The 2005 Waterfowl Hunting Season in Minnesota: A Study of Hunters' Opinions and Activities

White-winged scoter

Final Report

A cooperative study conducted by:

Minnesota Cooperative Fish and Wildlife Research Unit
Minnesota Department of Natural Resources

The 2005 Waterfowl Hunting Season in Minnesota: A Study of Hunters' Opinions and Activities

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Note: This report revised to correct several inaccurate calculations (July, 2009).

Executive Summary

This study of the 2005 Minnesota waterfowl-hunting season was conducted to assess waterfowl hunters':

- participation and activities;
- satisfaction;
- attitudes about waterfowl management, and
- opinions about hunting quality, Youth Waterfowl Hunting Day, and battery-operated, spinning-wing decoys.

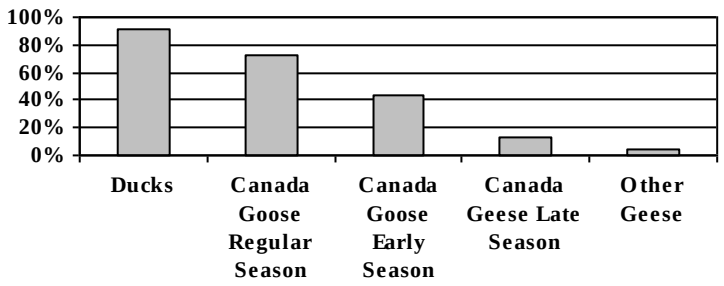
The survey was distributed to 4,000 waterfowl hunters; 2,572 completed surveys were used for this analysis. After adjusting for undeliverable surveys and invalid respondents, the response rate was 66%.

Experiences

Ninety percent of survey respondents hunted waterfowl during the 2005 Minnesota season. Respondents who had hunted in 2005 were asked if they had hunted for ducks, Canada Geese during the Early September, Regular, and Late December seasons, and other geese. Responses ranged from 93% for ducks to only 4% for other geese (Figure S-1).

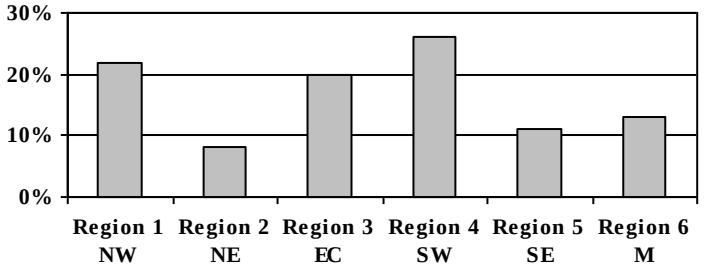
Hunters reported bagging an average of 8.1 ducks, 3.3 Canada geese, and 1.7 "other" geese over the course of the 2005 Minnesota season. Respondents hunted an average of 6.5 days on weekends and holidays, and 3.8 days during the week. Approximately two-thirds of waterfowl hunters statewide hunted opening Saturday (63%) or Sunday (65%).

Figure S-1: Percentage of Hunters Participating in Activities in 2005



Survey recipients were asked how many days they hunted in each of the six former DNR regions. Approximately 25% of respondents reported hunting most frequently in the Northwest (22%), Central (20%), or South regions (26%). Less than 15% of the state waterfowl hunters reported that they most often hunted in the Northeast (8%), Southeast (11%), or Metro regions (13%) (Figure S-2).

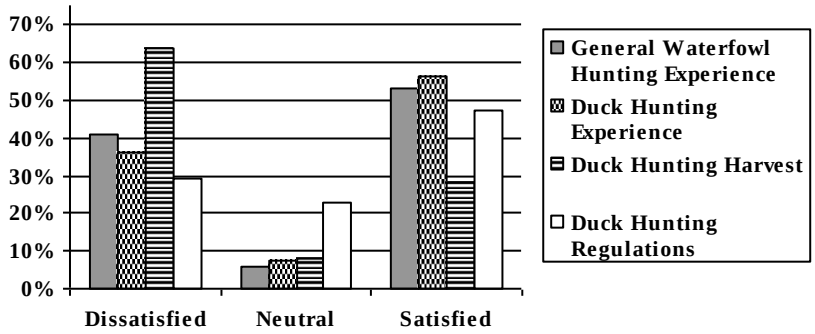
Figure S-2: Most Frequent Hunting Destination in 2005



Satisfaction

About half of hunters reported being satisfied with their general waterfowl-hunting experience. Younger hunters and hunters who have been hunting for fewer years reported higher levels of satisfaction.

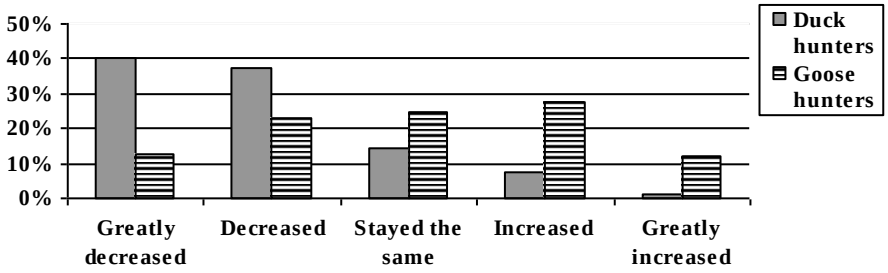
Figure S-3: Satisfaction With Duck Hunting in 2002



About half of respondents were satisfied with their 2005 duck-hunting experience (Figure S-3). However, only about one-fourth of respondents were satisfied with their duck-hunting harvest. Satisfaction with duck-hunting regulations fell between satisfaction levels for experience and harvest. Nearly one in four respondents felt neither satisfied nor dissatisfied about the duck-hunting regulations, compared to less than 10% for duck-hunting experience or harvest. There was a significant positive relationship between the number of ducks bagged and satisfaction with duck-hunting harvest.

About two-thirds of goose hunters were satisfied with their general goose-hunting experience. Fifty-eight percent of respondents were satisfied with their goose harvest. About half of goose hunters indicated they were satisfied with goose-hunting regulations. The number of geese bagged appears to have a slight positive influence on satisfaction with goose-hunting harvest.

Figure S-4: Change in Satisfaction Since Starting to Hunt in Minnesota

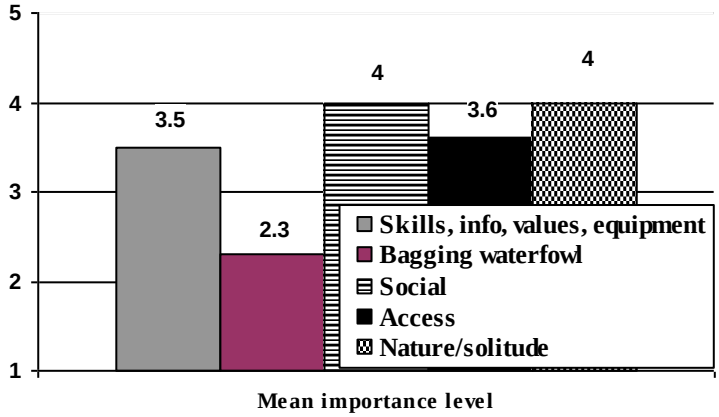


Hunters were also asked if their overall level of satisfaction for duck hunting and goose hunting had decreased or increased in the past three hunting seasons, and since they had begun hunting ducks and geese. More than two-thirds of duck hunters indicated their overall level of satisfaction with duck hunting had decreased in the past three years and only 8% indicated their satisfaction had increased. Similarly, 77% of duck hunters indicated that their satisfaction had decreased since they began hunting (Figure S-4). Compared to duck hunters, fewer goose hunters reported a decline in satisfaction over time. About one-third of goose hunters indicated their satisfaction had declined in the past three seasons, or since they began goose hunting in the state.

Motivations for and Involvement With Waterfowl Hunting

Survey recipients rated the importance of 21 diverse motivations for waterfowl hunting. Respondents' most important motivations for waterfowl hunting were enjoying nature and the outdoors, good behavior among other waterfowl hunters, getting away from crowds of people, hunting with family, and seeing lots of ducks and geese. The least important motivations were getting food for the family and getting the limit. Exploratory factor analysis identified five motivational factors associated with waterfowl hunting. The importance of these five factors is shown in Figure S-5. Over half of respondents indicated that waterfowl hunting was one of their most important recreational activities.

Figure S-5 Means on Motivation Factors



Youth Waterfowl Hunting Day

Youth Waterfowl Hunting Day has been somewhat controversial in Minnesota (Smith, 2002). However, survey results show continued support for the day. Overall, 63% of respondents support the youth hunt, with 38% strongly supporting it. Support for the youth hunt is slightly higher than in 2002, when 61% of respondents supported the youth hunt with 36% strongly supporting it.

Study respondents were asked if they took any youths hunting on Minnesota's 2005 Youth Waterfowl Hunting Day, and 13% reported participating. Those respondents who participated in Youth Waterfowl Hunting Day reported escorting an average of 1.55 youths. Based on the percentages provided by the survey, it is estimated that 23,286 youths participated in the youth waterfowl hunt in 2005. On average, 2.71 ducks and 0.53 geese were harvested by each mentored group of youths.

Management Strategies

Survey recipients were asked to report their support for different waterfowl management strategies. They responded to questions addressing shooting hours on opening day, management for specific duck species, and management of Canada Geese. The majority of respondents preferred shooting hours on opening day to begin ½ hour before sunrise, over 9 a.m. or noon. Nearly half of respondents did not have a preference for season dates for canvasbacks and pintails. Of those who did have a preference, most preferred that there be different seasons for each species to coincide with peak migration. Over three-fifths of respondents preferred a longer season with a smaller bag limit on scaup over a shorter season with a larger bag limit. Respondents also indicated their support for four strategies to control resident Canada Geese. About two-thirds of respondents supported hunting until ½ hour after sunset, about half supported allowing goose hunting in August or hunting resident Canada Geese with unplugged shotguns, and about one-third supported using electronic calls.

Split Seasons and Zones

About one-third of the respondents expressed support for zones for waterfowl hunting, and about one-fourth supported having split seasons rather than one continuous season.

Quality of Minnesota Waterfowl Hunting

Study participants were asked about changes in the quality of and problems associated with Minnesota waterfowl hunting. Respondents felt that all of the measures of Minnesota waterfowl hunting quality in the survey had gotten worse. Overall waterfowl numbers was the measure that was seen as having declined the most. The ease of understanding regulations had remained about the same. Similarly, none of the problems associated with Minnesota waterfowl hunting was seen as having gotten better. Of the problems listed, the problem of shifting waterfowl migration routes was the problem that had gotten the worst.

Spinning-Wing Decoys

About one-fourth of respondents reported that they owned a battery-operated, spinning-wing decoy, and 24% reported using these decoys during the 2005 waterfowl season. Ownership and use rates for these decoys appear to have stabilized—in 2002, 20% of survey respondents owned them and 26% used them.

Respondents were asked about their support for several current and proposed restrictions on battery-operated, spinning-wing decoys, if these decoys are found to increase duck harvest rate and possibly result in shorter seasons and/or lower bag limits. Overall, respondents were relatively neutral about the three restrictions that were included in the survey.

The number of ducks harvested per hunting day, and over the course of the 2005 waterfowl season, was significantly higher for respondents who used battery-operated, spinning-wing decoys compared to respondents who didn't use the decoys. Over the course of the season, Minnesota spinning-wing decoy users harvested an average of 12.2 ducks compared to 6.5 for nonusers. Decoy users harvested an average of 1.0 ducks per hunting day compared to 0.8 ducks for respondents who didn't use the decoys. This is similar to results seen in previous surveys and similar to differences observed in other states (Humburg et al., 2002; Miller, 2002).

Comparison with Earlier Study Results

Participation levels in different hunts were similar in 2002 and 2005. The proportion of hunters who reported bagging no ducks during the season increased from 1995 to 2005, while the proportion of hunters who reported bagging more than 10 ducks during the season decreased during this time period. Satisfaction with waterfowl hunting in Minnesota was similar in 2000 and 2002, then decreased substantially from 2002 to 2005. The reported use of battery-operated, spinning-wing decoys more than doubled from 10% in 2000 to 26% in 2002, but declined slightly to 24% in 2005. Support for Youth Waterfowl Hunting Day declined from 66.8% in 2000 to 61.0% in 2002 and increased slightly to 62.6% in 2005.

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Introduction

Minnesota has a large number of waterfowl hunters, yet quantitative information about this important clientele is limited. The U.S. Fish and Wildlife Service (USFWS) estimates hunter numbers and harvest annually by via the Federal Harvest Estimates and the Harvest Information Program. The Minnesota Department of Natural Resources (DNR) also estimates hunter numbers and harvest through its Small Game Hunter Survey. Despite these regular measures, details of hunter activity and opinions on waterfowl management issues are not regularly documented.

Minnesota participated in the North American Duck Hunter Survey (Ringelman, 1997), and Minnesota hunter responses have been compared to those in the rest of the United States (Lawrence & Ringelman, 2001). Much recreation research has examined participant satisfaction, and maintaining waterfowl hunter numbers over the long term depends on a satisfied clientele. In order to develop more information about satisfaction with waterfowl hunting in Minnesota and preferences concerning hunting regulations and experiences, data were collected from waterfowl hunters after the 2000 season (Fulton et al., 2002). A study of the 2002 waterfowl season provided updated information on hunter satisfaction (Schroeder et al., 2004). This report also detailed hunters' experiences during the 2002 hunting season and hunters' attitudes about management issues such as season timing, mechanical decoys, and youth waterfowl hunting (Schroeder et al., 2004). The current study extends information on satisfaction, hunter motivations, and opinions about regulations, season dates, mechanical decoys, and youth waterfowl hunting day. It also gathers data related to the quality of Minnesota waterfowl hunting.

Development of annual waterfowl-hunting regulations must be within the frameworks established by the U.S. Fish and Wildlife Service. However, Minnesota and other states have some latitude to adjust season structure based on state characteristics and hunter preferences. A Saturday opening day, a youth waterfowl hunt, and customized regulations are examples of regulations that can be modified by hunter preference. Hunter surveys like the one described in this report provide a better understanding of where the DNR Division of Fish and Wildlife needs to focus information and education efforts.

Study Purpose and Objectives

This study was conducted to provide ongoing information on waterfowl hunter demographics and attitudes in Minnesota. Its overall purpose was to measure hunter satisfaction, and to identify hunter preferences and opinions on various waterfowl hunting, management, and regulatory issues.

The specific objectives of this study were to:

1. Describe hunter effort in Minnesota in 2005 including: species and seasons hunted; number of days hunted; effort during weekdays, weekends, and opening weekend; management regions hunted; and hunting with a paid guide.
2. Describe hunting satisfaction with waterfowl (duck and goose) hunting in Minnesota in 2005, and changes in satisfaction in recent years and since beginning hunting in Minnesota.
3. Examine Minnesota waterfowl hunters' motivations for participating in waterfowl hunting;
4. Examine Minnesota waterfowl hunters' involvement with waterfowl hunting;
5. Describe problems associated with hunting waterfowl in Minnesota, and the quality of Minnesota waterfowl hunting;
6. Determine Minnesota waterfowl hunters' opinions concerning bag limits and other management strategies for maintaining waterfowl numbers;
7. Determine Minnesota waterfowl hunters' opinions on season dates and split seasons.
8. Determine Minnesota waterfowl hunters' support for and participation in Youth Waterfowl Hunting Day;

9. Determine Minnesota waterfowl hunters' opinions on and use of battery-operated duck decoys.
10. Determine general characteristics of waterfowl hunters in Minnesota.
11. Examine trends in waterfowl hunters' characteristics and opinions over time.

The questions used to address each objective are provided in the survey instrument (Appendix A) and discussed in more detail in the subsequent sections.

Methods

Sampling

The population of interest in this study included all Minnesota residents 16 years of age and older who hunted waterfowl in the state during 2005. The sampling frame used to draw the study sample was the Minnesota Department of Natural Resource's (DNR) Electronic Licensing System (ELS). A stratified random sample of Minnesota residents in the ELS was drawn. The sample included 1) individuals who had purchased a state waterfowl stamp in Minnesota, or 2) individuals who were over age 64 or under age 18 and were not required to purchase a state waterfowl stamp but reported through the Harvest Information Program (HIP). The study sample was stratified by residence of individuals (determined by ZIP code) in five regions (Fig. I-1). The target sample size was n = 400 for each region (n = 2,000 statewide). An initial stratified random sample of 4,000 individuals, 800 from each of the five regions, was drawn from the ELS. We stratified based on the 6 former DNR regions to select the samples for the 2000 and 2002 waterfowl hunter surveys (Fulton et al. 2002, Schroeder et al. 2004); but, for this survey we used the current 4 DNR regions (as of 2005) and separated the Central region into Twin Cities Metro (METRO) and non-Metro (NONMETRO) portions for 5 strata.

Data Collection

Data were collected using a mail-back survey following a process outlined by Dillman (2000) to enhance response rates. We constructed a relatively straightforward questionnaire, created personalized cover letters, and made multiple contacts with the targeted respondents. Potential study respondents were contacted three times between January and March, 2006. In the initial contact, a cover letter, survey questionnaire, and business-reply envelope were mailed to all potential study participants. The personalized cover letter explained the purpose of the study and made a personal appeal for respondents to complete and return the survey questionnaire. Approximately 3 weeks later, a second letter with another copy of the survey and business-reply envelope was sent to all study participants who had not responded to the first mailing. Three weeks after the second mailing a third mailing that included a personalized cover letter and replacement questionnaire with business-reply envelope was sent to all individuals with valid addresses who had not yet replied.

Survey Instrument

The data collection instrument was a 12-page self-administered survey with 11 pages of questions (Appendix A). The questionnaire addressed the following topics:

Part 1: Background and length of experience as a waterfowl hunter;
Part 2: Hunting experiences during the 2005 Minnesota waterfowl-hunting seasons, including: species hunted, days hunted, management region most often hunted, and hunting with a paid guide;

Part 3: Satisfaction with duck and goose hunting including general experience, harvest, and regulations, personal trends in hunting satisfaction for ducks and geese; and satisfaction with the number of ducks and geese seen in the field;
Part 4: Motivations for waterfowl hunting;
Part 5: General waterfowl hunting information including involvement and investment in waterfowl hunting, opinions on bag limits, changes in Minnesota waterfowl hunting quality, and problems with waterfowl hunting in Minnesota;
Part 6: Opinions concerning waterfowl management issues and special regulations including season dates, bag limits and special seasons;
Part 7: Waterfowl Hunting Zones including zones and season dates;
Part 8: Youth Waterfowl Hunting Day;
Part 9: Battery-operated, spinning-wing decoys; and
Part 10: Background information about group membership and hunting outside Minnesota.

Additional information concerning age and gender of respondents was obtained from the ELS database.

Data Entry and Analysis

Data were keypunched and the data were analyzed on a PC using the Statistical Program for the Social Sciences (SPSS for Windows 11.5.0). We computed basic descriptive statistics and frequencies for the statewide results. Regional results were compared using one-way analysis of variance and cross-tabulations.

Survey Response Rate

Of the 4,000 questionnaires mailed, 77 were undeliverable, sent to a deceased person, or otherwise invalid. Of the remaining 3,923 surveys, a total of 2,572 were returned, resulting in an overall response rate of 66%. Response rates for each region are summarized in Table I-1. Please note that the chart of response rates for each management region does not include 9 surveys that were returned without identification numbers. These 9 surveys were included in statewide results but could not be included in regional analyses. Responses received after the third survey mailing (n = 504) were used as a nonresponse check.

Table I-1: Response rates for each management region

	Initial sample size	Number invalid	Valid sample size	Number completed and returned	Response rate %
Central: Metro	800	10	790	504	63.8%
Central: Non-metro	800	18	782	515	65.9%
Northwest	800	19	781	506	64.8%
Northeast	800	18	782	541	69.2%
South	800	12	788	506	64.2%

The average age of respondents ($\bar{x} = 43.2$) was significantly older than the population of waterfowl hunters ($\bar{x} = 39.3$) (t = 12.985***). People over 40 returned the survey at a significantly higher rate than younger people. Weights correcting this age bias were calculated and applied to the data. While there were a few statistically significant differences between the weighted and unweighted data, weighting the data did not change results beyond the margin of error for the survey and the effect size of all differences

were minimal. For this reason, data were not weighted for age bias in any of the results reported here (see section 9 for respondent/study population age comparison).

Population Estimates

Statewide Estimates

The study sample was drawn using a stratified random sample with region of residence defining the five study strata. For this reason the data had to be weighted to reflect the proportion of the population residing in each region when making statewide estimates. Table I-2 summarizes the statewide population proportions for each region.

Regional Estimates

At the regional level, estimates were calculated based either on the region of residence or on the region most often hunted depending on the specific question asked. Estimates calculated based on the region of the state that respondents most often hunted waterfowl were made for participation in hunting seasons, birds bagged, days hunted, and satisfaction and motivation questions. For these estimates, the data were first weighted to reflect the proportion of hunters from each region based on residence (proportions listed in Table I-2).

Table I-2: Proportion of state waterfowl stamp purchasers by region of residence in Minnesota.

Region of residence	Proportion of state waterfowl stamp purchasers in each region age 18-64	
	Frequency[1]	Proportion
Central: Metro	36,301	31.41%
Central: Non-metro	18,573	16.07%
Northwest	23,573	20.40%
Northeast	10,496	9.08%
South	26,618	23.02%
Statewide[2]	115,561	100%

[1] Source: DNR license database

[2] The statewide total is not equal to the total number of waterfowl stamps sold. This number reflects the customer count rather than the stamp count. Customers can purchase more than one stamp.

Section 1: Experiences During the 2005 Waterfowl Hunt

Results for Part 2 of the waterfowl hunter survey are reviewed below. This section of the survey focused on hunting experiences during the 2005 Minnesota waterfowl-hunting seasons. Only individuals who hunted waterfowl in Minnesota in 2005 completed this section of the survey.

Regional estimates for participation in various seasons are presented both by region of residence and region most often hunted. Regional estimates for participation, harvest, days hunted, and hunting on private and public lands, are based on the region most often hunted. Other regional estimates are based on the hunters' region of residence.

Waterfowl Seasons Hunted in Minnesota in 2005

Respondents were first asked to report if they had actually hunted for waterfowl in Minnesota in 2005. Statewide 89.9% of the survey respondents indicated that they had hunted waterfowl in 2005. There were no significant differences in participation rates by region of residence (Table 1-1). Respondents who had hunted in 2005 were next asked if they had hunted for ducks and Canada Geese during the early September, regular, and late December seasons. At the statewide level, 92.5% of actual waterfowl hunters in 2005 indicated they had hunted ducks while 72.9% had hunted Canada Geese during the regular season. Approximately, 4 out of 10 respondents hunted Canada Geese during the early season, while approximately 1 in 10 hunted Canada Geese during the late season (13.4%). Less than 5% of respondents hunted "other" geese (4.3%). Statewide, 19.0% of respondents hunted ducks exclusively and 7.1% hunted geese exclusively.

There was no significant difference, by region, in the proportion of hunters who hunted for ducks or 'other' geese. Chi-square significance tests indicated that a smaller proportion of waterfowl hunters residing in the Metropolitan area hunted for Canada Geese during the September goose season. A smaller proportion of hunters from the Northeast region hunted for Canada Geese during the regular season and the late season, and a larger proportion of residents from the Southern region hunted for Canada Geese during the late season (Table 1-1). In the Northeast, hunters pursued Canada Geese less than in other regions (Table 1-2), The Southeast and Metro regions were most important for the late Canada Goose season.

Harvest

For each season in which they hunted, respondents were asked to report the number of ducks or geese they personally bagged. The statewide estimate of the average number of ducks each hunter harvested during the season was 8.11 (Table 1-4). Hunters reported an average of 4.39 geese during the early season, 2.75 during the regular season, and 3.41 during the late season. For all Canada Goose seasons combined, hunters bagged a total of 3.32 Canada Geese for the year. On average, hunters harvested 1.68 "other" geese.

Results of ANOVA indicate that, on average, hunters residing in the Metro and Northeast regions shot significantly fewer Canada Geese than residents of other regions (Table 1-4). Based on the average harvest estimates (Table 1-4) and the estimated hunters participating in different hunts (Table 1-3), the estimated statewide harvests and harvest by region are reported in Table 1-5.

Section 1: Experiences During the 2005 Waterfowl Hunt

Average Number of Days Hunting Weekends and Weekdays

Next, respondents were asked to report the number of days they hunted on weekends or holidays and weekdays. On average, hunters spent more days hunting on weekends and holidays (6.5 days) than during the week (3.8 days) (Table 1-6).

Hunting Opening Weekend

Approximately two-thirds of waterfowl hunters statewide hunted opening Saturday (63.0%) or Sunday (64.9%) during the 2005 duck season (Table 1-7). A smaller percentage of hunters from the Northeast region hunted on opening Saturday (56.1%) or opening Sunday (59.5%), while a greater proportion of respondents from the Central, non-metro region hunted on opening Saturday (68.8%) and opening Sunday (68.1%). A large proportion of those hunting mostly in the Southwest were out on opening weekend (Table 1-8).

Regions Hunted

Respondents were asked to indicate the number of days they hunted in each of the six old management regions. The Southwest region (25.7%), Northwest region (22.3%) and east-central region (20.0%) were hunted most often by the largest proportions of waterfowl hunters. Less than 15% of the state waterfowl hunters reported that they hunted most often in the Northeast region (7.6%), Southeast region (11.2%), or Metropolitan region (13.2%) (Table 1-9).

Hunting With a Paid Guide

Almost all of the respondents (97.8%) reported that they never hunted for geese with a paid guide during the 2005 waterfowl season (Table 1-10). Similarly, almost all of the respondents (99.6%) reported that they never hunted for ducks with a paid guide (Table 1-11). A slightly larger proportion of respondents from the Metro and Southern regions reported hunting for geese with a guide.

Section 1: Experiences During the 2005 Waterfowl Hunt

Table 1-1: Proportion of hunters participating in different waterfowl hunts by region of residence

Region of residence	% of hunters[1] indicating they hunted in Minnesota in 2005					
	%Who actually hunted in 2005	Ducks	Canada Geese Early September	Canada Geese Regular Season	Canada Geese Late Season	Other geese
Statewide[2]	89.9%	92.5%	43.6%	72.9%	13.4%	4.3%
NW	91.9%	92.4%	54.8%	71.2%	9.9%	5.4%
NE	90.3%	94.3%	40.4%	65.9%	4.7%	4.4%
METRO	88.6%	90.2%	33.0%	72.8%	11.9%	4.1%
S	89.0%	93.6%	45.9%	74.8%	20.6%	4.7%
NONMETRO	91.4%	94.6%	49.0%	76.3%	14.2%	3.0%
	n.s.	n.s.	χ^2=42.016*** CV=0.149	χ^2=13.252* CV=0.082	χ^2=45.787*** CV=0.162	n.s.

[1] % for species reflects only % of respondents that actually hunted waterfowl during 2005.
[2] A stratified sample based on region of residence was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-2: Proportion of hunters participating in different waterfowl hunts in each region

Area most often hunted[2]	% of hunters[1] indicating they hunted in Minnesota in 2005				
	Ducks	Canada Geese Early September	Canada Geese Regular Season	Canada Geese Late Season	Other geese
Statewide	92.5%	43.6%	72.9%	13.4%	4.3%
NW	92.4%	44.1%	73.1%	5.6%	5.7%
NE	96.4%	32.6%	58.0%	1.4%	5.3%
EC	94.5%	49.3%	71.6%	11.0%	2.9%
SW	93.9%	44.3%	78.0%	14.8%	4.3%
SE	90.0%	38.8%	70.9%	26.0%	4.7%
M	94.6%	49.5%	79.1%	19.9%	3.5%
	n.s.	χ^2=21.446*** CV=0.108	χ^2=36.345*** CV=0.137	χ^2=81.725*** CV=0.219	n.s.

[1] % for species reflects only % of respondents that actually hunted waterfowl during 2005
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 1: Experiences During the 2005 Waterfowl Hunt

Table 1-3: Estimate of the number of hunters participating in different waterfowl hunts

Region of residence	N	Actually hunted in 2005	Ducks	Canada Geese Early September	Canada Geese Regular Season	Canada Geese Late Season	Other geese
Statewide	115,561	103,889	96,098	45,296	75,735	13,921	4,467
NW	23,573	21,663	20,017	11,871	15,424	2,145	1,170
NE	10,496	9,478	8,938	3,829	6,246	443	415
METRO	36,301	32,163	29,011	10,614	23,414	3,827	1,319
S	26,618	23,690	22,174	10,874	17,720	4,880	1,113
NONMETRO	18,573	16,976	16,059	8,318	12,953	2,411	509

Table 1-4: Average number of birds bagged statewide and by region of residence

Region of residence	Average number of birds bagged in Minnesota in 2005 per hunter for that specific season					
	Ducks	Canada Geese Early September	Canada Geese Regular Season	Canada Geese Late Season	Total Canada Geese All Seasons[1]	Other Geese
Statewide[2]	8.11	4.39	2.75	3.41	3.32	1.68
NW	8.76	4.52	3.06	3.63	3.64	1.24
NE	8.23	3.81	1.75	2.53	2.12	0.69
METRO	7.06	2.83	2.34	2.49	2.29	0.86
S	9.10	5.21	3.08	3.78	4.33	3.56
NONMETRO	7.88	5.38	3.20	4.19	4.15	0.90
	n.s.	F=3.287* η=0.124	F=4.041** η=0.105	n.s.	F=7.369*** η=0.107	n.s.

[1] Total number of Canada Geese bagged was not asked directly on the survey. This number was calculated as a sum of the number of geese bagged in all seasons, including hunters who hunted in one to three of the possible seasons for Canada Geese.
[2] A stratified sample based on region of residence was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-5: Estimates of harvest statewide and by region of residence

Region of residence	Ducks	Canada Geese Early September	Canada Geese Regular Season	Canada Geese Late Season	Other geese
Statewide	779,355	198,849	208,271	47,471	7,505
NW	175,349	53,657	47,197	7,786	1,451
NE	73,560	14,588	10,931	1,121	286
METRO	204,818	30,038	54,789	9,529	1,134
S	201,783	56,654	54,578	18,446	3,962
NONMETRO	126,545	44,751	41,450	10,102	458

Estimates were only calculated for the statewide harvest and region of residence because a large percentage of hunters hunt in multiple regions, thus total seasonal harvest could not be identified at the regional level.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-6: Average number of days hunting on weekends and weekdays

Area most often hunted[1]	n	Mean number of days hunted during 2005 waterfowl season		
		Weekends/Holidays	Weekdays (Monday-Friday)	Total
Statewide	2,135	6.5	3.8	10.2
NW	397	6.6	4.0	10.6
NE	451	5.8	4.1	9.9
METRO	439	5.6	2.9	8.5
S	423	7.5	4.6	12.1
NONMETRO	415	6.9	3.9	10.8
		F=8.738*** η=0.127	F=4.834** η=0.095	F=8.245*** η=0.124

[1] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-7: Participation in hunting on opening Saturday and Sunday by region of residence

Region of residence	N	% hunting opening weekend in Minnesota	
		Opening Saturday (September 28, 2005)	First Sunday (September 29, 2005)
Statewide	2,118	63.0%	64.9%
NW	401	61.8%	66.8%
NE	449	56.1%	59.5%
METRO	433	60.0%	62.2%
S	428	67.1%	66.8%
NONMETRO	413	68.8%	68.1%
		χ^2=19.690** CV=0.096	χ^2=10.095* CV=0.069

[1] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-8: Participation in hunting on opening Saturday and Sunday by region most often hunted

Area most often hunted[1]	N	% hunting opening weekend in Minnesota	
		Opening Saturday (September 28, 2005)	First Sunday (September 29, 2005)
Statewide	2,118	63.0%	64.9%
NW	449	58.4%	63.8%
NE	254	60.2%	59.9%
EC	489	65.2%	67.9%
SW	463	71.1%	69.4%
SE	202	58.9%	59.0%
METRO	205	60.0%	65.5%
		χ^2=21.176** CV=0.101	χ^2=12.067* CV=0.077

[1] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-9: Regional distribution of hunting across Minnesota

Residence of hunter	n	% of hunters indicating the region they MOST OFTEN hunted in Minnesota in 2005					
		Region 1	Region 2	Region 3	Region 4	Region 5	Region 6
Statewide[1]	2088	21.4%	7.5%	19.7%	26.2%	11.5%	13.7%
NW	390	65.1%	7.7%	11.0%	13.6%	1.8%	0.8%
NE	444	17.1%	43.5%	32.7%	3.8%	2.0%	0.9%
METRO	427	14.1%	4.9%	16.6%	21.5%	8.4%	34.4%
S	419	2.6%	0.5%	1.2%	59.7%	33.4%	2.6%
NONMETRO	397	13.1%	2.0%	57.9%	13.9%	2.5%	10.6%
		χ^2=2250.403***					

[1] A stratified sample based on region of residence was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-10: Goose hunting with a paid guide

Residence of hunter	n	% of hunters indicating that they… goose hunted with a paid guide.			Mean[2]
		Never	Sometimes	Always	
Statewide[1]	2117	97.8%	1.4%	0.8%	1.029
NW	400	100.0%	0.0%	0.0%	1.000
NE	441	98.6%	1.1%	0.2%	1.016
METRO	428	96.0%	2.3%	1.6%	1.056
S	427	97.2%	1.9%	0.9%	1.037
NONMETRO	409	99.0%	0.7%	0.2%	1.012
		χ^2= 24.209**, CV=0.076			F=5.763***

[1] A stratified sample based on region of residence was drawn. Statewide data is weighted to reflect regional proportions in the population.
[2] Mean is based on the scale: 1=never, 2=sometimes, 3=always.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 1-11: Duck hunting with a paid guide

Residence of hunter	n	% of hunters indicating that they… goose hunted with a paid guide.			Mean[2]
		Never	Sometimes	Always	
Statewide[1]	2114	99.6%	0.1%	0.3%	1.006
NW	396	100.0%	0.0%	0.0%	1.000
NE	444	99.1%	0.7%	0.2%	1.011
METRO	429	99.3%	0.2%	0.5%	1.012
S	427	99.8%	0.0%	0.2%	1.005
NONMETRO	406	99.8%	0.0%	0.2%	1.005
		χ^2= 9.787 n.s.			n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data is weighted to reflect regional proportions in the population.
[2] Mean is based on the scale: 1=never, 2=sometimes, 3=always.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Study participants were asked to rate their satisfaction with their general waterfowl-hunting experience on a 7-point scale where 1 = very dissatisfied, 2 = moderately dissatisfied, 3 = slightly dissatisfied, 4 = neither, 5 = slightly satisfied, 6 = moderately satisfied, and 7 = very satisfied. They were also asked to rate hunting experiences, harvest, and hunting regulations for ducks and geese separately using the same response scale. Estimates at the regional level for these satisfaction questions are based on the region the respondents indicated that they most often hunted.

Satisfaction With the General Waterfowl Hunting Experience

Statewide about half of hunters (53.1%) reported being satisfied with their general waterfowl-hunting experience, with 40.8% expressing dissatisfaction. Statewide the overall mean satisfaction score was 4.18. Respondents who hunted most frequently in the Southwest region (formerly Region 4) reported a lower mean level of satisfaction compared to respondents who hunted most frequently in the other regions (Table 2-1). There were no significant differences in the mean satisfaction level or pattern of responses by region of residence (Table 2-2).

Younger hunters, and hunters who have been hunting for fewer years reported higher levels of satisfaction with the general waterfowl-hunting experience. There was a significant negative relationship ($r = -0.231$, $p<0.001$) between age and satisfaction. This means that older hunters reported less satisfaction than younger hunters. Likewise, there was a significant negative relationship ($r = -0.256$, $p<0.001$) between years of waterfowl-hunting experience and satisfaction. Novice and avid waterfowl hunters reported slightly higher mean levels of general satisfaction compared to intermediate hunters (Table 2-3). There was no significant difference in general satisfaction between hunters who used battery-operated, spinning-wing decoys and those who did not use them (Table 2-4).

Satisfaction With Duck Hunting

Statewide

Statewide about half (56.7%) of duck hunters were satisfied (slightly, moderately, or very) with their duck-hunting experience in 2005; of these 14.9% were very satisfied. Conversely, 36.1% of respondents were dissatisfied (slightly, moderately, or very), with 15.1% very dissatisfied with their duck-hunting experience. Only about one-fourth (28.1%) of respondents were satisfied with their duck-hunting harvest. About two-thirds (63.8%) of the respondents were dissatisfied with their duck harvest. Only 5.1% were very satisfied with their duck harvest. Satisfaction with duck-hunting regulations was higher than satisfaction with harvest, with 47.5% of respondents reporting satisfaction with the regulations, including 34.6% of respondents who were moderately or very satisfied. However, nearly one-fourth of respondents (22.9%) felt neither satisfied nor dissatisfied about the duck-hunting regulations, compared to only 7.1% who felt neutral about the duck-hunting experience and only 8.1% who felt neutral about the duck-hunting harvest. (Tables 2-5, 2-6, 2-7).

The mean score for duck-harvest satisfaction ($\bar{x}$ = 3.07) was significantly lower than the mean scores for experience ($\bar{x}$ = 4.35, t = 29.398, p < 0.001) or regulations ($\bar{x}$ = 4.38, t =27.866, p < 0.001). The mean satisfaction score for experience was not significantly different from regulations.

There was a significant positive relationship (r = 0.262, p < 0.001) between the number of ducks bagged and the satisfaction with the duck-hunting harvest. As the number of ducks bagged increases, satisfaction moderately increases.

Regional

Respondents who hunted most frequently in the northern regions of the state reported slightly higher satisfaction with the duck-hunting experience in 2005, while those who hunted most frequently in the Southwest part of the state reported a somewhat lower level of satisfaction with the duck-hunting experience (Table 2-5). There were no differences in mean satisfaction scores for duck-hunting harvest or regulations across the regions. (Tables 2-6, 2-7).

Satisfaction With Goose Hunting

Statewide

Statewide most goose hunters were satisfied (63.8%) with their general goose-hunting experience, with slightly less than half reporting that they were moderately (25.0%) or very (21.0%) satisfied (Table 2-8). Most goose hunters were less satisfied with their harvest, however. A total of 41.8% reported being dissatisfied with their harvest with 11.6% moderately dissatisfied and 18.9% very dissatisfied (Table 2-9). About half (48.9%) of the goose hunters indicated they were satisfied with the goose-hunting regulations with 21.6% moderately satisfied and 14.2% very satisfied (Table 2-10).

There was a statistically significant correlation (r = 0.314, p<0.001) between the total number of geese bagged in 2005 and satisfaction with the goose-hunting harvest. The number of geese bagged appears to have a moderate positive influence on satisfaction with goose-hunting harvest.

Regional

There were no significant differences among regions for satisfaction with goose-hunting experience or goose-hunting harvest. Goose hunters' satisfaction with goose-hunting regulations, however, varied slightly from region to region (χ^2 = 45.793, p<0.05) (Table 2-10). Goose hunters in Regions 1, 2 and 4 were more likely to report being very dissatisfied with goose-hunting regulations, compared to respondents who hunted primarily in other regions.

Comparison of Duck Hunting and Goose Hunting

We compared mean satisfaction levels for duck and goose hunting (Table 2-11). Statewide, respondents were significantly less satisfied with duck hunting than goose hunting for (a) experience (4.33 vs. 4.79) (t = 9.627, p<0.001), (b) harvest (3.08 vs. 3.88) (t = 15.185, p<0.001), and (c) regulations (4.32 vs. 4.40) t = 2.370, p<0.05).

Changes in Satisfaction Levels

Hunters were asked if their overall level of satisfaction for duck hunting and goose hunting had decreased or increased in the past 3 hunting seasons and since they had begun hunting ducks and geese. Responses

were recorded on a 5-point scale on which 1 = greatly decreased, 2 = decreased, 3 = stayed the same, 4 = increased, and 5 = greatly increased.

More than two-thirds (70.5%) of duck hunters in the state indicated their overall level of satisfaction with duck hunting had decreased in the past 3 years prior to the study and only 7.8% indicated their satisfaction had increased (Table 2-12). Similarly, 77.3% indicated that their satisfaction had decreased since they began hunting (Table 2-14). There were no notable differences in these changes across region of residence in the state.

About one-third of goose hunters indicated their satisfaction had declined in the past 3 years (34.9%) or since they began goose hunting in the state (35.6%). There were no substantive differences in changes in satisfaction levels across region of residence (Tables 2-13, 2-15).

There was a significant negative correlation ($r = -0.321$, $p < 0.001$) between total years of hunting experience in Minnesota and the change in level of satisfaction since beginning hunting ducks in Minnesota. This indicates that as the number of years of experience increases, the satisfaction rate decreases slightly. There was an opposite, but weak, correlation for goose hunting ($r = 0.067$, $p<0.001$).

Satisfaction With the Number of Ducks and Geese Seen in the Field

Hunters were asked about how satisfied they were with the number of ducks and geese seen in the field during the 2005 season. Responses were recorded on a 7-point scale on which 1 = very dissatisfied, 2 = moderately dissatisfied, 3 = slightly dissatisfied, 4 = neither, 5 = slightly satisfied, 6 = moderately satisfied, and 7 = very satisfied.

Less than one-fifth (19.0%) of respondents were satisfied with the number of ducks that they saw in the field, and only 3% were very satisfied (Table 2-16). Respondents who hunted most frequently in the Central and Southwest Regions (from the old 6-region system) reported slightly lower levels of satisfaction with the number of ducks seen in the field. Over half of the respondents (53.6%) were satisfied with the number of geese that they saw in the field, including 16.0% who were very satisfied (Table 2-17). Respondents who hunted most frequently in Regions 5 and 6 were more satisfied with the number of geese seen in the field.

Number of Ducks and Geese Needed to bag to be Satisfied

Hunters were asked how many ducks and geese they needed to harvest in a day or during the season to feel satisfied with their harvest. Response was open ended.

On average, respondents needed to bag 2.25 ducks per day to feel satisfied with their harvest (Table 2-18). Respondents from the Northeast region indicated that they needed to bag more ducks ($\bar{x} = 2.26$) on average, while respondents from the Southern region needed to bag fewer ducks on average ($\bar{x} = 2.03$) to feel satisfied. Respondents reported needing to bag 13.84 ducks on average during the season to feel satisfied, with no significant differences between regions (Table 2-19). On average, respondents reported needing to bag 1.35 geese per day (Table 2-20) and 8.43 geese per season (Table 2-21) in order to feel satisfied. There were no regional differences for geese.

Opinions About bag Limits

Hunters were asked if they felt the 4 duck bag limit and the 1 hen mallard daily bag limit were too low, too high, or about right. Over half of respondents (59.0%) felt that the 4 duck bag limit was about right

(Table 2-22), and 61.1% of respondents felt that the 1 hen mallard daily bag limit was about right (Table 2-23).

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Table 2-1: Satisfaction with the general waterfowl-hunting experience for the 2005 season by area most often hunted.

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1997	14.1%	14.2%	12.5%	6.1%	16.8%	24.6%	11.7%	4.18
NW	416	15.9%	11.3%	11.1%	5.3%	16.1%	26.2%	14.2%	4.30
NE	237	16.0%	13.1%	8.9%	5.5%	14.8%	24.1%	17.7%	4.33
C	470	11.3%	13.2%	15.7%	6.0%	18.9%	23.2%	11.7%	4.24
SW	439	17.3%	16.2%	13.0%	6.8%	15.3%	22.6%	8.9%	3.90
SE	189	12.7%	19.6%	13.2%	3.7%	13.8%	25.9%	11.1%	4.08
Metro	194	13.4%	11.9%	10.3%	6.2%	21.1%	28.9%	8.2%	4.29
		χ^2 = 49.915*, Cramer's V = 0.072							

[1] This table does not include those respondents who did not hunt in Minnesota in 2005.
[2] F = 2.507* for one-way ANOVA comparing means among regions. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-2: Satisfaction with the general waterfowl-hunting experience for the 2005 season by region of residence.

Region of residence	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1997	14.1%	14.2%	12.5%	6.1%	16.8%	24.6%	11.7%	4.18
NW	366	15.6%	12.8%	12.8%	6.3%	14.8%	24.0%	13.7%	4.19
NE	421	17.1%	11.4%	10.0%	5.0%	18.1%	23.8%	14.7%	4.26
METRO	407	12.0%	14.7%	11.8%	5.7%	19.2%	24.6%	12.0%	4.27
S	405	15.6%	16.5%	12.1%	7.4%	14.6%	24.4%	9.4%	4.00
NONMETRO	388	12.6%	12.9%	15.5%	5.2%	17.3%	26.3%	10.3%	4.22
		χ^2 = 28.889 n.s.							

[1] This table does not include those respondents who did not hunt in Minnesota in 2005.
[2] F = 1.218 n.s. for one-way ANOVA comparing means among regions. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Table 2-3: Satisfaction with the general waterfowl-hunting experience by hunting involvement level

2005 Waterfowl-hunting involvement[2]	n	% of hunters[1] indicating that level of satisfaction: Slightly, moderately, or very dissatisfied	Neither satisfied nor dissatisfied	Slightly, moderately, or very satisfied	Mean[3]
Novice (0-5 days afield)[4]	656	38.1%	7.2%	54.7%	4.30
Intermediate (6-19 days afield)	1037	42.8%	5.0%	52.2%	4.07
Avid (20+ days afield)	278	39.9%	6.5%	53.6%	4.39
	χ^2 = 6.035 n.s.				

[1] This table does not include those respondents who did not hunt in Minnesota in 2005.
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
[3] F = 3.262*, η = 0.057 for one-way ANOVA comparing means. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[4] Categories as defined by Humburg et al., 2002.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-4: Satisfaction with the general waterfowl-hunting experience by use of battery-operated, spinning-wing decoys

Use of battery-operated, spinning-wing decoys[2]	n	% of hunters[1] indicating that level of satisfaction: Slightly, moderately, or very dissatisfied	Neither satisfied nor dissatisfied	Slightly, moderately, or very satisfied	Mean[3]
Battery-operated spinning-wing decoy nonusers	1446	41.6%	6.3%	52.1%	4.15
Battery-operated spinning-wing decoy users	533	38.6%	5.1%	56.3%	4.27
	χ^2=3.049 n.s.				

[1] This table does not include those respondents who did not hunt in Minnesota in 2005.
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
[3] F = 1.365 n.s. for one-way ANOVA comparing means. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Table 2-5: Satisfaction with the duck-hunting experience for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[3]
Statewide[3]	1979	15.1%	10.4%	10.6%	7.1%	16.3%	25.5%	14.9%	4.35
NW	417	15.3%	8.6%	6.7%	7.2%	17.0%	28.1%	17.0%	4.54
NE	242	12.0%	10.3%	7.4%	9.1%	14.5%	24.4%	22.3%	4.66
C	469	12.2%	10.7%	14.9%	6.2%	16.6%	24.1%	15.4%	4.38
SW	439	19.8%	10.3%	11.6%	6.2%	14.8%	25.1%	12.3%	4.10
SE	183	12.6%	13.7%	11.5%	6.6%	19.1%	24.6%	12.0%	4.28
Metro	196	14.8%	10.2%	8.2%	7.1%	16.8%	29.6%	13.3%	4.43
		χ^2 = 53.620**, Cramer's V = .074							

[1] This table does not include those respondents who did not hunt ducks in Minnesota in 2005.
[2] F = 3.105* for one-way ANOVA comparing means. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-6: Satisfaction with the duck-hunting harvest for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1964	30.1%	17.6%	16.1%	8.1%	12.8%	10.2%	5.1%	3.07
NW	417	28.8%	14.9%	17.5%	8.2%	13.4%	12.2%	5.0%	3.19
NE	241	30.7%	15.8%	14.5%	8.7%	13.3%	9.5%	7.5%	3.17
C	463	28.3%	18.8%	18.1%	8.0%	12.3%	10.2%	4.3%	3.05
SW	435	35.9%	18.4%	13.1%	7.6%	10.1%	10.6%	4.4%	2.87
SE	181	25.4%	18.8%	18.8%	5.0%	18.8%	7.7%	5.5%	3.18
Metro	195	27.2%	19.0%	15.4%	8.2%	14.4%	10.3%	5.6%	3.17
		χ^2=32.770, n.s.							

[1] This table does not include those respondents who did not hunt ducks in Minnesota in 2005.
[2] F = 1.639 n.s. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Table 2-7: Satisfaction with the duck-hunting regulations for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1963	9.0%	9.2%	11.4%	22.9%	12.9%	22.5%	12.1%	4.38
NW	417	11.0%	10.1%	10.3%	22.5%	10.3%	24.7%	11.0%	4.29
NE	243	10.7%	9.1%	10.7%	26.3%	13.6%	19.3%	10.3%	4.22
C	458	7.2%	9.8%	12.9%	22.5%	12.4%	24.0%	11.1%	4.40
SW	439	10.7%	8.2%	11.4%	23.0%	14.8%	19.6%	12.3%	4.31
SE	180	6.7%	12.2%	11.7%	17.2%	15.6%	21.7%	15.0%	4.48
Metro	193	9.8%	7.3%	13.5%	22.3%	11.9%	24.4%	10.9%	4.36
		χ^2=27.259, n.s.							

[1] This table does not include those respondents who did not hunt ducks in Minnesota in 2005.
[2] F = 0.585 n.s. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-8: Satisfaction with the goose-hunting experience for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1694	8.5%	6.6%	8.9%	12.1%	17.8%	25.0%	21.0%	4.83
NW	353	9.9%	7.4%	7.6%	10.5%	16.4%	24.4%	23.8%	4.84
NE	172	9.9%	5.2%	7.6%	12.2%	16.3%	26.2%	22.7%	4.89
C	390	7.4%	5.9%	7.4%	15.9%	19.2%	24.6%	19.5%	4.85
SW	394	9.6%	6.9%	11.2%	12.2%	18.3%	24.4%	17.5%	4.66
SE	157	7.6%	7.0%	7.0%	12.7%	15.3%	23.6%	26.8%	4.99
Metro	173	6.9%	6.9%	8.7%	8.7%	17.9%	27.7%	23.1%	4.99
		χ^2=25.002, n.s.							

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] F = 1.198 n.s. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 2: Satisfaction With the 2005 Waterfowl Hunt

Table 2-9: Satisfaction with the goose-hunting harvest for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1695	18.9%	11.6%	11.3%	14.6%	15.4%	16.6%	11.7%	3.93
NW	356	20.5%	13.5%	11.0%	13.2%	14.6%	16.0%	11.2%	3.81
NE	171	19.3%	9.4%	10.5%	18.1%	10.5%	21.1%	11.1%	3.99
C	390	18.7%	11.0%	11.0%	17.7%	17.2%	13.8%	10.5%	3.87
SW	392	20.9%	12.8%	11.0%	13.5%	14.5%	17.9%	9.4%	3.79
SE	157	15.3%	10.8%	7.6%	14.6%	18.5%	17.8%	15.3%	4.25
Metro	172	17.4%	7.0%	12.8%	11.6%	18.6%	18.0%	14.5%	4.19
		χ^2=31.463, n.s.							

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] F = 2.036 n.s. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-10: Satisfaction with the goose-hunting regulations for the 2005 season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1694	10.8%	6.9%	10.6%	22.9%	13.1%	21.6%	14.2%	4.42
NW	358	13.7%	9.5%	10.3%	19.8%	11.5%	22.9%	12.3%	4.24
NE	173	10.4%	5.2%	4.0%	28.9%	16.8%	20.2%	14.5%	4.55
C	389	8.0%	6.2%	10.8%	25.2%	12.3%	25.4%	12.1%	4.52
SW	391	12.8%	5.4%	11.5%	24.6%	12.5%	18.7%	14.6%	4.33
SE	158	9.5%	7.0%	8.2%	19.0%	13.3%	23.4%	19.6%	4.68
Metro	171	9.9%	8.2%	13.5%	19.3%	16.4%	18.7%	14.0%	4.36
		χ^2=45.793*, Cramer's V=0.075							

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] F = 1.962 n.s. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-11: Comparison of duck-hunting and goose-hunting satisfaction

Satisfaction with…[1,2]	N	Mean[3]
Duck-hunting experience	1549	4.33
Goose-hunting experience		4.79
t=9.627***		
Duck-hunting harvest	1547	3.08
Goose-hunting harvest		3.88
t=15.185***		
Duck-hunting regulations	1552	4.32
Goose-hunting regulations		4.40
t=2.370*		

[1] This table does not include those respondents who did not hunt ducks and geese in Minnesota in 2005.
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
[3] Means are based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-12: Overall change in duck hunter's satisfaction over the past three seasons

Residence of hunter	n	% of hunters indicating that their overall level of satisfaction has _____ over the past three years: Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Mean[1]
Statewide[2]	2020	29.3%	41.2%	21.6%	6.8%	1.0%	2.09
NW	375	28.3%	36.0%	26.9%	8.0%	0.8%	2.17
NE	432	24.8%	41.4%	25.0%	7.6%	1.2%	2.19
METRO	408	28.2%	45.3%	19.4%	6.4%	0.7%	2.06
S	406	32.8%	39.9%	20.2%	5.7%	1.5%	2.03
NONMETRO	396	30.1%	41.2%	19.9%	7.6%	1.3%	2.09
		χ^2=21.336, n.s.					

[1] F = 2.211 n.s. Mean is based on the following scale: 1 = greatly decreased; 2 = decreased; 3 = stayed the same, 4 = increased; 5 = greatly increased.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-13: Overall change in goose hunter's satisfaction over the past three seasons

Residence of hunter	n	% of hunters indicating that their overall level of satisfaction has _____ over the past three years: Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Mean[1]
Statewide[2]	1812	10.6%	24.3%	42.9%	18.1%	4.1%	2.81
NW	348	10.6%	21.8%	46.6%	17.5%	3.4%	2.81
NE	366	12.3%	22.7%	38.3%	23.8%	3.0%	2.83
METRO	348	12.1%	24.1%	45.4%	16.4%	2.0%	2.72
S	381	9.7%	25.5%	40.9%	18.4%	5.5%	2.85
NONMETRO	363	8.3%	26.7%	39.1%	18.7%	7.2%	2.90
		χ^2=31.661*, Cramer's V=0.066					

[1] F = 1.477 n.s. Mean is based on the following scale: 1 = greatly decreased; 2 = decreased; 3 = stayed the same, 4 = Increased; 5 = greatly increased.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-14: Overall change in duck hunter's satisfaction since they began hunting

Residence of hunter	n	% of hunters indicating that their overall level of satisfaction has _____ since they began hunting: Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Mean[1]
Statewide[2]	2069	40.1%	37.2%	14.2%	7.6%	.9%	1.92
NW	386	37.6%	33.9%	19.4%	8.5%	.5%	2.01
NE	444	33.6%	42.6%	14.9%	7.7%	1.4%	2.01
METRO	420	40.2%	40.2%	12.4%	6.7%	.5%	1.87
S	413	43.8%	34.1%	13.6%	7.3%	1.2%	1.88
NONMETRO	402	41.3%	36.6%	12.2%	8.7%	1.2%	1.92
		χ^2=27.413*, Cramer's V=0.058					

[1] F = 1.992 n.s. Mean is based on the following scale: 1 = greatly decreased; 2 = decreased; 3 = stayed the same, 4 = increased; 5 = greatly increased.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-15: Overall change in goose hunter's satisfaction since they began hunting

Residence of hunter	n	% of hunters indicating that their overall level of satisfaction has _____ since they began hunting: Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Mean[1]
Statewide[2]	1886	12.7%	22.9%	24.8%	27.7%	11.9%	3.03
NW	355	12.1%	20.3%	25.1%	29.6%	13.0%	3.11
NE	387	12.7%	22.0%	24.0%	30.7%	10.6%	3.05
METRO	373	12.3%	26.0%	25.5%	25.5%	10.7%	2.96
S	391	13.6%	20.2%	26.1%	29.2%	11.0%	3.04
NONMETRO	370	12.7%	24.9%	21.4%	25.9%	15.1%	3.06
		χ^2=14.795, n.s.					

[1] F = 0.688 n.s. Mean is based on the following scale: 1 = greatly decreased; 2 = decreased; 3 = stayed the same, 4 = increased; 5 = greatly increased.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-16: Satisfaction with number of ducks seen in the field during the 2005 Minnesota waterfowl hunting season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	2032	43.1%	19.5%	14.6%	3.7%	8.3%	7.7%	3.0%	2.49
NW	425	39.5%	21.9%	13.6%	3.1%	8.9%	9.4%	3.5%	2.62
NE	244	40.2%	18.4%	16.8%	4.5%	7.4%	8.2%	4.5%	2.63
C	474	42.4%	19.2%	19.6%	3.8%	7.6%	5.7%	1.7%	2.39
SW	455	49.9%	17.4%	12.3%	4.6%	7.0%	6.2%	2.6%	2.31
SE	185	40.0%	21.6%	14.1%	3.8%	7.6%	8.1%	4.9%	2.61
Metro	203	39.4%	18.2%	15.8%	1.5%	12.8%	9.9%	2.5%	2.69
		χ^2=46.279*, Cramer's V=0.068							

[1] This table does not include those respondents who did not hunt ducks in Minnesota in 2005.
[2] F = 2.761*, η=0.083. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-17: Satisfaction with number of geese seen in the field during the 2005 Minnesota waterfowl hunting season

Area most often hunted	n	% of hunters[1] indicating that level of satisfaction: Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Mean[2]
Statewide[3]	1859	11.5%	10.1%	14.5%	10.4%	17.3%	20.3%	16.0%	4.37
NW	391	13.6%	11.3%	13.6%	8.7%	16.9%	22.0%	14.1%	4.26
NE	194	16.0%	8.8%	13.9%	6.7%	17.0%	22.7%	14.9%	4.28
C	432	11.3%	11.3%	16.7%	12.7%	14.6%	18.1%	15.3%	4.23
SW	431	13.0%	10.9%	15.5%	11.6%	17.2%	16.7%	15.1%	4.19
SE	172	9.9%	7.6%	9.3%	8.1%	19.2%	25.0%	20.9%	4.78
Metro	184	8.2%	8.2%	12.5%	10.9%	21.2%	21.7%	17.4%	4.64
		χ^2=38.303 n.s.							

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] F = 3.385**, η=0.097. Mean is based on the following scale: 1 = very dissatisfied; 2 = moderately dissatisfied; 3 = slightly dissatisfied, 4 = neither; 5 = slightly satisfied; 6 = moderately satisfied; 7 = very satisfied.
[3] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-18: Minimum number of ducks needed to harvest in a day to feel satisfied

Residence of hunter	n	Mean number of ducks
Statewide[1]	2326	2.25
NW	424	2.36
NE	492	2.51
METRO	478	2.29
S	473	2.03
NONMETRO	444	2.24
		F=5.187***, η=0.094

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-19: Minimum number of ducks needed to harvest in a season to feel satisfied

Residence of hunter	n	Mean number of ducks
Statewide[1]	2248	13.77
NW	411	16.44
NE	477	15.27
METRO	463	12.12
S	458	13.71
NONMETRO	423	13.21
		F=2.161 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-20: Minimum number of geese needed to harvest in a day to feel satisfied

Residence of hunter	n	Mean number of geese
Statewide[1]	2287	1.35
NW	412	1.45
NE	478	1.39
METRO	472	1.31
S	469	1.27
NONMETRO	436	1.43
		F=0.912 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-21: Minimum number of geese needed to harvest in a season to feel satisfied

Residence of hunter	n	Mean number of geese
Statewide[1]	2249	8.32
NW	409	13.22
NE	471	6.91
METRO	466	6.38
S	460	7.66
NONMETRO	422	8.31
		F=1.640 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-22: Opinion on the 4 duck bag limit in Minnesota

Residence of hunter	n	% of hunters[1] indicating that the bag limit is…			
		Too low	About right	Too high	No opinion
Statewide[2]	2380	15.8%	59.0%	12.8%	12.3%
NW	434	16.1%	59.7%	10.8%	13.4%
NE	501	21.2%	59.5%	9.6%	9.8%
METRO	494	14.8%	59.3%	13.2%	12.8%
S	480	14.4%	58.5%	14.6%	12.5%
NONMETRO	452	16.6%	58.2%	13.9%	11.3%
		χ^2=19.119, n.s.			

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 2-23: Opinion on the 1 hen mallard bag limit in Minnesota

Residence of hunter	n	% of hunters[1] indicating that the bag limit is…			
		Too low	About right	Too high	No opinion
Statewide[2]	2381	16.2%	61.1%	12.3%	10.4%
NW	435	18.6%	61.4%	9.9%	10.1%
NE	500	26.4%	56.2%	7.6%	9.8%
METRO	493	13.6%	60.0%	14.6%	11.8%
S	481	13.1%	64.9%	13.1%	8.9%
NONMETRO	453	17.9%	60.3%	11.7%	10.2%
		χ^2=49.580***, Cramer's V=0.084			

[1] This table does not include those respondents who did not hunt geese in Minnesota in 2005.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 3: Opinions on Youth Waterfowl Hunting Day

All study participants were provided with a brief background statement about Youth Waterfowl Hunting Day before their opinions concerning this issue were assessed (See Appendix A, Part 4 of the study instrument).

Support/Opposition to Youth Waterfowl Hunting Day

Respondents were asked if they support or oppose the concept of Youth Waterfowl Hunting Day on the following scale: "strongly support," "support," "undecided or neutral," "oppose," and "strongly oppose". Results are summarized in Table 3-1. Statewide, 62.6% of respondents supported the youth hunting day with 38.0% strongly supporting it. In contrast, 26.8% opposed the hunt, with 17.3% strongly opposing it. There was a significant negative correlation between age and support for Youth Waterfowl Hunting Day ($r = -0.218$, $p<0.001$). This means that older hunters reported less support for the youth hunt than younger hunters. Although there was support for Youth Waterfowl Hunting Day across all regions, the mean level of support was lower among hunters from the Metro region ($\bar{x} = 3.46$) and higher among hunters from the Northeast region ($\bar{x} = 3.81$) ($F = 4.167$, $p<0.01$).

Participation in Youth Waterfowl Hunting Day in 2005

All study respondents were asked if they took any youths hunting on Youth Waterfowl Hunting Day in Minnesota in 2005 (Table 3-2). Statewide, 13.0% of respondents reported participating in the youth hunt. Respondents that mentored youth on Youth Waterfowl Hunting Day were asked how many youths they took hunting and the number of ducks and geese that were harvested. Statewide, mentors took an average 1.55 youths hunting on Youth Waterfowl Hunting Day (Table 3-3). Based on the percentages provided by the survey, it is estimated that 23,286 youths participated in the youth hunt in 2005 (Table 3-5). On average, 2.71 ducks and 0.53 geese were harvested by each mentored group of youths (Table 3-4). Based on these averages, estimates of total harvest for the mentored youth groups are reported in Table 3-6.

Section 3: Opinions on Youth Waterfowl Hunting Day

Table 3-1: Do you support or oppose the concept of Youth Waterfowl Hunting Day?

Residence of hunter	n	% of hunters indicating that they _____ the concept of Youth Waterfowl Hunting Day: Strongly oppose	Oppose	Undecided/ neutral	Support	Strongly support	Mean[1]
Statewide[2]	2357	17.3%	9.5%	10.5%	24.7%	37.9%	3.56
NW	431	16.7%	7.4%	8.8%	28.1%	39.0%	3.65
NE	498	12.4%	10.6%	7.0%	23.3%	46.6%	3.81
METRO	487	17.5%	11.3%	12.7%	25.1%	33.5%	3.46
S	473	17.5%	9.3%	10.1%	23.0%	40.0%	3.59
NONMETRO	453	20.3%	7.9%	10.6%	23.2%	38.0%	3.51
		χ^2= 38.062**, Cramer's V=0.064					

[1]F = 4.167**, η=0.084. Mean is based on the following scale: 1 = strongly oppose; 2 = oppose; 3 = undecided; 4 = support; 5 = strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 3-2: Participation in Youth Waterfowl Hunting Day (Sept. 17, 2005)

Residence of hunter	n	% of all hunters who indicated that they took youth hunting on YWHD in 2005
Statewide[1]	2361	13.0%
NW	430	16.0%
NE	496	13.3%
METRO	487	11.1%
S	478	11.5%
NONMETRO	452	15.3%
		χ^2= 7.691 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 3-3: Number of youth taken hunting on Youth Waterfowl Hunting Day (Sept. 17, 2005)

Residence of hunter	n	Mean number of youth
Statewide[1]	296	1.55
NW	66	1.61
NE	62	1.58
METRO	54	1.63
S	52	1.33
NONMETRO	67	1.60
		F=1.306 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 3: Opinions on Youth Waterfowl Hunting Day

Table 3-4: Waterfowl taken during 2005 Youth Waterfowl Hunting Day

Residence of hunter	n	Mean number of ducks taken on Youth Waterfowl Hunting Day	n	Mean number of geese taken on Youth Waterfowl Hunting Day
Statewide[1]	292	2.71	251	0.53
NW	65	2.88	55	.89
NE	64	2.45	50	.36
METRO	51	2.18	44	.34
S	52	2.92	47	.45
NONMETRO	68	3.18	59	.53
		F=0.983 n.s.		F=2.007 n.s.

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 3-5: Estimate of the number of youth participating in Youth Waterfowl Hunting Day

Residence of hunter	Total adult hunters for entire season	% of adult hunters as mentors in the 2005 YWHD	Total mentors in the 2005 YWHD	Average # of youth with a mentor	Estimate of total youth participating in YWHD
Statewide[1,2]	115,561	13.0%	15,023	1.55	23,286
NW	23,573	16.0%	3,772	1.61	6,073
NE	10,496	13.3%	1,396	1.58	2,206
METRO	36,301	11.1%	4,029	1.63	6,567
S	26,618	11.5%	3,061	1.33	4,071
NONMETRO	18,573	15.3%	2,842	1.60	4,547

[1] Statewide estimates and the sum of regional estimates differ due to rounding. These estimates are based on mentors who purchased a duck stamp license (18-64 years of age). HIP participant mentors 65+ years of age are not included in the estimates. The number of respondents varies due to the use of multiple questions. Please refer to the preceding tables for this information.

Section 3: Opinions on Youth Waterfowl Hunting Day

Table 3-6: Estimated duck/goose harvest by youths on Youth Waterfowl Hunting Day

Residence of hunter	Total adult hunters for entire season	% of adult hunters as mentors in the 2005 YWHD	Estimated number of YWHD hunting groups	Average # of ducks harvested by youth groups on YWHD	Average # of geese harvested by youth groups on YWHD	Estimate of total ducks harvested by youth on YWHD	Estimate of total geese harvested by youth on YWHD
Statewide[1,2]	115,561	13.0%	15,023	2.71	0.53	40,712	7,962
NW	23,573	16.0%	3,772	2.88	0.89	10,863	3,357
NE	10,496	13.3%	1,396	2.45	0.36	3,420	503
METRO	36,301	11.1%	4,029	2.18	0.34	8,783	1,370
S	26,618	11.5%	3,061	2.92	0.45	8,938	1,377
NONMETRO	18,573	15.3%	2,842	3.18	0.53	9,038	1,506

[1] Statewide estimates and the sum of regional estimates differ due to rounding. These estimates are based on mentors who purchased a duck stamp license (18-64 years of age). HIP participant mentors 65+ years of age are not included in the estimates. The number of respondents varies due to the use of multiple questions. Please refer to the preceding tables for this information.

Section 4: Opinions on Management and Special Regulations

Support for Shooting Hours on Opening Day

Respondents were asked to indicate if they would prefer shooting hours on opening day to begin at noon, 9 a.m., or ½ hour before sunrise. The majority (58.3%) preferred that shooting hours begin ½ hour before sunrise, followed by 9 a.m. (32.2%), and noon (9.5%) (Table 4-1). A somewhat smaller proportion of respondents who lived in the Southern region (48.6%) preferred the ½ hour before sunrise start, but this was still the preferred start time in this region compared to the other two options.

Canvasback, Pintail, and Scaup Management

Respondents were asked to indicate their preferences on season dates for canvasbacks and/or pintails when shortened seasons are required for both species. Nearly half of the respondents (45.2%) did not have a preference. Most of the respondents who had a preference (36.5% of the total respondents) preferred that there be different season dates for both timed to coincide with peak migration for each species (Table 4-2).

Respondents were asked about possible reductions in scaup bag limits. Most respondents preferred a smaller bag limit with a longer open season on scaup (61.7%) to a higher bag limit with a shorter open season (38.3%) (Table 4-3).

Canada Goose Management Strategies

Respondents were asked their preferences for season lengths and bag limits for Canada Geese in the West Central, West, and Northwest goose zones. Respondents were nearly evenly divided between preferring (a) a smaller daily bag limit with a longer open season (47.3%) and (b) a higher daily bag limit with a shorter open season (52.7%) (Table 4-4).

Respondents were asked to indicate their level of support for four possible strategies to control resident Canada Goose populations. Response was on a 5-point scale on which 1 = strongly oppose, 2 = oppose, 3 = undecided, 4 = support, and 5 = strongly support. Nearly half of respondents (46.7%) supported hunting resident Canada Geese with unplugged shotguns ($\bar{x}$ = 3.15) (Table 4-5). Over one-third (38.4%) supported using electronic calls ($\bar{x}$ = 2.95) (Table 4-6). About two-thirds (67.3%) supported hunting until ½ hour after sunset ($\bar{x}$ = 3.70) (Table 4-7). Finally, 51.1% supported allowing goose hunting in August ($\bar{x}$ = 3.34) (Table 4-8).

Table 4-1: Preference for start of shooting hours on opening day of duck season

Residence of hunter	n	% of hunters indicating that they preferred a _____ start time for shooting hours on opening day		
		Noon	9 a.m.	½ hour before sunrise
Statewide[1]	2365	9.5%	32.2%	58.3%
NW	433	9.2%	25.4%	65.4%
NE	493	7.9%	25.8%	66.3%
METRO	491	8.4%	34.8%	56.8%
S	479	13.6%	37.8%	48.6%
NONMETRO	446	6.7%	30.0%	63.2%
		χ^2=49.861***, Cramer's V=0.103		

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-2: Preference for canvasback and/or pintail season dates when shortened seasons are required for both

Residence of hunter	n	% of hunters indicating that they preferred…		
		Both seasons begin on opening day	Different season dates for both timed to coincide with peak migration for each species	No preference
Statewide[1]	2367	18.3%	36.5%	45.2%
NW	433	20.3%	29.6%	50.1%
NE	494	22.5%	32.4%	45.1%
METRO	491	18.9%	37.9%	43.2%
S	479	12.9%	44.1%	43.0%
NONMETRO	448	20.3%	32.6%	47.1%
		χ^2=34.113***, Cramer's V=0.085		

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population..
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-3: Preference for scaup management

Residence of hunter	n	% of hunters indicating that they preferred…	
		Smaller daily bag limit with longer open season	Higher daily bag limit with shorter open season
Statewide[1]	2303	61.7%	38.3%
NW	423	58.6%	41.4%
NE	485	50.1%	49.9%
METRO	476	62.0%	38.0%
S	467	67.2%	32.8%
NONMETRO	433	63.5%	36.5%
		χ^2=33.333***, Cramer's V=0.121	

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population..
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-4: Preference for management of Canada Geese in the West Central, West and Northwest goose zones.

Residence of hunter	n	% of hunters indicating that they preferred…	
		Smaller daily bag limit with longer open season	Higher daily bag limit with shorter open season
Statewide[1]	2278	47.3%	52.7%
NW	420	38.3%	61.7%
NE	472	38.1%	61.9%
METRO	468	49.4%	50.6%
S	461	55.5%	44.5%
NONMETRO	437	46.7%	53.3%
		χ^2=40.719***, Cramer's V=0.134	

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population..
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-5: Resident Canada Goose control: Support for hunting with unplugged shotguns.

Residence of hunter	n	% of hunters indicating that they _____ this management strategy: Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2335	18.1%	15.9%	19.2%	26.2%	20.5%	3.15
NW	427	19.7%	16.2%	21.5%	25.5%	17.1%	3.04
NE	484	14.7%	19.4%	18.4%	25.6%	21.9%	3.21
METRO	484	18.0%	15.9%	19.6%	26.4%	20.0%	3.15
S	474	18.8%	15.6%	16.9%	27.0%	21.7%	3.17
NONMETRO	442	17.2%	14.3%	19.5%	25.8%	23.3%	3.24
		χ^2= 15.882 n.s.					

[1] F = 1.264 n.s. Mean is based on the following scale: 1 = strongly oppose; 2 = oppose; 3 = undecided, 4 = support; 5 = strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-6: Resident Canada Goose control: Support for using electronic calls.

Residence of hunter	n	% of hunters indicating that they _____ this management strategy: Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2311	19.3%	18.4%	23.9%	24.7%	13.7%	2.95
NW	420	19.0%	20.0%	24.8%	24.8%	11.4%	2.90
NE	478	15.7%	16.1%	28.5%	24.7%	15.1%	3.07
METRO	478	18.4%	18.6%	20.7%	28.0%	14.2%	3.01
S	474	23.0%	17.7%	23.4%	22.2%	13.7%	2.86
NONMETRO	437	17.8%	18.5%	27.9%	21.1%	14.6%	2.96
		χ^2= 25.111 n.s.					

[1] F = 2.024 n.s. Mean is based on the following scale: 1 = strongly oppose; 2 = oppose; 3 = undecided, 4 = support; 5 = strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-7: Resident Canada Goose control: Support for hunting until ½ hour after sunset.

Residence of hunter	n	% of hunters indicating that they _____ this management strategy: Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2328	8.5%	11.1%	13.1%	36.5%	30.8%	3.70
NW	428	8.2%	10.7%	13.8%	37.1%	30.1%	3.70
NE	485	6.6%	11.1%	18.4%	31.8%	32.2%	3.72
METRO	482	9.5%	13.9%	12.7%	35.5%	28.4%	3.59
S	472	7.6%	9.1%	11.2%	40.3%	31.8%	3.79
NONMETRO	439	8.9%	8.7%	13.0%	34.9%	34.6%	3.78
		χ^2= 29.004*, Cramer's V=0.056					

[1] F = 1.931 n.s. Mean is based on the following scale: 1 = strongly oppose; 2 = oppose; 3 = undecided, 4 = support; 5 = strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 4-8: Resident Canada Goose control: Support for allowing hunting in August.

Residence of hunter	n	% of hunters indicating that they _____ this management strategy: Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2313	13.2%	14.2%	21.6%	28.1%	23.0%	3.34
NW	423	14.7%	14.4%	21.7%	28.6%	20.6%	3.26
NE	484	9.7%	15.1%	24.4%	27.3%	23.6%	3.40
METRO	478	12.3%	13.2%	21.5%	28.2%	24.7%	3.40
S	470	14.0%	15.7%	23.6%	26.2%	20.4%	3.23
NONMETRO	438	13.7%	13.0%	16.7%	30.4%	26.3%	3.42
		χ^2= 21.670 n.s.					

[1] F = 2.090 n.s. Mean is based on the following scale: 1 = strongly oppose; 2 = oppose; 3 = undecided, 4 = support; 5 = strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 5: Opinions on Zones

Study participants were asked their opinions and preferences for waterfowl-hunting zones and split seasons.

Support for Zones and Split Seasons

Respondents were asked to rate their support for hunting zones and season splits using the scale 1 (strongly oppose) to 5 (strongly support).

First, respondents were asked how much they opposed or supported establishing a North and South Zone for duck hunting in the state that would have different season dates in each zone. Over one-third of respondents (36.1%) were neutral on this, with about one-third opposed (33.5%), and about one-third supporting (30.4%) (Table 5-1). More respondents from the Southern region (42.5%) indicated support for zones ($\chi^2 = 74.375$, $p<0.001$).

Next, respondents were asked how much they supported or opposed having split seasons instead of one continuous duck season. Over 4 in 10 respondents (43.2%) opposed having split seasons, with 27.4% in support and 29.3% neutral (Table 5-2). However, 36.2% of respondents from the Southern region supported having split seasons ($\chi^2 = 57.573$, $p<0.001$).

Options for a 30-day Duck Season

Study participants were asked if the duck season needed to be shortened to 30 days in a future year, which of several options they would prefer. About one-third (34.2%) preferred a statewide season with no zones or splits, about one-third (33.7%) preferred two zones (north and south) with a continuous season in the north and a split season in the south, 18.4% preferred a statewide season with 3 season segments, and 13.7% had no opinion (Table 5-3). A greater proportion of respondents from the Northeast region preferred a statewide season with no zones or splits, and a greater proportion of respondents from the Southern region preferred two zones ($\chi^2 = 99.798$, $p<0.001$).

Zone Boundaries

Survey participants were asked to select their preferred boundary if duck-hunting zones were to be established in Minnesota. Options included: (a) Highway 2, (b) Highway 94, (c) Highway 210, (d) Highway 212, (e) no zones, and (f) no opinion. The largest proportion of respondents (25.2%) selected no zones, followed by 20.8% who selected Highway 210, 17.7% who selected Highway 94, and 15.6% who selected Highway 212. Only 5.6% selected Highway 2. Nearly one in six (15.1%) had no opinion. Patterns of response differed significantly by region; a greater proportion of respondents from the Southern region selected the Highway 212 boundary or had no opinion ($\chi^2 = 123.645$, $p<0.001$).

Section 5: Opinions on Zones

Season Closures With Split Seasons

Survey participants were asked to select their preferred closed dates during split seasons. Options included: (a) early October (Oct. 1-10), (b) mid-October (Oct. 11-20), (c) late October (Oct. 21-31), (d) early November (Nov. 1-10), (e) no split season, and (f) no opinion. The largest proportion of respondents (30.6%) selected no split season, followed by 25.1% who selected mid-October, 11.3% who selected early October, 11.0% who selected early November, and 8.0% who selected late October. Again, nearly one in six (14.1%) had no opinion. Patterns of response differed significantly by region; a greater proportion of respondents from the Northeast and Northwest regions selected the no split season option ($\chi^2 = 106.297$, $p<0.001$).

Section 5: Opinions on Zones

Table 5-1: Support for establishing a North and South Zone for duck hunting in the state that would have different season dates in each zone.

Residence of hunter	n	% of hunters indicating that they: Strongly Oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2203	14.3%	19.2%	36.1%	22.4%	8.0%	2.91
NW	406	14.5%	22.4%	41.1%	15.0%	6.9%	2.77
NE	465	16.8%	17.6%	33.5%	23.4%	8.6%	2.89
METRO	458	14.0%	22.3%	34.1%	22.9%	6.8%	2.86
S	442	10.6%	12.7%	34.2%	30.1%	12.4%	3.21
NONMETRO	413	18.9%	19.4%	38.7%	17.9%	5.1%	2.71
		χ^2=74.375***, Cramer's V=0.092					

[1] F=12.548***, η=0.150. Mean is based on the following scale: 1= strongly oppose, 2= oppose, 3=neither support nor oppose, 4=support, 5=strongly support
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 5-2: Support for having split seasons instead of one continuous duck season.

Residence of hunter	n	% of hunters indicating that they: Strongly Oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2213	17.7%	25.5%	29.3%	19.2%	8.2%	2.75
NW	401	17.2%	31.4%	31.4%	13.5%	6.5%	2.61
NE	471	23.8%	28.0%	26.3%	17.0%	4.9%	2.51
METRO	461	16.5%	24.5%	29.9%	20.4%	8.7%	2.80
S	447	15.4%	21.3%	27.1%	24.8%	11.4%	2.96
NONMETRO	416	21.2%	25.7%	30.5%	16.1%	6.5%	2.61
		χ^2=57.573***, Cramer's V=0.081					

[1] F=10.347***, η=0.136. Mean is based on the following scale: 1= strongly oppose, 2= oppose, 3=neither support nor oppose, 4=support, 5=strongly support
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 5: Opinions on Zones

Table 5-3: Preference for 30-day duck season.

Residence of hunter	n	% of hunters indicating that they prefer: A statewide season with no zones or splits	A statewide season with 3 season segments	Two zones with a continuous season in the north zone and a split season in the south zone	No opinion/ undecided
Statewide[1]	2309	34.2%	18.4%	33.7%	13.7%
NW	424	39.9%	21.0%	25.5%	13.7%
NE	485	44.5%	19.2%	24.9%	11.3%
METRO	476	31.9%	19.5%	35.7%	12.8%
S	470	23.6%	14.3%	46.2%	16.0%
NONMETRO	435	42.3%	18.9%	25.3%	13.6%
		χ^2=99.798***, Cramer's V=0.121			

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 5-4: Preference for zone boundaries.

Residence of hunter	n	% of hunters indicating that they prefer: Hwy 2	Hwy 94	Hwy 210	Hwy 212	No zones	No opinion
Statewide[1]	2278	5.6%	17.7%	20.8%	15.6%	25.2%	15.1%
NW	419	7.2%	16.2%	22.4%	16.2%	23.4%	14.6%
NE	479	10.2%	19.2%	29.2%	5.2%	23.8%	12.3%
METRO	468	6.2%	20.1%	20.5%	14.1%	25.4%	13.7%
S	465	3.0%	13.3%	17.2%	20.6%	24.1%	21.7%
NONMETRO	429	3.5%	20.5%	20.3%	16.1%	29.4%	10.3%
		χ^2=123.645***, Cramer's V=0.117					

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 5-5: Preference for split season closed dates.

Residence of hunter	n	% of hunters indicating that they prefer: Early Oct.	Mid Oct.	Late Oct.	Early Nov.	No splits	No opinion
Statewide[1]	2338	11.3%	25.1%	8.0%	11.0%	30.6%	14.1%
NW	423	10.9%	24.8%	3.5%	11.1%	35.7%	13.9%
NE	493	8.7%	16.0%	6.9%	15.4%	38.7%	14.2%
METRO	485	13.0%	25.4%	7.6%	12.6%	27.8%	13.6%
S	473	11.4%	32.1%	12.5%	5.9%	23.3%	14.8%
NONMETRO	446	9.2%	19.3%	7.8%	12.6%	36.8%	14.3%
		χ^2=106.297***, Cramer's V=0.107					

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 6: Motivations for and Involvement in Waterfowl Hunting

Motivations

Respondents were asked to report how important 21 aspects of waterfowl hunting were to them using the scale: 1 = not at all important to 5 = extremely important (Table 4-1). Five items were rated very to extremely important: (a) enjoying nature and the outdoors ($\bar{x}$ = 4.6), (b) good behavior among other waterfowl hunters ($\bar{x}$ = 4.4), (c) getting away from crowds of people ($\bar{x}$ = 4.4), (d) hunting with family ($\bar{x}$ = 4.0), and (e) seeing lots of ducks and geese ($\bar{x}$ = 4.0). Two items were rated not at all to slightly important: (a) getting food for my family ($\bar{x}$ = 1.9), and (b) getting my limit ($\bar{x}$ = 2.0). The remaining items fell between slightly and very important.

The importance of some motivations differed by region of residence. Respondents from the Central, Non-metro and Northeast region rated a large daily duck bag limit slightly higher, while respondents from the Metro and South regions rated this item slightly lower (Table 6-2). Respondents from the Metro region rated access to a lot of different hunting areas slightly higher, while respondents from the Northwest region rated it slightly lower (Table 6-3). There were no differences among respondents from different regions for bagging ducks and geese. Being on my own was rated slightly higher by respondents from the two northern regions and slightly lower by respondents from the Central, Non-metro and South regions (Table 6-5). Hunting with friends was rated slightly higher by respondents from the Metro area and slightly lower by those from the South (Table 6-6). Hunting with family was rated slightly higher by respondents from the Northwest region and slightly lower from those from the South (Table 6-8). Getting food for my family was rated slightly lower by respondents from the Metro area and slightly higher by respondents from the Northwest region (Table 6-11). Getting my limit was rated slightly lower by respondents from the South region (Table 6-13). Good behavior among other waterfowl hunters was rated somewhat higher by respondents from the Metro area and somewhat lower by respondents from the South and Northwest regions (Table 6-14). There were no significant differences among the regions for the other 13 motivations.

An exploratory factor analysis of the 21 experience items produced five motivational factors: (a) skills, information, values, equipment; ($\bar{x}$ = 3.48), (b) bagging ducks and geese ($\bar{x}$ = 2.34), (c) social ($\bar{x}$ = 3.98), (d) access ($\bar{x}$ = 3.65), and (e) nature and solitude ($\bar{x}$ = 3.98). Based on factor loadings greater than 0.5 (Nunnally & Bernstein, 1994), the items that loaded on the skills, information, values, and equipment factor included: (a) developing my skills and abilities, (b) getting information about hunting seasons and conditions from the DNR or US Fish and Wildlife Service, (c) sharing my hunting skills and knowledge, (d) thinking about personal values, and (e) using my hunting equipment. Another item, reducing tension and stress loaded most heavily on this factor but did not reach 0.5 factor loading. Three items loaded on the bagging ducks and geese factor: (a) a large daily duck bag limit, (b) bagging ducks and geese, and (c) getting my limit; three other items loaded most heavily on this factor but at a lower level: (a) getting food for my family, (b) having a long duck season, and (c) seeing a lot of ducks and geese. Two items loaded on the social factor, hunting with friends and hunting with family. Hunting with a dog loaded on this factor at a lower level. Two items loaded on the access factor: (a) access to a lot of different hunting areas and (b) hunting areas open to the public. Finally, three items loaded on the nature and solitude factor: (a) being on my own, (b) enjoying nature and the outdoors, and (c) getting away from crowds of people.

Section 6: Motivations for and Involvement in Waterfowl Hunting

Importance of and Investment in Waterfowl Hunting

Respondents were asked how important waterfowl hunting was to them. The majority of respondents (53.2%) indicated that it was "one of my most important recreational activities." Over one-fourth (26.2%) indicated that it was "no more important than my other recreational activities." Less than 10% selected the other options (Table 6-23).

Respondents were also asked how much they spent on waterfowl hunting each year. The largest proportion of respondents (47.1%) indicated that they spent $250 or less, followed by 43.7% who indicated that they spent $251 to $1,000. Less than 10% spent over $1,000 on waterfowl hunting per year (Table 6-24).

Section 6: Motivations for and Involvement in Waterfowl Hunting

Table 6-1: Motivations for waterfowl hunting: Importance of…

	Mean[1]
Enjoying nature and the outdoors	4.59
Good behavior among other waterfowl hunters	4.43
Getting away from crowds of people	4.39
Hunting with family	4.01
Seeing a lot of ducks and geese	4.00
Hunting with friends	3.96
Reducing tension and stress	3.82
Hunting areas open to the public	3.81
Thinking about personal values	3.65
Developing my skills and abilities	3.56
Using my hunting equipment (decoys, boats, etc.)	3.52
Sharing my hunting skills and knowledge	3.50
Access to a lot of different hunting areas	3.49
Hunting with a dog	3.40
Having a long duck season	3.24
Getting information about hunting seasons and conditions from the DNR or US Fish and Wildlife Service	3.14
Bagging ducks and geese	3.00
Being on my own	2.96
A large daily duck bag limit	2.07
Getting my limit	1.95
Getting food for my family	1.94

[1] Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.

Table 6-2: Motivations for waterfowl hunting: Importance of… a large daily duck bag limit.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2128	36.4%	30.6%	24.4%	6.4%	2.2%	2.07
NW	401	33.2%	33.2%	24.4%	6.2%	3.0%	2.13
NE	448	33.7%	30.4%	25.9%	7.1%	2.9%	2.15
METRO	430	38.4%	30.9%	23.3%	5.6%	1.9%	2.02
S	429	38.9%	30.8%	22.4%	6.5%	1.4%	2.01
NONMETRO	411	34.1%	26.8%	28.7%	7.5%	2.9%	2.18
	χ^2=16.002 n.s.						

[1] F= 2.597*, η=0.070. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-3: Motivations for waterfowl hunting: Importance of… access to a lot of different hunting areas.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2127	8.4%	12.0%	23.3%	35.1%	21.3%	3.49
NW	400	12.3%	11.8%	25.3%	34.3%	16.5%	3.31
NE	447	7.8%	13.0%	25.5%	34.5%	19.2%	3.44
METRO	433	7.2%	9.9%	21.5%	38.3%	23.1%	3.60
S	428	7.2%	14.0%	23.6%	30.8%	24.3%	3.51
NONMETRO	407	8.1%	12.8%	23.1%	36.1%	19.9%	3.47
	χ^2= 25.613 n.s.						

[1] F= 3.343*, η=0.079. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-4: Motivations for waterfowl hunting: Importance of… bagging ducks and geese.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2117	6.1%	22.8%	43.0%	20.7%	7.3%	3.00
NW	397	6.5%	26.2%	37.3%	21.7%	8.3%	2.99
NE	448	5.6%	22.3%	43.3%	21.7%	7.1%	3.02
METRO	432	6.3%	20.8%	44.7%	20.4%	7.9%	3.03
S	422	6.2%	22.7%	46.7%	19.4%	5.0%	2.94
NONMETRO	408	5.1%	23.3%	41.2%	21.8%	8.6%	3.05
	χ^2= 14.226 n.s.						

[1] F=0.786 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-5: Motivations for waterfowl hunting: Importance of… being on my own.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2117	22.3%	14.4%	22.8%	26.0%	14.4%	2.96
NW	394	21.6%	10.2%	19.3%	31.0%	18.0%	3.14
NE	442	18.3%	10.9%	27.1%	25.3%	18.3%	3.14
METRO	431	22.7%	16.7%	21.8%	24.1%	14.6%	2.91
S	428	21.3%	16.1%	27.3%	25.2%	10.0%	2.87
NONMETRO	408	26.5%	14.5%	19.6%	25.5%	14.0%	2.86
	χ^2= 46.589***, Cramer's V=0.074						

[1] F= 4.693**, η=0.094. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-6: Motivations for waterfowl hunting: Importance of… hunting with friends.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2132	3.7%	5.1%	17.0%	39.9%	34.3%	3.96
NW	401	3.2%	6.5%	16.2%	41.4%	32.7%	3.94
NE	445	4.5%	6.1%	16.6%	35.7%	37.1%	3.95
METRO	434	3.0%	3.2%	14.5%	40.3%	38.9%	4.09
S	428	5.1%	5.8%	22.0%	40.4%	26.6%	3.78
NONMETRO	410	3.4%	5.6%	15.6%	38.5%	36.8%	4.00
	χ^2= 31.600*, Cramer's V=0.061						

[1] F= 5.254***, η=0.099. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-7: Motivations for waterfowl hunting: Importance of… developing my skills and abilities.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2121	5.2%	10.0%	27.8%	37.5%	19.5%	3.56
NW	397	4.5%	12.3%	27.5%	38.3%	17.4%	3.52
NE	448	5.6%	10.5%	28.1%	33.9%	21.9%	3.56
METRO	430	4.4%	9.1%	29.1%	37.4%	20.0%	3.60
S	426	6.6%	10.3%	27.0%	39.4%	16.7%	3.49
NONMETRO	411	5.1%	8.0%	26.8%	36.0%	24.1%	3.66
	χ^2= 17.371 n.s.						

[1] F= 1.553 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-8: Motivations for waterfowl hunting: Importance of… hunting with family.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2124	5.5%	5.0%	14.7%	33.1%	41.7%	4.00
NW	402	2.7%	3.5%	14.9%	35.6%	43.3%	4.13
NE	448	5.8%	4.9%	13.8%	31.7%	43.8%	4.03
METRO	429	6.3%	4.9%	15.4%	29.8%	43.6%	4.00
S	427	7.0%	7.0%	14.1%	36.3%	35.6%	3.86
NONMETRO	409	4.6%	4.4%	14.4%	33.0%	43.5%	4.06
	χ^2= 23.654 n.s.						

[1] F= 3.308*, η=0.079. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-9: Motivations for waterfowl hunting: Importance of… enjoying nature and the outdoors.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2136	0.5%	0.6%	4.3%	28.4%	66.3%	4.59
NW	401	0.5%	0.2%	4.5%	29.9%	64.8%	4.58
NE	449	0.9%	1.1%	4.5%	27.4%	66.1%	4.57
METRO	435	0.2%	0.9%	4.6%	24.4%	69.9%	4.63
S	428	0.7%	0.2%	3.7%	34.1%	61.2%	4.55
NONMETRO	412	0.2%	0.7%	4.1%	26.7%	68.2%	4.62
	χ^2= 18.514 n.s.						

[1] F= 1.112 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-10: Motivations for waterfowl hunting: Importance of… getting away from crowds of people.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2123	1.5%	2.0%	9.0%	30.9%	56.6%	4.39
NW	400	2.3%	2.5%	9.5%	30.0%	55.8%	4.35
NE	442	0.9%	2.5%	7.5%	28.5%	60.6%	4.45
METRO	432	1.4%	1.2%	10.0%	28.7%	58.8%	4.42
S	425	1.9%	2.4%	8.0%	35.8%	52.0%	4.34
NONMETRO	411	0.5%	2.2%	8.5%	30.9%	57.9%	4.44
	χ^2= 18.908 n.s.						

[1] F= 1.775 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-11: Motivations for waterfowl hunting: Importance of… getting food for my family.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2132	48.9%	23.1%	17.3%	7.2%	3.5%	1.93
NW	400	45.3%	21.0%	18.5%	11.0%	4.3%	2.08
NE	449	47.4%	22.7%	16.7%	6.9%	6.2%	2.02
METRO	433	52.0%	25.9%	15.9%	5.1%	1.2%	1.78
S	428	50.7%	21.3%	16.8%	6.5%	4.7%	1.93
NONMETRO	412	45.1%	22.8%	19.7%	8.3%	4.1%	2.03
	χ^2= 33.909**, Cramer's V=0.063						

[1] F= 4.642**, η=0.093. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-12: Motivations for waterfowl hunting: Importance of… getting information about hunting seasons and conditions from the DNR or US Fish and Wildlife Services.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2131	9.2%	18.7%	34.2%	24.6%	13.2%	3.14
NW	399	9.3%	19.0%	32.8%	23.1%	15.8%	3.17
NE	448	13.4%	16.7%	33.3%	24.3%	12.3%	3.05
METRO	435	8.5%	18.6%	34.9%	25.7%	12.2%	3.14
S	426	9.6%	20.7%	34.7%	22.8%	12.2%	3.07
NONMETRO	411	7.8%	16.5%	34.1%	27.3%	14.4%	3.24
	χ^2= 17.363 n.s.						

[1] F= 1.792 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-13: Motivations for waterfowl hunting: Importance of… getting my limit.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2128	41.8%	30.5%	21.0%	4.5%	2.2%	1.95
NW	400	40.5%	29.0%	23.0%	3.8%	3.8%	2.01
NE	448	38.8%	32.6%	21.2%	3.6%	3.8%	2.01
METRO	434	41.7%	29.3%	21.9%	6.0%	1.2%	1.96
S	427	45.2%	33.3%	16.9%	3.0%	1.6%	1.83
NONMETRO	407	40.3%	29.5%	22.6%	5.2%	2.5%	2.00
	χ^2= 25.269 n.s.						

[1] F= 2.550*, η=0.069. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-14: Motivations for waterfowl hunting: Importance of… good behavior among other waterfowl hunters.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2129	0.9%	1.5%	7.3%	34.2%	56.0%	4.43
NW	402	1.0%	2.7%	8.7%	34.6%	53.0%	4.36
NE	445	0.7%	2.0%	8.8%	31.5%	57.1%	4.42
METRO	432	0.7%	0.0%	5.1%	33.3%	60.9%	4.54
S	426	0.5%	2.8%	8.9%	36.6%	51.2%	4.35
NONMETRO	412	1.7%	1.0%	7.0%	33.7%	56.6%	4.42
	χ^2= 31.112*, Cramer's V=0.061						

[1] F= 3.900**, η=0.086. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-15: Motivations for waterfowl hunting: Importance of… having a long duck season.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2130	10.1%	15.4%	31.9%	25.6%	16.9%	3.24
NW	401	10.5%	16.2%	31.2%	25.9%	16.2%	3.21
NE	448	10.5%	13.4%	36.6%	21.2%	18.3%	3.23
METRO	432	9.0%	16.7%	32.6%	26.2%	15.5%	3.22
S	428	11.2%	14.3%	30.1%	26.2%	18.2%	3.26
NONMETRO	411	9.7%	14.8%	31.4%	26.0%	18.0%	3.28
	χ^2= 11.750 n.s.						

[1] F= 0.201 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-16: Motivations for waterfowl hunting: Importance of… hunting areas open to the public.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2117	5.8%	8.1%	19.9%	31.9%	34.4%	3.81
NW	400	8.0%	7.8%	19.8%	33.5%	31.0%	3.72
NE	448	5.6%	7.1%	21.4%	30.4%	35.5%	3.83
METRO	426	4.7%	6.8%	18.5%	31.7%	38.3%	3.92
S	426	4.9%	10.6%	19.7%	32.6%	32.2%	3.77
NONMETRO	411	6.6%	8.0%	22.1%	29.9%	33.3%	3.75
	χ^2= 16.762 n.s.						

[1] F= 1.964 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-17: Motivations for waterfowl hunting: Importance of… hunting with a dog.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2132	15.1%	12.1%	19.7%	23.8%	29.3%	3.40
NW	401	15.7%	10.5%	20.2%	23.9%	29.7%	3.41
NE	446	18.2%	11.9%	19.3%	20.2%	30.5%	3.33
METRO	433	14.3%	13.9%	21.9%	21.2%	28.6%	3.36
S	429	17.5%	11.9%	16.3%	25.4%	28.9%	3.36
NONMETRO	410	10.5%	11.2%	19.5%	28.5%	30.2%	3.57
	χ^2= 24.526 n.s.						

[1] F= 1.901 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-18: Motivations for waterfowl hunting: Importance of… reducing tension and stress.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2125	4.9%	7.3%	21.2%	34.7%	32.0%	3.82
NW	401	4.7%	8.2%	23.2%	33.7%	30.2%	3.76
NE	445	4.9%	7.9%	25.4%	26.7%	35.1%	3.79
METRO	431	4.2%	5.8%	20.0%	37.6%	32.5%	3.88
S	427	5.9%	8.7%	20.4%	34.2%	30.9%	3.76
NONMETRO	409	4.9%	6.6%	19.8%	35.5%	33.3%	3.86
	χ^2= 20.061 n.s.						

[1] F= 1.100 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-19: Motivations for waterfowl hunting: Importance of… seeing a lot of ducks and geese.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2130	0.5%	3.7%	22.3%	41.1%	32.3%	4.01
NW	399	0.3%	3.8%	25.1%	39.8%	31.1%	3.98
NE	448	0.4%	5.1%	24.8%	37.5%	32.1%	3.96
METRO	433	0.9%	2.1%	18.5%	46.4%	32.1%	4.07
S	429	0.2%	5.6%	22.6%	37.8%	33.8%	3.99
NONMETRO	410	0.5%	3.4%	25.1%	38.8%	32.2%	3.99
	χ^2= 23.663 n.s.						

[1] F=0.993 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-20: Motivations for waterfowl hunting: Importance of… sharing my hunting skills and knowledge.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2128	5.2%	10.3%	31.8%	34.3%	18.4%	3.50
NW	400	3.5%	10.5%	32.8%	33.0%	20.3%	3.56
NE	446	6.3%	12.1%	29.1%	31.4%	21.1%	3.49
METRO	433	4.6%	11.8%	28.2%	37.9%	17.6%	3.52
S	426	6.8%	8.9%	35.4%	32.6%	16.2%	3.42
NONMETRO	411	5.6%	8.0%	34.5%	32.4%	19.5%	3.52
	χ^2= 23.194 n.s.						

[1] F= 0.914 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-21: Motivations for waterfowl hunting: Importance of… thinking about personal values.

Regions	n	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2130	5.1%	8.4%	27.4%	35.1%	24.0%	3.65
NW	401	4.5%	8.7%	26.2%	33.2%	27.4%	3.70
NE	447	5.8%	9.2%	28.4%	32.7%	23.9%	3.60
METRO	432	5.6%	5.8%	28.0%	36.8%	23.8%	3.68
S	427	4.7%	10.8%	28.8%	34.4%	21.3%	3.57
NONMETRO	412	4.9%	9.5%	24.8%	36.7%	24.3%	3.66
	χ^2= 14.612 n.s.						

[1] F= 1.107 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-22: Motivations for waterfowl hunting: Importance of… using my hunting equipment (decoys, boats, etc.).

Regions	N	Not at all	Slightly	Somewhat	Very	Extremely	Mean[1]
Statewide[2]	2141	4.8%	12.2%	30.5%	31.3%	21.2%	3.52
NW	403	4.2%	13.2%	35.2%	26.8%	20.6%	3.46
NE	450	4.9%	11.1%	29.3%	29.6%	25.1%	3.59
METRO	435	5.1%	12.9%	29.7%	33.1%	19.3%	3.49
S	430	5.3%	11.4%	30.7%	30.7%	21.9%	3.52
NONMETRO	411	3.9%	11.4%	26.8%	35.3%	22.6%	3.61
	χ^2= 17.216 n.s.						

[1] F= 1.426 n.s. Mean is based on the scale: 1 = not at all unimportant, 2 = slightly important, 3 = somewhat important, 4= very important, 5 = extremely important.
[2] A stratified sample based on region was drawn. Statewide data is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 6: Motivations for and Involvement in Waterfowl Hunting

Table 6-23: How important is waterfowl hunting to you?

Residence of hunter	N	% of hunters indicating… …my most important recreational activity	…one of my most important recreational activities	…no more important than my other recreational activities	…less important than my other recreational activities	…one of my least important recreational activities.	Mean[1]
Statewide[2]	2357	9.6%	53.2%	26.2%	8.9%	2.1%	2.41
NW	433	8.3%	52.2%	29.3%	8.3%	1.8%	2.43
NE	495	7.3%	59.2%	24.2%	7.3%	2.0%	2.38
METRO	488	8.2%	51.2%	28.3%	10.0%	2.3%	2.47
S	475	12.2%	53.5%	21.7%	10.1%	2.5%	2.37
NONMETRO	447	11.4%	54.6%	26.2%	6.0%	1.8%	2.32
		χ^2 = 27.573*, Cramer's V= 0.054					

[1] F= 2.108 n.s. Mean is based on the following scale: 1= my most important recreational activity, 2= one of my most important recreational activities, 3= no more important than my other recreational activities, 4= less important than my other recreational activities, 5= one of my least important recreational activities.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 6-23: How much do you spend on waterfowl hunting each year?

Residence of hunter	N	% of hunters indicating… $250 or less	$251-$1,000	$1,001-$5,000	Over $5,000
Statewide[1]	2380	47.1%	43.7%	9.0%	0.2%
NW	437	51.9%	42.6%	5.0%	0.5%
NE	502	41.8%	49.4%	8.8%	0.0%
METRO	489	44.6%	43.1%	12.1%	0.2%
S	481	48.9%	43.2%	7.9%	0.0%
NONMETRO	455	46.8%	43.5%	9.5%	0.2%
		χ^2 = 27.289**, Cramer's V= 0.062			

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 7: Use of and Opinions About Battery-Operated, Spinning-Wing Decoys

Ownership and use of Battery-Operated, Spinning-Wing Decoys

Statewide, 28.4% of respondents reported that they owned a battery-operated, spinning-wing decoy (Table 7-1), and 24.2% reported using these decoys during the 2005 waterfowl season (Table 7-3). There was no significant difference in ownership or use rates among the regions. Similarly, there was no difference in ownership or use between Metro and Non-metro area residents (Tables 7-2, 7-4).

Support for Restricting the use of Battery-Operated, Spinning-Wing Decoys

Tables 7-5 through 7-8 summarize the support for various restrictions on battery-operated, spinning-wing decoys. Overall, respondents were fairly neutral in their support of the restrictions. Nearly 40% of respondents supported the current regulation to prohibit the use of motorized decoys or other motorized devices for the first 8 days of the duck season (Table 7-5). Over one-third of respondents (34.4%) supported the current regulation of prohibiting the use of motorized decoys or other motorized devices on Department of Natural Resources Wildlife Management Areas (Table 7-6). Nearly 4 in 10 respondents (37.5%) supported the proposed regulation to prohibit use of motorized decoys or other motorized devices on all Migratory Waterfowl Feeding and Resting Areas (Table 7-7). Decoy owners were substantially less supportive of each of the regulations (Tables 7-9, 7-10, 7-11).

Use of Battery-Operated, Spinning-Wing Decoys and Hunting Outcomes

Compared to respondents who did not use the decoys, respondents who used battery-operated, spinning-wing decoys hunted more days during 2005, bagged more ducks on average during the course of the season and per hunting day (Table 7-12).

Section 7: Use of and Opinions About Battery-Operated, Spinning-Wing Decoys

Table 7-1: Do you own a battery-operated, spinning-wing decoy?

Residence of hunter	n	No (%)	Yes (%)	% of all waterfowl hunters in state[1]
Statewide[2]	2348	71.6%	28.4%	100.0%
NW	429	73.4%	26.6%	20.4%
NE	492	72.6%	27.4%	9.1%
METRO	485	71.5%	28.5%	31.4%
S	478	68.8%	31.2%	23.0%
NONMETRO	444	73.0%	27.0%	16.1%
		χ^2=3.104 n.s.		

[1] Proportion of state waterfowl stamp purchasers by region of residence.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-2: Ownership of battery-operated, spinning-wing decoys by metropolitan residence

Residence of hunter	n	No (%)	Yes (%)
Non-metro	1843	71.9%	28.1%
Metro	485	71.5%	28.5%
		χ^2=0.023 n.s.	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-3: Did you use battery-operated, spinning-wing decoys when hunting in Minnesota during the 2005 waterfowl season?

Residence of hunter	N	No (%)	Yes (%)	% of all waterfowl hunters in state[1]
Statewide[2]	2363	75.8%	24.2%	100.0%
NW	433	76.2%	23.8%	20.4%
NE	497	78.7%	21.3%	9.1%
METRO	487	75.4%	24.6%	31.4%
S	479	73.5%	26.5%	23.0%
NONMETRO	449	78.2%	21.8%	16.1%
		χ^2=4.758 n.s.		

[1] Proportion of state waterfowl stamp purchasers by region of residence.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 7: Use of and Opinions About Battery-Operated, Spinning-Wing Decoys

Table 7-4: Use of battery-operated, spinning-wing decoys by metropolitan residence

Residence of hunter	N	No (%)	Yes (%)
Non-metro	1858	76.6%	23.4%
Metro	487	75.4%	24.6%
		χ^2=0.352 n.s.	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-5: Support for prohibiting the use of motorized decoys or other motorized devices for the first eight days of the duck season (current regulation).

Residence of hunter	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2363	16.3%	16.3%	27.6%	22.6%	17.2%	3.08
NW	432	20.1%	16.2%	29.2%	19.2%	15.3%	2.93
NE	493	22.3%	16.2%	23.3%	19.3%	18.9%	2.96
METRO	490	12.9%	16.5%	26.9%	24.5%	19.2%	3.21
S	477	14.7%	14.3%	29.6%	26.2%	15.3%	3.13
NONMETRO	449	18.0%	19.4%	26.3%	19.4%	16.9%	2.98
		χ^2=38.414**, Cramer's V=0.064					

[1]F=3.865**, η= 0.081. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-6: Support for prohibiting the use of motorized decoys or other motorized devices on DNR Wildlife Management Areas (current regulation).

Residence of hunter	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2360	17.8%	18.7%	29.2%	18.1%	16.3%	2.96
NW	430	18.4%	17.0%	33.7%	16.0%	14.9%	2.92
NE	492	23.0%	15.0%	24.2%	19.3%	18.5%	2.95
METRO	489	15.7%	19.8%	27.0%	20.0%	17.4%	3.03
S	479	17.7%	18.2%	30.9%	19.0%	14.2%	2.94
NONMETRO	448	18.3%	21.4%	28.6%	14.1%	17.6%	2.91
		χ^2=32.884**, Cramer's V=0.059					

[1]F=0.643 n.s. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 7: Use of and Opinions About Battery-Operated, Spinning-Wing Decoys

Table 7-7: Support for prohibiting the use of motorized decoys or other motorized devices on all Migratory Waterfowl Feeding and Resting Areas (35 lakes where outboard motor use is prohibited) (proposed).

Residence of hunter	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
Statewide[2]	2366	15.2%	16.4%	31.0%	19.8%	17.7%	3.08
NW	433	15.9%	15.5%	36.0%	16.2%	16.4%	3.02
NE	495	19.6%	15.6%	22.8%	20.8%	21.2%	3.08
METRO	490	13.3%	16.7%	30.0%	22.4%	17.6%	3.14
S	479	14.2%	15.4%	31.7%	21.7%	16.9%	3.12
NONMETRO	448	17.4%	18.8%	30.4%	14.7%	18.8%	2.99
		χ^2=39.691**, Cramer's V=0.065					

[1]F=1.179 n.s. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-8: Comparison of level of support for different restrictions on battery-operated, spinning-wing decoys

Restriction	Mean[1]
Prohibit the use of motorized decoys or other motorized devices for the first eight days of the duck season (current regulation)	3.08
Prohibit the use of motorized decoys or other motorized devices on DNR Wildlife Management Areas (current regulation)	2.96
Prohibit the use of motorized decoys or other motorized devices on all Migratory Waterfowl Feeding and Resting Areas (35 lakes where outboard motor use is prohibited) (proposed)	3.08

[1]F=26.697*** Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-9: Support for prohibiting the use of motorized decoys or other motorized devices for the first eight days of the duck season (current regulation) by ownership

Decoy ownership	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
All hunters	2342	16.5%	16.4%	27.6%	22.5%	17.1%	3.07
Decoy non-owners	1662	11.4%	14.3%	29.4%	23.6%	21.4%	3.29
Decoy owners	652	33.3%	22.4%	19.8%	17.6%	6.9%	2.42
		χ^2=226.627***, Cramer's V=0.313					

[1]F=216.734***. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 7: Use of and Opinions About Battery-Operated, Spinning-Wing Decoys

Table 7-10: Support for prohibiting the use of motorized decoys or other motorized devices on DNR Wildlife Management Areas (current regulation) by ownership

Decoy ownership	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
All hunters	2360	17.8%	18.7%	29.2%	18.1%	16.3%	2.96
Decoy non-owners	1660	11.8%	16.4%	31.7%	19.2%	20.8%	3.21
Decoy owners	652	36.0%	23.0%	20.6%	14.4%	6.0%	2.31
		χ^2=246.819***, Cramer's V=0.327					

[1]F=232.708***. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-11: Support for prohibiting the use of motorized decoys or other motorized devices on all Migratory Waterfowl Feeding and Resting Areas (35 lakes where outboard motor use is prohibited) (proposed) by ownership

Decoy ownership	N	Strongly oppose	Oppose	Neutral	Support	Strongly support	Mean[1]
All hunters	2366	15.2%	16.4%	31.0%	19.8%	17.7%	3.08
Decoy non-owners	1665	11.1%	14.4%	32.4%	20.3%	21.9%	3.28
Decoy owners	653	28.6%	22.1%	23.0%	17.2%	9.2%	2.56
		χ^2=164.679***, Cramer's V=0.267					

[1]F=146.788***. Mean is based on the following scale: 1=strongly oppose, 2=oppose, 3=neither support nor oppose, 4=support, 5=strongly support.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 7-12: Duck harvest by use of battery-operated, spinning-wing decoys by use

Residence of hunter	Decoy users	Decoy non-users	T-test
Total 2005 duck harvest	12.16	6.45	10.906***
Duck harvest per day hunting in 2005	0.997	0.807	3.909***
# of days hunting waterfowl in MN in 2005	13.816	9.036	11.043***
Total years hunting waterfowl in Minnesota	22.75	22.15	0.862 n.s.

Data for days hunting ducks, ducks bagged, and ducks bagged per day reflect only those hunters who went duck hunting and provided information on both the number of days spent duck hunting and the number of ducks bagged during the season.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 8: Quality of Minnesota Waterfowl Hunting

Changes in Minnesota Waterfowl Hunting Quality

Respondents were asked to respond to nine items addressing changes in the quality of waterfowl hunting in Minnesota. Response was on the scale 1 (much worse) to 5 (much better). None of the items was rated above the midpoint on the scale, so no aspect of quality was perceived as having gotten better on average (Table 8-1). Respondents felt that the quality of 'overall waterfowl numbers' was the item that had declined most ($\bar{x}$ = 1.84) (Table 8-6). Respondents felt that the 'ease of understanding regulations had stayed about the same ($\bar{x}$ = 2.99) (Table 8-7). There were significant differences in the mean ratings and the pattern of response among regions for a number of the hunting quality items. In general, where differences were observed, respondents from the Metropolitan area felt that quality had declined somewhat more.

Problems With Minnesota Waterfowl Hunting

Respondents were asked to respond to eight items addressing changes in problems associated with Minnesota waterfowl hunting. Response was on the scale 1 (much worse) to 5 (much better). None of the items was rated above the midpoint on the scale, so no problems were perceived as having gotten better on average (Table 8-11). Respondents felt that the problem of 'shifting waterfowl migration routes' was the item that had declined most ($\bar{x}$ = 1.79) (Table 8-15). Respondents felt that the problems of 'waterfowl unable to find rest areas' ($\bar{x}$ = 2.53) (Table 8-14) and 'interference from other hunters' ($\bar{x}$ = 2.53) (Table 8-16) had not become as much worse as the other problems had. There were significant differences in the mean ratings and the pattern of response among regions for a number of the hunting problem items. In general, where regional differences were observed, respondents from the Northeast and Northwest regions felt that the problems had not become as bad as those from the other regions felt they had.

Table 8-1: Mean statewide results: Changes in hunting quality.

Quality item	N	Mean[1,2]
Overall waterfowl numbers	2287	1.84
When waterfowl are arriving in my area	2239	2.08
The length of time waterfowl are staying in my area	2263	2.10
Waterfowl habitat where I hunt	2295	2.48
Weather patterns for waterfowl hunting	2260	2.58
The number of places to hunt	2264	2.59
Timing of waterfowl seasons	2255	2.78
Amount of time I have to hunt waterfowl	2307	2.78
Ease of understanding regulations	2288	2.99

[1]Grand mean=2.458. F=515.077***, η^2=0.205. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.

Table 8-2: Changes in hunting quality: waterfowl habitat where I hunt.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2295	16.5%	31.3%	41.2%	9.8%	1.3%	2.48
NW	422	13.0%	24.4%	45.3%	15.4%	1.9%	2.69
NE	477	12.4%	32.1%	48.4%	6.3%	0.8%	2.51
METRO	470	17.2%	34.5%	42.3%	5.5%	0.4%	2.37
S	467	20.3%	31.0%	33.6%	12.6%	2.4%	2.46
NONMETRO	441	15.4%	33.3%	41.0%	9.3%	0.9%	2.47
		χ^2=76.543***, Cramer's V=0.092					

[1]F=7.121***, η=0.111. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-3: Changes in hunting quality: when waterfowl are arriving in my area.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2239	28.5%	40.8%	25.3%	4.8%	0.5%	2.08
NW	411	27.5%	34.8%	29.9%	7.3%	0.5%	2.18
NE	467	28.9%	38.1%	28.1%	4.7%	0.2%	2.09
METRO	453	27.6%	46.1%	22.5%	2.9%	0.9%	2.03
S	463	31.3%	38.7%	24.4%	5.2%	0.4%	2.05
NONMETRO	430	27.0%	42.1%	25.3%	5.3%	0.2%	2.10
		χ^2 =27.453*, Cramer's V=0.056					

[1]F=1.938 n.s. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-4: Changes in hunting quality: the length of time waterfowl are staying in my area.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2263	28.9%	38.7%	27.1%	4.6%	0.7%	2.10
NW	421	28.5%	36.3%	27.3%	7.1%	0.7%	2.15
NE	476	29.8%	39.5%	26.3%	4.2%	0.2%	2.05
METRO	456	26.8%	41.4%	27.9%	3.3%	0.7%	2.10
S	465	31.6%	35.7%	27.1%	4.7%	0.9%	2.08
NONMETRO	433	28.9%	40.2%	25.9%	4.2%	0.9%	2.08
		χ^2 =15.321 n.s.					

[1]F=0.742 n.s. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-5: Changes in hunting quality: timing of waterfowl seasons.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2255	7.6%	19.0%	62.8%	9.3%	1.3%	2.78
NW	410	5.4%	16.6%	66.1%	10.7%	1.2%	2.86
NE	469	7.0%	16.2%	68.0%	7.9%	0.9%	2.79
METRO	458	8.5%	19.4%	60.7%	9.4%	2.0%	2.77
S	467	8.6%	21.6%	60.8%	7.9%	1.1%	2.71
NONMETRO	435	7.1%	18.6%	63.4%	10.1%	0.7%	2.79
		χ^2 =18.869 n.s.					

[1]F=2.093 n.s. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-6: Changes in hunting quality: overall waterfowl numbers.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2287	44.5%	34.8%	13.8%	6.2%	0.7%	1.84
NW	421	39.0%	34.4%	16.2%	9.5%	1.0%	1.99
NE	482	46.7%	33.2%	14.7%	4.8%	0.6%	1.79
METRO	466	45.7%	37.6%	12.0%	4.5%	0.2%	1.76
S	467	46.5%	30.6%	15.0%	7.1%	0.9%	1.85
NONMETRO	437	44.6%	36.8%	12.1%	5.5%	0.9%	1.81
		χ^2 =26.985*, Cramer's V=0.054					

[1]F=4.018**, η=0.084. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-7: Changes in hunting quality: ease of understanding regulations.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2288	4.5%	13.3%	65.4%	12.0%	4.9%	2.99
NW	418	6.5%	14.6%	65.3%	10.3%	3.3%	2.89
NE	472	6.4%	13.8%	62.7%	13.3%	3.8%	2.94
METRO	470	4.0%	14.0%	66.4%	10.9%	4.7%	2.98
S	466	3.4%	12.4%	65.7%	12.0%	6.4%	3.06
NONMETRO	441	3.9%	10.9%	64.4%	15.6%	5.2%	3.07
		χ^2=23.686 n.s.					

[1]F=3.936**, η=0.083. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-8: Changes in hunting quality: the number of places to hunt.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2264	10.8%	29.9%	50.2%	7.8%	1.3%	2.59
NW	412	8.5%	25.0%	55.8%	9.7%	1.0%	2.70
NE	475	8.2%	29.5%	54.5%	6.7%	1.1%	2.63
METRO	460	11.7%	33.9%	48.3%	5.2%	0.9%	2.50
S	467	11.3%	29.6%	46.9%	10.7%	1.5%	2.61
NONMETRO	436	12.6%	28.0%	50.0%	7.1%	2.3%	2.58
		χ^2=34.661**, Cramer's V=0.062					

[1]F=3.454**, η=0.078. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-9: Changes in hunting quality: amount of time I have to hunt waterfowl.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2307	9.9%	25.1%	46.4%	13.9%	4.6%	2.78
NW	420	9.5%	24.8%	44.0%	17.4%	4.3%	2.82
NE	487	7.6%	23.0%	49.5%	12.3%	7.6%	2.89
METRO	471	11.5%	27.8%	44.6%	11.9%	4.2%	2.70
S	474	10.3%	21.3%	49.4%	15.8%	3.2%	2.80
NONMETRO	441	7.9%	27.2%	46.9%	12.0%	5.9%	2.81
		χ^2=33.202**, Cramer's V=0.060					

[1]F=2.564*, η=0.067. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-10: Changes in hunting quality: weather patterns for waterfowl hunting.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2260	10.1%	28.0%	56.5%	4.9%	0.7%	2.58
NW	412	8.7%	20.4%	63.3%	7.0%	0.5%	2.70
NE	465	9.0%	23.0%	61.9%	5.4%	0.6%	2.66
METRO	464	13.1%	32.3%	51.3%	2.4%	0.9%	2.45
S	464	8.0%	30.8%	55.0%	5.6%	0.6%	2.60
NONMETRO	433	9.0%	26.3%	58.2%	6.0%	0.5%	2.63
		χ^2=43.802***, Cramer's V=0.070					

[1]F=6.922***, η=0.111. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-11: Mean statewide results: Changes in hunting problems.

Problem item	N	Mean[1,2]
Shifting waterfowl migration routes	2167	1.79
Waterfowl numbers on opening weekend	2200	2.05
Waterfowl concentrating on fewer areas	2161	2.29
Crowding at hunting areas	2241	2.35
Waterfowl arriving after the season is closed	2175	2.41
Hunting pressure	2251	2.44
Waterfowl unable to find rest areas	2160	2.53
Interference from other hunters	2267	2.53

[1]Grand mean=2.279. F=229.248***, η^2=0.110. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-12: Problems in last 5 years: crowding at hunting areas.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2241	15.5%	39.2%	40.5%	4.4%	0.4%	2.35
NW	404	12.9%	32.4%	50.5%	4.0%	0.2%	2.46
NE	465	11.4%	35.7%	47.7%	4.5%	0.6%	2.47
METRO	464	17.5%	41.2%	37.1%	3.9%	0.4%	2.29
S	461	16.3%	41.0%	37.1%	5.4%	0.2%	2.32
NONMETRO	424	15.8%	42.5%	37.0%	4.2%	0.5%	2.31
		χ^2=37.379**, Cramer's V=0.065					

[1]F=5.545***, η=0.100. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-13: Problems in last 5 years: hunting pressure.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2251	12.1%	39.3%	41.7%	6.1%	0.7%	2.44
NW	405	11.6%	30.1%	50.9%	6.7%	0.7%	2.55
NE	470	9.1%	34.9%	47.2%	7.9%	0.9%	2.56
METRO	464	11.9%	44.2%	38.6%	4.5%	0.9%	2.38
S	463	13.4%	39.7%	38.4%	7.6%	0.9%	2.43
NONMETRO	430	13.3%	41.9%	39.1%	5.6%	0.2%	2.38
		χ^2=40.001**, Cramer's V=0.067					

[1]F=5.516***, η=0.099. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-14: Problems in last 5 years: waterfowl unable to find rest areas.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2160	13.2%	29.3%	50.2%	6.4%	1.0%	2.53
NW	391	10.2%	24.8%	55.5%	8.4%	1.0%	2.65
NE	447	8.3%	25.3%	58.4%	6.5%	1.6%	2.68
METRO	435	14.5%	33.1%	47.4%	3.9%	1.1%	2.44
S	455	15.4%	29.0%	46.6%	8.1%	0.9%	2.50
NONMETRO	416	13.5%	29.3%	50.5%	6.0%	0.7%	2.51
		χ^2=38.983**, Cramer's V=0.067					

[1]F=6.631***, η=0.111. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-15: Problems in last 5 years: shifting waterfowl migration routes.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2178	42.4%	37.6%	18.5%	1.4%	0.0%	1.79
NW	396	35.4%	39.4%	22.2%	2.8%	0.3%	1.93
NE	457	41.8%	37.9%	18.8%	1.5%	0.0%	1.80
METRO	447	45.6%	35.1%	18.3%	0.9%	0.0%	1.74
S	448	46.2%	35.3%	17.2%	1.3%	0.0%	1.74
NONMETRO	413	38.3%	44.6%	16.2%	1.0%	0.0%	1.80
		χ^2 =30.827*, Cramer's V=0.060					

[1]F=4.036**, η=0.086. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-16: Problems in last 5 years: interference from other hunters.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2267	10.2%	31.2%	54.5%	3.6%	0.5%	2.53
NW	415	8.0%	24.6%	63.1%	3.6%	0.7%	2.65
NE	466	8.6%	26.6%	60.5%	3.6%	0.6%	2.61
METRO	468	11.3%	33.1%	51.9%	3.4%	0.2%	2.48
S	464	11.4%	33.4%	51.3%	2.8%	1.1%	2.49
NONMETRO	429	9.8%	34.3%	50.6%	5.4%	0.0%	2.52
		χ^2 =37.195**, Cramer's V=0.064					

[1]F=4.623**, η=0.091. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-17: Problems in last 5 years: waterfowl arriving after the season is closed.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2175	16.6%	31.4%	47.2%	3.6%	1.2%	2.41
NW	403	9.9%	27.3%	56.6%	5.7%	0.5%	2.60
NE	449	13.4%	27.2%	55.9%	3.3%	0.2%	2.50
METRO	436	18.8%	35.3%	41.7%	2.8%	1.4%	2.33
S	454	19.6%	35.2%	40.7%	2.9%	1.5%	2.31
NONMETRO	417	17.5%	24.9%	51.8%	4.3%	1.4%	2.47
		χ^2=65.481***, Cramer's V=0.087					

[1]F=8.872***, η=0.127. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-18: Problems in last 5 years: waterfowl concentrating on fewer areas.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2161	16.2%	41.6%	39.7%	2.4%	0.2%	2.29
NW	398	15.8%	41.5%	38.9%	3.5%	0.3%	2.31
NE	444	19.1%	39.0%	39.6%	2.0%	0.2%	2.25
METRO	435	14.5%	42.5%	41.1%	1.6%	0.2%	2.31
S	450	17.3%	38.0%	42.4%	2.2%	0.0%	2.30
NONMETRO	417	16.5%	46.8%	33.3%	2.9%	0.5%	2.24
		χ^2=19.414 n.s.					

[1]F=0.730 n.s. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 8-19: Problems in last 5 years: waterfowl numbers on opening weekend.

Residence of hunter	N	% of respondents who said that quality is…					Mean[1]
		Much worse	Somewhat worse	Neither better or worse	Somewhat better	Much better	
Statewide[2]	2200	32.7%	35.2%	26.8%	4.7%	0.6%	2.05
NW	403	31.0%	33.0%	28.3%	6.9%	0.7%	2.13
NE	470	30.2%	33.0%	30.2%	5.7%	0.9%	2.14
METRO	444	31.1%	36.9%	28.4%	3.2%	0.5%	2.05
S	451	35.0%	34.6%	26.2%	4.0%	0.2%	2.00
NONMETRO	426	36.2%	36.9%	20.4%	5.4%	1.2%	1.99
		χ^2=26.266 n.s.					

[1]F=2.756*, η=0.071. Mean based on scale: 1=much worse, 2=somewhat worse, 3=neither, 4=somewhat better, 5=much better.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

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Section 9: Characteristics of Waterfowl Hunters in Minnesota

Information from the Electronic Licensing System database indicates that nearly one-third (31.4%) of the Minnesota residents who purchased a state duck stamp live in the Twin Cities Metropolitan area. Less than one in ten Minnesota duck stamp purchasers reside in the Northeast region. See Table 9-1.

Hunter Age

The median age of the study population of Minnesota duck stamp purchasers was 39 years. The median age of 43 years for study respondents was higher than the age of the population. Those under the age of 40 tended to respond at a lower rate than those over the age of 40 leading to this slight age bias in the sample. (See Tables 9-2 and 9-3.) The bias in age of the respondents did not substantively affect any estimates reported previously in this document, and thus, data were not weighted in calculating those estimates.

Years of Waterfowl Hunting

At the beginning of the survey instrument, respondents were asked to report the year they first hunted waterfowl in the state of Minnesota, how many total years they have hunted waterfowl in Minnesota, and how many years since 2000 that they hunted for waterfowl in the state. Please note that because responses to these questions are strongly correlated to age, the data presented in Tables 9-5, 9-6, and 9-7 are weighted to correct for the age bias for these results.

Statewide almost one-third (31.1%) of respondents began hunting waterfowl in 1990 or more recently (Table 9-5). On average, waterfowl hunters in Minnesota have been hunting in the state for 22.4 years. The median of 20.0 indicates that half of the hunters have hunted 20 or more years in the state (Table 9-6). Across the regions, hunters in the Northwest region ($\bar{x}$ = 23.6; median = 21.0) tended to have slightly more years of hunting experience in Minnesota, while hunters from the Central, non-metropolitan region had fewer years of experience ($\bar{x}$ = 20.1; median = 17.0).

Statewide a majority (71.0%) of the waterfowl hunters hunted for waterfowl in Minnesota every year during the past 5 years (Table 9-7). Of the 6.6% of respondents who did not hunt waterfowl during any of the years between 2000 and 2004, approximately two-thirds (65.0%) hunted waterfowl during 2005. This would be expected because we drew a sample of those who purchased duck stamps or registered for HIP in 2005.

Age and Experience Comparison

Respondents to this survey are, on average, older ($\bar{x}$ = 43.2 years) than respondents to surveys of waterfowl hunters in other states. Michigan waterfowl hunters for the 1998-1999 season averaged 39 years of age (Soulliere & Frawley, 2001). Respondents to this survey are also older than Missouri waterfowl hunters, who averaged 39 years of age in 1988 and 42 years of age in 1995. Similarly, our Minnesota respondents are older than the average age reported by New York duck hunters (41 years) (Enck et al., 1993).

Respondents to this survey report an average of 22 years of waterfowl-hunting experience. This compares to the 15 years of experience reported by Michigan waterfowl hunters during the 1998-1999 season (Soulliere & Frawley, 2001), and the 19 years of experience reported by Colorado waterfowl hunters in 1992-1993 (Pierce, Ringelman, Szymczak, & Manfredo, 1996)

Membership in Conservation and Hunting Organizations

More than half (57.1%) of the waterfowl hunters reported that they belonged to a conservation/hunting organization. More than one-third (37.1%) of respondents reported membership in Ducks Unlimited and nearly one in ten (7.8%) reported membership in Minnesota Waterfowl Association (Table 9-8). For comparison, 24% of survey respondents who hunted waterfowl in Colorado during the 1992-1993 season reported membership in Ducks Unlimited (Pierce et al., 1996).

Hunting Outside of Minnesota

Approximately one in five (17.3%) Minnesota waterfowl hunters hunted outside the state in 2005, with hunters residing in the Northeast region (23.0%) most likely to hunt elsewhere (Table 9-9). Respondents from the Northwest region were the least likely to have hunted outside of Minnesota during 2005 (16.0%). North Dakota was the most popular destination for Minnesota hunters; 9.4% of respondents and 58.4% of respondents who hunted outside the state hunted there. On average, respondents who hunted in North Dakota hunted for 5.9 days and bagged 18.2 ducks in that state (Table 9-10).

Accessing the Internet for Waterfowl Hunting Information

Approximately one in five (18.0%) respondents accessed the Internet frequently for waterfowl hunting information, with nearly one-fourth of hunters residing in the Metropolitan region (22.1%) indicating frequent use (Table 9-11). Only 10.1% of respondents from the Northwest region and the Central, non-metropolitan region reported frequently accessing the Internet for information about waterfowl hunting.

Late Respondents

A comparison of late respondents to other respondents found that late respondents had been hunting for somewhat fewer years ($\bar{x}$ = 22.2 years) than early respondents had ($\bar{x}$ = 28.2 years) (t = 7.134***). Similarly, late respondents had been hunting for fewer years in Minnesota ($\bar{x}$ = 17.8 years) than early respondents had ($\bar{x}$ = 23.3 years) (t = 7.062***). Sixty-six percent of late respondents had hunted 5 of the previous 5 years, compared to 72% of early respondents (χ^2 = 7.477*). In addition, fewer late respondents hunted outside Minnesota during 2005 (15% compared to 19% of early respondents) (χ^2 = 7.644*). Late respondents were more supportive of Youth Waterfowl Hunting Day ($\bar{x}$ = 3.8 on a 5-point scale of support) compared to the average level of support among early respondents ($\bar{x}$ = 3.6) (t = 3.479**).

Section 9: Characteristics of Waterfowl Hunters in Minnesota

Table 9-1: Residence of waterfowl stamp buyers

Residence of hunter	Proportion of state waterfowl stamp purchasers in each region age 18-64	
	# of licensed MN waterfowl hunters[1]	% of all MN waterfowl hunters
Statewide	115,630[2]	100.0%
NW	23,573	20.4%
NE	10,496	9.1%
METRO	36,301	31.4%
S	26,618	23.0%
NONMETRO	18,573	16.1%

[1] Source: DNR license database
[2] The statewide total is not equal to the total of the six regions because zip code changes or additions are ongoing, and DNR regional zip code files lag behind U.S. Postal Service changes.

Table 9-2: Age of study population and survey respondents

Residence of hunter	n	16-17	18-19	20 – 29	30 – 39	40 – 49	50 - 59	60 - 64	65 +	Median age
Study population[1]	101,881	2,462	5,019	23,943	21,535	25,521	16,583	4,298	2,520	39
Statewide	2,568	33	75	480	463	652	503	105	257	43
NW	506	9	11	97	68	128	107	27	59	44
NE	541	8	16	91	91	127	120	29	59	46
METRO	504	6	16	72	98	156	87	16	53	44
S	506	2	14	111	95	105	110	23	46	43
NONMETRO	514	10	18	119	107	115	90	15	40	44

[1] Source: DNR license database

Table 9-3: Proportion of population and respondents by age category

Residence of hunter	n	16-17	18-19	20 – 29	30 – 39	40 – 49	50 - 59	60 - 64	65 +
Study population[1]	101881	2.4%	4.9%	23.5%	21.1%	25.1%	16.3%	4.2%	2.5%
Statewide	2568	1.3%	2.9%	18.7%	18.0%	25.4%	19.6%	4.1%	10.0%
NW	506	1.8%	2.2%	19.2%	13.4%	25.3%	21.1%	5.3%	11.7%
NE	541	1.5%	3.0%	16.8%	16.8%	23.5%	22.2%	5.4%	10.9%
METRO	504	1.2%	3.2%	14.3%	19.4%	31.0%	17.3%	3.2%	10.5%
S	506	0.4%	2.8%	21.9%	18.8%	20.8%	21.7%	4.5%	9.1%
NONMETRO	514	1.9%	3.5%	23.2%	20.8%	22.4%	17.5%	2.9%	7.8%

[1] Source: DNR license database

Table 9-4: Proportion of respondents from different age categories who actually hunting waterfowl in Minnesota in the year 2005

Age category	N	% No	% Yes
16-17	32	9.4%	90.6%
18-19	68	2.9%	97.1%
20-29	456	5.0%	95.0%
30-39	420	5.7%	94.3%
40-49	580	8.8%	91.2%
50-59	465	9.0%	91.0%
60-64	105	18.1%	81.9%
65+	227	29.5%	70.5%
		χ^2 =131.984***, Cramer's V=0.237	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 9-5: What year the hunter first hunted waterfowl

Year/decade	% of hunters from that area who indicated that they first hunted waterfowl (not necessarily in Minnesota) in that year or decade:					
	Statewide[1]	NW[2]	NE	Metro	S	Non-metro
N	2319	424	486	484	469	433
2005	1.9%	1.7%	2.3%	2.9%	0.9%	1.6%
2004	0.9%	0.5%	1.6%	0.8%	0.6%	1.6%
2003	1.4%	1.7%	1.2%	1.0%	1.7%	1.6%
2002	1.7%	1.4%	1.9%	1.4%	1.9%	2.1%
2001	1.5%	0.7%	0.6%	1.9%	1.3%	2.5%
2000	2.5%	2.6%	1.9%	3.1%	1.9%	2.5%
1990's	21.2%	19.8%	21.6%	16.7%	24.7%	27.0%
1980's	18.0%	15.6%	14.0%	19.8%	18.6%	18.2%
1970's	22.5%	22.4%	22.4%	25.6%	19.2%	21.0%
1960's	17.0%	20.0%	20.6%	14.7%	19.2%	12.9%
1950's	7.3%	9.0%	7.4%	7.0%	6.2%	7.6%
1940's	3.2%	3.8%	3.7%	3.9%	3.0%	1.2%
1930's	0.7%	0.9%	0.6%	0.8%	0.9%	0.0%
1920's	0.1%	0.0%	0.2%	0.2%	0.0%	0.0%

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population. Because this question is strongly correlated to age, this data is also weighted to correct for age.
[2] Regional data is also weighted to correct for age.

Table 9-6: Number of years hunting waterfowl in Minnesota

# of years	% of hunters from that area who indicated that they have been hunting in Minnesota for _____ years:[1]					
	Statewide[2]	NW[3]	NE	Metro	S	Non-metro
N	2,346	427	487	490	472	445
1	2.4%	1.2%	2.1%	4.1%	1.1%	2.2%
2	2.0%	1.4%	3.1%	2.2%	1.9%	1.6%
3	3.2%	3.3%	2.7%	2.7%	3.8%	3.6%
4	1.4%	1.6%	1.2%	1.2%	1.7%	1.3%
5	3.6%	2.3%	3.7%	3.7%	3.6%	4.9%
6	3.3%	3.3%	2.7%	4.5%	1.7%	3.8%
7	3.2%	3.5%	3.1%	1.8%	3.6%	4.9%
8	3.0%	3.0%	3.3%	2.2%	3.6%	3.8%
9	1.3%	1.6%	2.7%	.8%	1.1%	1.3%
10 – 19	24.0%	23.0%	22.6%	22.4%	25.6%	26.7%
20 – 29	18.5%	18.7%	15.6%	19.6%	18.2%	18.2%
30 – 39	17.7%	18.7%	19.5%	17.8%	17.6%	15.3%
40 – 49	10.9%	11.5%	11.7%	11.2%	11.4%	8.1%
50 – 59	3.9%	4.9%	4.5%	3.5%	3.8%	3.6%
60 – 69	1.3%	1.4%	1.0%	1.8%	1.1%	0.4%
70 +	0.3%	0.5%	0.2%	0.4%	0.2%	0.0%
Mean	22.37	23.63	22.54	22.62	22.44	20.06
Median	20.00	21.00	20.00	20.00	20.00	17.00

[1]Actual number years were collected for each hunter and used in computation of the means and medians. Data are presented in categorical form in the table for 10+ years to simplify the table.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population. Because this question is strongly correlated to age, this data is also weighted to correct for age.
[3] Regional data is also weighted to correct for age.

Table 9-7: Hunting in the last five years

Residence of hunter	n	% of hunters who hunted that particular year:						
		2004	2003	2002	2001	2000	Hunted every year	Did not hunt during any of these years
Statewide[1]	2569	85.7%	84.6%	82.5%	79.9%	78.8%	71.0%	6.6%
NW[2]	439	87.2%	85.0%	81.8%	78.6%	79.5%	71.1%	6.4%
NE	507	83.8%	81.7%	79.7%	77.5%	76.3%	69.0%	8.1%
METRO	500	82.6%	83.6%	81.8%	79.6%	77.4%	69.4%	8.8%
S	488	87.7%	85.7%	84.4%	81.6%	81.4%	73.4%	4.9%
NONMETRO	460	88.7%	86.5%	83.7%	80.9%	78.5%	72.2%	4.1%
		χ^2=11.245* CV=0.069	χ^2=5.410 n.s.	χ^2=4.664 n.s.	χ^2=3.244 n.s.	χ^2=4.387 n.s.	χ^2=3.200 n.s.	χ^2=12.692* CV=0.073

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population. Because this question is strongly correlated to age, this data is also weighted to correct for age.
[2] Regional data is weighted to correct for age.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 9-8: Membership in hunting-related groups

Hunting-related group	% of hunters indicating membership in that group:					
	No Groups[1]	Ducks Unlimited	Delta Waterfowl	MN Waterfowl Assn.	Local sportsmen's club	Other
Statewide[2]	42.9%	37.1%	3.5%	7.8%	20.3%	17.4%
NW	42.6%	33.5%	2.5%	6.4%	24.4%	16.9%
NE	47.5%	35.9%	3.6%	3.7%	17.6%	15.8%
METRO	46.0%	39.2%	4.6%	6.6%	11.6%	18.0%
S	38.1%	36.3%	2.9%	12.5%	30.7%	16.4%
NONMETRO	41.3%	38.9%	3.3%	7.2%	19.3%	19.3%

[1]"Not a member of any conservation/hunting organization" was not a direct question. It was determined by counting those respondents who did not indicate they were members of any of the group categories.
[2] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.

Table 9-9: Did you hunt for waterfowl in a state or province other than Minnesota in 2005?

Residence of hunter	n	Yes
Statewide[1]	2,378	17.3%
NW	435	13.6%
NE	501	23.0%
METRO	491	18.3%
S	480	16.0%
NONMETRO	454	18.3%
		χ^2=15.465**, Cramer's V=0.081

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 9-10: Most popular hunted areas outside of Minnesota for hunting waterfowl

Residence of hunter	Most popular hunted area outside of MN	% of all respondents who hunted that area in 2005	% of all respondents who hunted outside MN who hunted that area in 2005	Average # of days spent hunting that area in 2005	Average # of ducks bagged hunting in that area in 2005
Statewide[1]	North Dakota	9.4%	57.9%	5.9	18.2
NW	North Dakota	8.1%	69.5%	5.8	17.0
NE	North Dakota	14.6%	68.7%	6.1	16.8
METRO	North Dakota	8.7%	47.8%	6.1	17.8
S	North Dakota	8.1%	53.2%	6.4	22.6
NONMETRO	North Dakota	10.9%	67.5%	5.0	16.2

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.

Table 9-11: Do you access the Internet to look up waterfowl hunting information?

Residence of hunter	n	Not at all	Once in a while	Frequently
Statewide[1]	2,375	33.5%	48.5%	18.0%
NW	436	44.0%	45.9%	10.1%
NE	501	38.1%	46.3%	15.6%
METRO	489	26.6%	51.3%	22.1%
S	479	33.4%	48.4%	18.2%
NONMETRO	454	32.4%	47.4%	20.3%
		χ^2=47.615***, Cramer's V=0.100		

[1] A stratified sample based on region of residence was drawn. Statewide data in this table is weighted to reflect regional proportions in the population.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 10: Comparison of 1995, 2000, 2002, and 2005 Minnesota Waterfowl Hunter Survey Findings

In this section, we compare results from this 2005 waterfowl hunter survey to previous studies of Minnesota waterfowl hunters. In 2000 and 2002, similar studies of Minnesota waterfowl hunters were completed (Fulton et al. 2002; Schroeder et al., 2004). Also, in 1995, the Minnesota DNR participated in a survey of duck hunters in 23 states to learn more about duck hunters' experiences and opinions (Ringelman, 1997; Lawrence & Ringelman, 2001). The Ringelman (1997) study surveyed waterfowl hunters for experiences in both 1995 and 1996 because many southern states hunt in January; Minnesota data from this study is only for 1995. Some of the questions asked in these previous surveys are either identical or similar to questions asked in the 2005 waterfowl study. For those questions, a comparison of responses is provided.

Respondent age, Years Hunting and Days Hunting During the Season

The average age of respondents to the 1995 and 2000 surveys was approximately 41 years. The average age of respondents to the survey of the 2002 season was 45.3 years, and the average age of respondents to the survey of the 2005 season was 43.2 years (Table 10-1). There were also significant differences between the 2005 data and the earlier sets of data concerning the average number years hunting waterfowl (Table 10-2). Respondents for the 2005 season report hunting waterfowl an average of 23.1 years compared to 22.9 in 1995, 22.5 in 2000, and 26.9 years in 2002. The differences in age and years hunting waterfowl may reflect differences in sampling. The samples for the 2000 and 2002 seasons included both Minnesota duck stamp purchasers and individuals 16-18 and over 64 years of age who were not required to purchase a duck stamp but registered through the harvest information program (HIP). The sample from the 2005 season did not include HIP registrants (Table 10-3).

The average number of days spent hunting waterfowl also differed significantly when comparing 2005 results to the earlier surveys. Respondents reported hunting an average of 10.2 days in 2005, compared to an average of 9.7 in 2002, 11.5 in 2000 and 10.7 in 1995 (Table 10-4).

Waterfowl Harvest

Reported number of ducks bagged per hunter in 2005 varied significantly from 2002 (χ^2 = 96.754***), 2000 (χ^2 = 79.533***), and 1995/96 (χ^2 = 720.722***) (Table 10-5). A larger percentage of hunters reported that they did not bag any ducks during the 2005 season (17.1%) compared to 2002 (16.2%), 2000 (14.7%), and 1995/96 (5.3%). Also, a larger percentage of hunters (41.1%) reported bagging more than 10 ducks during the 1995 season compared to hunters in 2000 (31.9%), 2002 (32.9%), or 2005 (23.1%). These differences may be due to how the samples were selected in the two studies. The 1995 study sample went only to hunters who had responded to a small-game-hunter survey and had indicated that they had hunted ducks. This sample selection method may have created a "successful hunter" bias in the study sample.

Section 10: Comparison of 1995, 2000, and 2002 Minnesota Waterfowl Hunter Survey Findings

Hunting Participation and Satisfaction

There were some statistically significant differences in participation in the different waterfowl hunts, but differences do not appear substantive (Table 10-6).

There was no significant difference among the 2000, 2002, and 2005 seasons in hunting on the opening Saturday of the season (Table 10-7). However, participation in hunting on the opening Sunday was significantly lower in 2005 (64.9%) compared to 2002 (67.4%) or 2000 (69.7%) (Table 10-8).

There were also significant differences in the regions where respondents reported hunting most frequently. A slightly greater proportion of hunters reported hunting most frequently in the Metropolitan and Southeast regions in 2005 compared to 2002 and 2000, while a slightly smaller proportion of hunters hunted most frequently in the Northwest and Central, non-metropolitan regions (Table 10-9). A slightly smaller proportion of respondents reported hunting outside of Minnesota during the 2005 season (17.3%) than during the 2002 (18.6%) or 2000 season (24.7%) (Table 10-10). However, it must be noted that question phrasing may have caused higher reporting of out-of-state hunting for the 2000 survey. The 2002 and 2005 surveys specified hunting out of state during that season. In the 2000 survey of waterfowl hunters, the question was phrased "Did you waterfowl hunt in a state or province other than Minnesota?" and did not specify the year. Therefore, respondents to the 2000 survey may have responded affirmatively to the question because they hunted outside of Minnesota in years prior to 2000.

Respondents reported significantly lower satisfaction levels for the 2005 season than for the 2002 or 2000 seasons (Table 10-11). On a scale of 1 (very dissatisfied) to 7 (very satisfied), on average respondents rated overall satisfaction with the 2005 season near the neutral point ($\bar{x}$ = 4.2), compared to slightly satisfied in 2002 ($\bar{x}$ = 4.9) and 2000 ($\bar{x}$ = 4.8).

Youth Waterfowl Hunting Day

Based on a scale of 1 (strongly oppose) to 5 (strongly support), support for Youth Waterfowl Hunting Day in 2005 ($\bar{x}$ = 3.6) was significantly lower than in 2000 ($\bar{x}$ = 3.8), but similar to 2002 ($\bar{x}$ = 3.5) (Table 10-12). In 2000, 44.1% of respondents indicated that they strongly supported Youth Waterfowl Hunting Day, compared to 35.8% of respondents in 2002 and 38.0% in 2005.

Battery-Operated, Spinning-Wing Decoys

Use of battery-operated, spinning-wing decoys increased significantly from 10.3% in 2000 to 26.1% in 2002 then declined to 24.2% in 2005 (Table 10-13).

Group Membership

Reported membership in Ducks Unlimited did not change significantly between 2000, 2002, and 2005. However, there were statistically significant changes reported in membership in Delta Waterfowl and the Minnesota Waterfowl Association. Membership in Delta Waterfowl increased from 2.9% of respondents in 2002 to 3.5% of respondents in 2005, while membership in the MWA declined from 11.0% in 2000, to 10.5% in 2002 and 7.8% in 2005. Respondents who reported no memberships in conservation or hunting organizations declined from 46.4% in 2000 to 43.9% in 2002 to 42.9% in 2005. See Table 10-14.

Section 10: Comparison of 1995, 2000, and 2002 Minnesota Waterfowl Hunter Survey Findings

Table 10-1: Age of respondents: 1995, 2000, 2002, and 2005 findings

Study year	N[1]	Average age (years)	Range (years)	t-test, average compared to 2005
1995 hunters	448	40.9	15 - 82	t = 14.231***
2000 hunters	2,454	41.4	16 - 88	t = 12.597***
2002 hunters	3,109	45.3	14 - 88	t = 7.019***
2005 hunters	2,568	43.2	16 – 90	

[1] In 2000, 2002, and 2005, a stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population. Respondents include duck stamp buyers and individuals aged 16-18 or over 64 years who are not required to purchase duck stamps but registered through the hunter information program (HIP). The 2005 sample did not include individuals from the HIP.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-2: Number of years hunting ducks/waterfowl: 1995, 2000, 2002, and 2005 findings

Study year	N[1]	Average number of years hunting ducks/waterfowl[1]	t-test, average compared to 2005
1995 hunters (ducks)	457	22.9	n.s.
2000 hunters (waterfowl)	2,376	22.5	t = 2.466*
2002 hunters (waterfowl)	3,034	26.9	t = 12.464***
2005 hunters (waterfowl)	2,295	23.1	

[1] In 2000 2002,and 2005, a stratified sample based on region of residence was drawn. Data in this table is weighted to reflect regional proportions in the population. Because this question is strongly correlated to age, data is also weighted to correct for age. Respondents include duck stamp buyers and individuals aged 16-18 or over 64 years who are not required to purchase duck stamps but registered through the hunter information program (HIP). The 2005 sample did not include individuals from the HIP.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-3: Frequency distributions of HIP registrants in sample and age of respondents: 2000, 2002, and 2005 surveys

	Sample				Respondents							
Study year	HIP registrants		Stamp buyers		<18 years		>64 years		18-64 years		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
2000 hunters	n.a.	n.a.	n.a.	n.a.	131	5.4%	207	8.5%	2,100	86.1%	2,438	100%
2002 hunters	824	17.2%	3,976	82.8%	103	3.3%	599	19.3%	2,407	77.4%	3,109	100%
2005 hunters	0	0%	4,000	100%	33	1.3%	257	10.0%	2,278	88.7%	2,568	100%

Section 10: Comparison of 1995, 2000, and 2002 Minnesota Waterfowl Hunter Survey Findings

Table 10-4 Number of days hunting waterfowl: 1995, 2000, 2002, and 2005 findings

Study year	n	Average number of days hunting waterfowl	t-test, average compared to 2005
1995 hunters (waterfowl)	463	10.7	t=-2.288*
2000 hunters	2,120	11.5	t=6.345***
2002 hunters (waterfowl)	3,113	9.7	t=2.783**
2005 hunters (waterfowl)	2,137	10.2	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-5: Number of ducks bagged: 1995, 2000, 2002, and 2005 findings

Number bagged	1995 hunters (%)	2000 hunters (%)	2002 hunters (%)	2005 hunters (%)
N	458	1,959	2,027	1,960
Bagged none	5.3%	14.7%	16.2%	17.1%
Bagged 1 – 10	53.6%	53.4%	50.9%	59.8%
Bagged more than 10	41.1%	31.9%	32.9%	23.1%
Chi-square analysis[1]	χ^2=720.722***	χ^2=79.533***	χ^2=96.754***	

[1]Compares year in column to 2005 results.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-6: Waterfowl Hunting Activity: 2000, 2002, and 2005 findings

Study year	n	Hunt ducks	Hunt Canada geese regular season	Hunt Canada geese—early season	Hunt Canada geese—late season	Hunt geese--other
2000 hunters	2,191	92.6% [a]	72.3% [a]	38.5% [a]	9.0% [a]	6.9% [a]
2002 hunters	2,650	93.5% [b]	73.1% [b]	41.9% [b]	13.9% [b]	7.8% [b]
2005 hunters	2,098	92.5%	72.9%	43.6%	13.4%	4.3%
Chi-square analysis[1]		[a] n.s. [b] χ^2=11.039**	[a] n.s. [b] n.s.	[a] χ^2=14.081*** [b] n.s.	[a] χ^2=47.488*** [b] n.s.	[a] χ^2=19.208*** [b] χ^2=30.576***

[1]Chi-square test [a] compares 2000 to 2005 and [b] compares 2002 to 2005..
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-7: Waterfowl Hunting, Opening Saturday: 2000, 2002, and 2005 findings

Study year	N	Hunt opening Saturday	Chi-square analysis, proportion compared to 2005
2000 hunters	2,191	63.2%	n.s.
2002 hunters	2,745	64.4%	n.s.
2005 hunters	2,118	63.0%	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 10: Comparison of 1995, 2000, and 2002 Minnesota Waterfowl Hunter Survey Findings

Table 10-8: Waterfowl Hunting, Opening Sunday: 2000, 2002, and 2005 findings

Study year	N	Hunt opening Sunday	Chi-square analysis, proportion compared to 2005
2000 hunters	2,191	69.7%	χ^2=20.550***
2002 hunters	2,745	67.4%	χ^2=4.791*
2005 hunters	2,120	64.9%	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-9: Region Most Frequently Hunted: 2000, 2002, and 2005 findings

Study year	N	Region 1 NW	Region 2 NE	Region 3 EC	Region 4 SW	Region 5 SE	Region 6 M	Chi-square analysis[1]
2000 hunters	2,192	27.7%	6.7%	23.4%	27.7%	6.4%	8.1%	χ^2=336.058***
2002 hunters	2,650	28.3%	7.0%	23.3%	24.6%	9.4%	7.4%	χ^2=335.821***
2005 hunters	2,088	21.4%	7.5%	19.7%	26.2%	11.5%	13.7%	

[1] 2000 or 2002 compared to 2005.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-10: Hunt Outside Minnesota: 2000, 2002, and 2005 findings

Study year	N	Hunt Outside Minnesota	Chi-square analysis, proportion compared to 2005
2000 hunters	2,399	24.7%	χ^2=75.501***
2002 hunters	3,035	18.6%	n.s.
2005 hunters	2,378	17.3%	

2000 study asked "Did you waterfowl hunt in a state or province other than MN?"
2002/2005 surveys asked "Did you hunt for waterfowl in a state or province other than MN in (year)?"
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-11: Overall Satisfaction With Waterfowl Hunting: 2000, 2002, and 2005 findings

Study year	N	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neutral	Slightly satisfied	Moderately satisfied	Very satisfied	Chi-square analysis[1]	Means
2000 hunters	1,788	8.8%	10.3%	11.4%	4.0%	15.3%	30.8%	19.5%	χ^2=201.343***	4.77[2]
2002 hunters	2,604	7.0%	8.9%	10.4%	5.5%	16.0%	35.0%	17.1%	χ^2=300.036***	4.88[3]
2005 hunters	1,997	14.1%	14.2%	12.5%	6.1%	16.8%	24.6%	11.7%		4.18
	χ^2=46.745***									

[1] 2000 or 2002 compared to 2005.
[2] 2000 compared to 2005, t=13.029***
[3] 2002 compared to 2005, t=15.434***
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Section 10: Comparison of 1995, 2000, and 2002 Minnesota Waterfowl Hunter Survey Findings

Table 10-12 Support for Youth Waterfowl Hunting Day: 2000, 2002, and 2005 findings

Study year	n	Strongly oppose	Oppose	Neutral	Support	Strongly support	Chi-square analysis[1]	Means
2000 hunters	2,432	11.7%	9.4%	13.0%	21.7%	44.1%	χ^2=122.615***	3.77[2]
2002 hunters	3,027	17.0%	9.3%	12.7%	25.2%	35.8%	n.s.	3.53[3]
2005 hunters	2,357	17.3%	9.5%	10.5%	24.7%	37.9%		3.56
	χ^2=155.028***							

[1] 2000 or 2002 compared to 2005.
[2] 2000 compared to 2005, t=6.565***
[3] 2002 compared to 2005, n.s.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-13: Use Battery-Operated, Spinning-Wing Decoys: 2000, 2002, and 2005 findings

Study year	Question	n	Use Battery-Operated, Spinning-Wing Decoys	Chi-square analysis, proportion compared to 2005
2000 hunters	Have you used battery-operated, rotating wing decoys when hunting?	2,440	10.3%	χ^2=497.156***
2002 hunters	Did you use battery-operated, spinning-wing decoys when hunting in Minnesota during the (year) waterfowl season?	3,015	26.1%	n.s.
2005 hunters		2,363	24.2%	

n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

Table 10-14 Group Membership : 2000, 2002, and 2005 findings

Study year	n	Ducks Unlimited	Delta Waterfowl	Minnesota Waterfowl Association	Local sportsman's club	No memberships[1]
2000 hunters	2,454	35.6%[a]	Not asked	11.0%[a]	16.0%[a]	46.4%[a]
2002 hunters	2,635	36.8%[b]	2.9%[b]	10.5%[b]	22.3%[b]	43.9%[b]
2005 hunters	2,392	37.1%	3.5%	7.8%	20.3%	42.9%
Chi-square analysis[2]		[a] n.s. [b] n.s.	[b] χ^2=4.188*	[a] χ^2=23.795*** [b] χ^2=17.489***	[a] χ^2=19.989*** [b] χ^2=11.949**	[a] χ^2=12.047** [b]n.s.

[1]"Not a member of any conservation/hunting organization" was not a direct question. It was determined by counting those respondents who did not indicate they were members of any of the group categories.
[2]Chi-square test [a] compares 2000 to 2005 and [b] compares 2002 to 2005.
n.s. = not significant, *p < 0.05, **p< 0.01, ***p< 0.001

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Appendix A: Survey Instrument

THE 2005 WATERFOWL HUNTING SEASON IN MINNESOTA

A study of hunters' opinions and activities

White-winged scoter

A cooperative study conducted by the University of Minnesota for the Minnesota Department of Natural Resources

Your help on this study is greatly appreciated!

Please return your completed questionnaire in the enclosed envelope. The envelope is self-addressed and no postage is required. Thanks!

Minnesota Cooperative Fish and Wildlife Research Unit,
Department of Fisheries, Wildlife and Conservation Biology
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Appendix A: Survey Instrument

Part I. Your Waterfowl Hunting Background

We would like to know about your background and experience as a waterfowl hunter.

Q1. **In what year did you first hunt waterfowl, not necessarily in Minnesota? *If uncertain please estimate*.**

_____ year (*If you have never hunted waterfowl, please enter '0' here, and return your survey*.)

Q2. **How many years have you hunted waterfowl in Minnesota? *If uncertain please estimate*.**

_____ years

Q3. **For the previous 5 years, indicate which years you hunted waterfowl in Minnesota? (*Check all that apply*.)**

- ❑ 2004
- ❑ 2003
- ❑ 2002
- ❑ 2001
- ❑ 2000
- ❑ I did not hunt during any of these years.

Q4. Did you hunt waterfowl in Minnesota during the 2005 season? (*Please check one.*)

- ❑ No. → (***Skip to Part V, question Q16.***)
- ❑ Yes. (Please continue with *Part II, Q5*.)

Part II. Your 2005 Minnesota Waterfowl Hunting Season

Next we have a few questions about your hunting experiences during the 2005 Minnesota waterfowl-hunting season. (*If you did not hunt waterfowl in Minnesota in 2005 please skip to question Q16.)*

Q5. Please indicate whether you hunted for the following kinds of waterfowl in Minnesota in 2005. If you did hunt, estimate the total number of that kind of waterfowl you bagged (shot and retrieved).

During the 2005 waterfowl season, did you hunt in Minnesota for:	*Please circle no or yes.*		If yes, how many did you personally bag in Minnesota? (*Write in number bagged.)*
Ducks	no	yes	_____ducks
Canada Geese during:			
Early September Canada Goose Season	no	yes	_____geese
Regular Canada Goose Season (October—Early December)	no	yes	_____geese
Late Goose Season (December)	no	yes	_____geese
Other Geese (Snow Geese, etc.)	no	yes	_____geese

Q6. During the 2005 Minnesota waterfowl season, about how many days did you hunt on…

Weekend days or holidays: _____days

Weekdays (Monday-Friday): _____days

Q7. Did you hunt the opening Saturday (Oct. 1) of the 2005 Minnesota Season? (*Please check one*.)

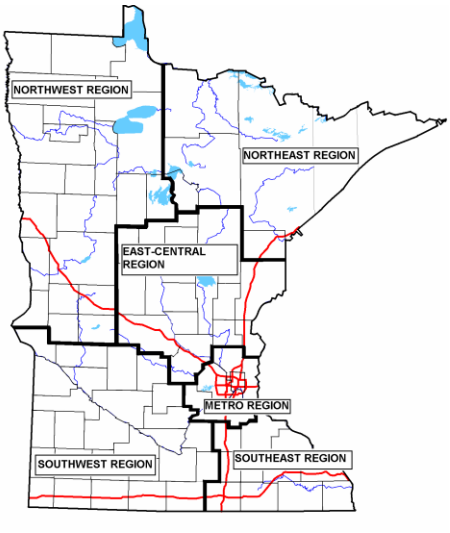
- ❑ YES
- ❑ NO

Q8. Did you hunt the first Sunday (Oct. 2) of the 2005 Minnesota Season? (*Please check one.*)

- ❑ YES
- ❑ NO

Q9. During the 2005 Minnesota waterfowl-hunting season, how many days did you hunt in each region? (*See map.*) *Do not include days hunted during the special September or December goose seasons.*

Region	Number of Days
Northwest region	days
Northeast region	days
East-central region	days
Southwest region	days
Southeast region	days
Metro region	days



Q10. During the 2005 Minnesota waterfowl season, did you hunt with a paid hunting guide?

I **goose** hunted with a paid guide _____never _____sometimes _____always

I **duck** hunted with a paid guide _____never _____sometimes _____always

Part III. Your Hunting Satisfaction

Q11. During the 2005 Minnesota waterfowl hunting season, how satisfied or dissatisfied were you with the following? (*Please circle one response for each. If you did not hunt ducks or geese please circle "9" in the far right column.*)

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Did not hunt ducks/geese
General waterfowl hunting experience	1	2	3	4	5	6	7	9
DUCKS:								
hunting experience	1	2	3	4	5	6	7	9
hunting harvest	1	2	3	4	5	6	7	9
hunting regulations	1	2	3	4	5	6	7	9
GEESE:								
hunting experience	1	2	3	4	5	6	7	9
hunting harvest	1	2	3	4	5	6	7	9
hunting regulations	1	2	3	4	5	6	7	9

Q12. During the past three duck and goose hunting seasons in Minnesota, would you say your overall level of satisfaction with waterfowl hunting in Minnesota has generally decreased or increased? (*Please circle one for each*.)

	Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Did not hunt ducks/geese
Ducks	1	2	3	4	5	9
Geese	1	2	3	4	5	9

Q13. Since you began hunting ducks and geese in the state, would you say your overall satisfaction with duck and goose hunting in Minnesota has decreased or increased? (*Please circle one response for each*.)

	Greatly decreased	Decreased	Stayed the same	Increased	Greatly increased	Did not hunt ducks/geese
Ducks	1	2	3	4	5	9
Geese	1	2	3	4	5	9

Q14. During the 2005 Minnesota waterfowl hunting season, how satisfied or dissatisfied were you with the number of ducks and geese you saw in the field? (*Please circle one response for each*.)

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly	Moderately satisfied	Very satisfied	Did not hunt ducks/geese
Number of ducks **seen**	1	2	3	4	5	6	7	9
Number of geese **seen**	1	2	3	4	5	6	7	9

Part IV. Motivations for Waterfowl Hunting

Q15. Please tell us how important each of the following experiences was to your waterfowl hunting satisfaction during the 2005 season. (*Please circle one response for each*.)

	Not at all important	Slightly important	Somewhat important	Very important	Extremely important
A large daily duck bag limit	1	2	3	4	5
Access to a lot of different hunting areas	1	2	3	4	5
Bagging ducks and geese	1	2	3	4	5
Being on my own	1	2	3	4	5
Hunting with friends	1	2	3	4	5
Developing my skills and abilities	1	2	3	4	5
Hunting with family	1	2	3	4	5
Enjoying nature and the outdoors	1	2	3	4	5
Getting away from crowds of people	1	2	3	4	5
Getting food for my family	1	2	3	4	5
Getting information about hunting seasons and conditions from the DNR or US Fish and Wildlife Service	1	2	3	4	5
Getting my limit	1	2	3	4	5
Good behavior among other waterfowl hunters	1	2	3	4	5
Having a long duck season	1	2	3	4	5
Hunting areas open to the public	1	2	3	4	5
Hunting with a dog	1	2	3	4	5
Reducing tension and stress	1	2	3	4	5
Seeing a lot of ducks and geese	1	2	3	4	5
Sharing my hunting skills and knowledge	1	2	3	4	5
Thinking about personal values	1	2	3	4	5
Using my hunting equipment (decoys, boats, etc.)	1	2	3	4	5

Part V. General Waterfowl Hunting Information

Next we have a few general questions about waterfowl hunting. *Please respond to these questions even if you did not hunt waterfowl in Minnesota in 2005.*

Q16. How important is waterfowl hunting to you? (*Please check one*.)

- ❑ It is my most important recreational activity.
- ❑ It is one of my most important recreational activities.
- ❑ It is no more important than my other recreational activities.
- ❑ It is less important than my other recreational activities.
- ❑ It is one of my least important recreational activities.

Q17. About how much do you spend on waterfowl hunting each year? (*Please check one*.)

- ❑ $250 or less
- ❑ $251-$1,000
- ❑ $1,001-$5,000
- ❑ Over $5,000

Q18. What is the minimum number of ducks you need to harvest in a day's hunt to feel satisfied with your harvest?

_____ ducks

Q19. What is the minimum number of ducks you need to harvest in a season to feel satisfied with your harvest?

_____ ducks

Q20. What is the minimum number of geese you need to harvest in a day's hunt to feel satisfied with your harvest?

_____ geese

Q21. What is the minimum number of geese you need to harvest in a season to feel satisfied with your harvest?

_____ geese

Q22. The U.S. Fish and Wildlife Service allowed states to have a 6 duck daily bag limit in 2005. Which one statement best describes how you feel about the total daily duck bag limit in Minnesota (4 ducks)?

- ❑ The daily limit was too low.
- ❑ The daily limit was about right.
- ❑ The daily limit was too high.
- ❑ No opinion.

Q23. The U.S. Fish and Wildlife Service allowed states to have a 2 hen mallard daily bag limit in 2005. Which one statement best describes how you feel about the hen mallard daily bag limit in Minnesota (1 hen mallard)?

- ❑ The daily limit was too low.
- ❑ The daily limit was about right.
- ❑ The daily limit was too high.
- ❑ No opinion.

Appendix A: Survey Instrument

Q24. Thinking about changes in hunting quality over the last 5 years in Minnesota, how much better or worse do you think the following have become?

	Much worse	Somewhat worse	Neither better nor worse	Somewhat better	Much better	Don't know
Waterfowl habitat where I hunt	1	2	3	4	5	9
When waterfowl are arriving in my area	1	2	3	4	5	9
The length of time waterfowl are staying in my area	1	2	3	4	5	9
Timing of waterfowl seasons	1	2	3	4	5	9
Overall waterfowl numbers	1	2	3	4	5	9
Ease of understanding regulations	1	2	3	4	5	9
The number of places to hunt	1	2	3	4	5	9
Amount of time I have to hunt waterfowl	1	2	3	4	5	9
Weather patterns for waterfowl hunting	1	2	3	4	5	9

Q25. Indicate how much more or less of a problem the following have become over the last 5 years in Minnesota.

	Much worse	Somewhat worse	Neither better nor worse	Somewhat better	Much better	Don't know
Crowding at hunting areas	1	2	3	4	5	9
Hunting pressure	1	2	3	4	5	9
Waterfowl unable to find rest areas	1	2	3	4	5	9
Shifting waterfowl migration routes	1	2	3	4	5	9
Interference from other hunters	1	2	3	4	5	9
Waterfowl arriving after the season is closed	1	2	3	4	5	9
Waterfowl concentrating on fewer areas	1	2	3	4	5	9
Waterfowl numbers on opening weekend	1	2	3	4	5	9

Part VI. Waterfowl Management and Special Regulations

Q26. On the opening day of the duck season, would you most prefer shooting hours begin at: (*Please check one.*)

- ❑ Noon
- ❑ 9 a.m.
- ❑ 1/2 hour before sunrise

Q27. In recent years, the open season for canvasbacks and/or pintails has been 30 days within a 60-day regular duck season. When shortened seasons are required for both canvasbacks and pintails, what is your preference for season dates? (*Please check one.*)

- ❑ Both seasons begin on opening day
- ❑ Different season dates for both timed to coincide with peak migration for each species
- ❑ No preference

Q28. Last season, the bag limit on scaup was reduced from 3 birds/day to 2 birds/day because of a declining continental population. If further restrictions were required in the future, which season option would you prefer for scaup during a 60-day regular duck season: (*Please check one.*)

- ❑ Smaller daily bag limit with longer open season (for example, 1 scaup/day for 60 days)
- ❑ Higher daily bag limit with shorter open season (for example, 2 scaup/day for 30 days)

Q29. In the West Central, West and Northwest goose zones, season lengths and bag limits for Canada geese have remained more restrictive than the remainder of the state due to the status of the Eastern Prairie Population of Canada geese. Which season alternative would you prefer in those goose zones? (*Please check one.*)

- ❑ Smaller daily bag limit with longer open season (for example, 1 Canada goose/day for 40 days)
- ❑ Higher daily bag limit with shorter open season (for example, 2 Canada geese/day for 30 days)

Q30. In the future, states may allow hunting practices that are currently illegal in order to control resident Canada goose populations (geese that nest in Minnesota). These could include unplugged shotguns, electronic calls, hunting after sunset, and hunting during August. How much do you support/oppose each of the following methods for controlling resident Canada geese in Minnesota during the early (currently September) Canada goose season only: (*Please circle one for each.*)

	Strongly oppose	Oppose	Neither support nor oppose	Support	Strongly support	Don't know
Hunt with unplugged shotguns (currently only 3 shells are allowed)	1	2	3	4	5	9
Use electronic calls (currently illegal)	1	2	3	4	5	9
Hunt until ½ hour after sunset (currently closes at sunset)	1	2	3	4	5	9
Allow goose hunting in August (season currently begins in early September)	1	2	3	4	5	9

Appendix A: Survey Instrument

Part VII. Waterfowl Hunting Zones

Every 5 years, the U.S. Fish and Wildlife Service offers states the opportunity to establish zones and/or split seasons for duck hunting. Zones divide the state into 2 areas (for example, north and south) with different season dates in each zone. Split seasons open for a period of time, close, and reopen at a later date. Minnesota has not used zones for duck hunting, and in most years has had a continuous duck season (no splits). Both zones and split seasons provide later hunting opportunity within a season but add complexity to the regulations. The next series of questions addresses your opinions on establishing duck hunting zones and/or split seasons in Minnesota for 2006-2010.

Q31. Would you support or oppose the following options?

	Strongly oppose	Oppose	Neutral	Support	Strongly support	Don't know
Establishing a North and South Zone for duck hunting in the state that would have different season dates in each zone	1	2	3	4	5	9
Having split seasons instead of one continuous duck season	1	2	3	4	5	9

Q32. If the duck season needed to be shortened to 30 days in a future year, <u>which one of the following three options</u> would you prefer: (*Please check <u>one</u>*.)

❑ A statewide season with no zones or splits (for example, Oct. 1-Oct. 30).

October

S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

❑ A statewide season with 3 season segments (for example, Oct. 1 – Oct. 9, Oct. 13 – Oct. 30, Nov. 4 – Nov 6).

October

S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

November

S	M	T	W	TH	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

❑ Two zones (north and south) with a continuous season in the north zone (for example, Oct. 1-Oct. 30) and a split season in the south zone (for example, Oct. 1-Oct. 9 and Oct. 22 – Nov. 11).

<u>North Zone</u>

October

S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

<u>South Zone</u>

October

S	M	T	W	TH	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

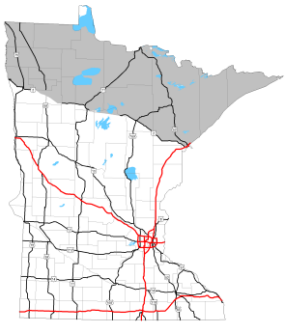
November

S	M	T	W	TH	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

No opinion/undecided

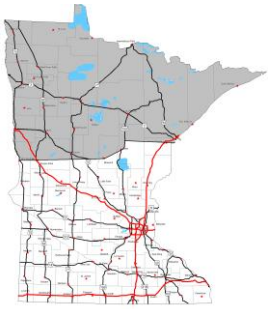
Q33. If zone boundaries for duck hunting were to be established in Minnesota, which boundary would you prefer? The opening date would remain the same for both zones (Saturday nearest Oct. 1). The season in the north zone (shaded) would remain a continuous season and the season in the south zone would include 1 split (period of closed hunting). **(*Please check one*.)**

❑ Highway 2 boundary

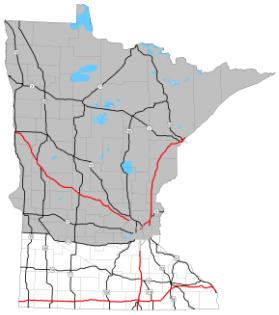


❑ Highway 94 boundary

❑ Highway 210 boundary



❑ Highway 212 boundary



❑ Do not use zones.
❑ No opinion/undecided.

Q34. If split seasons are used in Minnesota, which time period would you prefer to have the season *closed* for a period of 3 to 12 days for the area that you hunt the most? (*Check only 1 box.*):

❑ Early October (October 1-10)
❑ Mid October (October 11-20)
❑ Late October (October 21-31)
❑ Early November (November 1-10)
❑ Do not split season
❑ No opinion/undecided

Part VIII. Youth Waterfowl Hunting Day

Since 1997, the U.S. Fish and Wildlife Service has allowed states to select a Youth Waterfowl Hunting Day outside the regular waterfowl season for youth age 15 and younger to take ducks and geese. Beginning in 2000, states could designate two days for the Youth Waterfowl Hunt. During this event adults accompany youth, but may not hunt waterfowl themselves. Because of the season structure in Minnesota, Youth Waterfowl Hunting Day is held before the regular waterfowl season opening. Minnesota has offered a one-day Youth Waterfowl Hunt since 1997.

Q35. Do you support or oppose the concept of Youth Waterfowl Hunting Day? (*Please check one.)*

- ❑ Strongly oppose
- ❑ Oppose
- ❑ Undecided or neutral
- ❑ Support
- ❑ Strongly support

67Q36. Last September (2005), did you take any youth hunting on Youth Waterfowl Hunting Day? (*Please check one.)*

- ❑ No → **(***Skip to Q37).*
- ❑ Yes. (*Please answer questions Q36a-Q36b.*)

Q36a. If yes, how many youths did you take? _____ youths

Q36b. How many total waterfowl did the youths harvest? _____ ducks

_____ geese

Part IX. Battery-Operated Spinning-Wing Decoys

Q37. Do you own a battery-operated, spinning-wing decoy? *(Please check one.)*

- ❑ No
- ❑ Yes

Q38. Did you use battery-operated, spinning-wing decoys when hunting in Minnesota during the 2005 waterfowl season? (*Please check one.)*

- ❑ No
- ❑ Yes

Q39. Do you support or oppose the following… (*Circle one for each.)*

	Strongly oppose	Oppose	Neutral	Support	Strongly support
Prohibit the use of motorized decoys or other motorized devices for the first 8 days of the duck season. (Current regulation)	1	2	3	4	5
Prohibit use of motorized decoys or other motorized devices on Department of Natural Resources Wildlife Management Areas. (Current regulation)	1	2	3	4	5
Prohibit use of motorized decoys or other motorized devices on all Migratory Waterfowl Feeding and Resting Areas (35 lakes where outboard motor use is prohibited) (proposed)	1	2	3	4	5

Part X. About You

Q40. Are you currently a member of: (*Check all that apply*.)

- ❑ Ducks Unlimited
- ❑ Delta Waterfowl
- ❑ Minnesota Waterfowl Association
- ❑ Local sportsman's club
- ❑ Other national/statewide conservation/hunting organization(s) *Please specify*: _____

Q41. Do you access the Internet to look up waterfowl hunting information? (*Please check one.*)

- ❑ Not at all
- ❑ Once in a while
- ❑ Frequently

Q42. Did you hunt for waterfowl in a state or province other than Minnesota in 2005? (*Please check one*.)

- ❑ No
- ❑ Yes. (*Please answer question Q42a*.)

→ **Q42a. If yes, list locations, number of days you hunted waterfowl, and number you personally bagged in that area during 2005:**

STATE OR PROVINCE	NUMBER OF DAYS HUNTED WATERFOWL	NUMBER OF DUCKS YOU PERSONALLY BAGGED	NUMBER OF GEESE YOU PERSONALLY BAGGED
_____	_____ days	_____ ducks	_____ geese
_____	_____ days	_____ ducks	_____ geese
_____	_____ days	_____ ducks	_____ geese

Please write additional comments below or on additional sheets. Survey results will be available in the summer of 2006 on the Minnesota Department of Natural Resources Web site, www.dnr.state.mn.us. If you have a question about the survey, contact Sue at 612-624-3479. If you have a specific question about waterfowl hunting, please contact the Minnesota DNR at 1-888-MINNDNR.