was in 2017.

Notable harvests:

<sup>d</sup> Record low harvest since this area was established in 1987.

<sup>e</sup> Lowest harvest since 1988.

<sup>f</sup> Record low harvest since this area was established in 1989.

<sup>g</sup> Lowest harvest since 1996.

<sup>h</sup> Record low harvest since this area was established in 1991.

<sup>i</sup> Record low harvest since this area was established in 1990.

<sup>j</sup> Lowest harvest since 1988 (quota—no-quota split in 1987).

<sup>k</sup> Lowest harvest since 1999.

<sup>m</sup> Highest harvest since 2007.

<sup>n</sup> Record high harvest.

<sup>p</sup> Third lowest harvest since established as NQ area in 1987

<sup>q</sup> Record high % males (or tie for record).

<sup>r</sup> Tie for record low harvest, only hunter-harvested bear in this area was in 2017.

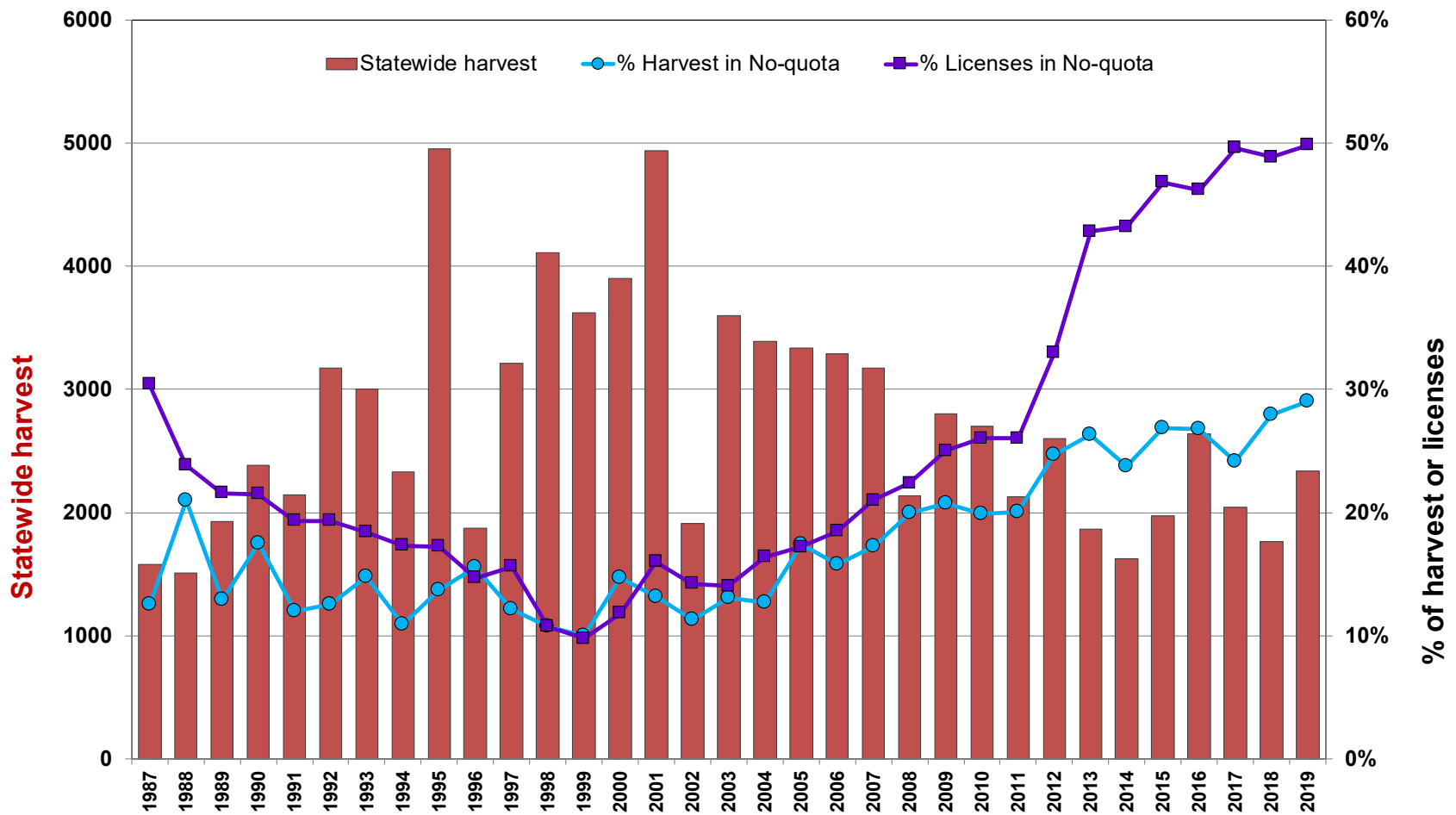


Figure 4. Trends in statewide bear harvest and proportions of harvest and licenses in the no-quota zones, 1987–2019.

**Table 6.** Bear hunting success (%) by BMU, measured as the registered harvest divided by the number of licenses sold<sup>a</sup>, 2014–2019.

BMU	Max success (yr)		Mean success 2014–2018	2019	2018	2017	2016	2015	2014
	before 2019								
12	53	(18)	41	50	53 <sup>b</sup>	43	52 <sup>c</sup>	40	19 <sup>e</sup>
13	59	(95,16)	43	46	53 <sup>c</sup>	45	59 <sup>b</sup>	29	36
22	18	(92)	11	6	8	16	10	13	10
24	48	(15,16)	43	49 <sup>b</sup>	34	46 <sup>c</sup>	48	48	25
25	57	(16)	49	56 <sup>c</sup>	56 <sup>c</sup>	53	57 <sup>b</sup>	45	34
26	59	(95)	47	59 <sup>b</sup>	49	57	52	34	33
27				57 <sup>b</sup>	47	53	52		
28				65 <sup>c</sup>	60	70 <sup>d</sup>	53		
31	56	(15,16)	49	42	42	52	56 <sup>b</sup>	56 <sup>b</sup>	40
41	50	(95)	38	51 <sup>b</sup>	46	49 <sup>c</sup>	46	23	24
44	48	(16)	42	52 <sup>b</sup>	39	41	48 <sup>c</sup>	35	38
46				51 <sup>b</sup>	39	40	47		
47				55 <sup>b</sup>	38	43	50		
45	44	(17)	42	53 <sup>b</sup>	29	44 <sup>c</sup>	40	36	36
51	46	(16)	40	46 <sup>b</sup>	21	41 <sup>c</sup>	46 <sup>b</sup>	33	32
<b>Quota</b>	50	(16)	<b>43</b>	<b>49<sup>c</sup></b>	<b>38</b>	<b>46<sup>c</sup></b>	<b>50<sup>b</sup></b>	<b>39</b>	<b>33</b>
11 <sup>f</sup>			<b>20</b>	23	25	17	28	20	9
10 <sup>f</sup>			<b>8</b>	12	9	8	9	7	7
52 <sup>f</sup>			<b>15</b>	19	10	14	19	15	16
<b>No Quota</b>	32	(95)	<b>16</b>	20	15	15	21	16	13
<b>Statewide</b>	40	(95)	<b>30</b>	<b>34</b>	<b>27</b>	<b>31</b>	<b>37<sup>c</sup></b>	<b>28</b>	<b>25</b>

<sup>a</sup> Registered harvest/licenses instead of harvest/hunters because BMU-year-specific estimates for the proportion of license-holders that hunted are unreliable. Statewide estimates of harvest/hunters are presented in Table 1.

<sup>b</sup> Record high (or tied record high) success.

<sup>c</sup> Second highest (or tied second highest) success.

<sup>d</sup> Highest success ever for any BMU.

<sup>e</sup> Tied record lowest success.

<sup>f</sup> Since 2013, an attempt was made to differentiate the number of no-quota (NQ) hunters by BMU in order to estimate success rates. When no-quota hunters bought licenses, they recorded the deer block where they anticipated hunting. A significant number chose blocks in the quota zone; those who did not harvest a bear in the quota zone were divided up into NQ-BMUs in proportion to those who chose blocks in or adjacent to NQ-BMUs. A few chose BMU 60 (SE Minnesota); the first bear was harvested there in 2017. Table shows % indicating where they planned to hunt (number of hunters in parentheses for BMU 60 and Quota zone):

BMU	2019	2018	2017	2016	2015	2014
11	30.9	34.6	29.8	30.3	29.3	28.5
10	14.3	7.4	6.6	4.9	4.4	4.1
52	52.0	55.3	59.2	61.2	63.9	64.7
60 (n)	0.3 (11)	0.1 (4)	0.1 (4)	0.4 (12)	0.2 (8)	0.6 (17)
<b>Quota zone (n)</b>	<b>2.5 (94)</b>	<b>2.6 (83)</b>	<b>4.2 (137)</b>	<b>3.2 (105)</b>	<b>3.1 (101)</b>	<b>2.1 (60)</b>

Table 7. Cumulative bear harvest (% of total harvest) by date, 1998–2019.

Year	Day of week for opener	Aug 22/23 – Aug 31	Sep 1 – Sep 7	Sep 1 – Sep 14	Sep 1 – Sep 30
1998	Tue		76	87	96
1999	Wed		69	81	95
2000	Wed	57	72	82	96
2001	Wed	67	82	88	98
2002	Sun		57 <sup>a</sup>	69 <sup>a</sup>	90
2003	Mon		72	84	96
2004	Wed		68	82	95
2005	Thu		72	81	94
2006	Fri		69	83	96
2007	Sat		69	82	96
2008	Mon		58 <sup>a</sup>	71 <sup>a</sup>	92
2009	Tue		74	86	96
2010	Wed		69	84	96
2011	Thu		65	78	93
2012	Sat		68	83	96
2013	Sun		61	76	94
2014	Mon		60	75	92
2015	Tue		58 <sup>b</sup>	75	91
2016	Thu		68	83	95
2017	Fri		69	83	93
2018	Sat		59 <sup>a</sup>	75	91
2019	Sun		71	83	95

<sup>a</sup> The low proportion of total harvest taken during the opening week (<60%) reflects a high abundance of natural foods.

<sup>b</sup> The slow start the first week was likely due to especially warm weather.

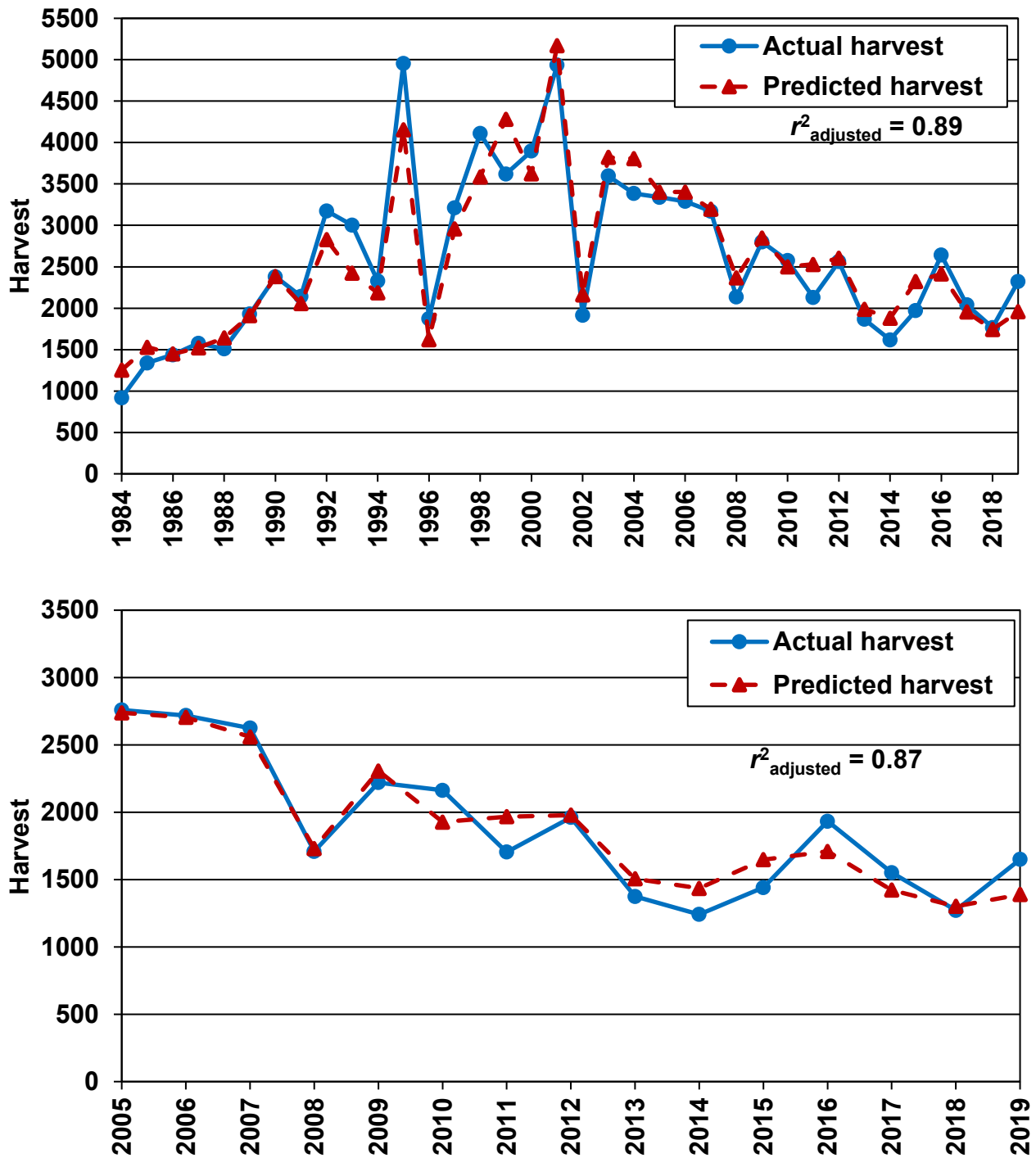


Figure 5. Number of bears harvested vs. number predicted to be harvested based on number of hunters and fall food production — top panel: statewide 1984–2019; bottom panel: quota zone only, most recent 15 years. Regression for both datasets included an interaction term between food and hunters to better predict the drastic changes in harvest when fall foods were extremely high or low.

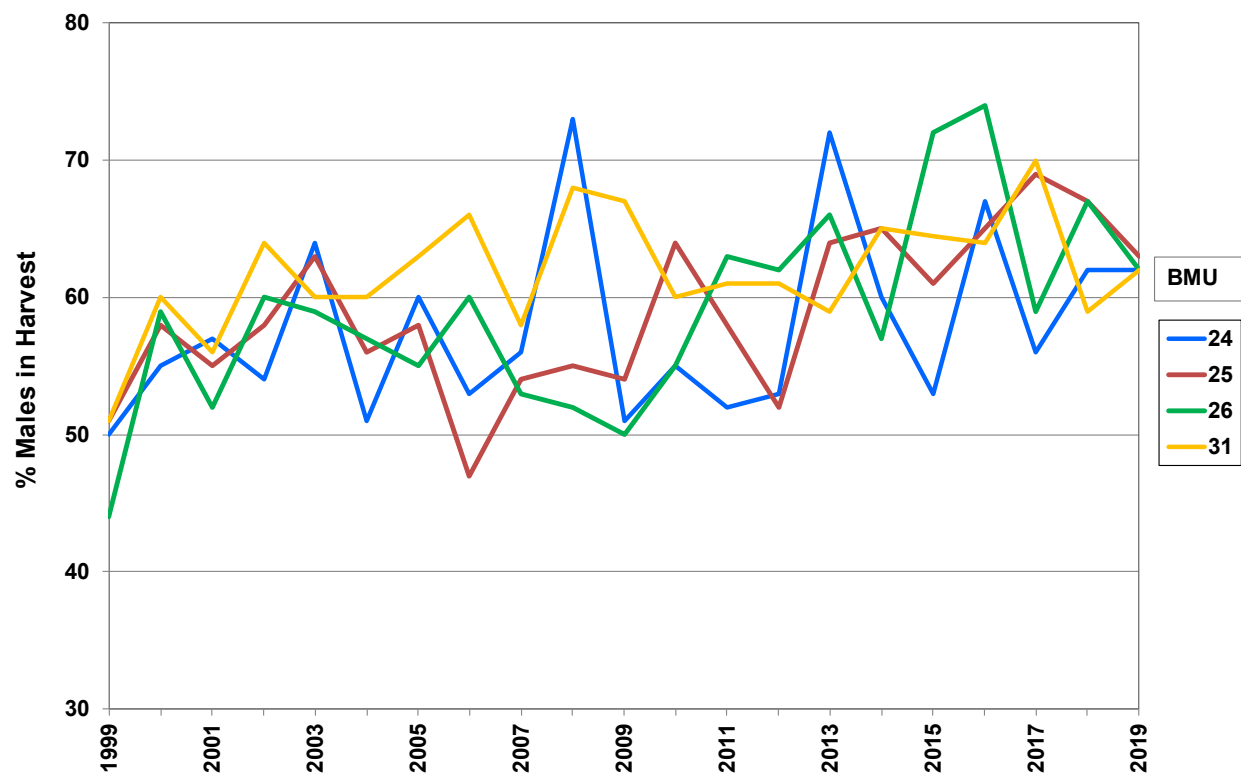
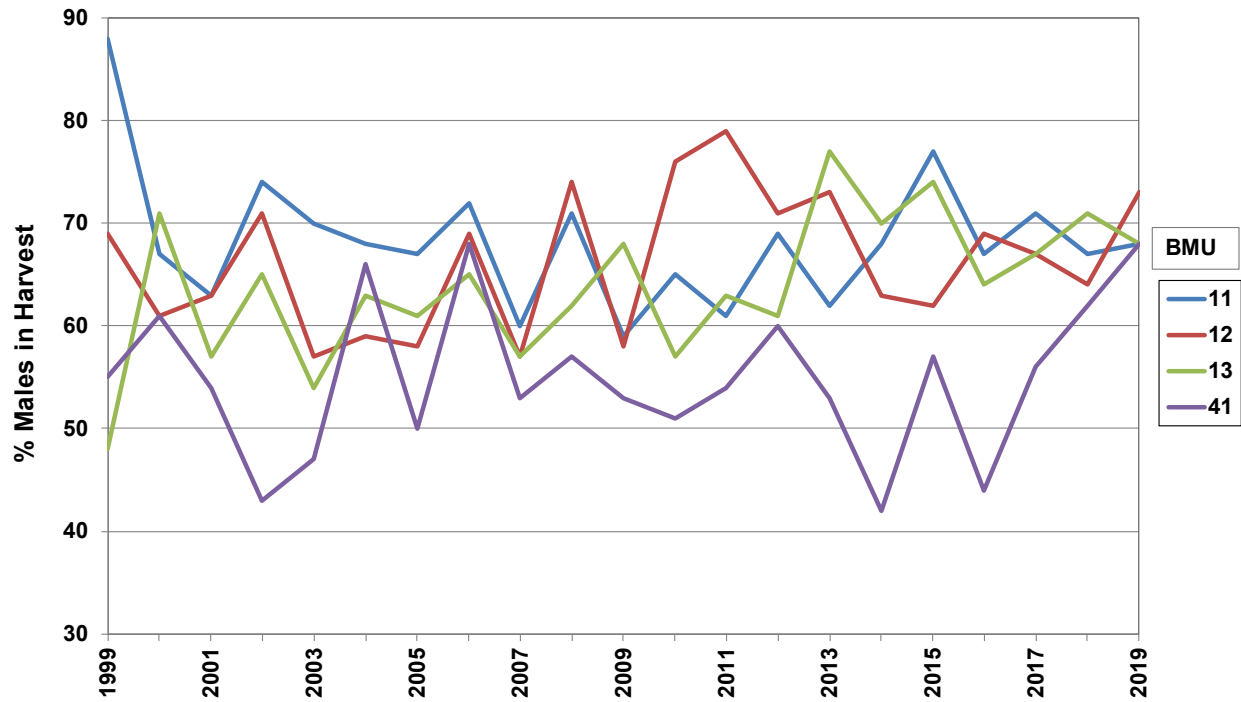


Figure 6. Sex ratios of harvested bears by BMU, 1999–2019. Thick lines show significant increasing trend across this period.

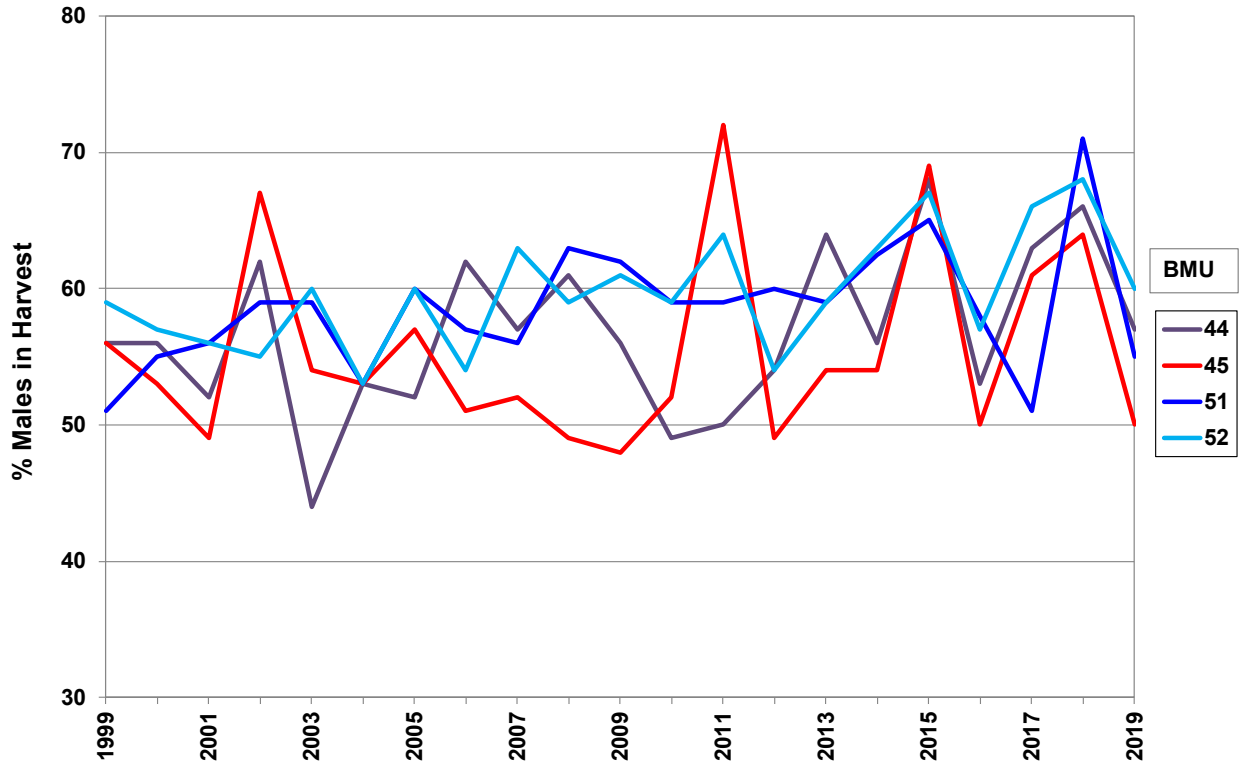


Figure 6 (continued)

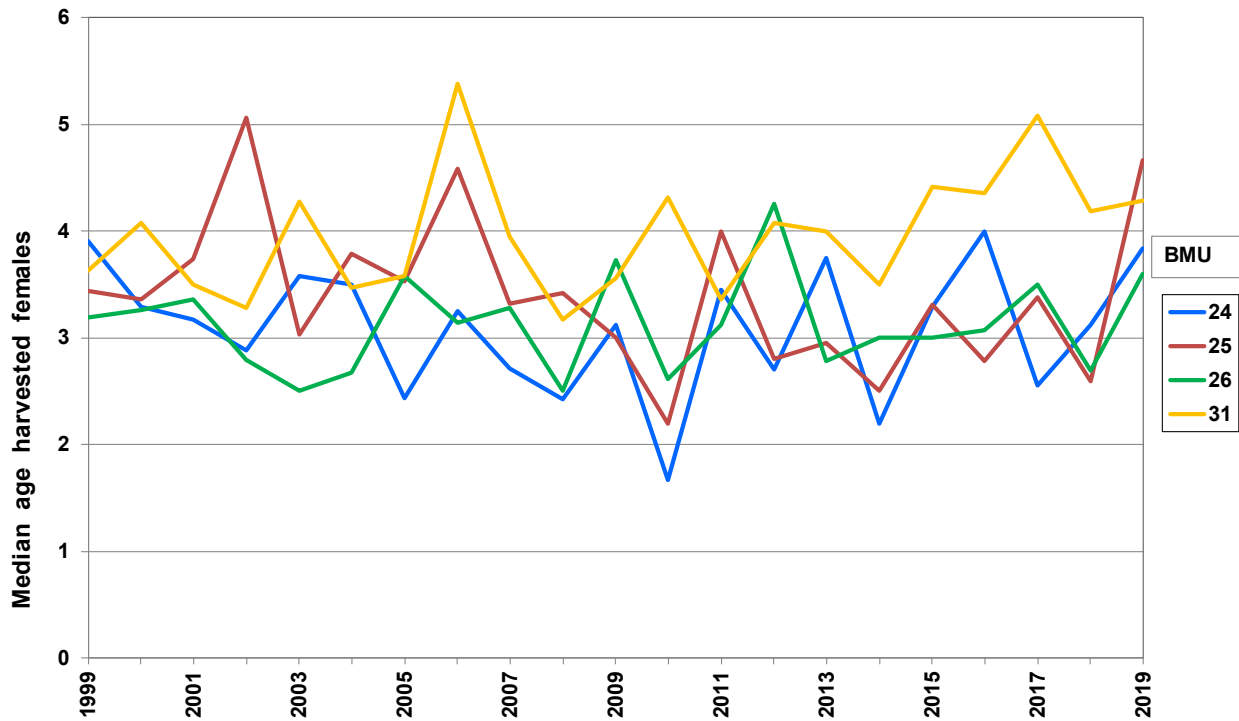
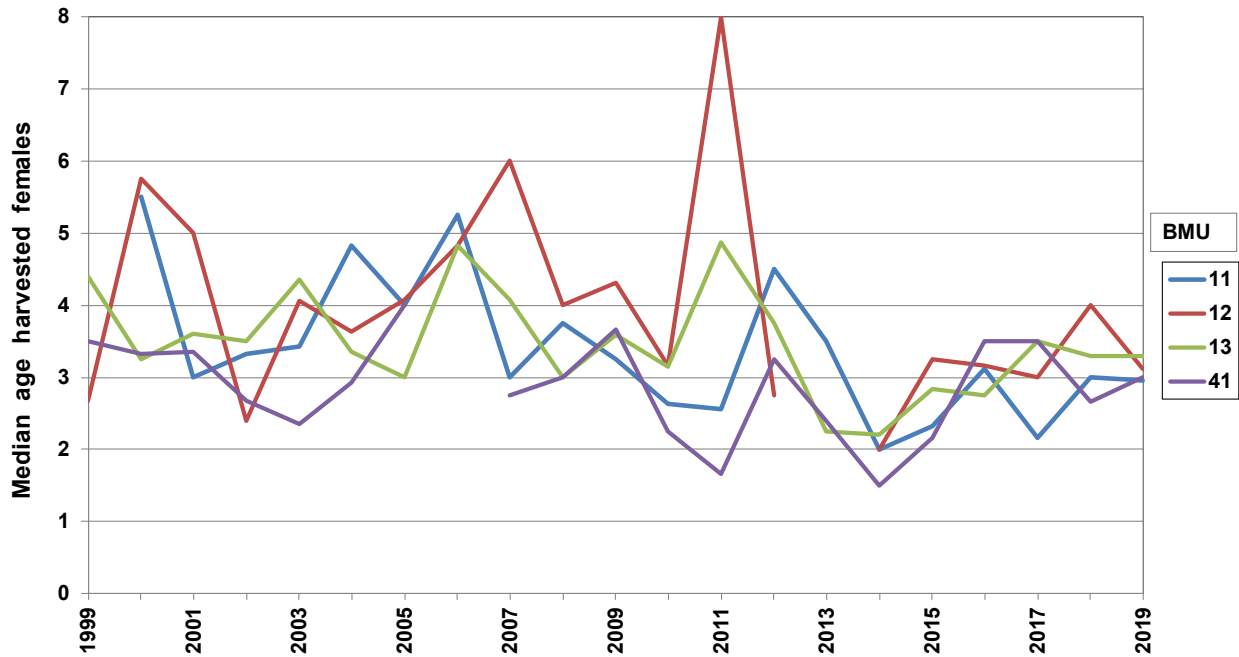


Figure 7. Median ages of harvested female bears by BMU, 1999–2019. Breaks in line occur when sample sizes were too small to calculate a meaningful median.



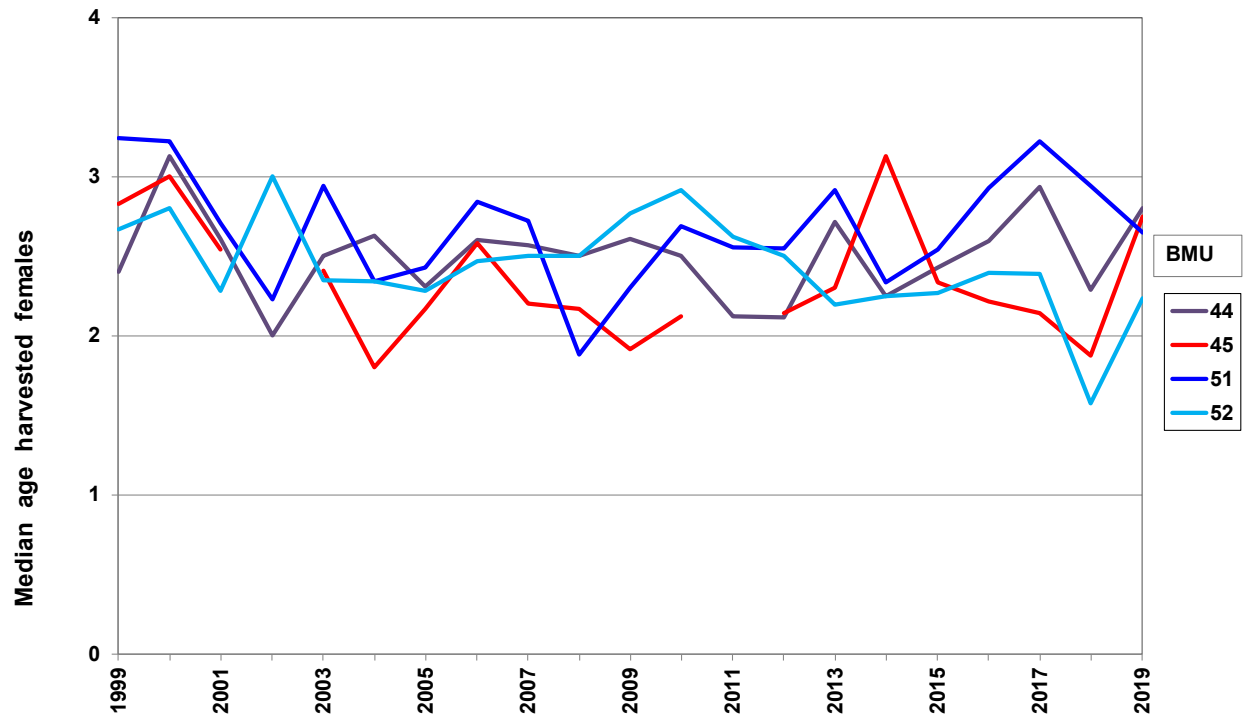


Figure 7. (continued)

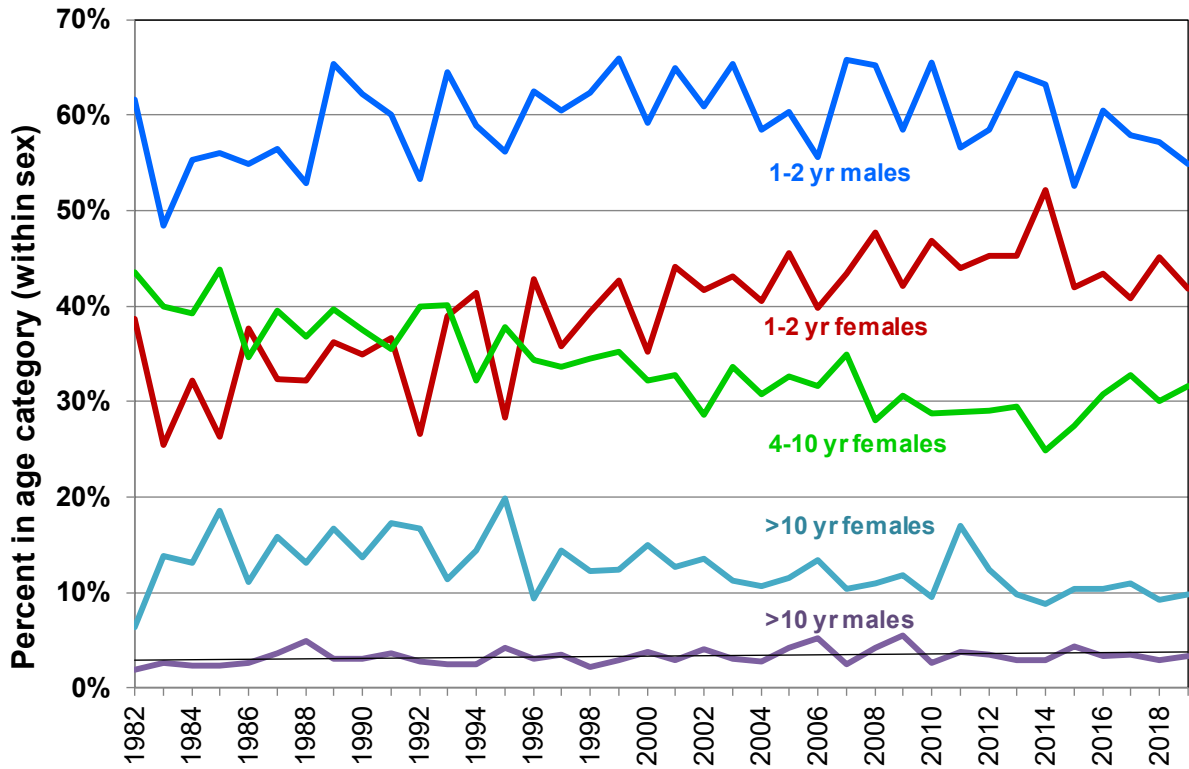


Figure 8. Statewide harvest structure: proportion of each sex in age category, 1982–2019.

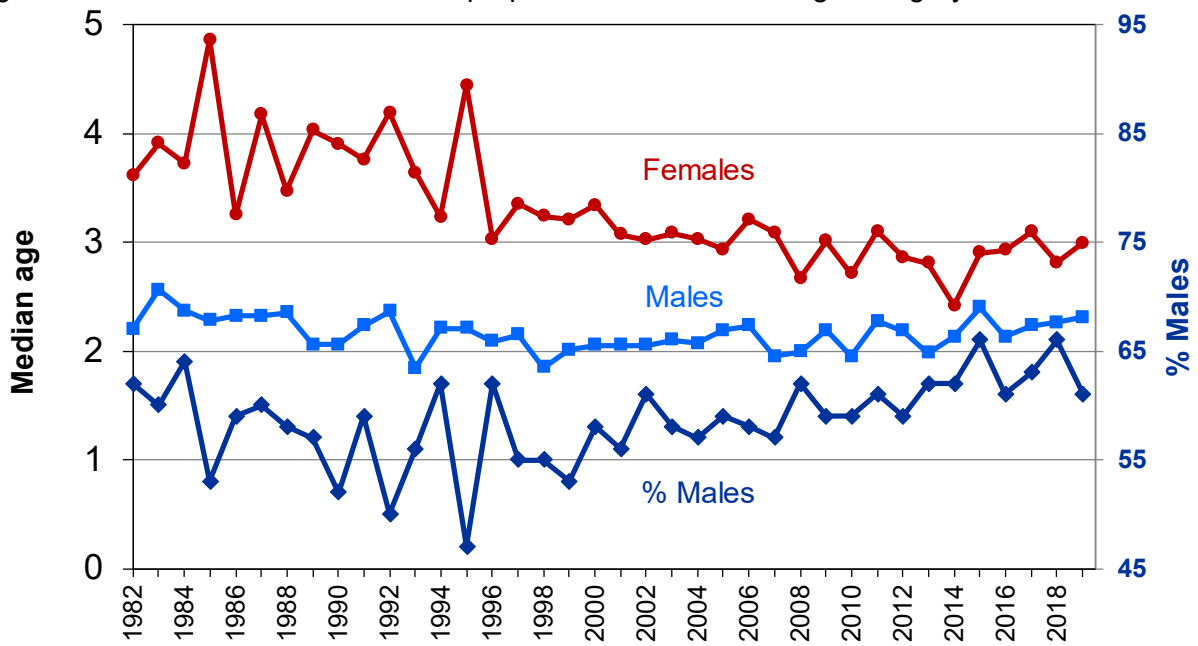


Figure 9. Statewide median ages (years) and sex ratio of harvested bears, 1982–2019.

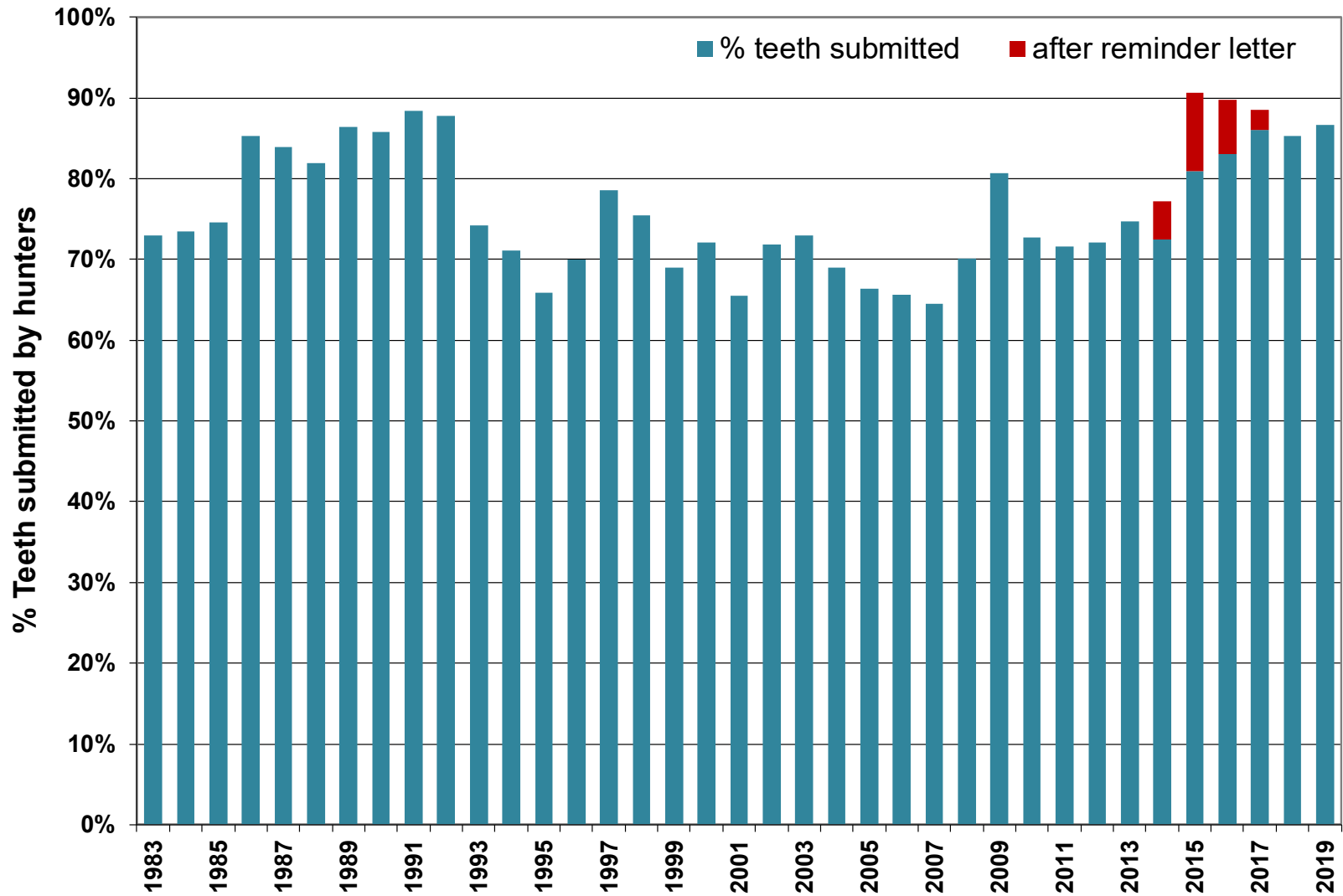


Figure 10. Percent of hunters submitting useable bear teeth for aging. Cooperation levels exceeded 80% when registration stations were paid to extract teeth (this practice ended in 1993), and in recent years after a series of reminder letters (no letter was sent in 2018 or 2019).

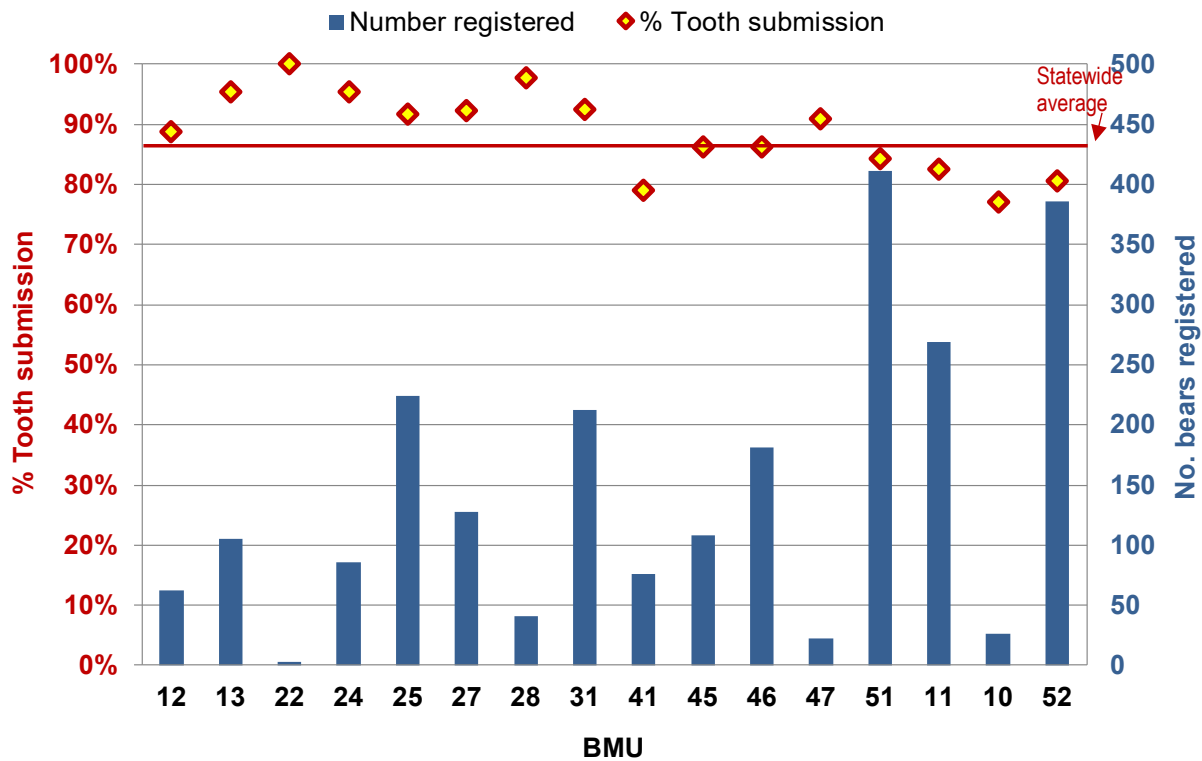
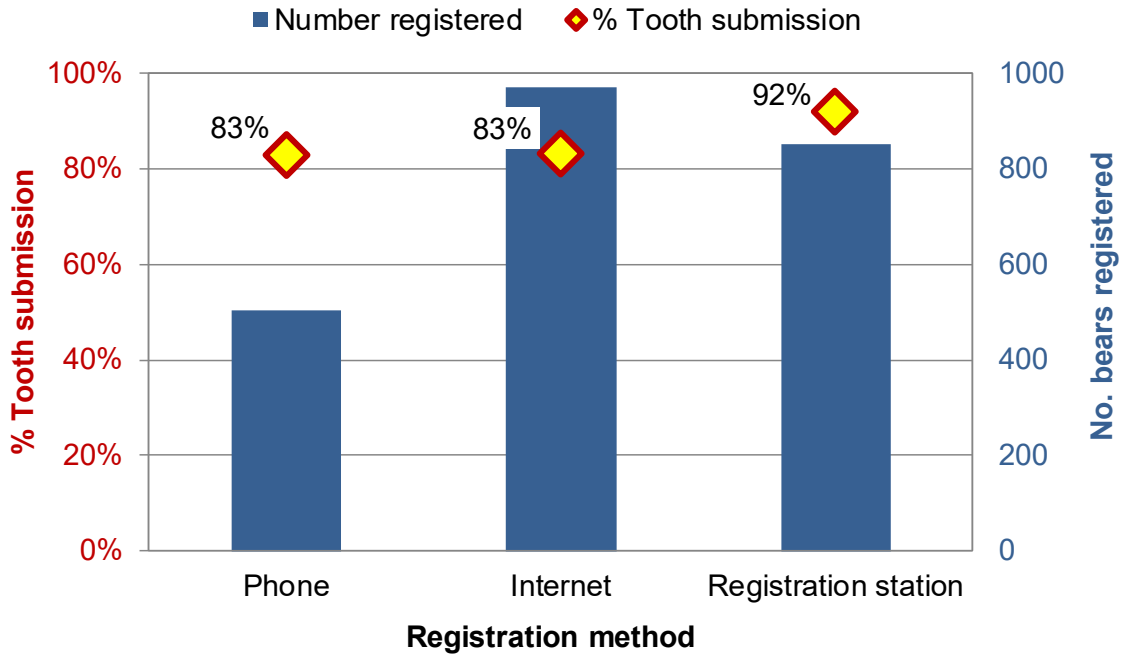


Figure 11. Percent of hunters who submitted a bear tooth in 2019 by method of registration (top panel) and by BMU (bottom panel). Beginning in 2013, hunters could register their bear by phone or internet, as well as in person at a station.

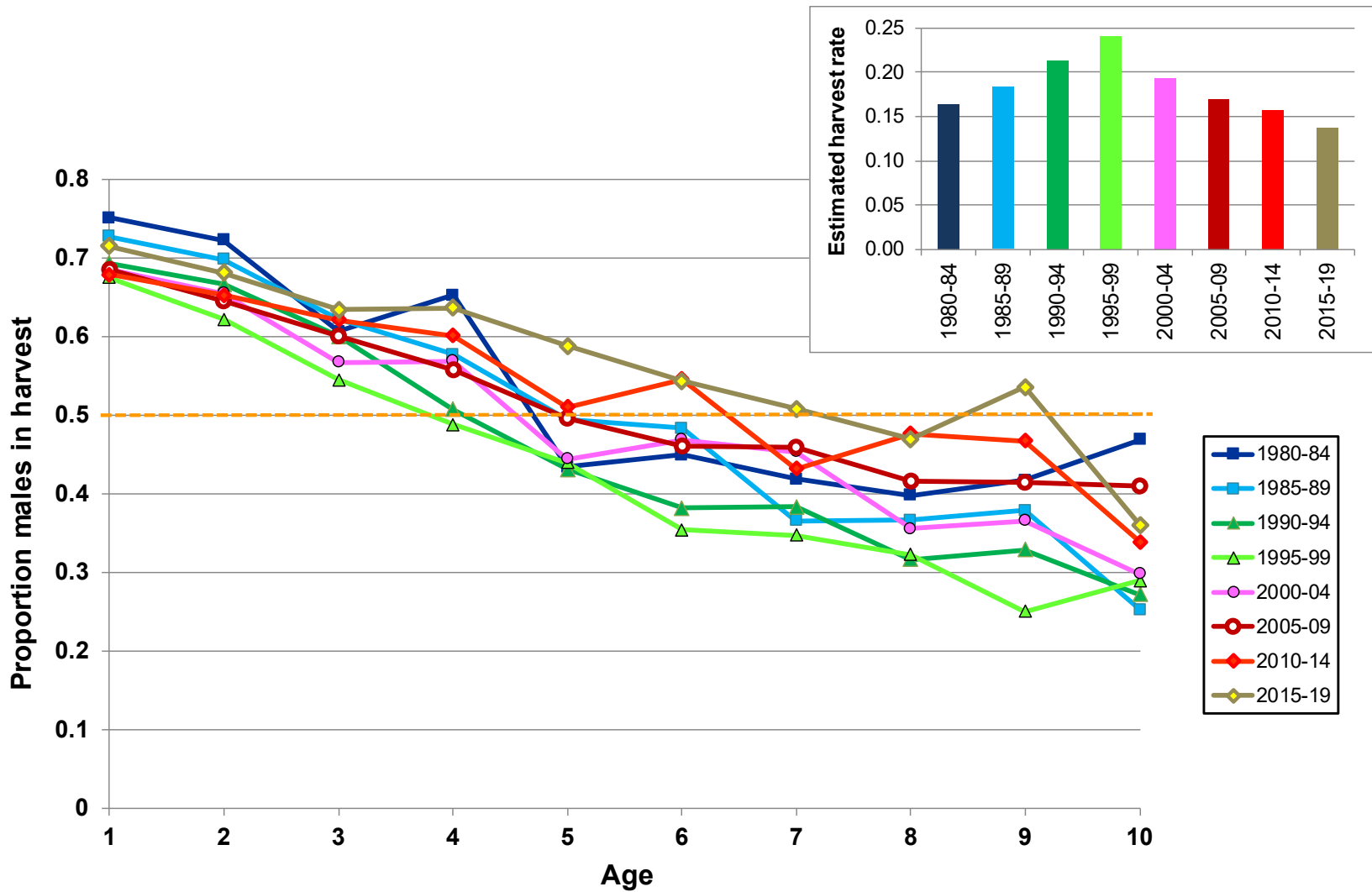


Figure 12. Trends in proportion of male bears in statewide harvest at each age, 1–10 years, grouped in 5-year time blocks, 1980–2019. Higher harvest rates result in steeper curves because males in the living population are reduced faster than females. Fitting a line to the data for each time block and predicting the age at which 50% of the harvest is male (dashed tan horizontal line) yields approximately the inverse of the harvest rate (derived rates are shown in inset). Flatter curves in recent years indicate lower harvest rates (2015–19 lower than 1980–84).



## **2019 MINNESOTA DEER HARVEST REPORT**

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### **INTRODUCTION**

The white-tailed deer may be considered Minnesota's most popular wildlife species. In 2019, nearly 465,000 hunters participated in the season. 2019 was a generally liberal season designed to stabilize or reduce deer population growth across much of central Minnesota along the transition zone where there is exceptional deer habitat provided by deciduous forests interspersed with prairie and agriculture. The southeastern portion of the state, known as the driftless region also provides exceptional deer habitat and ample hunting opportunities. Management of deer populations in the coniferous forests of the northcentral and northeastern portions of the state remained conservative, this an area where populations tend to have slower population growth rates. Likewise, the southwestern portion of the state, an area in an agriculturally dominated landscape had a conservative management strategy. During the archery, firearms and muzzleloader seasons, hunters registered 183,637 deer.

### **METHODS**

Every deer taken by hunting in Minnesota must be registered. Deer may be registered at any of the 825 to nearly 900 "Big Game Registration" stations available throughout the state. Beginning in 2011, deer could also be registered using the internet and telephone. Implementation of electronic licensing (ELS) has improved the efficiency and accuracy of deer harvest estimates and provides a more timely release of harvest information. Registered deer are recorded as adult buck, fawn buck, adult doe, or fawn doe. Additional information gathered at the time of registration includes date of kill, deer permit area, and season. In 2016, carcass import restrictions were instituted to help prevent the spread of Chronic Wasting Disease (CWD). CWD was detected in three deer in Fillmore County during routine surveillance efforts. This prompted additional late season deer harvest opportunities for sample collection in southeast Minnesota. Additionally, deer farms in Crow Wing, Meeker, and Winona counties tested positive for CWD in 2017 prompting more areas of surveillance. During 2018 mandatory testing of all deer > 1 year old was instituted for the opening weekend of firearms season in three areas of the state and for the entire hunting season in the newly created CWD disease management zone 603. Due to the outward radial spread of CWD in southeast Minnesota and new detections of a wild deer near a positive deer farm in Crow Wing County, during the 2019 fall hunting seasons mandatory surveillance was implemented for the newly formed CWD Management Zones, known as 600-series DPAs.

### **RESULTS**

Outcomes of the 2019 deer harvest are presented in the following tables.

Total Reported Deer Harvest by Season, 1999-2019

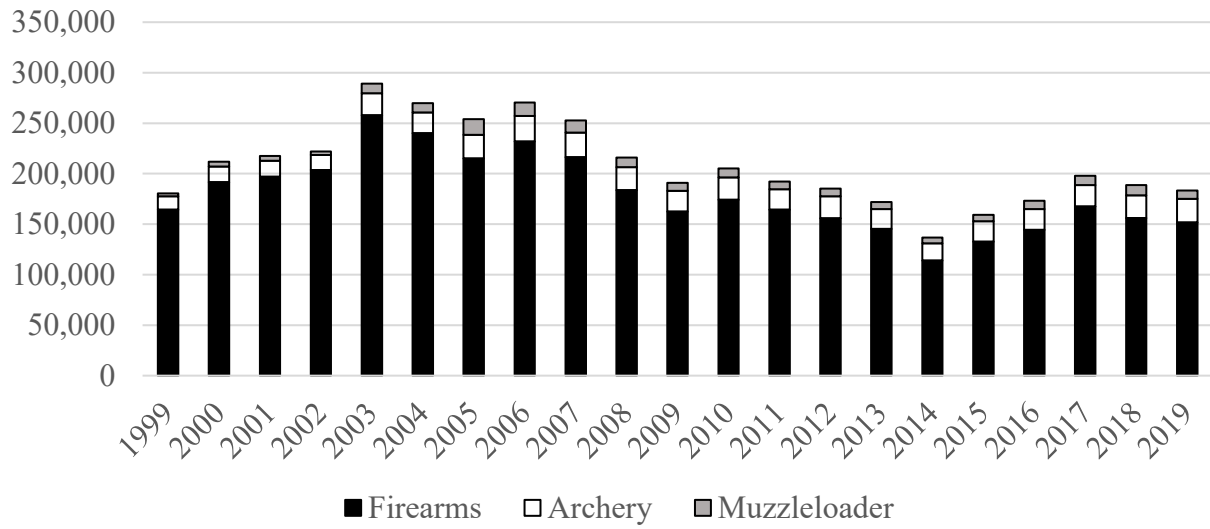


Table 1. Statewide firearms, archery, and muzzleloader harvest, license sales, and success rates, 2009 – 2019.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>REGULAR FIREARMS</b>											
Resident License Sales	377,077	379,866	382,668	391,822	391,967	374,314	371,612	372,645	368,407	360,873	351,659
Non-Resident License Sales	11,759	11,908	11,955	12,483	12,496	11,674	13,501	12,540	12,923	12,928	12,239
Bonus Permit Sales	140,920	143,763	142,049	89,750	97,402	29,642	31,065	44,365	93,309	117,640	131,804
Youth License Sales	56,678	59,726	60,943	62,949	64,748	62,488	62,333	61,138	58,779	56,989	57,575
Total License Sales	586,434	595,263	597,615	557,004	566,613	478,118	478,511	490,688	533,418	548,430	553,277
Registered Buck Harvest <sup>1</sup>	83,820	88,027	76,003	84,729	70,627	69,851	83,939	87,855	88,467	81,772	83,772
Antlerless Permits Offered	60,100	60,083	15,525	32,854	36,816	26,332	31,065	39,646	20,540	14,023	14,111
Antlerless Permits Issued	60,100	60,083	15,525	32,854	36,816	26,332	31,065	39,646	20,385	13,971	13,777
Antlerless Permits App.	90,882	86,783	21,071	67,308	68,811	96,580	95,656	97,056	45,001	29,302	33,191
Registered AL Harvest <sup>1</sup>	78,525	86,077	88,197	71,140	67,885	44,038	48,758	52,338	79,033	74,203	66,971
Registered Total Harvest <sup>1</sup>	162,345	174,104	164,200	155,869	145,449	113,889	132,697	144,470	167,500	155,975	150,743
Registered % Successful <sup>2</sup>	33.8	35.9	32.9	32.0	29.7	25.3	28.9	31.2	33.7	31.7	31.2
<b>ARCHERY</b>											
Resident License Sales	88,707	91,156	90,252	95,259	92,717	92,301	93,462	92,076	91,875	89,292	85,343
Non-Resident License Sales	1,610	1,638	1,718	1,814	1,952	1,946	2,032	2,062	2,016	2,020	2,129
Youth Archery Sales	9,157	9,577	10,306	11,276	12,212	11,965	11,905	10,846	9,961	9,052	8,267
Total License Sales	99,474	102,371	102,276	108,349	106,881	106,212	107,399	104,984	103,852	100,364	95,739
Total Archery Harvest	20,629	22,057	20,444	21,605	19,388	17,119	20,074	20,360	21,058	22,665	24,250
Registered % Successful <sup>2</sup>	17.5	17.8	17.0	18.8	14.5	15.3	16.5	18.5	18.7	20.3	21.1
<b>MUZZLELOADER</b>											
Total Muzzleloader License Sales	63,282	55,640	59,384	58,363	51,092	43,946	50,176	53,097	51,961	48,589	43,126
Total Muzzleloader Harvest	7,929	9,023	7,416	7,779	7,045	5,847	6,572	8,383	9,210	10,066	8,644
Registered % Successful <sup>2</sup>	11.3	14.4	11.6	12.4	12.7	12.7	12.0	15.2	16.6	19	20.0
Antlerless Permits Offered		5,792	1,997	1,626	2,144	1,593	1,434	1,352	935	874	689
Antlerless Permits App.		7,260	2,615	3,743	3,544	4,588	3,393	2,930	1,902	1,592	1,485
<b>TOTAL Registered Harvest</b>	194,186	207,313	192,331	186,634	172,781	139,442	159,343	173,213	197,768	188,706	183,637



Table 2. Deer Harvest by Season, 2019.

Season	Total Hunters	Buck Harvest	Antlerless Harvest	Total Harvest	Successful Hunters <sup>2</sup>	Overall Success
Archery	95,656	11,000	13,250	24,250	20,225	21.1%
100 Series A	149,406	24,846	17,566	42,412	40,812	27.3%
200 Series A	221,798	47,930	36,581	84,511	76,341	34.4%
300-600 Series A <sup>1</sup>	36,431	6,082	4,678	10,760	9,250	25.4%
300-600 Series B <sup>1</sup>	8,352	1,235	2,690	3,925	3,326	39.8%
Metro Firearms (701)	2,391	553	350	903	835	34.9%
Muzzleloader	43,138	3,188	5,456	8,644	7,627	17.7%
Youth	N/A	2,665	3,194	5,859	5,829	N/A
Early Antlerless	3,950	0	892	4,842	755	19.1%
Special Firearms Hunts	3,117	283	540	823	662	21.2%
Late CWD	N/A	178	480	658	525	N/A
<b>Total</b>	<b>464,086</b>	<b>97,960</b>	<b>85,677</b>	<b>183,637</b>	<b>166,462</b>	<b>35.9%</b>

<sup>1</sup>does not include deer harvested in permit area 604; in 2019 a person could hunt either the A or B season in the 600 series regardless of license type and thus hunter numbers and success rates are only an estimate; <sup>2</sup> Number of hunters that harvested at least one deer

Figure 1. Deer Permit Area management designations, 2019.

Proposed Deer Permit Area Management Designations  
June 24, 2019

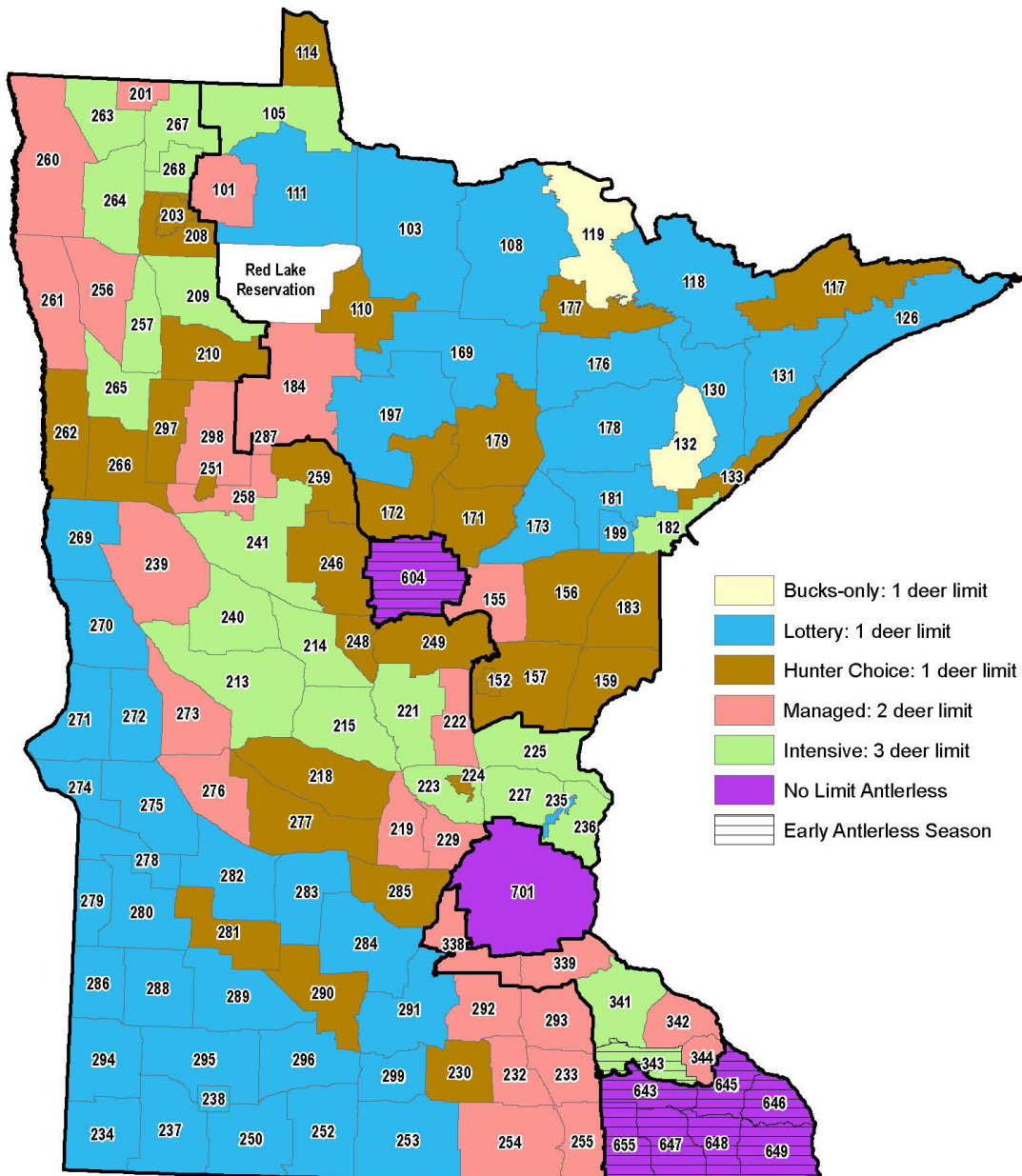


Table 3. Total deer harvest in each deer permit area for the 2019 deer season.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Land Area (Sq. Mile)	Bucks/ Sq. Mile	Antlerless/ Sq. Mile	Total/ Sq. Mile	Rank
101	447	35	228	32	742	496	0.90	0.60	1.50	81
103	622	34	275	23	954	1,820	0.34	0.18	0.52	117
105	1066	116	802	102	2086	740	1.44	1.38	2.82	45
108	866	18	176	24	1084	1,651	0.52	0.13	0.66	106
110	903	72	475	60	1510	529	1.71	1.15	2.86	44
111	326	21	107	8	462	1,438	0.23	0.09	0.32	124
114	17	2	9	1	29	116	0.15	0.10	0.25	128
117	17	1	11	1	30	927	0.02	0.01	0.03	130
118	649	7	85	6	747	1,220	0.53	0.08	0.61	111
119	348	4	14	2	368	770	0.45	0.03	0.48	120
126	233	6	52	0	291	942	0.25	0.06	0.31	125
130	190	5	28	0	223	746	0.25	0.04	0.30	126
131	64	2	14	0	80	899	0.07	0.02	0.09	129
132	235	0	7	0	242	482	0.49	0.01	0.50	119
133	410	29	201	21	661	352	1.16	0.71	1.88	65
152	69	15	28	4	116	61	1.13	0.77	1.90	63
155	782	171	744	109	1806	499	1.57	2.05	3.62	34
156	1300	198	819	116	2433	825	1.58	1.37	2.95	43
157	2128	310	1145	196	3779	888	2.40	1.86	4.26	26
159	1171	114	660	76	2021	571	2.05	1.49	3.54	36
169	1335	49	331	36	1751	1,124	1.19	0.37	1.56	75
171	626	103	490	58	1277	627	1.00	1.04	2.04	59
172	1174	250	1048	145	2617	687	1.71	2.10	3.81	32
173	546	56	299	32	933	584	0.93	0.66	1.60	73
176	795	21	158	21	995	921	0.86	0.22	1.08	92
177	588	69	436	42	1135	480	1.23	1.14	2.37	53
178	1340	40	305	32	1717	1,195	1.12	0.32	1.44	82
179	1401	220	1082	139	2842	862	1.63	1.67	3.30	40
181	835	71	377	49	1332	629	1.33	0.79	2.12	56
182	486	81	374	57	998	278	1.75	1.84	3.59	35
183	1139	160	872	86	2257	663	1.72	1.69	3.40	37
184	2515	412	1924	359	5210	1,229	2.05	2.19	4.24	28
197	851	49	254	34	1188	955	0.89	0.35	1.24	86
199	105	2	32	4	143	153	0.69	0.25	0.94	97

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Land Area (Sq. Mile)	Bucks/ Sq. Mile	Antlerless/ Sq. Mile	Total/ Sq. Mile	Rank
201	133	10	76	11	230	161	0.83	0.60	1.43	83
203	44	1	24	7	76	118	0.37	0.27	0.65	108
208	271	14	101	11	397	379	0.72	0.33	1.05	93
209	708	85	441	75	1309	640	1.11	0.94	2.05	58
210	900	77	325	54	1356	615	1.46	0.74	2.20	55
213	2965	563	2312	483	6323	1,057	2.81	3.18	5.98	12
214	2061	470	1628	430	4589	554	3.72	4.56	8.28	3
215	1877	511	1451	371	4210	701	2.68	3.33	6.00	11
218	1362	167	684	120	2333	884	1.54	1.10	2.64	50
219	855	137	582	91	1665	391	2.18	2.07	4.25	27
221	1821	399	1460	323	4003	642	2.84	3.40	6.24	8
222	1250	248	788	217	2503	413	3.02	3.03	6.05	10
223	1009	193	769	131	2102	376	2.69	2.91	5.60	15
224	140	8	43	9	200	47	2.96	1.27	4.23	29
225	1993	376	1313	305	3987	618	3.23	3.23	6.45	7
227	1527	245	997	172	2941	472	3.24	3.00	6.24	9
229	420	53	244	35	752	284	1.48	1.17	2.65	48
230	343	46	141	23	553	452	0.76	0.46	1.22	87
232	366	46	206	30	648	377	0.97	0.75	1.72	68
233	334	49	184	30	597	381	0.88	0.69	1.57	74
234	269	8	50	5	332	636	0.42	0.10	0.52	118
235	100	14	40	6	160	34	2.97	1.78	4.75	20
236	979	155	584	95	1813	370	2.65	2.26	4.90	18
237	333	11	71	8	423	728	0.46	0.12	0.58	113
238	96	6	15	4	121	95	1.01	0.26	1.27	85
239	2106	357	1229	247	3939	919	2.29	1.99	4.29	25
240	2351	513	1817	360	5041	643	3.66	4.19	7.84	4
241	3744	760	3172	615	8291	996	3.76	4.57	8.33	2
246	1824	309	1229	225	3587	784	2.33	2.25	4.58	23
248	426	52	203	35	716	214	1.99	1.35	3.34	39
249	1430	222	717	139	2508	496	2.88	2.17	5.06	17
250	394	17	111	13	535	713	0.55	0.20	0.75	102
251	60	14	46	8	128	55	1.09	1.24	2.33	54
252	405	8	123	11	547	715	0.57	0.20	0.77	100
253	539	28	161	12	740	974	0.55	0.21	0.76	101

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Land Area (Sq. Mile)	Bucks/ Sq. Mile	Antlerless/ Sq. Mile	Total/ Sq. Mile	Rank
254	691	83	421	63	1258	924	0.75	0.61	1.36	84
255	335	43	196	27	601	392	0.85	0.68	1.53	78
256	548	64	317	59	988	654	0.84	0.67	1.51	79
257	542	73	316	67	998	412	1.31	1.11	2.42	52
258	924	162	702	162	1950	343	2.70	2.99	5.69	14
259	1043	147	630	121	1941	490	2.13	1.83	3.96	30
260	466	46	247	23	782	1,249	0.37	0.25	0.63	109
261	258	21	139	17	435	795	0.32	0.22	0.55	116
262	277	17	78	20	392	677	0.41	0.17	0.58	114
263	540	54	324	59	977	512	1.05	0.85	1.91	62
264	904	104	659	104	1771	669	1.35	1.30	2.65	47
265	607	121	480	97	1305	494	1.23	1.41	2.64	49
266	477	44	177	32	730	617	0.77	0.41	1.18	88
267	390	43	256	39	728	472	0.83	0.72	1.54	77
268	440	45	251	31	767	228	1.93	1.43	3.36	38
269	334	14	89	4	441	650	0.51	0.16	0.68	105
270	272	6	53	6	337	748	0.36	0.09	0.45	123
271	266	13	84	16	379	632	0.42	0.18	0.60	112
272	231	15	45	9	300	531	0.44	0.13	0.57	115
273	617	67	370	63	1117	571	1.08	0.88	1.95	61
274	300	11	92	12	415	354	0.85	0.32	1.17	89
275	416	12	102	8	538	764	0.54	0.16	0.70	104
276	728	73	490	75	1366	542	1.34	1.18	2.52	51
277	1873	167	912	141	3093	812	2.31	1.50	3.81	33
278	512	15	143	17	687	402	1.27	0.44	1.71	69
279	228	20	79	13	340	344	0.66	0.33	0.99	95
280	218	13	72	7	310	675	0.32	0.14	0.46	122
281	630	58	281	25	994	575	1.10	0.63	1.73	67
282	176	6	26	3	211	778	0.23	0.04	0.27	127
283	333	13	91	8	445	613	0.54	0.18	0.73	103
284	397	24	113	8	542	838	0.47	0.17	0.65	107
285	535	55	259	33	882	549	0.98	0.63	1.61	72
286	318	20	143	20	501	446	0.71	0.41	1.12	91
287	39	6	41	9	95	46	0.85	1.23	2.08	57
288	403	24	207	14	648	625	0.65	0.39	1.04	94

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Land Area (Sq. Mile)	Bucks/ Sq. Mile	Antlerless/ Sq. Mile	Total/ Sq. Mile	Rank
289	250	15	105	14	384	815	0.31	0.16	0.47	121
290	575	55	332	37	999	662	0.87	0.64	1.51	80
291	888	65	355	42	1350	800	1.11	0.58	1.69	70
292	761	109	492	76	1438	479	1.59	1.41	3.00	42
293	776	121	458	60	1415	511	1.52	1.25	2.77	46
294	398	28	116	22	564	686	0.58	0.24	0.82	98
295	591	32	159	23	805	839	0.70	0.26	0.96	96
296	361	21	146	6	534	667	0.54	0.26	0.80	99
297	176	11	68	14	269	438	0.40	0.21	0.61	110
298	604	107	376	74	1161	618	0.98	0.90	1.88	64
299	427	22	135	16	600	386	1.11	0.45	1.55	76
338	339	60	296	35	730	454	0.75	0.86	1.61	71
339	381	57	297	53	788	394	0.97	1.03	2.00	60
341	1214	232	1126	208	2780	606	2.00	2.58	4.59	22
342	795	150	628	127	1700	350	2.27	2.59	4.86	19
343	688	98	498	101	1385	320	2.15	2.18	4.33	24
344	509	104	338	113	1064	186	2.74	2.98	5.72	13
604	1630	568	1844	423	4465	673	2.42	4.21	6.63	6
643	686	121	452	113	1372	351	1.95	1.95	3.91	31
645	740	151	513	131	1535	330	2.24	2.41	4.65	21
646	1398	321	994	327	3040	319	4.38	5.15	9.53	1
647	706	124	452	98	1380	434	1.63	1.55	3.18	41
648	838	165	572	141	1716	332	2.52	2.64	5.17	16
649	1723	440	1211	397	3771	492	3.50	4.16	7.66	5
655	213	43	148	39	443	387	0.55	0.59	1.14	90
701	1448	208	1118	140	2914	1625	0.89	0.90	1.79	66
Total	97,397	14,042	59,313	10,828	181,580	78,860	1.24	1.07	2.30	

Table 4. Archery season harvest by DPA, excluding special hunts, 2019.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
101	17	0	14	2	33
103	5	0	11	1	17
105	39	6	45	3	93
108	25	5	14	3	47
110	20	1	9	0	30
111	8	0	1	0	9
114	4	0	2	0	6
117	1	1	1	0	3
118	25	2	17	0	44
119	2	0	2	0	4
126	12	2	10	0	24
130	5	1	5	0	11
131	6	1	5	0	12
132	6	0	1	0	7
133	35	2	21	1	59
152	4	0	3	1	8
155	46	16	73	7	142
156	57	9	45	8	119
157	126	18	81	7	232
159	82	4	45	3	134
169	41	10	63	2	116
171	23	4	22	1	50
172	52	7	61	3	123
173	18	2	19	2	41
176	32	7	14	3	56
177	18	0	24	0	42
178	66	4	53	6	129
179	98	9	65	8	180
181	34	1	14	3	52
182	117	21	176	18	332
183	66	7	41	4	118
184	168	24	202	20	414
197	43	3	23	3	72
199	2	0	1	0	3
201	4	1	5	1	11
203	0	0	2	1	3
208	8	0	3	0	11

Table 4., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
209	31	3	31	5	70
210	35	1	19	2	57
213	203	54	438	48	743
214	180	37	270	33	520
215	284	78	366	51	779
218	171	9	92	17	289
219	153	24	173	13	363
221	207	38	288	35	568
222	109	17	123	15	264
223	252	40	309	34	635
224	41	1	7	1	50
225	234	48	253	33	568
227	387	60	371	49	867
229	104	10	76	8	198
230	47	2	21	0	70
232	57	7	39	2	105
233	65	11	57	3	136
234	42	1	15	1	59
235	32	6	21	1	60
236	317	49	255	26	647
237	31	3	20	0	54
238	10	0	0	0	10
239	152	23	138	9	322
240	211	28	286	22	547
241	299	51	440	54	844
246	114	9	59	7	189
248	52	6	15	5	78
249	112	8	38	4	162
250	50	2	22	5	79
251	3	0	2	0	5
252	44	1	26	0	71
253	88	7	50	3	148
254	106	13	81	6	206
255	87	11	68	6	172
256	29	4	19	2	54
257	29	6	20	2	57
258	39	5	57	6	107



Table 4., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
259	44	1	26	1	72
260	15	0	11	0	26
261	26	4	26	1	57
262	34	2	13	2	51
263	15	3	23	1	42
264	29	3	53	5	90
265	36	10	56	5	107
266	25	2	13	1	41
267	8	2	19	0	29
268	17	3	24	1	45
269	38	2	13	0	53
270	20	3	15	0	38
271	19	1	7	1	28
272	15	1	3	1	20
273	60	3	70	6	139
274	23	3	18	0	44
275	26	2	26	1	55
276	71	8	106	10	195
277	267	12	132	7	418
278	46	1	31	3	81
279	12	1	15	3	31
280	17	3	16	1	37
281	75	5	43	2	125
282	25	1	6	0	32
283	46	1	26	2	75
284	48	3	20	2	73
285	88	4	35	2	129
286	25	1	17	0	43
287	2	0	1	0	3
288	42	1	52	0	95
289	29	3	13	1	46
290	74	6	37	4	121
291	135	14	73	9	231
292	96	17	99	11	223
293	132	18	111	6	267
294	38	1	12	2	53
295	67	9	42	3	121

Table 4., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
296	29	4	28	0	61
297	5	0	4	0	9
298	21	4	19	0	44
299	78	6	34	1	119
338	72	3	84	9	168
339	96	13	79	15	203
341	277	31	308	47	663
342	147	18	122	18	305
343	218	25	190	24	457
344	84	15	35	9	143
604	181	84	373	66	704
643	163	21	106	10	300
645	144	17	108	19	288
646	253	34	138	32	457
647	121	12	65	7	205
648	147	6	76	20	249
649	338	51	193	35	617
655	21	5	23	5	54
701	853	138	833	98	1922
Total	10755	1482	9879	1128	23244

Table 5. Total 2019 firearms season harvest by DPA. Does not include youth season, early antlerless season, or special firearms hunts.

Permit Area	Land Area (Sq. Mile)	Firearms Hunters	Hunters / sq. mile	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Bucks / sq. mile	Antlerless / sq. mile	Total / sq. mile
101	496	1891	3.8	404	28	191	27	650	0.82	0.50	1.31
103	1,820	2907	1.6	599	27	234	18	878	0.33	0.15	0.48
105	740	4106	5.5	960	93	672	86	1811	1.30	1.15	2.45
108	1,651	4197	2.5	808	10	129	17	964	0.49	0.09	0.58
110	529	3796	7.2	845	67	427	57	1396	1.60	1.04	2.64
111	1,438	1868	1.3	297	17	86	7	407	0.21	0.08	0.28
114	116	116	1.0	13	1	5	0	19	0.11	0.05	0.16
117	927	120	0.1	16	0	10	1	27	0.02	0.01	0.03
118	1,220	2906	2.4	606	4	43	5	658	0.50	0.04	0.54
119	770	1967	2.6	340	3	11	2	356	0.44	0.02	0.46
126	942	1387	1.5	215	4	38	0	257	0.23	0.04	0.27
130	746	1734	2.3	184	2	16	0	202	0.25	0.02	0.27
131	899	809	0.9	55	1	8	0	64	0.06	0.01	0.07
132	482	1858	3.9	228	0	5	0	233	0.47	0.01	0.48
133	352	2190	6.2	370	24	173	20	587	1.05	0.62	1.67
152	61	650	10.6	64	14	22	3	103	1.05	0.64	1.69
155	499	5389	10.8	714	146	643	94	1597	1.43	1.77	3.20
156	825	8171	9.9	1199	183	726	101	2209	1.45	1.22	2.68
157	888	12094	13.6	1932	278	1010	181	3401	2.18	1.66	3.83
159	571	6267	11.0	1057	109	576	70	1812	1.85	1.32	3.17
169	1,124	7878	7.0	1265	31	224	30	1550	1.13	0.25	1.38
171	627	4895	7.8	583	94	436	51	1164	0.93	0.93	1.86
172	687	9299	13.5	1093	222	905	130	2350	1.59	1.83	3.42
173	584	4396	7.5	507	49	268	30	854	0.87	0.59	1.46
176	921	5171	5.6	739	12	124	13	888	0.80	0.16	0.96
177	480	3843	8.0	556	67	374	40	1037	1.16	1.00	2.16
178	1,195	8171	6.8	1237	28	213	25	1503	1.04	0.22	1.26
179	862	8492	9.9	1248	196	922	125	2491	1.45	1.44	2.89
181	629	5118	8.1	773	65	346	42	1226	1.23	0.72	1.95
182	278	2253	8.1	362	58	182	34	636	1.30	0.99	2.29
183	663	6989	10.5	1051	145	784	81	2061	1.58	1.52	3.11
184	1,229	12951	10.5	2261	361	1594	324	4540	1.84	1.85	3.69
197	955	4990	5.2	788	44	213	29	1074	0.83	0.30	1.13
199	153	537	3.5	97	2	26	4	129	0.64	0.21	0.84
201	161	421	2.6	115	7	60	7	189	0.71	0.46	1.17
203	118	234	2.0	43	1	20	6	70	0.37	0.23	0.59
208	379	979	2.6	230	14	77	8	329	0.61	0.26	0.87
209	640	2556	4.0	606	77	361	65	1109	0.95	0.79	1.73

Table 5., continued.

Permit Area	Land Area (Sq. Mile)	Firearms Hunters	Hunters / sq. mile	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Bucks / sq. mile	Antlerless / sq. mile	Total / sq. mile
210	615	3652	5.9	823	69	275	49	1216	1.34	0.64	1.98
213	1,057	10003	9.5	2562	464	1556	388	4970	2.42	2.28	4.70
214	554	7153	12.9	1784	402	1199	365	3750	3.22	3.55	6.77
215	701	7115	10.1	1457	378	892	267	2994	2.08	2.19	4.27
218	884	5441	6.2	1103	131	472	86	1792	1.25	0.78	2.03
219	391	3533	9.0	640	88	309	71	1108	1.64	1.20	2.83
221	642	6123	9.5	1476	333	1015	260	3084	2.30	2.51	4.81
222	413	4948	12.0	1084	209	594	185	2072	2.62	2.39	5.01
223	376	3465	9.2	704	134	380	82	1300	1.87	1.59	3.46
224	47	553	11.7	99	7	35	7	148	2.09	1.04	3.13
225	618	7457	12.1	1686	304	960	243	3193	2.73	2.44	5.17
227	472	4676	9.9	1064	163	519	102	1848	2.26	1.66	3.92
229	284	1503	5.3	290	32	141	24	487	1.02	0.69	1.71
230	452	1352	3.0	274	38	97	22	431	0.61	0.35	0.95
232	377	1358	3.6	277	32	122	24	455	0.74	0.47	1.21
233	381	905	2.4	233	27	90	23	373	0.61	0.37	0.98
234	636	722	1.1	204	6	29	3	242	0.32	0.06	0.38
235	34	412	12.2	62	6	16	3	87	1.84	0.74	2.58
236	370	3056	8.3	616	91	297	58	1062	1.67	1.21	2.87
237	728	1093	1.5	252	7	39	4	302	0.35	0.07	0.41
238	95	314	3.3	78	5	13	3	99	0.82	0.22	1.04
239	919	7592	8.3	1853	305	983	220	3361	2.02	1.64	3.66
240	643	7829	12.2	2015	445	1316	306	4082	3.14	3.22	6.35
241	996	13889	13.9	3223	645	2368	485	6721	3.24	3.51	6.75
246	784	9894	12.6	1649	286	1086	200	3221	2.10	2.01	4.11
248	214	1891	8.8	354	39	164	27	584	1.65	1.07	2.73
249	496	5717	11.5	1260	193	613	125	2191	2.54	1.88	4.42
250	713	1360	1.9	298	12	68	7	385	0.42	0.12	0.54
251	55	399	7.3	54	12	38	8	112	0.98	1.05	2.04
252	715	1271	1.8	322	7	81	8	418	0.45	0.13	0.58
253	974	1794	1.8	390	18	88	6	502	0.40	0.11	0.52
254	924	2412	2.6	514	58	258	40	870	0.56	0.39	0.94
255	392	1083	2.8	218	24	88	19	349	0.56	0.33	0.89
256	654	2029	3.1	478	53	246	49	826	0.73	0.53	1.26
257	412	1798	4.4	470	58	262	61	851	1.14	0.92	2.06
258	343	4110	12.0	844	147	585	141	1717	2.46	2.55	5.01

Table 5., continued.

Permit Area	Land Area (Sq. Mile)	Firearms Hunters	Hunters / sq. mile	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Bucks / sq. mile	Antlerless / sq. mile	Total / sq. mile
259	490	6479	13.2	970	139	551	112	1772	1.98	1.64	3.62
260	1,249	1516	1.2	390	46	193	19	648	0.31	0.21	0.52
261	795	773	1.0	203	16	95	16	330	0.26	0.16	0.42
262	677	864	1.3	210	14	52	18	294	0.31	0.12	0.43
263	512	1803	3.5	468	43	244	48	803	0.91	0.65	1.57
264	669	3390	5.1	780	87	506	86	1459	1.17	1.01	2.18
265	494	2080	4.2	520	98	347	85	1050	1.05	1.07	2.13
266	617	1888	3.1	404	38	126	29	597	0.66	0.31	0.97
267	472	1222	2.6	328	39	201	36	604	0.69	0.58	1.28
268	228	1273	5.6	376	36	187	28	627	1.65	1.10	2.75
269	650	1258	1.9	261	8	56	4	329	0.40	0.10	0.51
270	748	929	1.2	216	1	31	6	254	0.29	0.05	0.34
271	632	1011	1.6	215	10	60	13	298	0.34	0.13	0.47
272	531	955	1.8	197	13	38	8	256	0.37	0.11	0.48
273	571	2582	4.5	505	57	254	48	864	0.88	0.63	1.51
274	354	1144	3.2	249	8	57	8	322	0.70	0.21	0.91
275	764	1739	2.3	348	9	54	5	416	0.46	0.09	0.54
276	542	2958	5.5	585	57	289	52	983	1.08	0.73	1.81
277	812	6743	8.3	1441	133	609	117	2300	1.78	1.06	2.83
278	402	1760	4.4	415	10	93	13	531	1.03	0.29	1.32
279	344	1058	3.1	179	16	45	8	248	0.52	0.20	0.72
280	675	1233	1.8	176	9	51	4	240	0.26	0.09	0.36
281	575	2311	4.0	491	42	185	19	737	0.85	0.43	1.28
282	778	604	0.8	129	5	19	2	155	0.17	0.03	0.20
283	613	1378	2.2	260	10	49	5	324	0.42	0.10	0.53
284	838	1715	2.0	310	18	73	5	406	0.37	0.11	0.48
285	549	2274	4.1	410	43	187	25	665	0.75	0.46	1.21
286	446	1223	2.7	253	15	97	15	380	0.57	0.28	0.85
287	46	400	8.8	35	6	36	8	85	0.77	1.09	1.86
288	625	1861	3.0	311	20	116	14	461	0.50	0.24	0.74
289	815	1125	1.4	187	10	70	11	278	0.23	0.11	0.34
290	662	2305	3.5	450	42	206	24	722	0.68	0.41	1.09
291	800	3451	4.3	668	39	222	27	956	0.83	0.36	1.19
292	479	3007	6.3	611	83	314	49	1057	1.28	0.93	2.21
293	511	2542	5.0	584	88	280	46	998	1.14	0.81	1.95
294	686	1263	1.8	300	24	92	17	433	0.44	0.19	0.63

Table 5., continued.

Permit Area	Land Area (Sq. Mile)	Firearms Hunters	Hunters / sq. mile	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest	Bucks / sq. mile	Antlerless / sq. mile	Total / sq. mile
295	839	2122	2.5	455	18	93	17	583	0.54	0.15	0.69
296	667	1524	2.3	290	16	95	6	407	0.44	0.18	0.61
297	438	965	2.2	159	10	55	13	237	0.36	0.18	0.54
298	618	3552	5.8	557	99	332	66	1054	0.90	0.80	1.71
299	386	1426	3.7	326	16	81	14	437	0.84	0.29	1.13
338	454	2005	4.4	235	43	183	24	485	0.52	0.55	1.07
339	394	1733	4.4	256	38	179	30	503	0.65	0.63	1.28
341	606	4801	7.9	854	179	691	138	1862	1.41	1.66	3.07
342	350	3295	9.4	564	106	442	94	1206	1.61	1.83	3.45
343	320	2214	6.9	418	62	239	58	777	1.31	1.12	2.43
344	186	2568	13.8	391	77	259	94	821	2.10	2.31	4.41
604	673	8444	12.5	1384	414	1192	298	3288	2.06	2.83	4.89
643	351	1813	5.2	454	80	241	66	841	1.29	1.10	2.40
645	330	2724	8.3	546	110	314	91	1061	1.65	1.56	3.22
646	319	3693	11.6	1003	209	577	200	1989	3.14	3.09	6.24
647	434	2324	5.4	505	83	287	59	934	1.16	0.99	2.15
648	332	2958	8.9	634	115	361	81	1191	1.91	1.68	3.59
649	492	5455	11.1	1282	311	811	274	2678	2.61	2.84	5.44
655	387	755	2.0	175	30	105	28	338	0.45	0.42	0.87
701	1625	2391	1.5	553	64	252	34	903	0.34	0.22	0.56
Total	78860	418377	5.3	80646	11124	42322	8419	142511	1.02	0.78	1.81

Table 6. Muzzleloader deer season harvest by DPA, 2019.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
101	9	4	8	1	22
103	9	1	15	0	25
105	18	7	29	6	60
108	6	0	2	0	8
110	8	1	11	0	20
111	5	0	2	0	7
114	0	0	1	1	2
118	8	0	1	0	9
119	3	0	0	0	3
126	2	0	3	0	5
131	1	0	1	0	2
132	1	0	0	0	1
133	1	1	2	0	4
152	0	0	1	0	1
155	7	3	10	3	23
156	14	3	15	2	34
157	19	2	20	3	44
159	12	1	25	2	40
169	10	1	5	1	17
171	8	1	15	1	25
172	11	14	46	8	79
173	2	1	3	0	6
176	4	0	2	0	6
177	5	2	12	1	20
178	10	1	5	0	16
179	17	6	41	1	65
181	10	0	1	1	12
182	0	0	8	1	9
183	3	4	12	1	20
184	33	11	71	7	122
197	10	0	5	1	16
199	2	0	2	0	4
201	6	0	5	0	11
208	13	0	8	2	23
209	25	5	29	3	62

Table 6., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
210	22	1	14	3	40
213	108	32	220	35	395
214	42	11	86	15	154
215	79	31	143	33	286
218	61	12	98	8	179
219	44	19	71	4	138
221	48	13	87	16	164
222	18	7	38	8	71
223	29	13	68	13	123
224	0	0	1	0	1
225	31	13	64	15	123
227	50	19	92	16	177
229	18	7	21	1	47
230	16	3	19	0	38
232	24	6	40	4	74
233	25	7	27	2	61
234	22	1	4	1	28
235	3	0	2	1	6
236	28	15	25	7	75
237	48	0	8	2	58
238	8	1	2	1	12
239	40	15	59	8	122
240	43	9	132	19	203
241	56	36	229	39	360
246	22	5	45	9	81
248	5	4	12	0	21
249	23	7	23	6	59
250	38	2	16	0	56
251	1	0	2	0	3
252	34	0	10	0	44
253	55	2	19	1	77
254	55	11	71	16	153
255	24	7	36	2	69
256	13	3	24	1	41
257	26	7	19	2	54
258	13	5	29	7	54



Table 6., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
259	13	5	34	5	57
260	14	0	23	2	39
261	18	0	14	0	32
262	22	1	10	0	33
263	32	4	39	6	81
264	32	9	60	7	108
265	24	8	59	3	94
266	28	1	28	2	59
267	28	2	18	2	50
268	20	5	27	1	53
269	31	2	11	0	44
270	30	1	4	0	35
271	29	0	16	2	47
272	12	1	0	0	13
273	37	6	32	7	82
274	21	0	10	1	32
275	25	0	15	1	41
276	55	5	75	10	145
277	109	13	126	11	259
278	43	2	13	1	59
279	34	3	16	1	54
280	22	0	2	2	26
281	50	9	46	3	108
282	15	0	1	0	16
283	21	1	7	0	29
284	34	2	11	1	48
285	22	5	29	3	59
286	34	3	21	3	61
287	2	0	4	1	7
288	43	2	27	0	72
289	30	2	15	2	49
290	39	5	72	7	123
291	63	10	36	2	111
292	38	6	59	13	116
293	41	13	56	7	117
294	56	2	10	3	71

Table 6., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
295	58	1	15	2	76
296	39	0	18	0	57
297	8	0	2	0	10
298	11	1	15	3	30
299	20	0	12	0	32
338	20	9	20	1	50
339	15	4	34	7	60
341	40	15	95	15	165
342	46	14	55	11	126
343	27	6	46	11	90
344	16	6	30	7	59
604	13	6	49	9	77
643	23	2	29	8	62
645	20	9	44	7	80
646	42	13	76	22	153
647	14	2	21	7	44
648	12	1	30	4	47
649	62	25	100	24	211
655	13	4	12	5	34
701	23	3	22	5	53
Total	3153	642	4023	598	8416

Table 7. Youth deer season harvest by DPA, 2019.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
101	17	3	15	2	37
103	9	6	15	4	34
105	49	10	56	7	122
108	27	3	31	4	65
110	30	3	28	3	64
111	16	4	18	1	39
114	0	1	1	0	2
118	10	1	24	1	36
119	3	1	1	0	5
126	4	0	1	0	5
130	1	2	7	0	10
131	2	0	0	0	2
132	0	0	1	0	1
133	4	2	5	0	11
152	1	1	2	0	4
155	15	6	18	5	44
156	30	3	33	5	71
157	51	12	34	5	102
159	20	0	14	1	35
169	19	7	39	3	68
171	12	4	17	5	38
172	18	7	36	4	65
173	19	4	9	0	32
176	20	2	18	5	45
177	9	0	26	1	36
178	27	7	34	1	69
179	38	9	54	5	106
181	18	5	16	3	42
182	7	2	8	4	21
183	19	4	35	0	58
184	53	16	57	8	134
197	10	2	13	1	26
199	4	0	3	0	7
201	8	2	6	3	19
203	1	0	2	0	3

Table 7., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
208	20	0	13	1	34
209	46	0	20	2	68
210	20	6	17	0	43
213	92	13	98	12	215
214	55	20	73	17	165
215	57	24	50	20	151
218	27	15	22	9	73
219	18	6	29	3	56
221	90	15	70	12	187
222	39	15	33	9	96
223	24	6	12	2	44
224	0	0	0	1	1
225	42	11	36	14	103
227	26	3	15	5	49
229	8	4	6	2	20
230	6	3	4	1	14
232	8	1	5	0	14
233	11	4	10	2	27
234	1	0	2	0	3
235	3	2	1	1	7
236	18	0	7	4	29
237	2	1	4	2	9
239	61	14	49	10	134
240	82	31	83	13	209
241	166	28	135	37	366
246	39	9	39	9	96
248	15	3	12	3	33
249	35	14	43	4	96
250	8	1	5	1	15
251	2	2	4	0	8
252	5	0	6	3	14
253	6	1	4	2	13
254	16	1	11	1	29
255	6	1	4	0	11
256	28	4	28	7	67
257	17	2	15	2	36

Table 7., continued.

Permit Area	Adult Male Harvest	Fawn Male Harvest	Adult Female Harvest	Fawn Female Harvest	Total Harvest
258	28	5	31	8	72
259	16	2	19	3	40
260	47	0	20	2	69
261	11	1	4	0	16
262	11	0	3	0	14
263	25	4	18	4	51
264	63	5	40	6	114
265	27	5	18	4	54
266	20	3	10	0	33
267	26	0	18	1	45
268	27	1	13	1	42
269	4	2	9	0	15
270	6	1	3	0	10
271	3	2	1	0	6
272	7	0	4	0	11
273	15	1	14	2	32
274	7	0	7	3	17
275	17	1	7	1	26
276	17	3	20	3	43
277	56	9	45	6	116
278	8	2	6	0	16
279	3	0	3	1	7
280	3	1	3	0	7
281	14	2	7	1	24
282	7	0	0	1	8
283	6	1	9	1	17
284	5	1	9	0	15
285	15	3	8	3	29
286	6	1	8	2	17
288	7	1	12	0	20
289	4	0	7	0	11
290	12	2	17	2	33
291	22	2	24	4	52
292	16	3	20	3	42
293	19	2	11	1	33
294	4	1	2	0	7

Table 7., continued.

<b>Permit Area</b>	<b>Adult Male Harvest</b>	<b>Fawn Male Harvest</b>	<b>Adult Female Harvest</b>	<b>Fawn Female Harvest</b>	<b>Total Harvest</b>
295	11	4	9	1	25
296	3	1	5	0	9
297	4	1	7	1	13
298	15	3	10	5	33
299	3	0	8	1	12
338	12	5	9	1	27
339	14	2	5	1	22
341	43	7	32	8	90
342	38	12	9	4	63
343	25	0	4	4	33
344	18	6	14	3	41
604	52	2	19	6	79
643	12	2	7	0	21
645	30	2	4	2	38
646	33	1	10	3	47
647	11	2	6	1	20
648	23	1	4	5	33
649	41	5	6	3	55
655	4	1	0	0	5
701	19	3	11	3	36
<b>Total</b>	<b>2665</b>	<b>516</b>	<b>2271</b>	<b>407</b>	<b>5859</b>

Table 8. Early-season antlerless deer harvest by DPA, 2019.

<b>Permit Area</b>	<b>Fawn Male Harvest</b>	<b>Adult Female Harvest</b>	<b>Fawn Female Harvest</b>	<b>Total Harvest</b>
343	5	19	4	28
604	62	211	44	317
643	0	14	3	17
645	13	43	12	68
646	35	67	29	131
647	3	15	4	22
648	13	52	22	87
649	48	101	61	210
655	3	8	1	12
<b>Total</b>	<b>182</b>	<b>530</b>	<b>180</b>	<b>892</b>

Table 9. 300 Series A and B Firearms Harvest by Permit Area, 2019.

Permit Area	Zone	Adult Male	Fawn Male	Adult Female	Fawn Female	Total
338	3A	214	29	133	14	390
	3B	20	13	49	10	92
339	3A	228	29	136	22	415
	3B	28	7	41	8	84
341	3A	721	115	437	80	1353
	3B	127	63	247	56	493
342	3A	488	68	279	60	895
	3B	76	37	167	35	315
343	3A	357	47	167	43	614
	3B	58	16	70	15	159
344	3A	339	60	178	78	655
	3B	52	17	80	16	165
643	3A	371	57	170	39	637
	3B	83	25	74	27	209
645	3A	422	68	184	51	725
	3B	124	42	133	40	339
646	3A	806	131	338	119	1394
	3B	197	79	242	82	600
647	3A	413	56	186	19	674
	3B	91	27	101	41	260
648	3A	557	86	252	63	958
	3B	76	30	111	18	235
649	3A	1003	177	441	136	1757
	3B	279	134	371	138	922
655	3A	153	21	88	21	283
	3A	22	9	18	8	57
<b>Total</b>		<b>7305</b>	<b>1443</b>	<b>4693</b>	<b>1239</b>	<b>14680</b>



Table 10. Free Landowner License Harvest by Permit Area, 2019.

Permit Area	Fawn Male	Adult Female	Fawn Female	Total
101	5	1	1	7
105	9	1	1	11
110	16	0	1	17
131	0	0	1	1
155	3	1	0	4
156	11	1	1	13
157	34	7	5	46
159	7	1	0	8
171	2	0	0	2
172	6	0	0	6
177	9	0	0	9
179	9	0	2	11
183	3	0	0	3
184	16	3	4	23
201	2	0	0	2
208	3	4	0	7
209	3	1	2	6
210	18	2	5	25
213	73	17	22	112
214	71	17	22	110
215	28	11	12	51
218	8	3	5	16
219	5	0	0	5
221	29	4	8	41
222	10	0	0	10
223	2	0	0	2
225	18	4	3	25
227	7	1	1	9
229	1	0	0	1
230	2	0	1	3
232	4	0	1	5
233	2	0	0	2
236	3	0	2	5
239	21	8	6	35

Table 10., Continued.

Permit Area	Fawn Male	Adult Female	Fawn Female	Total
240	48	13	19	80
241	94	15	21	130
246	30	4	8	42
248	6	0	1	7
249	47	11	17	75
254	3	1	0	4
255	3	0	1	4
256	18	0	3	21
257	15	7	3	25
258	10	2	1	13
259	6	0	0	6
260	6	0	0	6
261	2	0	0	2
262	1	0	2	3
263	1	0	0	1
264	26	4	2	32
265	9	2	5	16
266	5	1	0	6
267	3	0	0	3
268	4	0	0	4
276	1	0	0	1
277	14	2	2	18
281	3	0	1	4
290	4	1	0	5
292	9	1	1	11
293	3	1	2	6
297	2	1	0	3
298	6	0	2	8
338	4	0	0	4
339	2	1	0	3
341	16	4	8	28
342	9	3	3	15
343	2	1	2	5
344	8	1	3	12

Table 10., Continued.

Permit Area	Fawn Male	Adult Female	Fawn Female	Total
604	4	0	2	6
643	1	0	0	1
645	7	1	0	8
646	3	3	3	9
647	1	0	0	1
648	5	0	2	7
649	8	2	4	14
Total	889	169	224	1,270

Table 11. Summary of special firearms hunts, 2019. Includes regular, youth, and bonus permits.

Area	Dates	Permits Issued	Harvest				Total
			Adult Male	Fawn Male	Adult Female	Fawn Female	
893 - Carver Park Reserve	11/16-11/17	110*	20	5	14	5	44
900 - Cascade River State Park	11/9-11/24	100*	4	1	14	1	20
901 - Rice Lake NWR	11/16-11/24	40*	2	0	2	0	4
902 - St. Croix State Park	11/21-11/24	350*	24	11	42	4	81
903 - Lake Louise State Park	11/16-11/17	25*	5	0	14	3	22
904 - Gooseberry Falls State Park	11/9-11/24	40*	8	3	8	2	21
905 - Split Rock Lighthouse State Park	11/9-11/24	40*	4	1	3	1	9
906 - Tettegouche State Park	11/9-11/24	125*	3	0	2	0	5
907 - Scenic State Park	11/9-11/24	30*	1	2	4	1	8
908 - Hayes Lake State Park	11/9-11/24	75*	5	1	3	1	10
909 - Lake Bemidji State Park	11/9-11/12	30***	1	1	5	1	8
910 - Zippel Bay State Park	11/9-11/24	75***	10	8	15	4	37
911 - Judge CR Magney State Park	11/9-11/24	75*	6	0	5	0	11
912 - Schoolcraft State Park	11/9-11/24	NA*	0	1	1	0	2
913 - Lake Carlos State Park	11/9-11/12	20**	0	3	7	1	11
914 - William O'Brien State Park	11/9-11/10	50*	17	2	15	3	37
915 - Lake Bronson State Park	11/9-11/17	30***	3	6	10	2	21
916 - Maplewood State Park	11/9-11/12	100*	34	6	20	5	65
917 - Miesville Ravine Park Reserve	11/9-1/17	40**	0	6	28	5	39
918 - Beaver Creek Valley State Park	11/9-11/10	25*	8	0	6	0	14
919 - Glacial Lakes State Park	11/14-11/17	20**	0	1	7	1	9
920 - Zumbro Falls Woods SNA	11/9-11/17	12*	3	1	3	0	7
922 - Old Mill State Park	11/9-11/12	10*	3	0	0	0	3
923 - Zumbro Falls Woods SNA	11/23-12/1	12*	2	2	2	0	6
925 - Vermillion Highlands Research, Recreation and WMNA	11/9-11/22	20*	2	0	2	1	5
927 - Whitewater State Park	11/23-11/24	50*	8	3	7	0	18
928 - Wild River State Park	11/9-11/10	75*	21	11	24	7	63
931 - City of Grand Rapids	11/9-11/24	N/A*	9	7	19	4	39
933 - Forestville/ Mystery Cave State Park	11/9-11/10	130*	13	4	15	3	35
934 - Whitewater State Game Refuge	11/23-12/1	100**	0	1	16	4	21
940 - Frontenac State Park	11/23-11/24	60#	8	3	12	2	25
962 - Great River Bluffs State Park	11/23-11/24	50*	4	1	1	3	9
<b>Total</b>			<b>228</b>	<b>91</b>	<b>326</b>	<b>64</b>	<b>709</b>

Table 12. Summary of special muzzleloader deer hunts, 2019. Includes regular, youth, and bonus permits.

Area	Dates	Permits Issued	Harvest				Total
			Adult Male	Fawn Male	Adult Female	Fawn Female	
894 - Sakatah State Park	12/7-12/8	15**	0	3	4	0	7
929 - McCarthy Beach State Park	11/30-12/8	25*	2	0	6	1	9
930 - Nerstrand Big Woods State Park	12/7-12/8	50***	4	4	19	3	30
932 - Rice Lake State Park	12/7-12/8	20**	1	1	11	1	14
935 - Jay Cooke State Park	12/7-12/13	75*	0	2	1	2	5
936 - Crow Wing State Park	12/7-12/11	25*	5	1	5	0	11
937 - Lake Vermillion - Soudan Underground Mine State Park	11/30-12/15	25*	3	1	4	0	8
938 - City of Tower	11/30-12/15	20*	3	4	6	2	15
939 - Myre-Big Island State Park	12/7-12/8	50**	0	10	22	5	37
942 - Sibley State Park	11/30-12/1	60**	0	4	4	3	11
943 - Miesville Ravine Park Reserve	12/7-12/15	40**	1	5	9	3	18
944 - Vermillion Highlands Research, Recreation and WMA	11/30-12/15	20*	2	1	2	0	5
946 - City of Grand Rapids	11/30-12/15	N/A*	2	2	2	1	7
947 - Lake Bemidji State Park	12/6-12/8	30*	0	1	4	1	6
948 - Savanna Portage State Park	11/30-12/8	30*	0	1	3	0	4
949 - St. Croix State Park	12/4-12/8	100*	0	0	12	4	16
Totals			23	40	114	26	203

Table 13. Summary of special youth and Camp Ripley archery hunts.

Area	Dates	Permits Issued	Harvest				Total
			Adult Male	Fawn Male	Adult Female	Fawn Female	
899 - Minneopa State Park	10/26-10/27	5*	1	0	0	0	1
950 - Camp Ripley Youth Archery	10/12-10/13	175*	0	0	1	0	1
951 - Afton State Park	11/9-11/10	30*	10	1	11	0	22
952 - Sibley State Park	10/26-10/27	10*	2	0	1	0	3
953 - Zippel Bay State Park	10/19-10/20	20*	1	0	1	1	3
954 - Lake Bemidji State Park	10/18-10/20	20*	1	0	0	0	1
956 - St. Croix State Park	11/2-11/3	90*	21	3	8	2	34
957 - Rydell National Wildlife Refuge	10/26-10/27	15*	1	0	1	0	2
958 - Savanna Portage State Park	10/26-10/27	25*	2	0	1	0	3
959 - Buffalo River State Park	11/9-11/10	12***	1	1	2	1	5
960 - Tettegouche State Park	11/2-11/3	10*	1	0	0	0	1
961 - Itasca State Park	10/12-10/13	75*	2	0	0	0	2
963 - Kilen Woods State Park	10/26-10/27	6*	1	0	0	1	2
965 - Banning State Park	11/2-11/3	6*	1	0	2	0	3
966 - Blue Mounds State Park	11/23-11/24	10***	0	0	2	0	2
967 - Camden State Park	10/26-10/27	12***	1	0	3	4	8
968 - Lake Shetek State Park	11/23-11/24	12***	4	0	8	1	13
969 - Lake Bronson State Park	10/26-10/27	10*	0	0	2	0	2
		<b>Total</b>	<b>50</b>	<b>5</b>	<b>43</b>	<b>10</b>	<b>108</b>
970 - Camp Ripley First Hunt	10/17-10/18	2,000*	31	6	28	3	68
971 - Camp Ripley Second Hunt	10/26-10/27	2,000*	105	17	71	19	212
		<b>Total</b>	<b>136</b>	<b>23</b>	<b>99</b>	<b>22</b>	<b>280</b>

Table 14. 2019 Firearm Lottery Distribution Report

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
103	1	864	4	276	588	991
	2	293	1	0	293	
	3	73	0	0	73	
	4	25	0	0	25	
	5	7	0	0	7	
	6	5	0	0	5	
	<b>Total</b>		<b>1267</b>	<b>5</b>	<b>276</b>	
108	1	220	0	220	0	99
	2	217	0	217	0	
	3	220	0	220	0	
	4	181	0	181	0	
	5	152	0	152	0	
	6	115	0	38	77	
	7	22	0	9	22	
	<b>Total</b>		<b>1127</b>	<b>0</b>	<b>1037</b>	
111	1	264	0	37	227	498
	2	134	1	0	134	
	3	125	0	0	125	
	4	12	0	0	12	
	<b>Total</b>		<b>535</b>	<b>1</b>	<b>37</b>	
118	1	388	2	388	0	49
	2	215	2	215	0	
	3	126	0	126	0	
	4	42	1	11	31	
	5	17	0	0	17	
	9	1	0	0	1	
	<b>Total</b>		<b>789</b>	<b>5</b>	<b>740</b>	
126	1	237	0	237	0	145
	2	186	3	45	141	
	3	4	0	0	4	
	<b>Total</b>		<b>427</b>	<b>3</b>	<b>282</b>	
130	1	288	3	288	0	49
	2	152	0	146	6	
	3	42	0	0	42	
	4	1	0	0	1	
	<b>Total</b>		<b>483</b>	<b>3</b>	<b>434</b>	

Table 14., continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
131	1	122	1	88	34	50
	2	12	0	0	12	
	3	3	0	0	3	
	4	1	0	0	1	
	<b>Total</b>	<b>138</b>	<b>1</b>	<b>88</b>	<b>50</b>	
169	1	1403	2	1403	0	494
	2	1673	9	1673	0	
	3	669	6	192	477	
	4	14	2	0	14	
	5	3	1	0	3	
	<b>Total</b>	<b>3762</b>	<b>20</b>	<b>3268</b>	<b>494</b>	
173	1	1373	3	517	856	1481
	2	516	3	0	516	
	3	96	2	0	96	
	4	13	2	0	13	
	5	0	1	0	0	
	<b>Total</b>	<b>1998</b>	<b>11</b>	<b>517</b>	<b>1481</b>	
176	1	1093	6	1093	0	297
	2	538	1	434	104	
	3	191	1	0	191	
	4	2	0	0	2	
	<b>Total</b>	<b>1824</b>	<b>8</b>	<b>1527</b>	<b>297</b>	
178	1	1199	2	1199	0	297
	2	773	2	773	0	
	3	567	5	275	292	
	4	5	0	0	5	
	<b>Total</b>	<b>2544</b>	<b>9</b>	<b>2247</b>	<b>297</b>	
181	1	1439	6	0	1439	1984
	2	197	2	0	197	
	3	26	1	0	26	
	4	2	0	0	2	
	<b>Total</b>	<b>1664</b>	<b>9</b>	<b>0</b>	<b>1664</b>	



Table 14., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
197	1	814	1	814	0	740
	2	656	1	560	96	
	3	523	1	0	523	
	4	120	0	0	120	
	5	1	2	0	1	
	<b>Total</b>		<b>2114</b>	<b>5</b>	<b>1374</b>	
199	1	154	1	70	84	99
	2	13	0	0	13	
	3	2	0	0	2	
	<b>Total</b>		<b>169</b>	<b>1</b>	<b>70</b>	
234	1	113	4	113	0	94
	2	101	0	24	77	
	3	15	0	0	15	
	4	2	0	0	2	
	<b>Total</b>		<b>231</b>	<b>4</b>	<b>137</b>	
235	1	74	0	41	33	69
	2	33	0	0	33	
	3	3	0	0	3	
	<b>Total</b>		<b>110</b>	<b>0</b>	<b>41</b>	
237	1	94	0	94	0	47
	2	84	0	84	0	
	3	70	1	70	0	
	4	50	0	3	47	
	5	0	1	0	0	
	<b>Total</b>		<b>298</b>	<b>2</b>	<b>251</b>	
238	1	58	0	58	0	49
	2	46	0	3	43	
	3	5	0	0	5	
	4	1	0	0	1	
	<b>Total</b>		<b>110</b>	<b>0</b>	<b>61</b>	
250	1	306	2	294	12	276
	2	251	0	0	251	
	3	13	0	0	13	
	<b>Total</b>		<b>570</b>	<b>2</b>	<b>294</b>	

Table 14., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
252	1	346	1	123	223	373
	2	147	0	0	147	
	3	3	0	0	3	
	<b>Total</b>	<b>496</b>	<b>1</b>	<b>123</b>	<b>373</b>	
253	1	376	2	376	0	266
	2	275	0	71	204	
	3	62	1	0	62	
	<b>Total</b>	<b>713</b>	<b>3</b>	<b>447</b>	<b>266</b>	
269	1	292	0	168	124	319
	2	167	1	0	167	
	3	27	0	0	27	
	4	1	0	0	1	
	<b>Total</b>	<b>487</b>	<b>1</b>	<b>168</b>	<b>319</b>	
270	1	150	0	150	0	141
	2	64	0	7	57	
	3	52	0	0	52	
	4	30	0	0	30	
	5	2	0	0	2	
	<b>Total</b>	<b>298</b>	<b>0</b>	<b>157</b>	<b>141</b>	
271	1	311	0	0	311	418
	2	92	4	0	92	
	3	1	1	0	1	
	<b>Total</b>	<b>404</b>	<b>5</b>	<b>0</b>	<b>404</b>	
272	1	186	1	186	0	193
	2	147	0	0	147	
	3	44	0	0	44	
	4	1	1	0	1	
	9	1	0	0	1	
	<b>Total</b>	<b>379</b>	<b>2</b>	<b>186</b>	<b>193</b>	
274	1	228	0	228	0	227
	2	231	0	63	168	
	3	58	0	0	58	
	4	1	0	0	1	
	<b>Total</b>	<b>518</b>	<b>0</b>	<b>291</b>	<b>227</b>	

Table 14., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
275	1	261	0	261	0	141
	2	247	0	247	0	
	3	177	0	36	141	
	6	0	1	0	0	
	<b>Total</b>	<b>685</b>	<b>1</b>	<b>544</b>	<b>141</b>	
278	1	364	2	364	0	361
	2	251	0	131	120	
	3	216	0	0	216	
	4	23	0	0	23	
	5	0	1	0	0	
	7	1	0	0	1	
	9	1	0	0	1	
	<b>Total</b>	<b>856</b>	<b>3</b>	<b>495</b>	<b>361</b>	
279	1	247	1	247	0	267
	2	255	1	6	249	
	3	15	1	0	15	
	4	3	0	0	3	
	<b>Total</b>	<b>520</b>	<b>3</b>	<b>253</b>	<b>267</b>	
280	1	154	0	154	0	93
	2	124	0	124	0	
	3	121	0	52	69	
	4	23	0	0	23	
	9	1	0	0	1	
	<b>Total</b>	<b>423</b>	<b>0</b>	<b>330</b>	<b>93</b>	
282	1	45	0	45	0	24
	2	37	0	37	0	
	3	29	0	29	0	
	4	31	0	7	24	
	<b>Total</b>	<b>142</b>	<b>0</b>	<b>118</b>	<b>24</b>	
283	1	211	1	211	0	189
	2	182	0	116	66	
	3	121	1	0	121	
	4	2	0	0	2	
	<b>Total</b>	<b>516</b>	<b>2</b>	<b>327</b>	<b>189</b>	

Table 14., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
284	1	264	2	264	0	191
	2	235	0	235	0	
	3	213	2	64	149	
	4	42	0	0	42	
	<b>Total</b>	<b>754</b>	<b>4</b>	<b>563</b>	<b>191</b>	
286	1	283	1	229	54	269
	2	192	0	0	192	
	3	21	0	0	21	
	4	2	0	0	2	
	<b>Total</b>	<b>498</b>	<b>1</b>	<b>229</b>	<b>269</b>	
288	1	451	0	276	175	460
	2	269	0	0	269	
	3	16	0	0	16	
	4	0	1	0	0	
	<b>Total</b>	<b>736</b>	<b>1</b>	<b>276</b>	<b>460</b>	
289	1	380	1	165	215	271
	2	41	0	0	41	
	3	14	0	0	14	
	4	1	0	0	1	
	<b>Total</b>	<b>436</b>	<b>1</b>	<b>165</b>	<b>271</b>	
291	1	782	2	661	121	911
	2	656	2	0	656	
	3	131	1	0	131	
	4	3	1	0	3	
	<b>Total</b>	<b>1572</b>	<b>6</b>	<b>661</b>	<b>911</b>	
294	1	383	0	200	183	280
	2	94	0	0	94	
	3	2	0	0	2	
	6	1	0	0	1	
	<b>Total</b>	<b>480</b>	<b>0</b>	<b>200</b>	<b>280</b>	

Table 14., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
295	1	330	0	330	0	271
	2	275	0	201	74	
	3	195	2	0	195	
	4	1	2	0	1	
	5	1	0	0	1	
	6	0	1	0	0	
	<b>Total</b>		<b>802</b>	<b>5</b>	<b>531</b>	
296	1	278	0	278	0	272
	2	250	0	95	155	
	3	117	0	0	117	
	<b>Total</b>	<b>645</b>	<b>0</b>	<b>373</b>	<b>272</b>	
299	1	363	2	305	58	366
	2	301	1	0	301	
	3	7	0	0	7	
	4	0	2	0	0	
	<b>Total</b>	<b>671</b>	<b>5</b>	<b>305</b>	<b>366</b>	
<b>Total</b>		<b>33,191</b>	<b>133</b>	<b>19,423</b>	<b>13,777</b>	<b>14,111</b>

Table 15. 2019 Muzzleloader Season Lottery Distribution Report.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
103	1	8	0	3	5	9
	2	3	0	0	3	
	4	1	0	0	1	
	<b>Total</b>	<b>12</b>	<b>0</b>	<b>3</b>	<b>9</b>	
108	1	1	0	1	0	1
	2	3	0	3	0	
	3	2	0	2	0	
	4	2	0	2	0	
	5	3	0	2	1	
<b>Total</b>	<b>11</b>	<b>0</b>	<b>10</b>	<b>1</b>		
111	1	2	0	0	2	2
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	
118	1	10	0	10	0	1
	2	4	0	4	0	
	3	2	0	1	1	
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>15</b>	<b>1</b>	
126	1	10	0	9	1	5
	2	4	0	0	4	
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>9</b>	<b>5</b>	
130	1	3	0	3	0	1
	2	5	0	4	1	
	<b>Total</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>1</b>	
169	1	25	0	25	0	6
	2	17	0	14	3	
	3	3	0	0	3	
	<b>Total</b>	<b>45</b>	<b>0</b>	<b>39</b>	<b>6</b>	
173	1	22	0	7	15	19
	2	3	0	0	3	
	3	1	0	0	1	
	<b>Total</b>	<b>26</b>	<b>0</b>	<b>7</b>	<b>19</b>	
176	1	16	0	16	0	3
	2	6	0	4	2	
	3	1	0	0	1	
	<b>Total</b>	<b>23</b>	<b>0</b>	<b>20</b>	<b>3</b>	

Table 15., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
178	1	16	0	16	0	3
	2	6	0	4	2	
	3	1	0	0	1	
	<b>Total</b>	<b>23</b>	<b>0</b>	<b>20</b>	<b>3</b>	
181	1	11	0	0	11	16
	2	2	0	0	2	
	<b>Total</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>	
197	1	13	0	13	0	10
	2	12	0	5	7	
	3	3	0	0	3	
	<b>Total</b>	<b>28</b>	<b>0</b>	<b>18</b>	<b>10</b>	
199	1	1	0	1	0	1
	2	1	0	0	1	
	<b>Total</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	
234	1	13	0	9	4	6
	2	2	0	0	2	
	<b>Total</b>	<b>15</b>	<b>0</b>	<b>9</b>	<b>6</b>	
235	1	10	0	4	6	6
<b>Total</b>	<b>10</b>	<b>0</b>	<b>4</b>	<b>6</b>		
237	1	9	0	9	0	3
	2	5	0	5	0	
	3	2	0	0	2	
	4	1	0	0	1	
	<b>Total</b>	<b>17</b>	<b>0</b>	<b>14</b>	<b>3</b>	
238	1	2	0	2	0	1
	2	1	0	0	1	
	<b>Total</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	
250	1	35	0	25	10	24
	2	14	0	0	14	
	<b>Total</b>	<b>49</b>	<b>0</b>	<b>25</b>	<b>24</b>	
252	1	29	0	9	20	27
	2	7	0	0	7	
	<b>Total</b>	<b>36</b>	<b>0</b>	<b>9</b>	<b>27</b>	

Table 15., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
253	1	50	0	50	0	34
	2	39	0	7	32	
	3	2	0	0	2	
	<b>Total</b>	<b>91</b>	<b>0</b>	<b>57</b>	<b>34</b>	
269	1	36	0	16	20	31
	2	10	0	0	10	
	3	1	0	0	1	
	<b>Total</b>	<b>47</b>	<b>0</b>	<b>16</b>	<b>31</b>	
270	1	10	0	10	0	9
	2	6	0	0	6	
	3	1	0	0	1	
	4	2	0	0	2	
	<b>Total</b>	<b>19</b>	<b>0</b>	<b>10</b>	<b>9</b>	
271	1	22	0	0	22	32
	2	9	0	0	9	
	<b>Total</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>31</b>	
272	1	8	0	7	1	7
	2	5	0	0	5	
	3	1	0	0	1	
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>7</b>	<b>7</b>	
274	1	21	0	21	0	23
	2	30	0	9	21	
	3	2	0	0	2	
	<b>Total</b>	<b>53</b>	<b>0</b>	<b>30</b>	<b>23</b>	
275	1	21	0	21	0	9
	2	19	0	16	3	
	3	6	0	0	6	
	<b>Total</b>	<b>46</b>	<b>0</b>	<b>37</b>	<b>9</b>	
278	1	53	0	53	0	39
	2	25	0	0	25	
	3	14	1	0	14	
	<b>Total</b>	<b>92</b>	<b>1</b>	<b>53</b>	<b>39</b>	



Table 15., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
279	1	45	0	31	14	33
	2	19	0	0	19	
	<b>Total</b>	<b>64</b>	<b>0</b>	<b>31</b>	<b>33</b>	
280	1	13	0	13	0	7
	2	14	0	13	1	
	<b>Total</b>	<b>33</b>	<b>0</b>	<b>26</b>	<b>7</b>	
282	1	3	0	3	0	1
	3	1	0	0	1	
	<b>Total</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>1</b>	
283	1	21	0	20	1	11
	2	10	0	0	10	
	<b>Total</b>	<b>31</b>	<b>0</b>	<b>20</b>	<b>11</b>	
284	1	18	0	18	0	9
	2	11	0	8	3	
	<b>Total</b>	<b>35</b>	<b>0</b>	<b>26</b>	<b>9</b>	
286	1	34	0	27	7	31
	2	24	0	0	24	
	<b>Total</b>	<b>58</b>	<b>0</b>	<b>27</b>	<b>31</b>	
288	1	49	0	24	25	40
	2	15	0	0	15	
	<b>Total</b>	<b>64</b>	<b>0</b>	<b>24</b>	<b>40</b>	
289	1	41	0	18	23	29
	2	5	0	0	5	
	<b>Total</b>	<b>47</b>	<b>0</b>	<b>18</b>	<b>29</b>	
291	1	100	0	64	36	89
	2	47	0	0	47	
	3	5	0	0	5	
	<b>Total</b>	<b>153</b>	<b>0</b>	<b>64</b>	<b>89</b>	

Table 15., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
294	1	33	0	15	18	20
	2	2	0	0	2	
	<b>Total</b>	<b>35</b>	<b>0</b>	<b>15</b>	<b>20</b>	
295	1	45	0	45	0	29
	2	27	0	12	15	
	3	13	0	0	13	
	4	1	0	0	1	
<b>Total</b>	<b>86</b>	<b>0</b>	<b>57</b>	<b>29</b>		
296	1	37	0	37	0	28
	2	28	0	2	26	
	3	2	0	0	2	
<b>Total</b>	<b>67</b>	<b>0</b>	<b>39</b>	<b>28</b>		
299	1	40	0	28	12	34
	2	21	0	0	21	
	3	1	0	0	1	
<b>Total</b>	<b>62</b>	<b>0</b>	<b>28</b>	<b>34</b>		
<b>Total</b>		<b>1,485</b>	<b>1</b>	<b>800</b>	<b>685</b>	<b>689</b>

Table 16. 2019 Special Firearms Hunt Lottery Distribution Report.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
893- Carver Park Reserve A Season	1	157	0	157	0	103
	2	125	0	78	47	
	3	52	0	0	52	
	4	2	0	0	2	
	6	1	0	0	1	
	9	1	0	0	1	
	<b>Total</b>	<b>338</b>	<b>0</b>	<b>235</b>	<b>103</b>	
893 - Carver Park Reserve B Season	1	8	0	8	0	7
	2	13	0	4	9	
	3	1	0	0	1	
	<b>Total</b>	<b>22</b>	<b>0</b>	<b>12</b>	<b>10</b>	
900- Cascade River S. P.	1	34	0	0	34	100
	2	6	0	0	6	
	<b>Total</b>	<b>40</b>	<b>0</b>	<b>0</b>	<b>40</b>	
903 - Lake Louise S. P.	1	47	0	47	0	25
	2	15	0	3	12	
	3	15	0	0	15	
	<b>Total</b>	<b>77</b>	<b>0</b>	<b>50</b>	<b>27</b>	
901 - Rice Lake Wildlife Refuge	1	55	28	30	25	40
	2	14	10	0	14	
	3	1	1	0	1	
	<b>Total</b>	<b>70</b>	<b>39</b>	<b>30</b>	<b>40</b>	
902 - St. Croix S. P.	1	405	0	169	236	350
	2	102	0	0	102	
	3	10	0	0	10	
	9	2	0	0	2	
	<b>Total</b>	<b>519</b>	<b>0</b>	<b>169</b>	<b>350</b>	
903 - Lake Louise S. P.	1	27	0	27	0	25
	2	25	0	2	23	
	3	2	0	0	2	
	<b>Total</b>	<b>54</b>	<b>0</b>	<b>29</b>	<b>25</b>	
904 - Gooseberry Falls S. P.	1	37	0	1	36	40
	2	4	0	0	4	
	<b>Total</b>	<b>41</b>	<b>0</b>	<b>1</b>	<b>40</b>	
905 - Split Rock Lighthouse S. P.	1	35	0	0	35	40
	2	1	0	0	1	
	<b>Total</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>36</b>	

Table 16., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
906 - Tettegouche S. P.	1	91	0	0	91	125
	2	4	0	0	4	
	Total	95	0	0	95	
907 - Scenic S. P.	1	35	0	12	23	30
	2	7	0	0	7	
	Total	42	0	12	30	
908 - Hayes Lake S. P.	1	39	0	0	39	50
	3	1	0	0	1	
	Total	40	0	0	40	
909 - Lake Bemidji S. P.	1	27	0	4	23	30
	2	6	0	0	6	
	3	1	0	0	1	
	Total	34	0	4	30	
910 - Zippel Bay S. P.	1	74	0	8	66	75
	2	6	0	0	6	
	3	3	0	0	3	
	Total	83	0	8	75	
911 - Judge C. R. Magney S. P.	1	18	0	0	18	75
	2	3	0	0	3	
	Total	21	0	0	21	
913 - Lake Carlos S. P.	1	28	0	16	12	20
	2	10	0	0	10	
	Total	38	0	16	22	
914 - William O'Brien S. P.	1	70	0	66	4	50
	2	31	0	0	31	
	3	12	0	0	12	
	4	3	0	0	3	
	9	1	0	0	1	
	Total	117	0	66	51	
915 - Lake Bronson S. P.	1	37	0	31	6	30
	2	23	0	0	23	
	9	1	0	0	1	
	Total	61	0	31	30	

Table 16., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
916 - Maplewood S. P.	1	138	0	138	0	100
	2	110	0	110	0	
	3	100	0	30	70	
	4	26	0	0	26	
	6	2	0	0	2	
	9	3	0	0	3	
	Total	379	0	278	101	
917 - Miesville Ravine S. P.	1	72	0	57	15	40
	2	22	0	0	22	
	3	4	0	0	4	
	Total	98	0	57	41	
918 - Beaver Creek Valley S. P.	1	32	0	25	7	25
	2	17	0	0	17	
	3	4	0	0	4	
	Total	53	0	25	28	
919 - Glacial Lakes S. P.	1	36	0	27	9	20
	2	8	0	0	8	
	3	3	0	0	3	
	Total	47	0	27	20	
920 - Zumbro Falls SNA	1	44	0	42	2	12
	2	8	0	0	8	
	3	1	0	0	1	
	9	1	0	0	1	
	Total	54	0	42	12	
922 - Old Mill S. P.	1	12	0	8	4	10
	2	6	0	0	6	
	3	1	0	0	1	
	Total	19	0	8	11	
923 - Zumbro Falls SNA	1	16	0	6	10	12
	2	2	0	0	2	
	Total	18	0	6	12	

Table 16., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
925 - Vermillion Highlands Research, Recreation, and Wildlife Management Area A Season	1	43	0	43	0	19
	2	23	0	17	6	
	3	12	0	0	12	
	4	1	0	0	1	
	<b>Total</b>		<b>79</b>	<b>0</b>	<b>60</b>	
925 - Vermillion Highlands Research, Recreation, and Wildlife Management Area B Season	1	1	0	1	0	1
	3	2	0	0	2	
	<b>Total</b>		<b>3</b>	<b>0</b>	<b>1</b>	
927 - Whitewater S. P.	1	46	0	23	23	50
	2	28	0	0	28	
	<b>Total</b>		<b>74</b>	<b>0</b>	<b>23</b>	
928 - Wild River S. P.	1	102	0	102	0	75
	2	89	0	46	43	
	3	29	0	0	29	
	4	1	0	0	1	
	9	2	0	0	2	
	<b>Total</b>		<b>223</b>	<b>0</b>	<b>148</b>	
931 - Grand Rapids	1	56	0	0	56	66
	2	8	0	0	8	
	3	2	0	0	2	
	<b>Total</b>		<b>66</b>	<b>0</b>	<b>0</b>	
933 - Forestville Mystery Cave S. P.	1	58	0	0	58	130
	2	8	0	0	8	
	3	1	0	0	1	
	<b>Total</b>		<b>67</b>	<b>0</b>	<b>0</b>	
934 - Whitewater State Game Refuge	1	71	0	0	71	100
	2	17	0	0	17	
	<b>Total</b>		<b>88</b>	<b>0</b>	<b>0</b>	
940 - Frontenac S. P.	1	44	0	11	33	60
	2	25	0	0	25	
	3	4	0	0	4	
	<b>Total</b>		<b>73</b>	<b>0</b>	<b>11</b>	
962 - Great River Bluffs S. P.	1	45	0	6	39	50
	2	11	0	0	11	
	3	2	0	0	2	
	<b>Total</b>		<b>58</b>	<b>0</b>	<b>6</b>	
<b>Total</b>		<b>3086</b>	<b>39</b>	<b>1354</b>	<b>1732</b>	<b>1985</b>

Table 17. 2019 Muzzleloader Special Hunts Distribution Report.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
894 - Sakatah Lake S. P.	1	17	0	8	9	15
	2	1	0	0	1	
	3	5	0	0	5	
	Total	23	0	8	15	
929 - McCarthy Beach S. P.	1	8	0	0	8	25
	2	2	0	0	2	
	Total	10	0	0	10	
930 - Nerstrand Big Woods S. P.	1	88	0	88	0	50
	2	62	0	19	43	
	3	6	0	0	6	
	9	1	0	0	1	
	Total	157	0	107	50	
932 - Rice Lake S. P.	1	27	0	23	4	20
	2	17	0	0	17	
	Total	44	0	23	21	
935 - Jay Cooke S. P.	1	87	0	56	31	75
	2	37	0	0	37	
	3	7	0	0	7	
	Total	131	0	56	75	
936 - Crow Wing S. P.	1	50	0	50	0	25
	2	19	0	1	18	
	3	7	0	0	7	
	Total	76	0	51	25	
937 - Lake Vermillion-Soudan Underground Mine S. P.	1	36	0	15	21	25
	2	4	0	0	4	
	Total	40	0	15	25	
938 - City of Tower	1	12	0	0	12	20
Total		12	0	0	12	

Table 17., Continued.

Permit Area Number	Preference Level	Applications		Unsuccessful	Winners	Permits Available
		Total	Rejected			
939 - Myre-Big Island S. P.	1	74	0	74	0	50
	2	47	0	3	44	
	3	6	0	0	6	
	9	1	0	0	1	
	Total	128	0	77	51	
942 - Sibley S. P.	1	92	0	84	8	60
	2	50	0	0	50	
	3	1	0	0	1	
	9	1	0	0	1	
	Total	144	0	84	60	
943 - Miesville Ravine Park Reserve	1	50	0	20	30	40
	2	8	0	0	8	
	3	1	0	0	1	
	4	1	0	0	1	
	Total	60	0	20	40	
944 - Vermillion Highlands Research, Recreation, and WMA	1	35	0	30	5	20
	2	15	0	0	15	
	Total	50	0	30	20	
946 - City of Grand Rapids	1	12	0	0	12	13
	2	1	0	0	1	
	Total	13	0	0	13	
947 - Lake Bemidji S. P.	1	15	0	0	15	30
	2	1	0	0	1	
	Total	16	0	0	16	
948 - Savanna Portage S. P.	1	13	0	0	13	30
	2	3	0	0	3	
	Total	16	0	0	16	
949 - St. Croix S. P.	1	82	0	0	82	100
	2	7	0	0	7	
	9	1	0	0	1	
	Total	90	0	0	90	
<b>Total</b>		<b>1010</b>	<b>0</b>	<b>471</b>	<b>539</b>	<b>598</b>





## 2019 MINNESOTA ELK HARVEST REPORT

Barbara Keller, Big Game Program Leader

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Kyle Arola, Thief Lake Wildlife Area Supervisor

### INTRODUCTION

A limited number of licenses are offered to Minnesota residents to hunt elk. In 2019, there were two established zones open for elk hunting: 1) Zone 20 - Kittson County Central and 2) Zone 30 - Kittson County Northeast (Figure 1). Elk hunting in Zone 10, near Grygla, Minnesota, has been closed since 2013 because the population is below goal (Figure 2). In 2019, there were four regular season hunts held in Zone 20: 1) Season A - September 7 through September 15, 2) Season B – September 21 through September 29, 3) Season C - October 5 through October 13, and 4) Season D – December 7 through December 15. There was one regular season hunt in Zone 30: 1) Season A - September 7 through September 15. The first three hunts were structured to fall within the breeding season when bull elk are most vulnerable and elk can be located by vocalizations. The late season is used as a mechanism to harvest antlerless elk because patterns are more predictable and elk are in larger groups. All of the seasons were 9 days in length. Hunter success rates were lower this year. These dates were also chosen to not conflict with the Youth Firearm Deer Season on October 17 through October 20 and the Regular Firearm Deer Season November 9 through November 17.

### METHODS

All elk hunters are required to attend a mandatory orientation session the day before their respective hunts begin. At this session, DNR staff provide hunters with their license and a kit to collect biological samples from their harvested animal. Field samples collected by the hunter include blood, hair with skin, muscle tissue, a spleen sample, and the whole liver. Hunters must register their animal in person within 24 hours at the local DNR office and provide biological samples. DNR staff help map the harvest location, provide a possession tag, and take the hunter-collected biological samples. DNR staff also collect lymph nodes, the obex (brain stem), the whole brain (with consent), and a tooth so an accurate age can be determined at a later date. Alternative arrangements are made for the collection of some samples, if immediate collection would interfere with a hunter's planned taxidermy mount. DNR staff submit all biological samples to Wildlife Health for disease testing and other monitoring projects.

### RESULTS

A total of 27 licenses were available and 2,819 individuals or parties (up to two hunters) applied for the opportunity to hunt elk for both zones and all seasons (Table 1). Applicants were given the opportunity to select both zone and season in which to hunt. First, random drawings were held for landowner names in Zone 20 (20% = 5 tags offered). Once landowner names were drawn and selected, the second round was for names of applicants that had applied for 10

years or more (20% of remaining tags = 5 tags offered). All remaining landowner names were then placed into the general drawing with all the other applicant names for the remaining elk tags available in the zone and season they had selected on their application. Lastly, after all names were picked, there was a random drawing from the names to determine the Either-Sex tags and Antlerless tags. Zone 30 only had two Bull-Only tags available, so no landowner tags were offered.

In 2019, a total of 15 elk were harvested in zones 20 and 30 (Table 2). This gives us a total hunter success rate of 56% for Zone 20 and 50% for Zone 30. Long-term elk harvest for all zones is depicted in Tables 3 and 4.

Table 1. License allocation and application numbers of the 2019 Minnesota elk seasons

Kittson County Season A					
Zone	Either-Sex	Antlerless	Bull-only	Total	Total Applicants
Zone 20 – Kittson Central	2	5	0	7	747
Zone 30 – Kittson Northeast	0	0	2	2	781
<b>Total</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>9</b>	<b>1,528</b>
Kittson County Season B					
Zone	Either-Sex	Antlerless	Bull-only	Total	Total Applicants
Zone 20 – Kittson Central	1	6	0	7	569
<b>Total</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>569</b>
Kittson County Season C					
Zone	Either-Sex	Antlerless	Bull-only	Total	Total Applicants
Zone 20 – Kittson Central	1	5	0	6	435
<b>Total</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>435</b>
Kittson County Season D					
Zone	Either-Sex	Antlerless	Bull-only	Total	Total Applicants
Zone 20 – Kittson Central	0	5	0	5	287
<b>Total</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>287</b>

Table 2. Distribution of the 2019 Minnesota elk harvest.

Kittson County Central Hunt Zone (20)					
Season	Bulls-only Licenses	Antlerless Licenses	Bulls taken	Antlerless taken	Total elk taken
Season A (Sept 7-15)	2	5	2	3	5
Season B (Sept 21-29)	1	6	1	2	3
Season C (Oct 5 – 13)	1	5	1	3	4
Season D (Dec 7-15)	0	5	0	2	2
<b>Total</b>	<b>4</b>	<b>21</b>	<b>4</b>	<b>10</b>	<b>14</b>

Kittson County Northeast Hunt Zone (30)					
Season	Bulls-only Licenses	Antlerless Licenses	Bulls taken	Antlerless taken	Total elk taken
Season A (Sept 7 – 15)	2	0	1	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>

Table 3. Grygla elk harvests, 1987-2019

<b>Grygla Elk Harvests</b>					
<b>Year</b>	<b>Bulls (or Either-Sex)</b>		<b>Antlerless</b>		
	<b>Permits</b>	<b>Harvest</b>	<b>Permits</b>	<b>Harvest</b>	
1987	2	1	2	1	
1996	2	2	7 (1 alternate)	6	
1997	5 (2 alternate)	1	5 (2 alternate)	2	
1998	4 (2 alternate)	2	0	0	
2004	1	1	4	2	
2005	1	0	4	0	
2006	2	2	6	2	
2007	0	0	6	6	
2008	2	2	10	6	
2009	2	3*	12		11
2010	2	1	5	3	
2011	2	2	3	0	
2012	2	1	3	0	
2013	Closed	0	Closed	0	
2014	Closed	0	Closed	0	
2015	Closed	0	Closed	0	
2016	Closed	0	Closed	0	
2017	Closed	0	Closed	0	
2018	Closed	0	Closed		0
2019	Closed	0	Closed		0
<b>Total</b>	<b>27</b>	<b>18</b>	<b>67</b>		<b>39</b>

\*One bull was a sub-legal spike and was legally tagged as an antlerless animal.

Table 4. Kittson County elk harvests, 2008-2019

<b>Kittson County (Combined Zone 20 &amp; 30)</b>				
<b>Year</b>	<b>Bulls (or Either-Sex)</b>		<b>Antlerless</b>	
	<b>Permits</b>	<b>Harvest</b>	<b>Permits</b>	<b>Harvest</b>
2008	1	1	10	10
2009	12	9 <sup>a</sup>	4	5
2010	1	1	3	3
2011	2	3 <sup>b</sup>	8 <sup>c</sup>	4
2012	5	4 <sup>d</sup>	13	3
2013	8	6	15	6
2014	9	6	0	0
2015	7	5	0	0
2016	7	5	0	0
2017	11	9	2	1
2018	6	5	16	12 <sup>e</sup>
2019	6	5	21	10
<b>Total</b>	<b>75</b>	<b>59</b>	<b>92</b>	<b>54</b>

<sup>a</sup> One additional bull (6x7) was wounded but not retrieved in 2009. It was found dead later and is counted in the total.

<sup>b</sup> One bull was a male calf and was legally tagged as an antlerless animal.

<sup>c</sup> Three unsuccessful hunters from the Grygla zone were invited to participate in the January extended season in Kittson County, however only 2 participated and were included in the number of antlerless permits issued.

<sup>d</sup> One bull was a sub-legal spike and was confiscated.

<sup>e</sup> One antlerless cow was taken with and Either-Sex tag.

# Minnesota 2019 Elk Hunt Zones

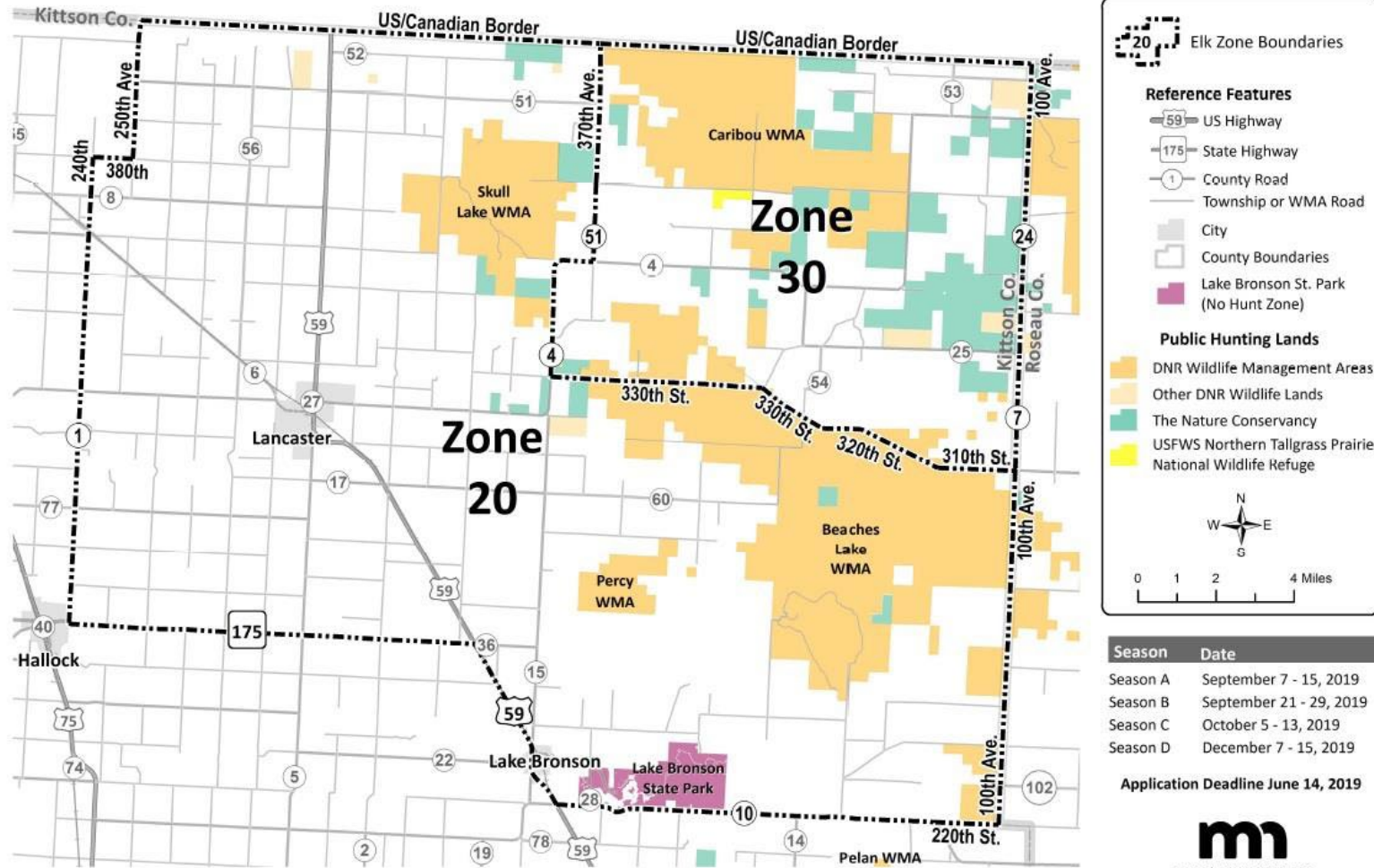


Figure 1. Kittson County Elk Hunt zones.

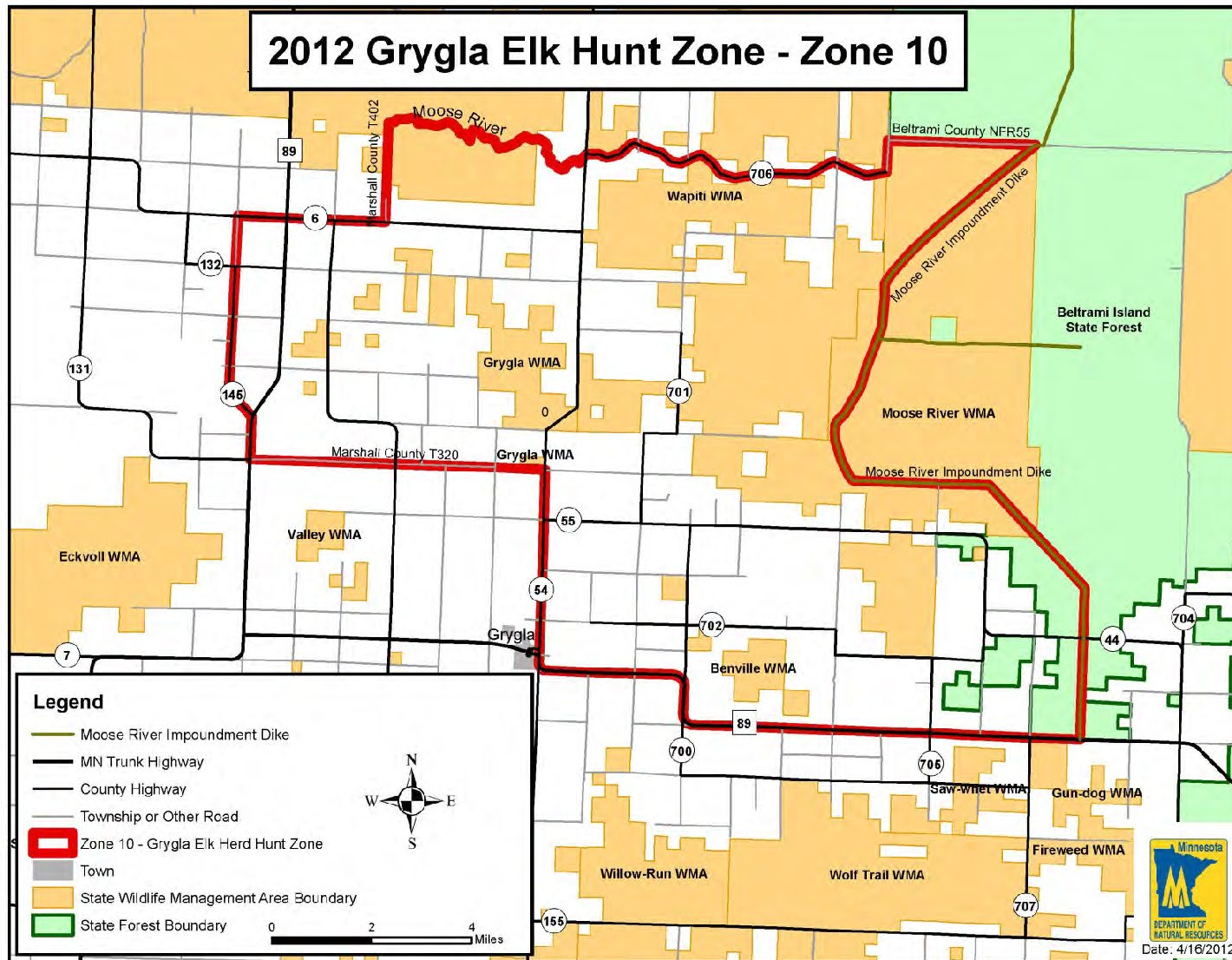


Figure 2. Grygla Elk Hunt zone.



## MINNESOTA SANDHILL CRANE HARVEST REPORT, 2019

Margaret Dexter, Wildlife Research Unit

Two distinct populations of sandhill cranes (*Grus Canadensis*) occur in Minnesota. Sandhill cranes that breed and stage during fall in NW Minnesota are part of the Mid-continent population whereas sandhill cranes in the remainder of the state are part of the Eastern population. The Mid-continent population, including cranes in NW Minnesota is managed via a cooperative management plan with the U.S. Fish and Wildlife Service, Mississippi, Central, and Pacific Flyway Councils.

A limited season for Mid-continent sandhill cranes was opened in Minnesota's Northwest Goose Zone (Figure 1) beginning in 2010. The season was open from the first Saturday in September through the second Sunday in October for the first two years with a daily limit of 2 and a possession limit of 4 (Table 1). In 2012 the season was shifted to a week later but the limits remained the same. The possession limit increased from 4 to 6 in 2013. In 2014 limits were reduce to 1 daily and 3 in possession. In 2017 the season was shifted to open the third Saturday in September and close the fourth Sunday in October with no changes to the daily and possession limits. This remained the same for the 2018 and 2019 seasons. Hunters were required to purchase a \$3.00 sandhill crane permit. A sample of sandhill crane permit holders were selected to receive a harvest survey from the U.S. Fish and Wildlife Service after the season. This survey is used to monitor harvest levels and hunting activity (Table 2).

### LITERATURE CITED

- Central Flyway Webless Migratory Bird Technical Committee. 2006. Management Guidelines for the Mid-Continent Population of Sandhill Cranes. Special Report in files of the Central Flyway Representative. Denver, Colorado.
- Dubovsky, J.A. 2016. Status and harvests of sandhill cranes:Mid-Continent, Rocky Mountain, Lower Colorado River Valley and Eastern Populations. Administrative Report, U.S. Fish and Wildlife Service, Denver, Colorado. 15pp.)  
<http://www.fws.gov/migratorybirds/NewReportsPublications/PopulationStatus.html>

Table 1. Sandhill Crane season dates and limits in Minnesota, 2010 – 2019.

Year	Dates	Daily limit	Possession limit
2010	4 Sept – 10 Oct	2	4
2011	3 Sept – 9 Oct	2	4
2012	15 Sept – 21 Oct	2	4
2013	14 Sept – 20 Oct	2	6
2014	13 Sept – 19 Oct	1	3
2015	12 Sept – 18 Oct	1	3
2016	10 Sept – 16 Oct	1	3
2017	16 Sept – 22 Oct	1	3
2018	15 Sept – 21 Oct	1	3
2019	14 Sept – 20 zoct	1	3



Table 2. Sandhill crane permit sales, estimated number of active hunters and harvest for NW Minnesota, 2010-2019. (Kruse, K.L. et al. 2020).

Year	Number of Permits	Active Hunters	Harvest
2010	1,954	964	830
2011	1,342	643	765
2012	1,032	410	407
2013	1,086	485	378
2014	1,216	401	247
2015	1,199	424	212
2016	1,139	471	287
2017	1,125	397	196
2018	1,091	383	129
2019	1,073	333	179

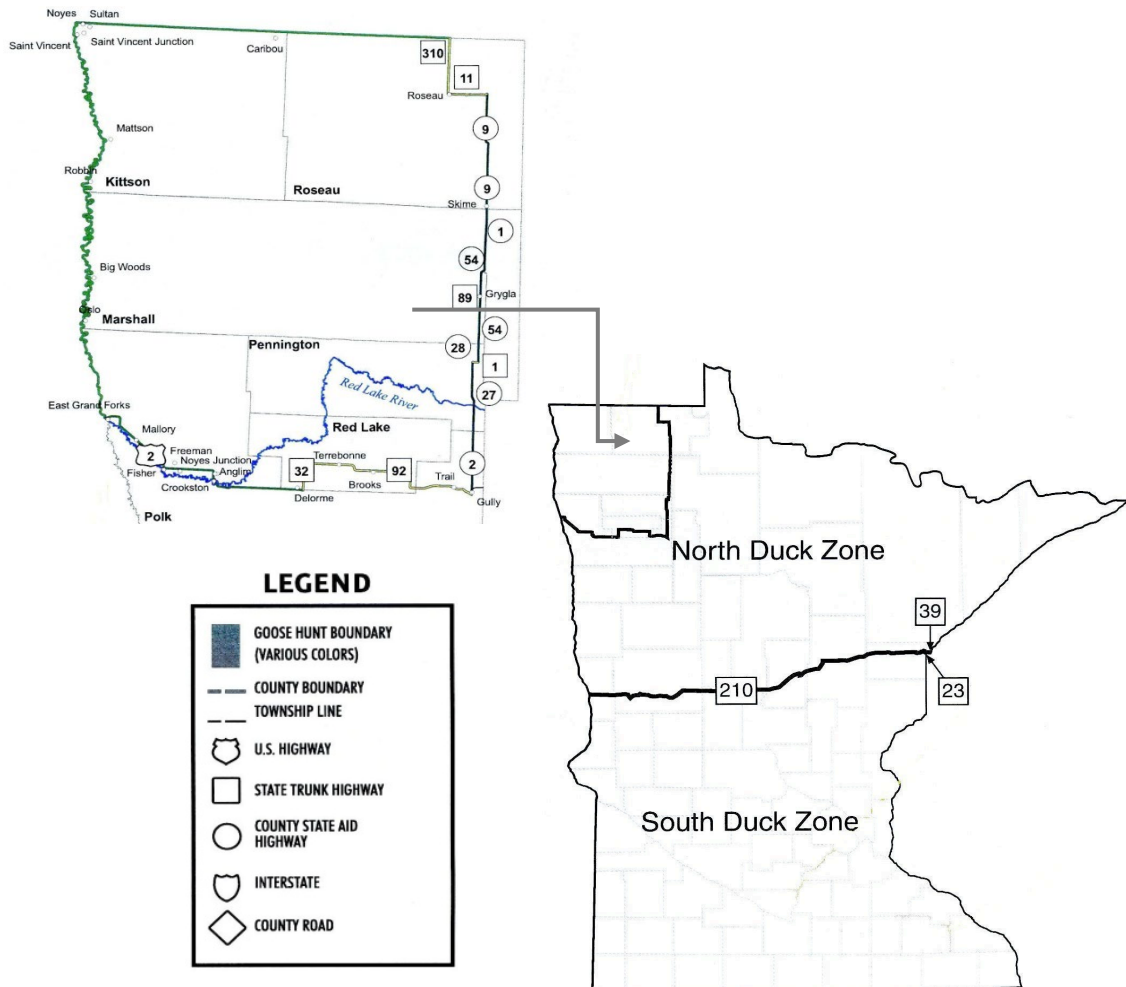


Figure 1. Sandhill crane hunting zone in Minnesota, 2010-2018.

