



## 2014 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. The number of hunters going afield was estimated at 102. Prairie-chicken harvest was estimated at 95 and 35 sharp-tailed grouse (*Tympanuchus phasianellus*) were reported as harvested during prairie-chicken hunts. Hunter success (0.54) and satisfaction (3.7 on a scale of 1-5) were higher than before the changes to the permit areas and season (i.e., longer length and earlier dates) in 2013.

### INTRODUCTION

Prairie-chicken (*Tympanuchus cupido pinnatus*) hunting 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 (Fig. 1a,b). 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. In 2014, the prairie-chicken season opened 27 September and closed 5 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 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., 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 6 December were included in this report.

## **RESULTS & DISCUSSION**

The combined quota for the 11 permit areas during 2014 was 126, and 305 individuals applied in the lottery (Table 1). Only 2 permit areas (804A and 813A) had fewer applicants than permits available. No surplus permits were available this year. Of the 130 lottery winners, 110 later purchased a permit, of whom, 5 were landowners.

Ninety-four permit purchasers (87%) responded to the survey and 2 surveys were undeliverable; 72 (67%) responded to the first mailing and 22 (20%) to the second mailing. This response rate is slightly lower than survey response rates during 2012 (95%), but similar to 2010 (84%), 2011 (90%), and 2013 (83%). In contrast to 2013, we did not detect a strong response bias between the first and second mailings. Although respondents to the first mailing were slightly more likely than respondents to the second mailing to have hunted (93% vs. 86% of respondents), they hunted a similar number of days (2.3 vs. 2.3), reported harvesting prairie-chickens at similar rates (50% vs. 45%), reported harvesting a similar number of chickens (0.9 vs. 0.8 birds per hunter) and sharp-tailed grouse (0.4 vs. 0.4 birds per hunter), and reported similar satisfaction (mean 3.7 vs. 3.9, median 4 vs. 4), with 88% and 90% of respondents

reporting satisfaction scores  $\geq 3$ , respectively. Thus, I combined responses from both mailings this year for the analysis.

Eighty-six respondents reported that they hunted prairie-chickens (Table 2). I estimated the total number of hunters to be 102 (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 95 prairie-chickens. An estimated 55 hunters bagged  $\geq 1$  chicken. Survey respondents reported harvesting 35 sharp-tailed grouse while hunting prairie-chickens from permit areas 803A, 804A, 805A, 806A, 807A, and 808A (Fig. 1). Most purchasers (88%) that responded to the survey reported a satisfaction rating  $\geq 3$ . Although successful hunters reported higher average satisfaction (4.3) than respondents that were not successful (3.2), satisfaction of prairie-chicken hunters was high overall.

Prairie-chicken hunter success and satisfaction during 2014 was similar to 2013 and higher than the preceding years (Table 3). Regulations were changed in 2013 in an attempt to improve hunter success and satisfaction, and survey responses indicated that this was achieved by the changes. Write-in comments about the longer (9 day) season with 2 weekends were favorable, with only one survey respondent expressing opposition to this change. Write-in comments about the timing of the season 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. However, a survey question asking directly about the timing of the season should better represent the opinions of hunters, than write-in comments from a minority of respondents. The 2013 Wildlife Public Input Survey asked specifically whether a season 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). Thus, public input appears to have informed season setting and improved hunter satisfaction, although some hunters still prefer the later hunting season.

## ACKNOWLEDGEMENTS

I would like to thank Laura Gilbert for preparing and mailing the postcards and entering data. I would also like to thank Mike Larson for commenting on the report and Jason Abraham for sharing the 2013 Wildlife Public Input Survey results.

Table 1. Prairie-chicken hunt lottery applicants, winners, and hunting permit purchasers in Minnesota during 2014.

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	10	25	12	0.48	9	0.75	0
804A	12	11	11	1.00	11	1.00	0
805A	12	66	13	0.20	13	1.00	0
806A	12	33	12	0.36	11	0.92	0
807A	20	42	22	0.52	20	0.91	0
808A	15	39	15	0.38	12	0.80	0
809A	15	25	16	0.64	10	0.63	0
810A	15	30	16	0.53	11	0.69	0
811A	5	9	5	0.56	5	1.00	0
812A	5	22	5	0.23	5	1.00	0
813A	5	3	3	1.00	3	1.00	0
All	126	305	130	0.43	110	0.85	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 2014.

Table 2. Prairie-chicken harvest in Minnesota during 2014.

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	9	9	6	6	1.5	0.44
804A	8	10	1	1	1.0	0.10
805A	10	13	14	18	1.8	0.77
806A	8	10	10	12	2.0	0.60
807A	15	17	13	15	1.7	0.53
808A	8	12	13	19	1.7	0.92
809A	9	9	4	4	2.0	0.22
810A	10	11	8	9	1.8	0.45
811A	2	3	3	5	1.7	1.0
812A	4	5	5	6	1.5	0.8
813A	3	3	0	0	NA	NA
All	86	102 <sup>d</sup>	77	95 <sup>d</sup>	1.7 <sup>d</sup>	0.54 <sup>d</sup>

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

<sup>b</sup> Estimated number of birds harvested per successful hunter.

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

<sup>d</sup> Assumed that non-respondents were represented by respondents.

Table 3. Summary of prairie-chicken hunting in Minnesota during 2003–2014.

Year	Permits available	Applicants	Hunters <sup>a</sup>	Birds harvested	Success rate <sup>b</sup>	Hunter satisfaction <sup>c</sup>
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

<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.

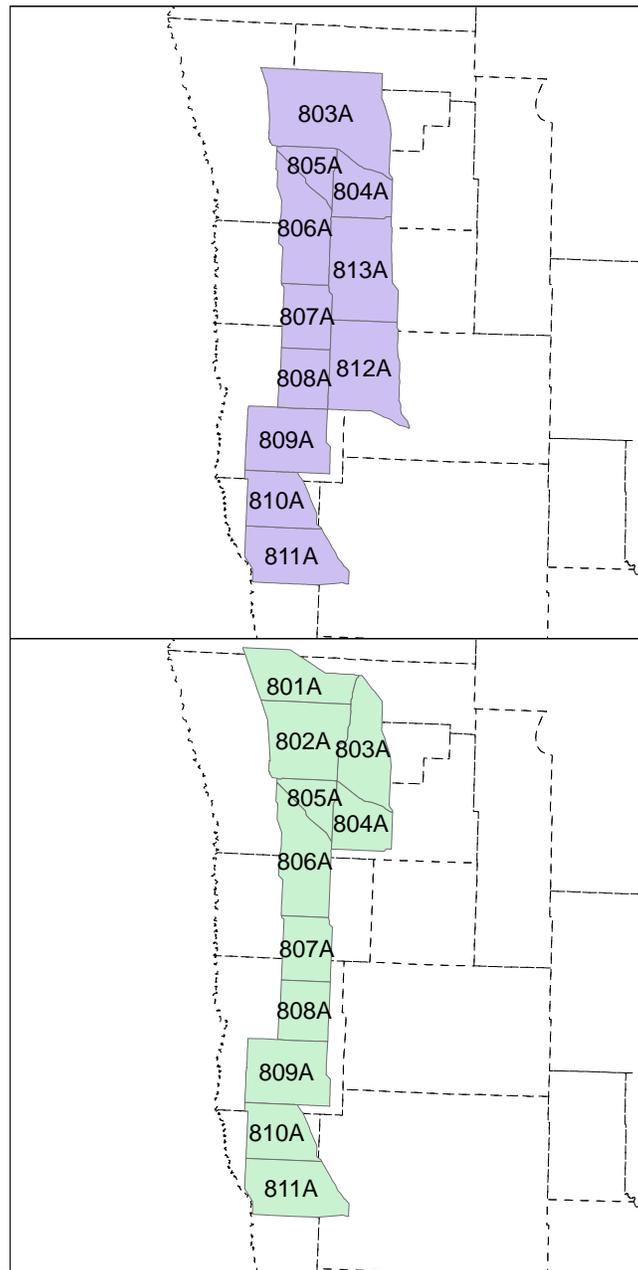


Figure 1a. Prairie-chicken hunting permit area boundaries in northwestern Minnesota during 2013 and 2014 (top) compared to 2012 (bottom). County boundaries are indicated by dashed lines. Permit areas 812A and 813A were added, 801A was eliminated, and 802A and portions of 803A were combined into a revised permit area 803A.

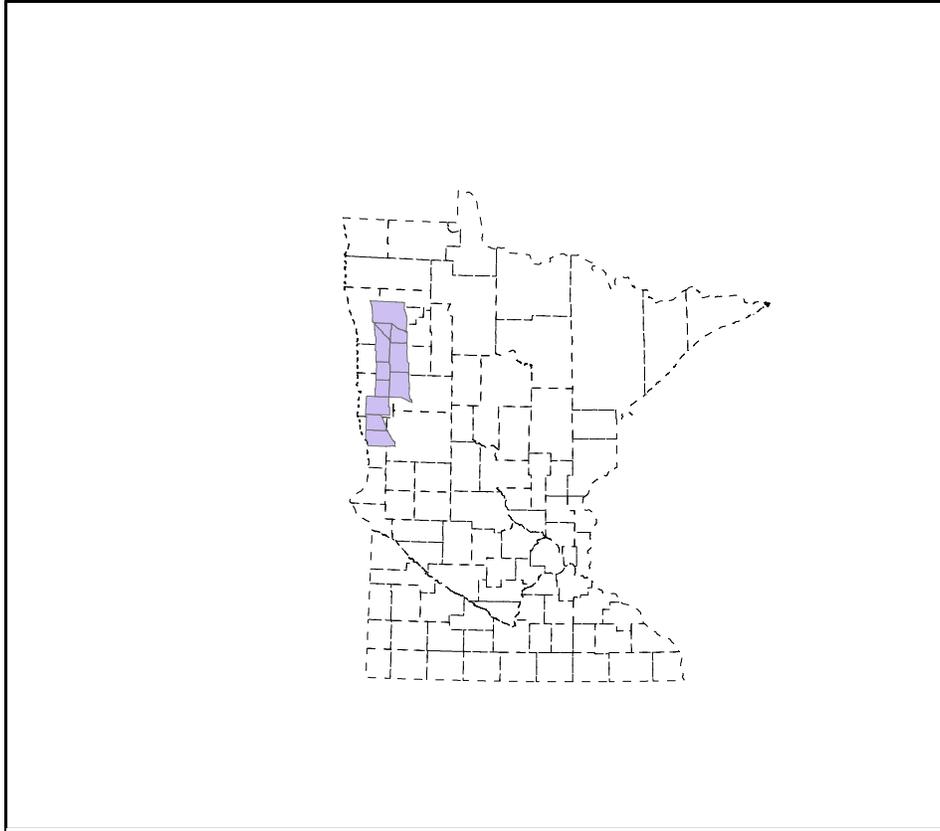


Figure 1b. Northwestern location of prairie-chicken hunting permit areas within the state relative to county boundaries (dashed lines).