



2016 MINNESOTA PRAIRIE-CHICKEN HARVEST SURVEY

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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 2016, 111 hunters were estimated to have gone afield and harvested 102 prairie-chickens and 35 sharp-tailed grouse (*Tympanuchus phasianellus*) during prairie-chicken hunts. Hunter success (0.58) and satisfaction (3.7 on a scale of 1-5) were 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 2016, the prairie-chicken season opened 24 September and closed 2 October.

Prairie-chicken hunting in Minnesota is a privilege that is only available to residents. Landowners or tenants of ≥ 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 (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. Three 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 were considered in the analysis. I compared responses from the first mailing to responses from the second mailing to examine possible nonresponse bias. Corrections were made to account for harvest of non-respondents, based on the answers of respondents. I estimated the number of hunters, birds harvested, birds per harvester, and hunter success for each permit area. Average hunter satisfaction was determined for both successful and unsuccessful hunters, as well as a combined mean. Responses received prior to 21 December were included in this report.

RESULTS & DISCUSSION

The combined quota for the 11 permit areas during 2016 was 126 permits, and 304 individuals applied in the lottery (Table 1). Of the 128 lottery winners, 110—including 7 landowners—later purchased a permit. Only 1 permit area (813A) had fewer applicants than permits available, and all 4 surplus permits were purchased by lottery applicants that did not win in other permit areas, for a total of 114 permit purchasers. The hunters who purchased surplus permits were not included in the survey sample.

Ninety-one permit purchasers (83%, $n = 110$) responded to the survey; 72 (65%) responded to the first mailing and 19 (17%) to the second mailing. This response rate is slightly lower than survey response rates during 2011 (90%) and 2012 (95%), but similar to 2010 (84%), 2013 (83%), and 2014 (87%). In contrast to 2013, we did not detect a strong response bias between the first and second mailings. Respondents to the first mailing were as likely as respondents to the second mailing to have hunted (96% vs. 100% of respondents), they hunted a similar number of days (2.8 vs. 2.3), reported harvesting prairie-chickens at similar rates (58%

vs. 47%), reported harvesting a similar number of chickens (0.9 vs. 0.8 birds per hunter), but more sharp-tailed grouse (0.4 vs. 0.1 birds per hunter), and reported similar satisfaction (mean 3.8 vs. 3.6, median 4 vs. 4), with 84% and 79% of respondents reporting satisfaction scores ≥ 3 , respectively. Thus, I combined responses from both mailings this year for the analysis.

Eighty-seven respondents reported that they hunted prairie-chickens (Table 2). I estimated the total number of hunters to be 111 (i.e., purchasers who went afield) after accounting for hunting by non-respondents. Hunters reported harvesting 77 prairie-chickens and total harvest after accounting for non-respondents was estimated as 102 prairie-chickens. An estimated 64 hunters bagged ≥ 1 chicken. Survey respondents reported harvesting 32 sharp-tailed grouse while hunting prairie-chickens from permit areas 803A, 804A, 805A, and 807A (Figure 1). Although successful hunters reported higher average satisfaction (4.5) than respondents that were not successful (2.8), satisfaction of prairie-chicken hunters was high overall.

Prairie-chicken hunter success and satisfaction during 2016 was similar to 2013, 2014, and 2015 and was consistent with improvements following season changes (Table 3). Regulations were changed in 2013 in an attempt to improve hunter success and satisfaction, and survey responses indicated that this was achieved. Write-in comments about the longer (9-day) season with 2 weekends were favorable. Write-in comments about the timing of the season in 2014 included numerous comments indicating a preference for the former, later season (15% of respondents including non-purchasers), compared to 1% of respondents that commented that they preferred the earlier season. Although the 2013 Wildlife Public Input Survey asked specifically whether a season opening on the last Saturday in September was preferred to the opener on the Saturday nearest Oct. 20, and the majority of respondents indicated a preference for the earlier season (64% respondents who expressed an opinion supported the earlier season), preferences of prairie-chicken hunters might change over time. So in 2015, we again asked hunters about their preferences for the timing of the season. In

reply, 56% of respondents indicated a preference for the earlier season, and 44% preferred a later 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. Clearly, the survey indicates that prairie-chicken hunters are split in their preferences for season timing, but that the current season meets the timing preferences of the majority of responding prairie-chicken hunters.

ACKNOWLEDGEMENTS

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Table 1. Prairie-chicken hunt lottery applicants, winners, and hunting permit purchasers in Minnesota during 2016.

Permit area	Permits available	No. of applicants	Lottery winners		Permit purchasers ^a		Surplus purchasers ^c
			No. ^b	Proportion	No.	Proportion	
803A	10	22	10	0.45	10	1.00	0
804A	12	17	12	0.71	9	0.75	0
805A	12	73	12	0.16	12	1.00	0
806A	12	24	14	0.58	8	0.57	0
807A	20	43	20	0.47	18	0.90	0
808A	15	29	17	0.59	15	0.88	0
809A	15	32	15	0.47	13	0.87	0
810A	15	27	17	0.63	15	0.88	0
811A	5	8	5	0.63	4	0.80	0
812A	5	28	5	0.18	5	1.00	0
813A	5	1	1	1.00	1	1.00	4
All	126	304	128	0.42	110	0.86	4

^a Lottery winners who purchased a hunting permit.

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

^c Number of people purchasing a surplus permit after the lottery because the permit quota was not met during the lottery.

Table 2. Prairie-chicken harvest in Minnesota during 2016.

Permit area	No. of hunters ^a		Birds harvested		Birds per harvester ^b	Success rate ^c
	Self-reported	Estimated	Self-reported	Estimated		
803A	10	10	8	8	1.3	0.60
804A	6	7	7	8	1.3	0.86
805A	9	11	3	4	2.0	0.18
806A	5	8	8	13	2.2	0.75
807A	13	18	14	19	1.4	0.78
808A	11	15	13	18	1.6	0.73
809A	10	13	6	8	2.0	0.31
810A	14	15	12	13	1.9	0.47
811A	4	4	2	2	2.0	0.25
812A	4	5	3	4	2.0	0.40
813A	1	5	1	5	1.0	1.00
All	87	111 ^d	77	102 ^d	1.6 ^d	0.58 ^d

^a Permit purchasers who hunted.

^b Estimated number of birds harvested per successful hunter.

^c Proportion of estimated hunters harvesting ≥ 1 prairie-chicken.

^d Assumed that non-respondents were represented by respondents.

Table 3. Summary of prairie-chicken hunting in Minnesota during 2003–2016.

Year	Permits available	Applicants	Hunters ^a	Birds harvested	Success rate ^b	Hunter satisfaction ^c
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 ^d	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 ^e	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 ^f	96 ^f	0.60 ^f	3.7 ^f
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	3.7

^a Estimated number who went hunting, not permit purchasers.

^b Proportion of hunters harvesting ≥ 1 prairie-chicken.

^c Mean on a scale of 1–5.

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

^e One hunter reported harvesting 10 prairie-chickens in 2010.

^f Assumed that non-respondents were represented by respondents in the second mailing in 2013.

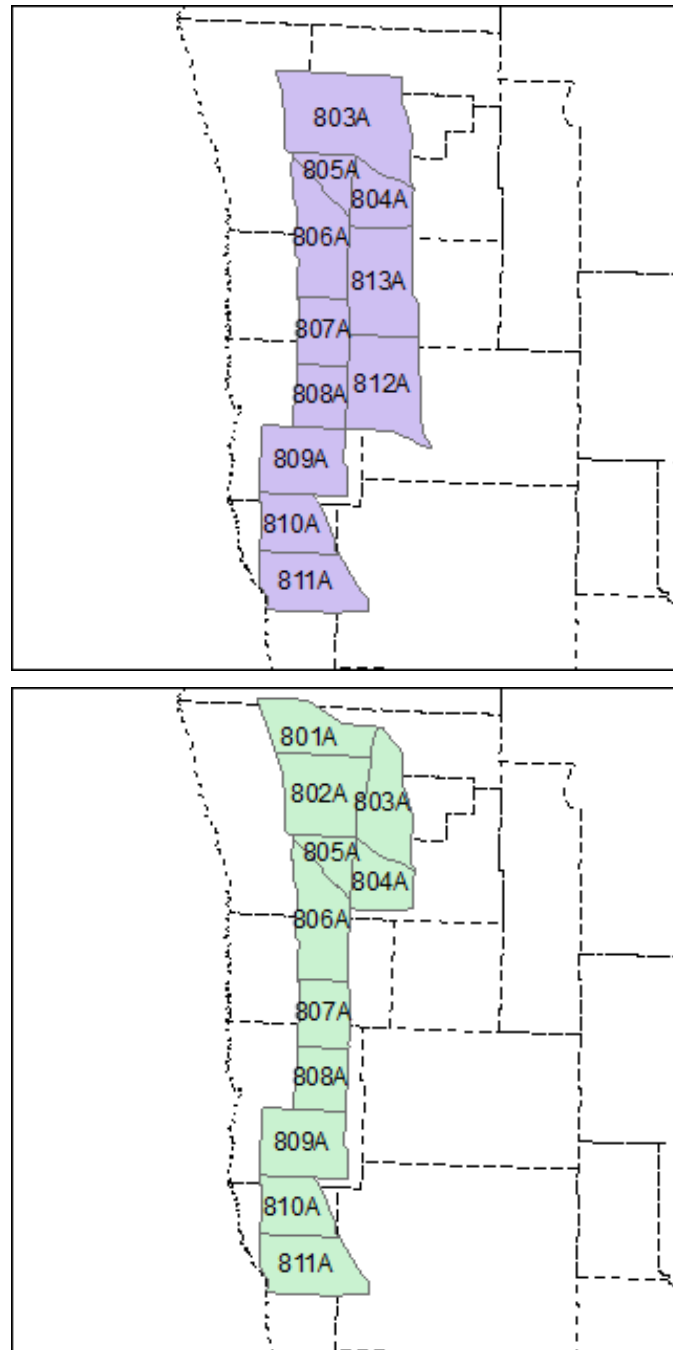


Figure 1. Prairie-chicken hunting permit area boundaries in northwestern Minnesota during 2013 - 2016 (top) compared to 2012 (bottom). County boundaries are indicated by dashed lines. Permit areas 812A and 813A were added, 801A was eliminated, and 802A and portions of 803A were combined into a revised permit area 803A.

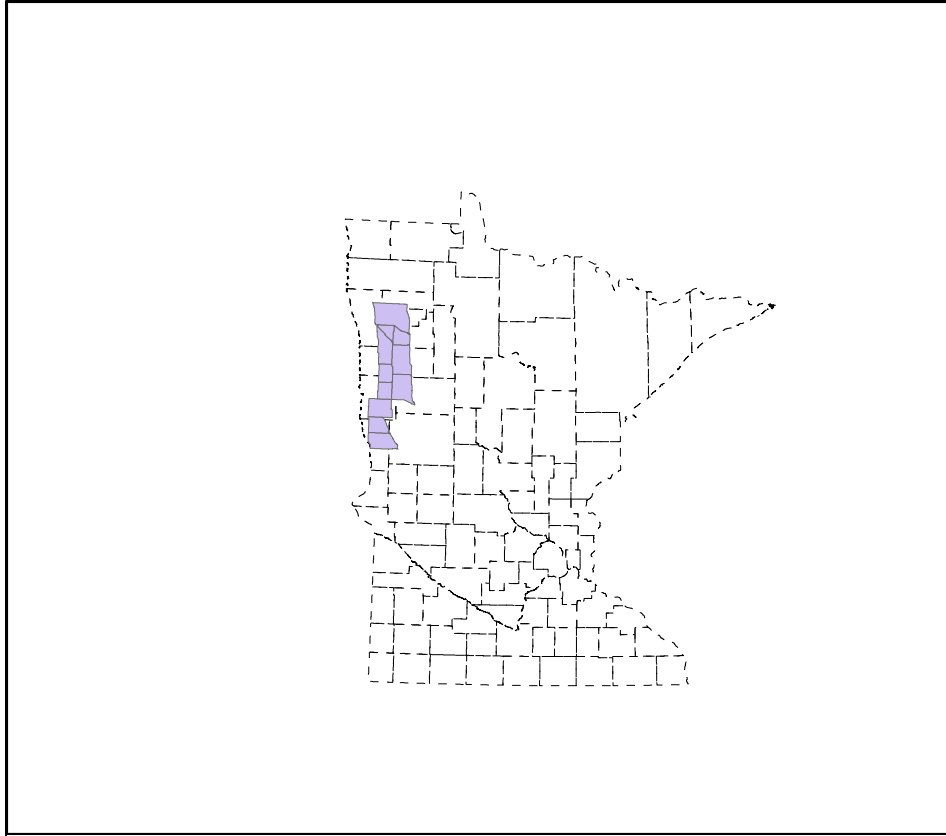


Figure 2. Northwestern location of prairie-chicken hunting permit areas within the state relative to county boundaries (dashed lines).