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Research Program

Illinois Natural History Survey
Prairie Research Institute
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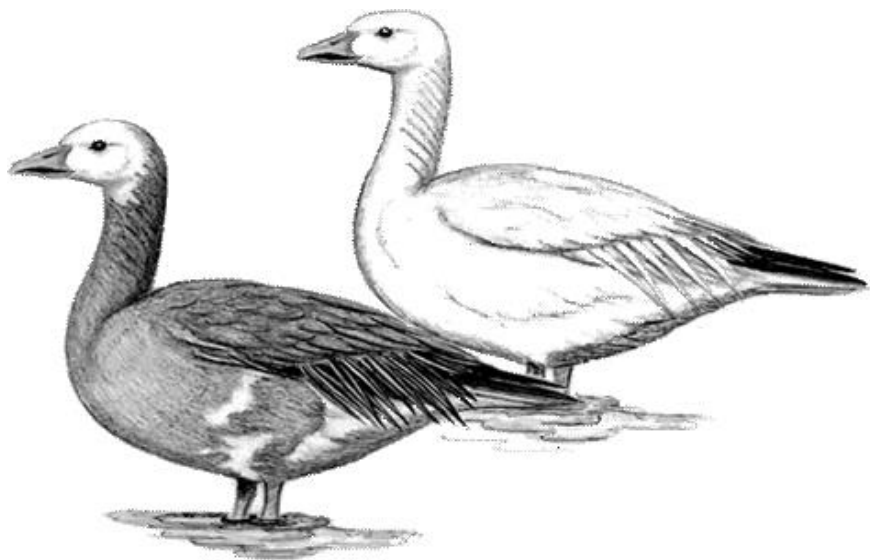
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Colleen Callahan, Director
Illinois Department of Natural
Resources

Paul Vehlow,
Federal Aid Coordinator

Mike Wefer,
Chief, Division of Wildlife
Resources

Hunter Participation, Harvest, and Hunting Behavior During the 2019 Illinois Conservation Order



Craig A. Miller, Ph.D.
Program Leader and Principal Investigator
Human Dimensions Research Program
Illinois Natural History Survey

Prepared by
Craig A. Miller, Ph.D., Lauren J. Stephens,
Eric M. Walberg, and Brent D. Williams



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HUNTER PARTICIPATION, HARVEST, AND HUNTING
BEHAVIOR DURING THE 2019 ILLINOIS
CONSERVATION ORDER

JOB COMPLETION REPORT

WILDLIFE HARVEST AND
HUMAN DIMENSIONS RESEARCH PROGRAM

STATE OF ILLINOIS

PROJECT NUMBER: W-112-R-28
STUDY 101
JOB NO. 101.4

Craig A. Miller, Ph.D.
Program Leader and Principal Investigator
Human Dimensions Research Program
Illinois Natural History Program
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Champaign, IL
November 27, 2019

Federal Aid in Wildlife Restoration
W-112-R-28
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ABSTRACT

Harvest of light geese (*Chen caerulescens*, *Chen rossii*) during the 2019 Illinois Light Goose Conservation Order was estimated at 86,683. An estimated 2,694 hunters participated in the 2019 Illinois Light Goose Conservation Order. Hunters spent an estimated 30,206 days afield during 2019, and the majority (64%) of the snow goose harvest occurred during the month of February. Due to changes in sampling of addresses and calculation of estimates, comparisons should not be made to years prior to 2014. Hunters were sampled from Harvest Information Program (HIP) registrants who reported they hunted snow and other light geese (including Ross' and Blue geese) during the 2018 Light Goose Conservation Order. Electronic calls were used by 83.8% of hunters, 80.2% used unplugged shotguns, and 59.5% reported hunting between sunset and ½ hour after sunset. About forty-four percent of active snow goose hunters indicated an increase in effort over the past five years, and 7.2% of hunters had increased harvest of snow goose over the previous 5 years. Approximately fifty-three percent of active snow goose hunters used a guide or outfitter while hunting snow geese during the 2019 order.

OBJECTIVE

To survey hunters participating in the Light Goose Conservation Order (hereafter, spring) to determine their activities and harvests in Illinois, as well as their opinions toward specific waterfowl management issues.

METHODS

The sample frame for this survey changed in 2014 and we recommend closely examining confidence intervals when making any comparisons of results between results prior to 2014. The 2014 Harvest Information Program (HIP) registration was the first year in which hunters were asked if they hunted snow geese during the Light Goose Conservation Order the previous year. Addition of this question allowed for more precise sampling of likely participants since the 2015 Light Goose Illinois Conservation Order than did a random sample of Illinois State Waterfowl Stamp purchasers, the sampling method used in previous snow goose hunter surveys in Illinois (Williams et al. 2013). A total of 3,000 waterfowl hunters were randomly

selected from HIP registrants who reported they hunted snow geese during the 2018 Light Goose Conservation Order in Illinois and purchased a state waterfowl stamp. Hunters sampled were mailed an 8-page mail-back questionnaire (Appendix A) and cover letter (Appendix B) 04 June 2019. Non-respondents were mailed a thank you/reminder postcard (Appendix C) 26 June 2019, a second copy of the questionnaire and cover letter (Appendix D) 15 July 2019, and another thank you/reminder postcard 30 July 2019. A third copy of the questionnaire and cover letter (Appendix D) was mailed 14 August 2019. The number of snow goose hunters ($Hunt_{sp}$), days afield ($Days_{sp}$), birds crippled but not retrieved ($Crip_{sp}$) and harvest ($Harv_{sp}$) were calculated as follows:

$$\begin{aligned}
 Hunt_{sp} &= Hunt_r \frac{L_t}{n}, & Days_{sp} &= Days_r \frac{L_t}{n}, \\
 Crip_{sp} &= Crip_r \frac{L_t}{n}, & Harv_{sp} &= Harv_r \frac{L_t}{n}
 \end{aligned}$$

Where:

$Hunt_r$ = number of respondents to the 2019 Illinois Spring Snow Goose Hunter Survey who reported hunting snow geese (adjustment for non-hunters is inherent),

L_t = total number of Harvest Information Program (HIP) registrants who indicated they hunted snow geese in Illinois during 2018-19 waterfowl hunting season,

n = number of respondents to the 2019 Illinois Spring Snow Goose Hunter Survey,

$Days_r$ = total number of days spent hunting reported by respondents,

$Crip_r$ = total number of birds crippled but not retrieved reported by respondents,

$Harv_r$ = total harvest of each species reported by respondents.

The 2019 estimates for number of hunters, days hunted, and snow geese harvested were based on 6,329 HIP registrants who reported they hunted during the 2018 Light Goose Conservation Order. Estimated snow goose harvest was not adjusted for reporting bias using 0.478 as has been done in previous years (for discussion of this estimator related to waterfowl harvest, see Anderson et al. 1996). Ninety-five percent

confidence intervals were calculated for number of hunters, days hunted, and geese harvested, as described in Lischka et al. (2006). We entered and analyzed data using SPSS 26.0 (IBM SPSS Inc. 2019). Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

ORDER DATES AND BAG LIMITS

The 2019 spring goose order took place from 18 January to 31 March in the North Zone and from 1 February to 31 March in the Central, South Central, and South Zones. The order began in each zone the day after regular Canada goose (*Branta canadensis*) season closed. Hunters during the spring light goose order were required to have a state waterfowl stamp and hunting license, but were exempt from daily bag and possession limits, and needing a federal waterfowl stamp. Hunters were permitted to use unplugged shotguns, electronic calls, and to hunt from one half-hour before sunrise to half-hour after sunset; these liberalized regulations were not permitted during waterfowl seasons.

RESULTS

Harvest Results

The questionnaire was undeliverable to 99 addresses, reducing the mailing list to 2,901 individuals. A total of 1,346 questionnaires were returned, of which 928 were considered usable, for a 32% response rate. Approximately two-thirds (64.7%) of respondents reported that they hunt waterfowl other than light geese every year (Figure 1). Just under 22% of respondents reported that they did not hunt waterfowl (ducks and/or geese during the 2018-19 regular waterfowl season (Figure 2). A large majority (94.4%) of respondents participated in the regular duck season, 88.2% participated in the regular goose season, 49.6% participated in the September Canada goose season, and 44.7% in the September teal season during the 2018-19 hunting season (Figure 3). When asked about which species they hunted most often, 44.1% of respondents hunted ducks most often, 16.7% hunted geese most often, and 39.2% hunted ducks and geese equally (Figure 4). Of those who hunted during the regular goose season, 29.2% harvested snow geese (Figure 5), and harvested an

average of 11.81 (S.D. 20.08) snow geese. The majority (57.8%) hunted in the Central zone most often (Figure 6).

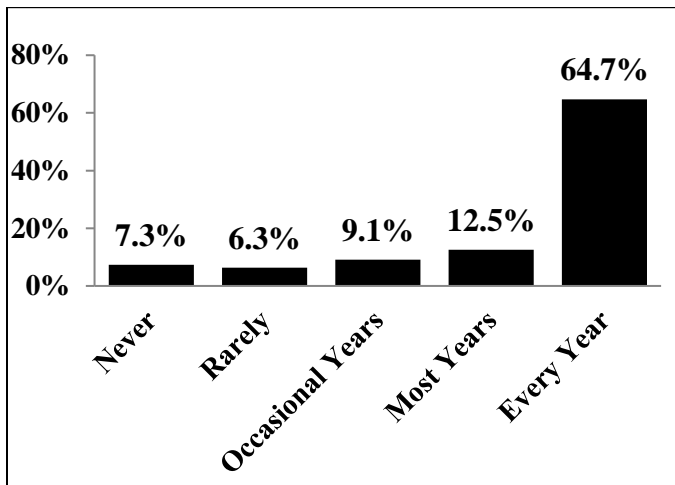


Figure 1. How often survey respondents hunt waterfowl other than light geese in Illinois ($n = 887$).

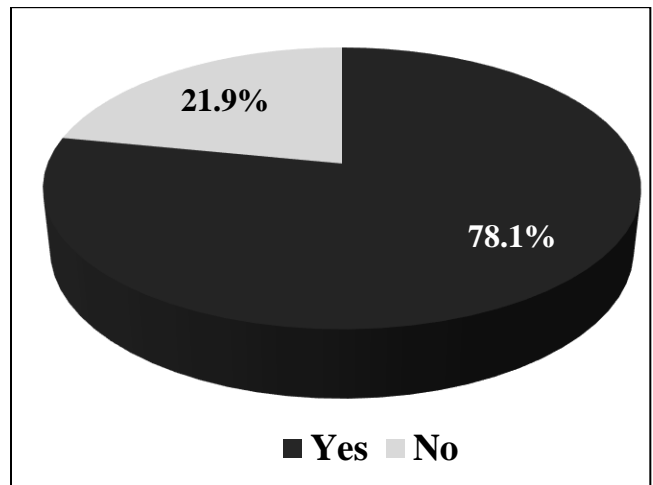


Figure 2. Percentage of survey respondents who hunted waterfowl in Illinois during the 2018-19 waterfowl season ($n = 890$).

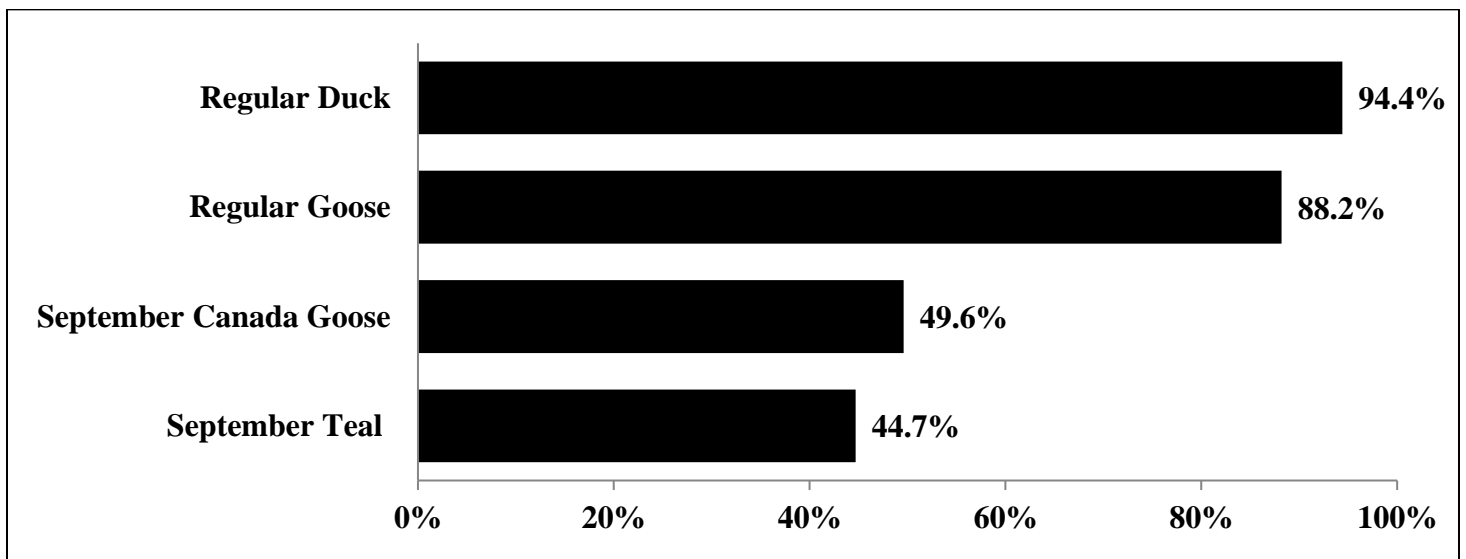


Figure 3. The seasons that survey respondents participated in during the 2018-19 waterfowl hunting season ($n = 695$).

*Percentages do not add up to 100 because some hunters indicated they hunted multiple seasons.

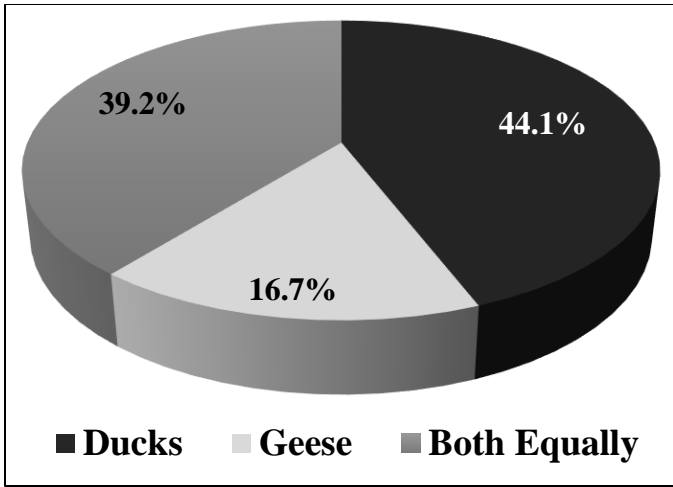


Figure 4. Species hunted most often in Illinois during the 2018-19 waterfowl season ($n = 691$).

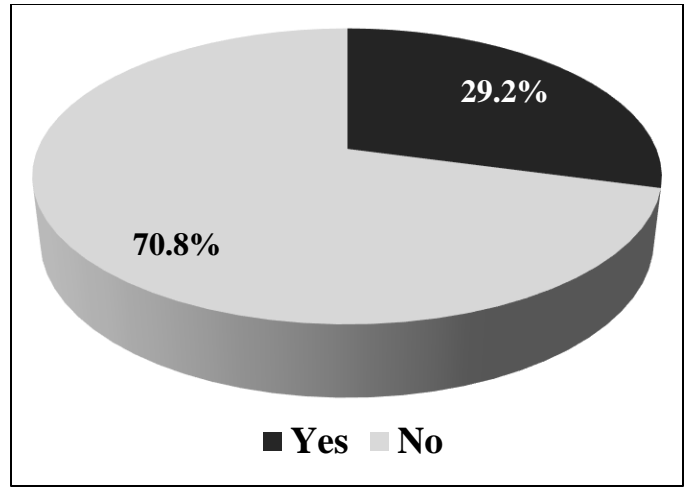


Figure 5. Percentage of respondents who harvested snow geese during the 2018-19 regular goose season ($n = 620$).

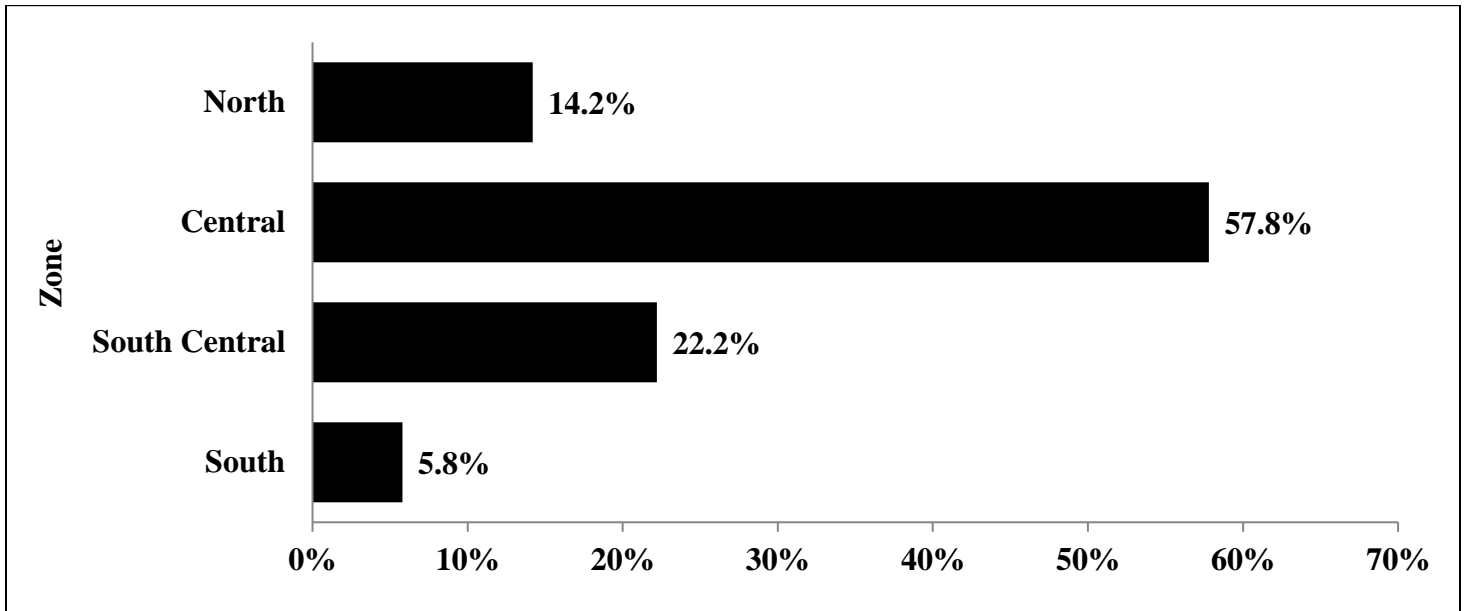


Figure 6. Zone hunted most often during the 2018-19 regular waterfowl seasons ($n = 692$).

Slightly less than half (45.3%) of respondents reported hunting snow geese during the 2019 Light Goose Conservation Order (Figure 7). Most (93.3%) snow goose hunters also hunted during the regular waterfowl seasons (Figure 8). Approximately 64% of these active hunters reported they hunted snow geese every year (Figure 9). More than half (58.4%) of active hunters reported hunting the Central Zone most often for snow geese (Figure 10).

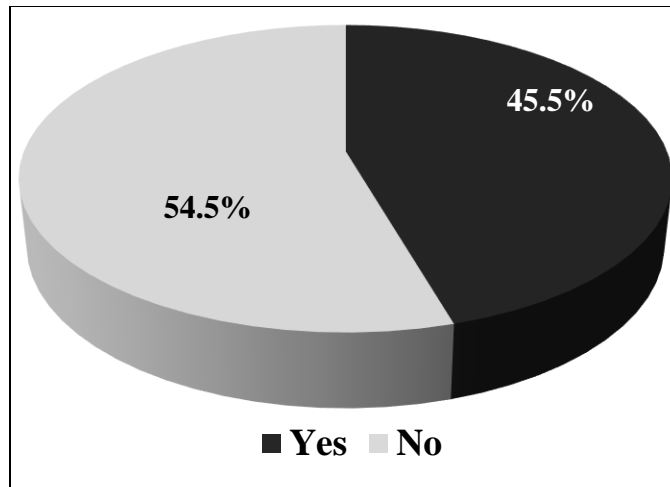


Figure 7. Percentage of survey respondents who hunted snow geese in Illinois during the 2019 spring snow goose order ($n = 924$).

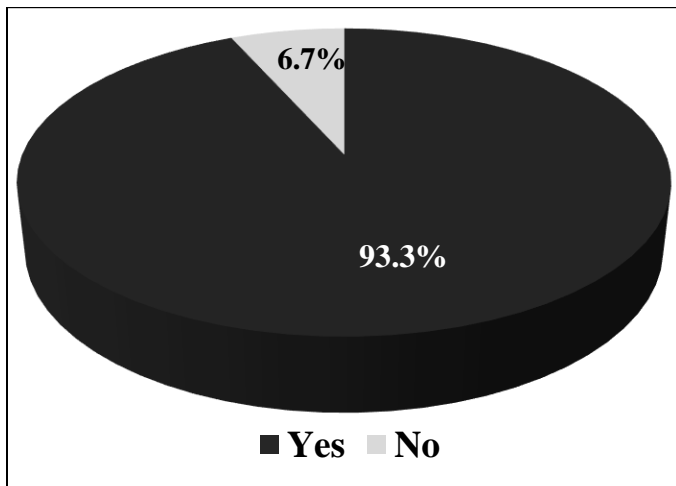


Figure 8. Percentage of snow goose hunters* who hunted waterfowl in Illinois during the 2018-19 regular waterfowl season ($n = 419$).

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

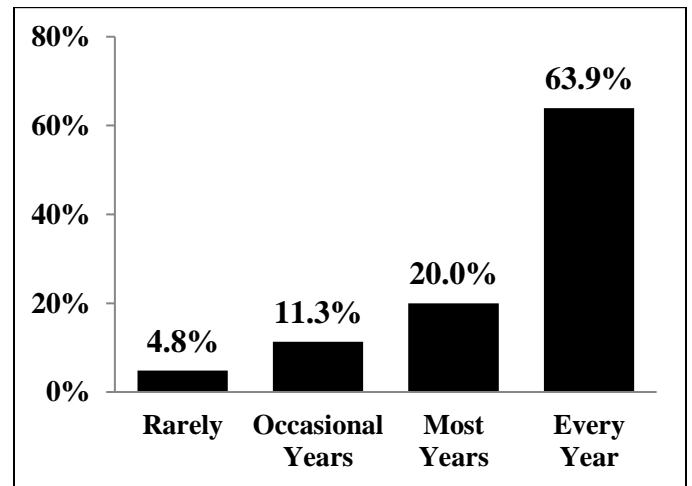


Figure 9. How often snow goose hunters* hunt the spring snow goose order in Illinois ($n = 415$).

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

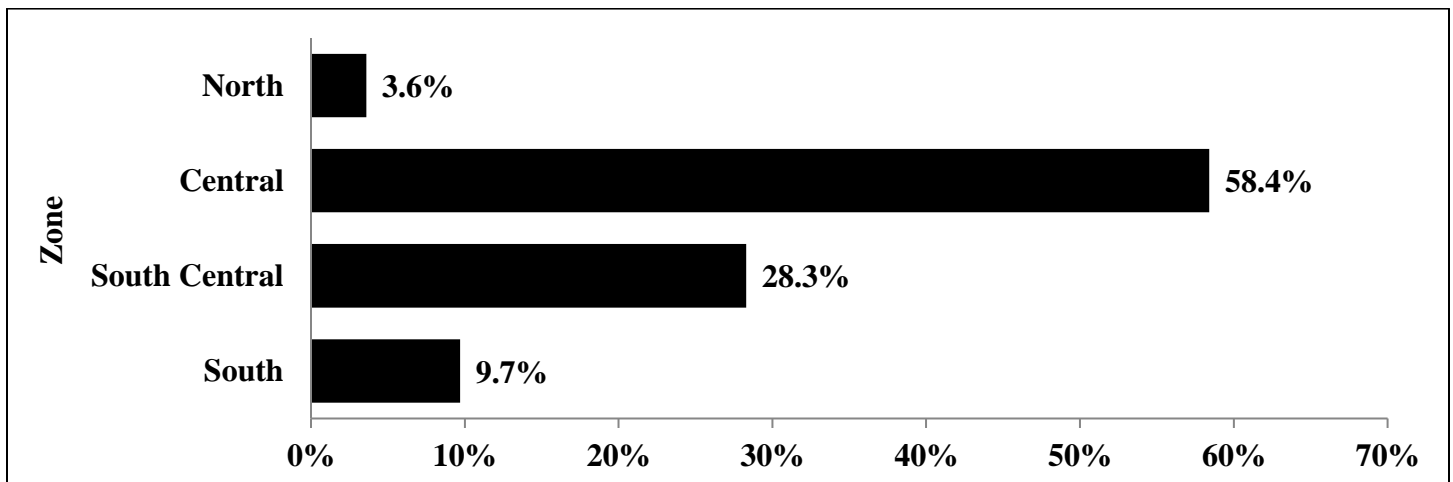


Figure 10. Zone hunted* most often during the 2019 spring snow goose order ($n = 413$).

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

During the 2019 Illinois spring snow goose order, an estimated 2,694 snow goose participants hunted for 30,206 days and harvested 86,683 snow geese (Table 1). In comparison to the 2018 order, hunter participation rose by 7.5% and snow goose harvest decreased 16.1% (Figure 11). Of respondents who indicated hunting snow geese ≥ 1 day, 66.1% hunted 10 days or less (Figure 12), and 23.3% of hunters reported not harvesting any snow geese, whereas 7.1% harvested ≥ 100 snow geese (Figure 12). The fewest number geese were harvested in January (<1%), 63.6% of the harvest occurred during February, and 36.3% percent occurred in March (Table 2).

Mean harvest per hunter was 31 geese per hunter, and 40 geese per hunter when unsuccessful hunters are excluded. When hunters who harvested >100 geese are also excluded, mean geese harvested dropped to 19 geese per successful hunter, respectively. A total of 5,558 snow geese were estimated to be downed but not retrieved by hunters this order.

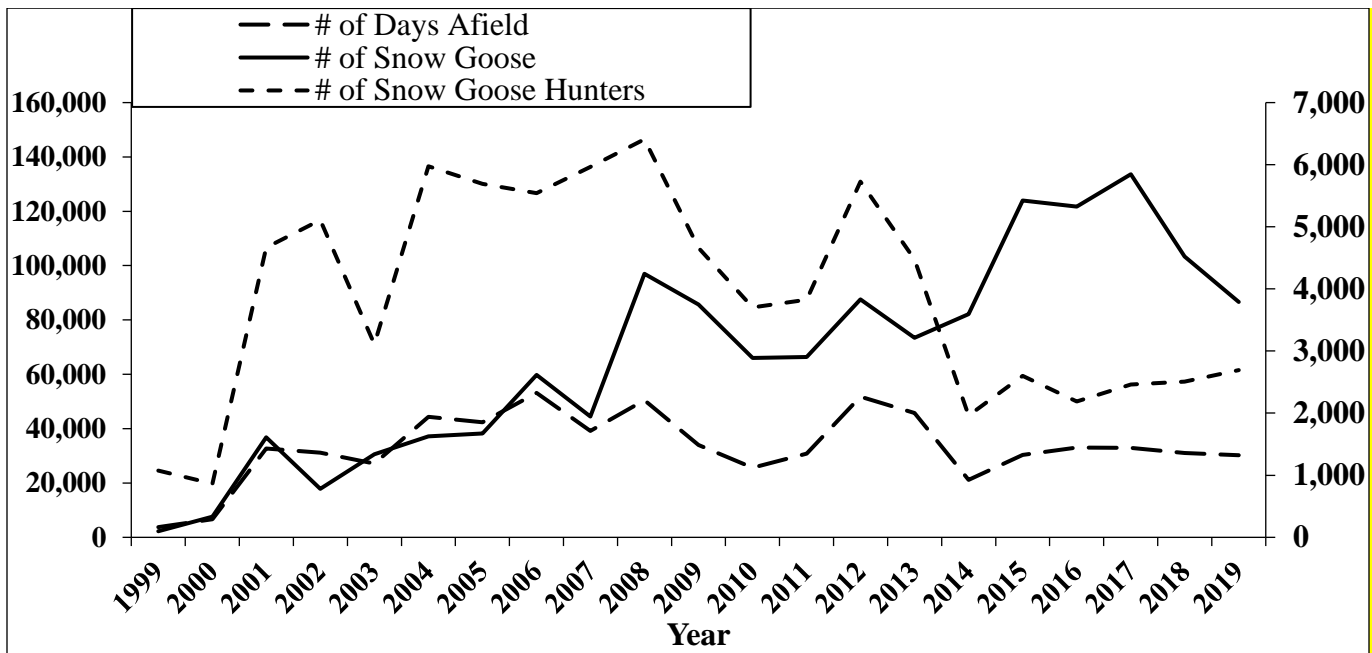


Figure 11. Estimated Illinois Light Goose Conservation Order hunter participation and harvest across time.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

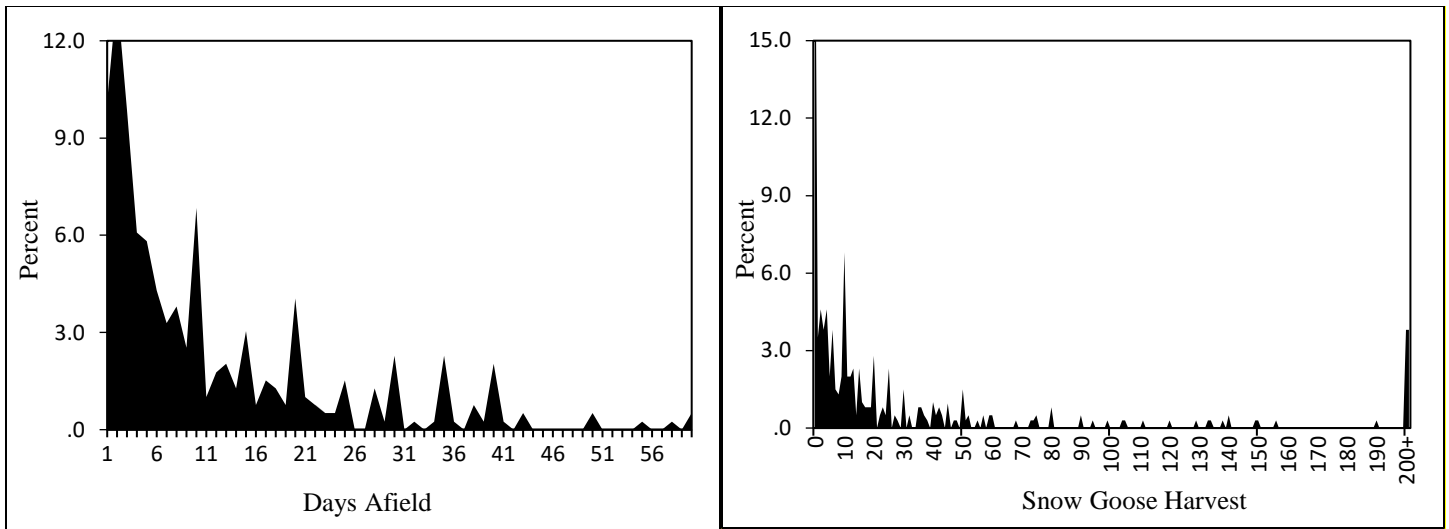


Figure 12. Distribution of days afield per hunter and snow geese harvested per hunter for Illinois’ during the 2019 Light Goose Conservation Order.

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

Electronic calls were used by 83.8% of snow goose hunters; 80.2% reported using an unplugged shotgun during the spring snow goose order. A majority (59.5%) of hunters reported hunting up to ½ hour after sunset (Table 3). Slightly over half (51.9%) of hunters used magazine extensions when hunting snow geese (Figure 13), of which 65.1% reported that it resulted in a greater harvest (Figure 14). Snow goose hunters hunted most frequently on private land with permission (69.5%), followed by private land for a fee (23.1%) (Figure 15). The general locations in Illinois in which snow goose hunters live and concentrated their efforts is presented in Appendix E.

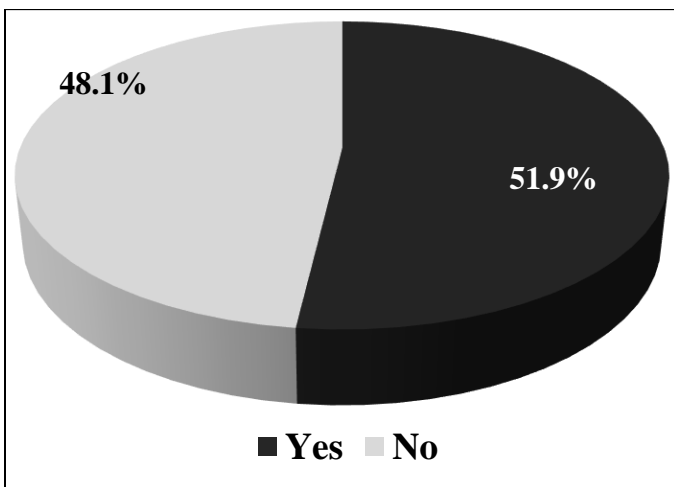


Figure 13. Hunters* who used a magazine extension while hunting snow geese in 2019 ($n = 414$).

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

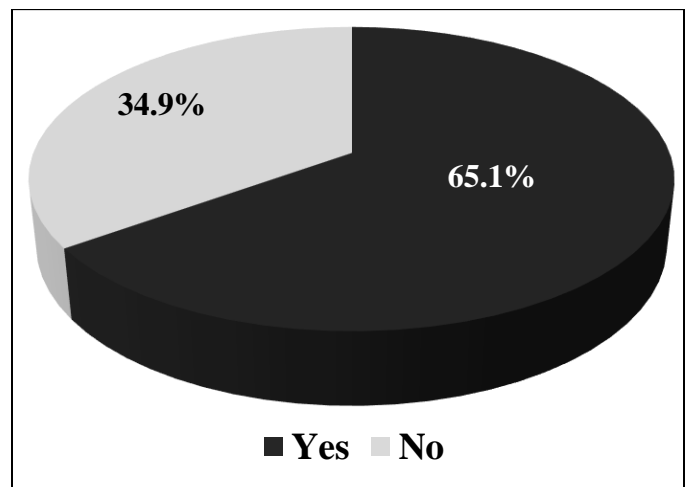


Figure 14. Did the extended magazine result in a greater harvest of snow geese? ($n = 209$).

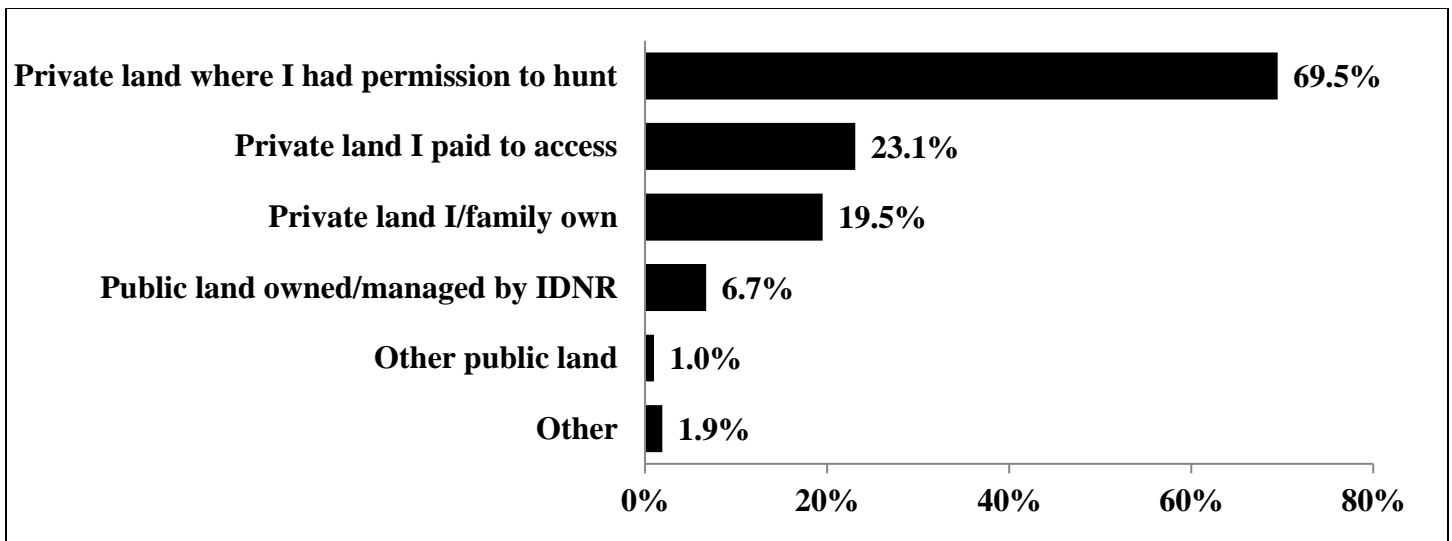


Figure 15. Type of land hunters* hunt most often for snow geese ($n = 420$).

*Hunters who reported they hunted snow geese 1 day or more in Illinois during the 2019 spring order.

**Percentages do not add up to 100 because some hunters indicated they hunted multiple types of land.

Satisfaction with the 2019 Light Goose Conservation Order

Approximately 18 percent of hunters perceived an increase in the number of snow geese seen during the spring snow goose orders over the past 5 years (Table 4). Approximately 7 percent of hunters stated that the number of snow geese they harvested increased over the past 5 years (Table 5). Over half (64.5%) of active hunters reported that harvesting snow geese was important, very important, or extremely important to their hunting experience (Table 6). Whereas among those who did not hunt this year 44.1% felt it was not at all important or slightly important. When asked about the dates of the 2019 Light Goose Conservation Order, most active hunters (66%) felt that the dates were about right, whereas those that did not hunt in 2019 were split between “not sure” and about right. (Figure 16). About 38% of active snow goose hunters were satisfied with the number of snow geese they saw during the 2019 spring order and 32.2% were satisfied with the number of snow geese that migrated through their hunting areas (Table 7). Active hunters were least satisfied with the amount of shooting they got in (70.1%) and the number of snow geese they harvested (69.0%). Whereas, those who did not hunt snow geese in 2019 were dissatisfied with “number of geese harvested”, “the

amount of shooting”, and “amount hunting got in”.

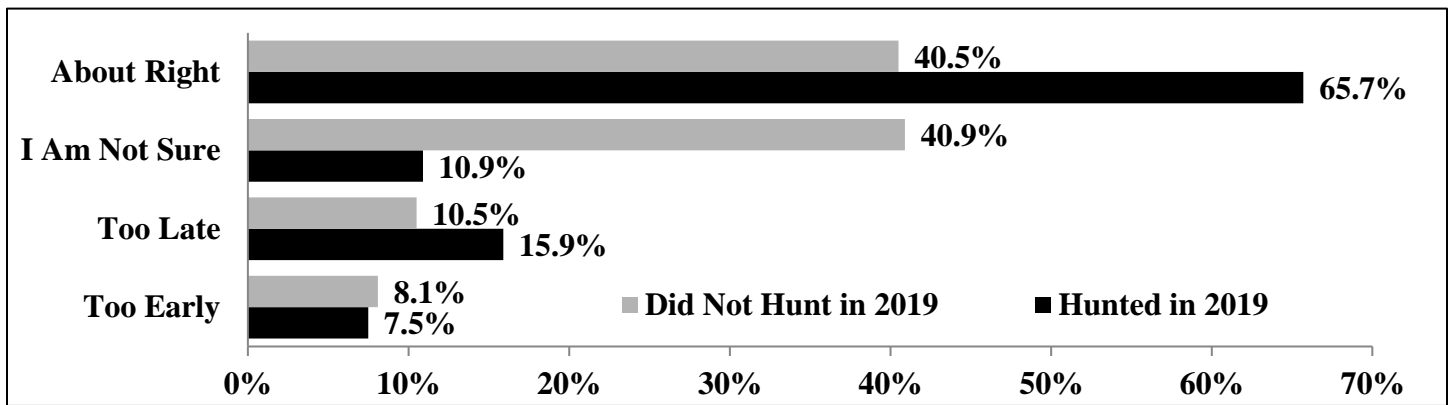


Figure 16. How respondents feel about the dates of the 2019 spring snow goose order for the area they hunted ($n = 832$).

Almost half of the hunters who were active during the 2019 Light Goose Conservation Order had increased their snow goose hunting efforts (44.1%) over the past 5 years, while 34.0% reported no change in effort (Table 8). Whereas, those who did not hunt were more likely to indicate there was no change in their effort (48.8%) or their effort had decreased (41.2%). Active hunters’ top reasons why they were interested in snow goose hunting were to “share quality time with family/friends” (62.7%), “do something with family/friends” (56.1%), and “be outdoors” (54.1%) (Table 9). Those who did not hunt in 2019 indicated that to “be outdoors” and “share quality time with family/friends” were the most important reasons. The most common reasons that prevented all hunters from participating during the spring snow goose order was not enough time (Table 10).

When asked to compare their hunting skills with other hunters, most of those who did not hunt during the 2019 Light Goose Conservation Order labeled their “overall skill as a snow goose hunter” as novice or less than intermediate (53.3%), whereas the majority of those who did hunt labeled their skills as intermediate (44.8%) or greater (33.5%) (Table 11). Active hunters were more likely to agree with every measured attitude regarding Snow Goose conservation (Table 12). Active hunters had the highest level of agreement with “I feel snow geese are an overabundant species” (79.4%), “I feel snow geese populations are too high” (78.5%), and “I feel snow geese compete with Canada geese for food” (64.2%) (Table 12).

Use of guides and outfitters

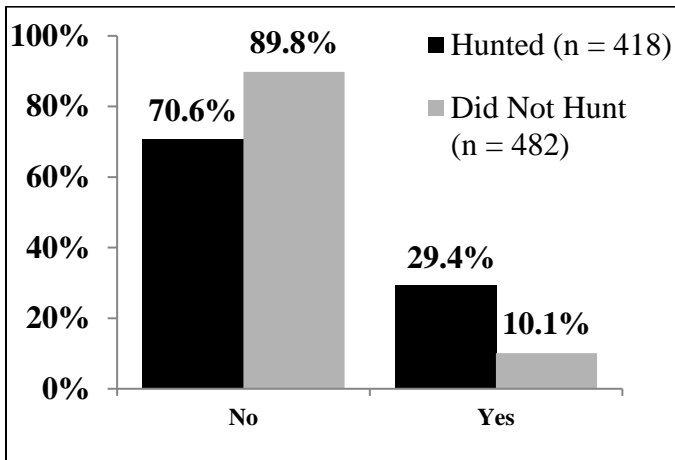


Figure 17. Percent of snow goose hunters who have ever used a guide/outfitter for snow goose hunting.

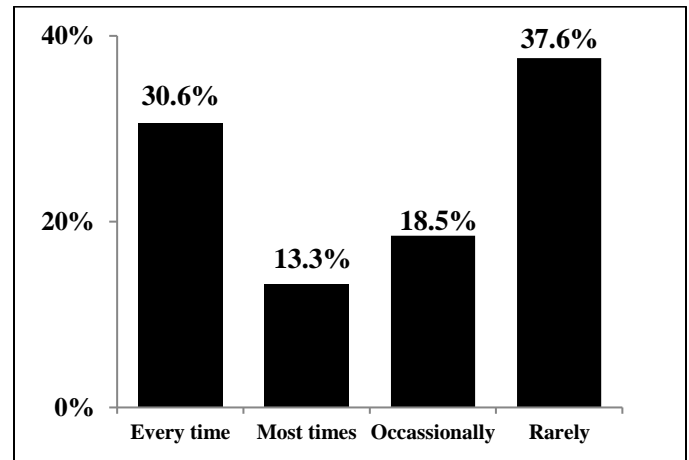


Figure 18. How frequently a guide is used for snow goose hunting ($n = 173$).

Most hunters have never used an outfitter to hunt snow geese (Figure 17), although those who hunted this year were more likely to indicate they have. Almost a third use an outfitter/guide every time (30.6%) and 37.6% use one rarely (Figure 18). Difference among those who were active hunters and those who did not hunt were not reported due to small sub-sample size. Among those who hunted this year and had ever used an outfitter/guide 52.8% used an outfitter in 2019, and 15.5% of all the 2019 hunters used a guide.

Hunter characteristics

Active Light Goose Conservation Order hunters were younger ($M = 44$ years old) than non-hunters ($M = 46$ years old), and almost all (97.0%) were male (Figure 19). Active hunters have been hunting snow geese during the spring in Illinois for an average of 8.3 years compared to 4.3 among those who did not and have been hunting regular waterfowl in Illinois for an average of 24.4 years as compared to 19.3. The majority (53.6%) of respondents have introduced someone to snow goose hunting (Figure 20). When asked what type(s) of snow goose decoys they use during a typical hunt, 88.6% used full-body decoys, 87.0% used rags/sock decoys, and 77.5% used shells (Table 13). The counties with the most respondents were St. Clair (6.0%), Madison (4.6%), Sangamon (4.2%), Tazewell (4.1%), and Fulton (3.0%).

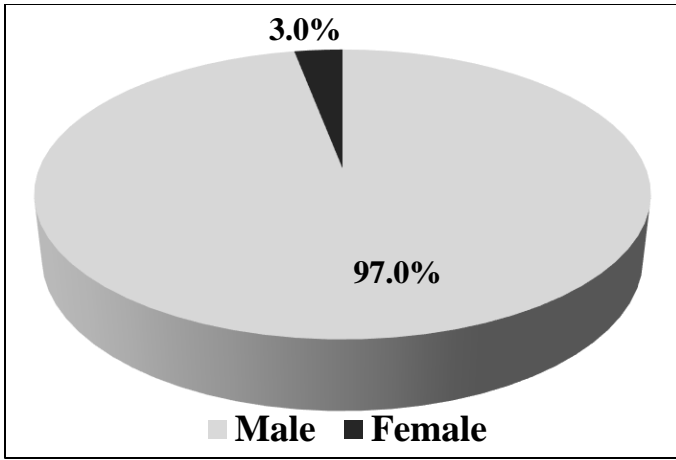


Figure 19. Gender of snow goose hunters ($n = 924$).

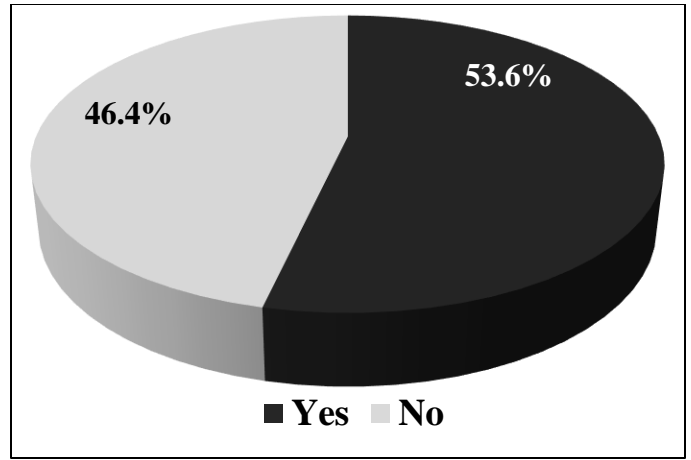


Figure 20. Hunters who have introduced someone to snow goose hunting ($n = 872$).

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Table 1. Estimates of the number of hunters, days afield, and harvest of snow geese from 1999-2019 during the Illinois Light Goose Conservation Order.

	Hunters	Days Afield	Harvest
1999	1,076	3,756	2,254
2000	865	6,643	7,612
2001	4,665	32,634	36,830
2002	5,107	31,204	17,875
2003	3,111	27,177	30,564
2004	5,976	44,306	37,189
2005	5,689	42,349	38,183 ^a
2006	5,543	53,154	59,799 ^a
2007	5,962 ± 1,147 ^b	39,170 ± 15,221	44,514 ± 25,794
2008	6,409 ± 1,046 ^b	50,471 ± 10,331	97,021 ± 40,811
2009	4,663 ± 950 ^b	33,947 ± 8,403	85,635 ± 36,479
2010	3,702 ± 820 ^b	25,581 ± 6,297	65,987 ± 42,519
2011	3,825 ± 826 ^b	30,753 ± 8,902	66,406 ± 30,962
2012	5,726 ± 943 ^b	51,763 ± 11,376	87,558 ± 41,316
2013	4,477 ± 1,192 ^b	45,724 ± 16,642	73,495 ± 52,191
2014	1,962 ± 188 ^b	21,170 ± 3,151	82,161 ^c ± 22,291
2015	2,599 ± 206 ^b	30,360 ± 3,213	123,944 ^c ± 29,265
2016	2,187 ± 81 ^b	33,048 ± 1,822	121,689 ^c ± 9,716
2017	2,459 ± 145 ^b	32,931 ± 2,403	133,629 ^c ± 24,576
2018	2,505 ± 141 ^b	30,989 ± 2,400	103,322 ^c ± 33,481
2019	2,694 ± 205 ^b	30,206 ± 3,138	86,683 ^c ± 34,461

^a Harvest data estimates differ from the original estimates and were restricted to Conservation Order only.

^b 95% confidence intervals

^c Reporting bias of .487 was not used for these years.

Table 2. Estimated snow goose harvest by month during the Illinois Light Goose Conservation Order from 2004-2019.

	January ^{b,c}	February	March
2004 ^a	-	26,404	10,785
2005	824	29,008	8,351
2006	67	43,815	15,917
2007	2,006	32,564	9,944
2008	295	61,376	35,351
2009	77	58,761	26,797
2010	249	44,755	20,983
2011	-	48,323	18,082
2012	55	60,625	26,878
2013	476 ^d	45,080	22,233
2014	97	39,969	42,094
2015	20	65,454	58,470
2016	402	74,269	47,018
2017	678	84,153	48,798
2018	180	62,584	40,558
2019	82	55,167	31,434

^a Monthly harvest data before 2004 are not available.

^b January estimates include only North Zone harvest unless otherwise noted.

^c Harvest data are estimates for Conservation Order only.

^d Revised from reported 2013-14 harvest.

Table 3. Methods utilized by hunters to hunt snow geese during the 2019 Light Goose Conservation Order ($n = 420$).

Method	Number of Hunters	Percentage of Hunters (%)	Estimated Total Hunters in IL
Electronic calls	352	83.8	2,401
Unplugged shotguns	337	80.2	2,298
Hunting from sunset to 1/2 hour after sunset	250	59.5	1,705

Table 4. Hunter comparison between the number of snow geese SEEN during 2019 to the last 5 years ($n = 414$).

	Hunted in 2019	
	Number of Hunters	Percentage of Hunters (%)
Decreased Considerably	114	27.5
Decreased Moderately	68	16.4
Decreased Slightly	86	20.8
No Change	73	17.6
Increased Slightly	28	6.8
Increased Moderately	28	6.8
Increased Considerably	17	4.1

Table 5. Hunter comparison between the number of snow geese HARVESTED during 2019 to the last 5 years ($n = 416$).

	Hunted in 2019	
	Number of Hunters	Percentage of Hunters (%)
Decreased Considerably	189	45.4
Decreased Moderately	92	22.1
Decreased Slightly	59	14.2
No Change	46	11.1
Increased Slightly	17	4.1
Increased Moderately	7	1.7
Increased Considerably	6	1.4

Table 6. The importance of harvesting snow geese to your hunting experience ($n = 839$).

	Hunted in 2019		Did Not Hunt in 2019	
	Number of Hunters	Percentage of Hunters (%)	Number of Hunters	Percentage of Hunters (%)
Not at all important	9	2.2	119	27.8
Slightly important	39	9.5	70	16.3
Moderately important	98	23.8	100	23.4
Important	143	34.8	91	21.3
Very important	77	18.7	33	7.7
Extremely important	45	11.0	15	3.5

Table 7. Satisfaction with the 2019 Light Goose Conservation Order in Illinois.

	Hunted in 2019				Did Not Hunt in 2019			
	<i>n</i>	Dissatisfied %	Neither %	Satisfied %	<i>n</i>	Dissatisfied %	Neither %	Satisfied %
Number of snow geese you saw.	416	42.5	20.0	37.5	326	29.1	43.0	27.9
Mid-season matched peak of snow goose migration.	406	43.1	35.0	21.9	321	30.8	56.1	13.1
Amount of shooting you got in.	415	70.1	16.6	13.3	317	53.6	43.2	3.2
Amount of time you spent snow goose hunting.	416	41.8	29.6	28.6	318	51.9	42.8	5.3
Number of snow geese you harvested.	416	69.0	17.3	13.7	318	57.5	38.7	3.8
The weather during the Conservation Order season.	416	43.3	35.8	20.9	319	30.7	55.8	13.5
Number of snow geese that migrated through areas you hunted.	416	44.0	23.8	32.2	321	33.9	45.2	20.9

Table 8. Change in Illinois hunters' spring snow goose hunting effort over the past 5 years (*n* = 857).

	Hunted in 2019		Did Not Hunt in 2019	
	Number of Hunters	Percentage of Hunters (%)	Number of Hunters	Percentage of Hunters (%)
Decreased Considerably	21	5.2	86	19.1
Decreased Moderately	24	5.9	43	9.5
Decreased Slightly	44	10.8	57	12.6
No Change	138	34.0	220	48.8
Increased Slightly	74	18.2	30	6.6
Increased Moderately	62	15.3	12	2.7
Increased Considerably	43	10.6	3	0.7

Table 9. Reasons for wanting to hunt snow geese during the Light Goose Conservation Order.

	Hunted in 2019					Did Not Hunt in 2019				
	Not at all	Slightly	Moderately	Very	Extremely	Not at all	Slightly	Moderately	Very	Extremely
	Important	Important	Important	Important	Important	Important	Important	Important	Important	Important
	%	%	%	%	%	%	%	%	%	%
Experience harvesting a lot of geese (<i>n</i> = 801).	9.8	22.5	34.2	24.0	9.5	22.2	22.2	27.8	20.7	7.1
Enjoy nature (<i>n</i> = 803).	0.0	3.2	16.2	37.6	43.0	3.8	2.0	13.4	36.1	44.7
Reduce populations in the nesting grounds (<i>n</i> = 803).	7.4	11.5	26.3	29.2	25.6	11.4	12.4	25.2	28.3	22.7
Be outdoors (<i>n</i> = 805).	0.2	2.0	9.8	33.9	54.1	3.8	1.5	9.0	36.4	49.3
Harvest geese for food (<i>n</i> = 800).	10.5	25.7	29.2	18.9	15.7	25.3	17.6	27.3	19.1	10.7
Contribute to managing goose populations (<i>n</i> = 808).	2.2	8.8	24.7	34.2	30.1	7.8	7.3	24.3	34.3	26.3
Experience natural surroundings (<i>n</i> = 803).	0.0	3.9	18.6	34.1	43.4	4.6	3.0	15.2	38.2	39.0
Test my abilities (<i>n</i> = 805).	5.9	9.5	27.6	28.1	28.9	12.4	8.1	26.3	29.5	23.7
Decrease populations of overabundant species (<i>n</i> = 805).	4.2	11.3	24.8	30.1	29.6	9.6	5.8	25.9	31.7	27.0
Share quality time with family/friends (<i>n</i> = 806).	0.7	0.2	9.3	27.1	62.7	4.0	2.8	11.1	34.4	47.7
Develop my skills and abilities (<i>n</i> = 805).	4.4	5.4	30.4	27.0	32.8	10.1	7.6	25.9	32.5	23.9
Challenge my hunting abilities (<i>n</i> = 802).	6.4	6.1	27.8	26.3	33.4	9.4	9.9	27.3	29.4	24.0
Do something with family/friends (<i>n</i> = 803).	1.0	1.2	12.4	29.3	56.1	4.8	2.0	13.5	34.9	44.8
Contribute to conservation efforts (<i>n</i> = 799).	1.2	6.4	24.4	30.6	37.4	6.6	4.3	22.7	32.3	34.1
For a unique hunting experience (<i>n</i> = 801).	1.5	7.4	24.3	33.4	33.4	7.6	7.6	30.7	31.7	22.4
Bring family/friends closer together (<i>n</i> = 800).	2.0	2.9	16.7	28.4	50.0	5.9	3.8	21.9	32.4	36.0

Table 10. Reasons that prevent you from hunting during the spring snow goose order.

	Hunted in 2019 (<i>n</i> = 328)		Did Not Hunt in 2019 (<i>n</i> = 442)	
	Number of hunters	Percentage (%)	Number of hunters	Percentage (%)
Not enough time	197	60.1	231	52.3
No place to hunt snow geese	79	24.1	156	35.3
Equipment is too much money	117	35.7	115	26.0
No snow geese where I hunt/live	82	25.0	112	25.3
Too hard to hunt	52	15.9	58	13.1
Not enough people to hunt with	38	11.6	41	9.3
Don't know how hunt them	6	1.8	37	8.4
Other	29	8.8	22	5.0
Work/family commitments	10	3.0	5	1.1
Illness/health/age	1	0.3	15	3.4
Little/no interest in hunting them	1	0.3	22	5.0
Hunting techniques conflict with my ethics	5	1.5	2	0.5

Table 11. Ratings of skills compared to other hunters during the 2019 Light Goose Conservation Order in Illinois.

	Hunted in 2019						Did Not Hunt in 2019					
	<i>n</i>	Novice %	Between %	Interm. %	Between %	Expert %	<i>n</i>	Novice %	Between %	Interm. %	Between %	Expert %
Skill calling in snow geese	407	23.1	17.2	38.8	17.0	3.9	422	53.3	16.6	21.3	8.3	0.5
Snow geese harvested per shots taken	406	6.7	8.6	42.6	36.9	5.2	410	29.3	12.9	34.6	20.0	3.2
Overall skill as a snow goose hunter	406	6.9	14.8	44.8	29.8	3.7	413	32.0	21.3	32.9	12.8	1.0

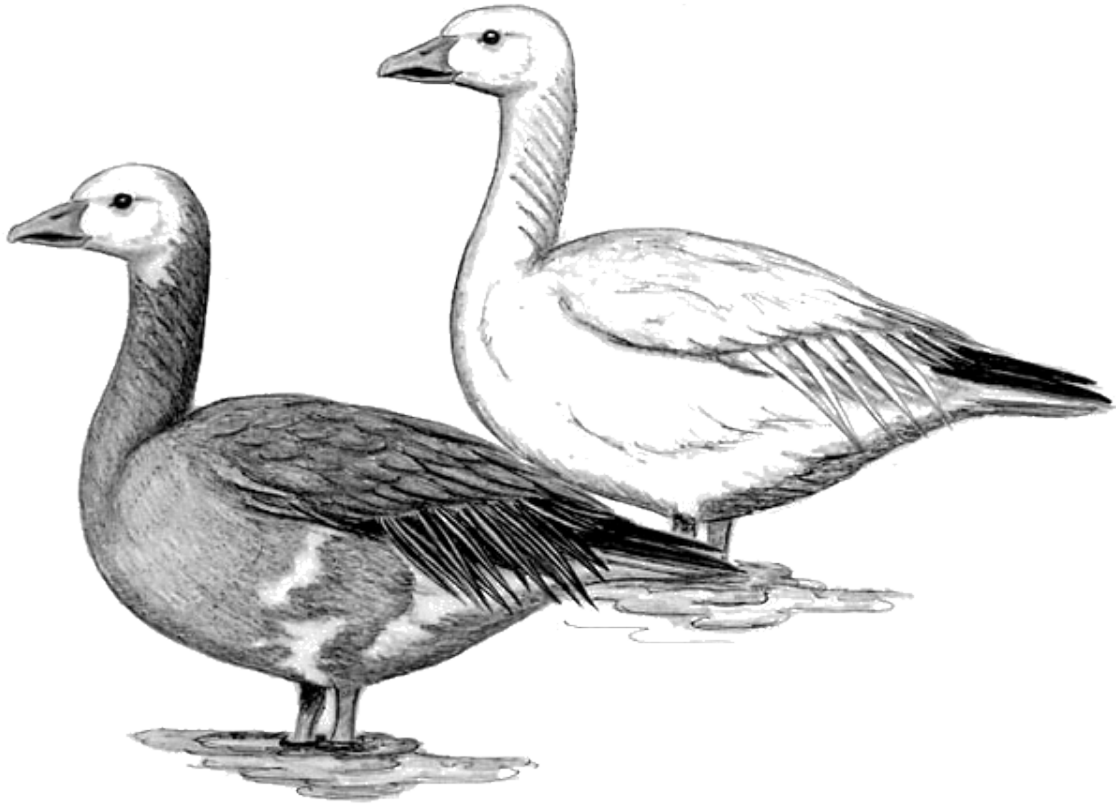
Table 12. Hunters' attitudes toward Snow Goose conservation.

"I feel snow geese..."	Hunted in 2019				Did Not Hunt in 2019			
	<i>n</i>	Disagree %	Neither %	Agree %	<i>n</i>	Disagree %	Neither %	Agree %
...compete with Canada geese for nest sites.	401	26.4	33.4	40.2	412	18.9	34.2	46.9
...contribute to a balanced ecosystem.	399	36.9	32.3	30.8	408	34.6	35.3	30.1
...populations are too high.	404	8.4	13.1	78.5	411	4.6	21.7	73.7
...are a conservation success story.	400	20.2	36.3	43.5	404	20.3	44.8	34.9
...threaten biodiversity.	397	9.3	34.0	56.7	404	8.7	40.3	51.0
...populations have rebounded due to conservation efforts.	399	17.0	40.9	42.1	406	14.0	48.3	37.7
...compete with Canada geese for food.	402	15.4	20.4	64.2	408	10.8	26.2	63.0
...are harming habitat in the Hudson Bay region.	398	4.0	40.7	55.3	403	3.0	50.6	46.4
...are an overabundant species.	404	6.7	13.9	79.4	412	3.4	24.0	72.6

Table 13. Number of decoys typically used by Illinois snow goose hunters (*n* = 414).

Decoy Type	Number of Hunters*	% of Total Hunters	Number of Decoys Used (by % of hunters)					
			0	1-100	101-250	251-500	501-1000	1001+
Rags/sock decoys	360	87.0	12.0	19.7	13.6	15.8	16.7	22.2
Full-bodied decoys	367	88.6	9.3	32.2	11.7	16.6	7.9	22.3
Kites/Flags	317	76.7	15.5	78.6	2.2	1.9	0.9	0.9
Shells	321	77.5	17.1	45.2	15.9	10.9	6.5	4.4
Silhouettes	272	65.7	47.4	29.4	10.3	5.1	2.6	5.2
Floater decoys	251	60.6	55.8	29.5	6.7	4.8	2.0	1.2

Illinois Spring Snow Goose Hunter Survey 2019 Season



Illinois Department of Natural Resources
Division of Wildlife Resources
and
Illinois Natural History Survey



The Department of Natural Resources is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under the Illinois Compiled Statutes, The Wildlife Code, Chapter 520. Disclosure of information is voluntary. This study is funded by the federal Wildlife Restoration Fund through your purchase of sporting arms and ammunition.

THANK YOU FOR YOUR COOPERATION!

All of your responses will be kept confidential.
Please return this survey in the postage-paid return envelope provided.

Section 1. Conservation Order (Spring) Snow Goose Hunting Effort and Harvest. Please take a few minutes to complete the following questionnaire to help us evaluate the 2019 **Spring Conservation Order snow goose hunting season even if you did not hunt snow geese. All questions pertain to Illinois hunting. Please note: "Snow geese" also includes Ross' and Blue geese.**

1. Did you hunt snow geese in Illinois during the **2019 Conservation Order (spring snow goose) season** (North Zone: **Jan. 18-March 31, 2019**; Central, South Central, and South Zones: **Feb. 1- March 31, 2019**)? **Do not include** hunting snow geese during the regular Canada goose season. (Please check **one**.)

Yes No (Please skip to **Question 14**)

2. Which of the following best describes how often you hunt **spring snow geese** in Illinois?

Every year Most years Occassional years Rarely

3. In which zone did you **hunt snow geese most often** during the 2019 **spring snow goose season**? (Please check **one**.)

North Zone Central Zone South Central Zone South Zone

4. On which of the following types of land did you hunt snow geese during the 2019 **spring snow goose season**? (Please check **all that apply**.)

Public land owned/managed by IDNR Other public land
 Private land I/family own Private land where I had permission to hunt
 Private land I paid to access Other (Please identify): _____

5. Please indicate **your personal** effort- not your hunting party's effort- and harvest in the following table. **Include only harvest that occurred during the spring snow/blue and Ross' goose season; do not include snow goose harvest during the regular Canada goose seasons.** Report the counties in which you hunted, number of days you hunted, and geese harvested for the time period in which you hunted snow geese. Include only geese you harvested and days you hunted in Illinois. Count part of 1 day as 1 day. **Please refer to the county/zone map on the inside cover to answer this question. Please note, during January only the North zone is open to hunts.**

	County hunted	Days hunted	Geese harvested	Geese hit, but not retrieved
January (North only):				
February:				
March:				

6. Please indicate which of the following methods you used to hunt snow geese during the **2019 spring snow goose season**? (Please check **all that apply**)

Electronic calls Unplugged shotgun Hunting from sunset to ½ hour after sunset

7. Did you use a magazine extension during the **spring snow goose season**? Yes No

7a. If “Yes,” did the extended magazine result in a greater harvest of geese? Yes No

8. Approximately how many of each of the following types of decoys do you use during a typical hunt?

	Number of decoys used					
	None	1-100	101-250	251-500	501-1000	1000+
Kites/Flags						
Rags/sock decoys						
Shells						
Full-bodied decoys						
Floater decoys						
Silhouettes						

9. Did you use a **spinning-wing decoy(s)** to hunt snow geese? Yes No (Skip to question 10)

9a. If “Yes,” how many spinning-wing decoys did you typically use? Decoys

10. Did you use a moving multi-decoy system (**Vortex, etc.**) to hunt snow geese? Yes No

11. How does the number of snow geese you **saw** during the **spring snow goose season** compare to the **last 5 years**? Please circle the number that matches your response.

Decreased Considerably	Decreased Moderately	Decreased Slightly	No Change	Increased Slightly	Increased Moderately	Increased Considerably
1	2	3	4	5	6	7

12. How does the number of snow geese you **harvested** during the **spring snow goose season** compare to the **last 5 years**? Please circle the number that matches your response.

Decreased Considerably	Decreased Moderately	Decreased Slightly	No Change	Increased Slightly	Increased Moderately	Increased Considerably
1	2	3	4	5	6	7

13. About how far, on average, did you travel to hunt snow geese in Illinois during 2019? Miles

14. Have you **ever** used a guide or outfitter while hunting snow geese during the **spring snow goose season in Illinois**? Yes No (Skip to question 15)

14a. If “Yes,” on average for all years you have hunted snow geese, how often do you use a guide or outfitter while hunting snow geese in Illinois during **spring snow goose season**?

Every time Most times Occasionally Rarely

14b. Did you use a guide or outfitter while hunting snow geese in Illinois **during the 2019 spring snow goose season**?

Yes No

15. How has your spring snow goose hunting **effort changed over the past 5 years?** Please circle the number that matches your response.

Decreased Considerably	Decreased Moderately	Decreased Slightly	No Change	Increased Slightly	Increased Moderately	Increased Considerably
1	2	3	4	5	6	7

16. How did you feel about the dates of the 2019 Conservation light goose season for the area where you hunted most often? (Please circle **one**.)

Too early	About right	Too late	I am not sure
1	2	3	4

17. Have you ever introduce someone to snow goose hunting? _____ Yes _____ No

17a. If yes, have you taken a youth snow goose hunting in Illinois?

_____ Yes (If "Yes," what was the last year you did so _____)

_____ No

_____ A youth has accompanied me hunting, but they did not hunt

18. Please rate the following statements as your **reasons for Snow Goose Hunting**.

	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
Experience harvesting a lot of geese	1	2	3	4	5
Enjoy nature	1	2	3	4	5
Reduce populations in the nesting grounds	1	2	3	4	5
Be outdoors	1	2	3	4	5
Harvest geese for food	1	2	3	4	5
Contribute to managing goose populations	1	2	3	4	5
Experience natural surroundings	1	2	3	4	5
Test my abilities	1	2	3	4	5
Decrease populations of overabundant species	1	2	3	4	5
Share quality time with family/friends	1	2	3	4	5
Develop my skills and abilities	1	2	3	4	5
Challenge my hunting abilities	1	2	3	4	5
Do something with family/friends	1	2	3	4	5
Contribute to conservation efforts	1	2	3	4	5
For a unique hunting experience	1	2	3	4	5
Bring family/friends closer together	1	2	3	4	5

19. Please check which of the following prevents you from hunting during the **spring snow goose season**. (Please check **all that apply**).

- | | |
|---|---|
| <input type="checkbox"/> No place to hunt snow geese | <input type="checkbox"/> No snow geese where I live/hunt |
| <input type="checkbox"/> Not enough time | <input type="checkbox"/> They're too hard to hunt |
| <input type="checkbox"/> Equipment is too expensive | <input type="checkbox"/> Don't know how to hunt them |
| <input type="checkbox"/> Not enough people to hunt with | <input type="checkbox"/> Hunting techniques conflict with my ethics |
| <input type="checkbox"/> Other (please indicate: _____) | |

20. Please show how much you agree or disagree with the following statements about Snow Goose conservation by circling the number that matches your response.

"I feel snow geese..."	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
...compete with Canada geese for nest sites.	1	2	3	4	5	6	7
...contribute to a balanced ecosystem.	1	2	3	4	5	6	7
...populations are too high.	1	2	3	4	5	6	7
...are a conservation success story.	1	2	3	4	5	6	7
...threaten biodiversity.	1	2	3	4	5	6	7
...populations have rebounded due to conservation efforts.	1	2	3	4	5	6	7
...compete with Canada geese for food.	1	2	3	4	5	6	7
...are harming habitat in the Hudson Bay region.	1	2	3	4	5	6	7
...are an overabundant species.	1	2	3	4	5	6	7

Section 2. Hunting Skills and Satisfaction. Please tell us about yourself as a hunter by answering the following statements.

1. Please rate **your skills** as compared to other snow goose hunters.

	Novice	Between novice and intermediate	Intermediate	Between intermediate and expert	Expert
Skill calling in snow geese	1	2	3	4	5
Snow geese harvested per shots taken	1	2	3	4	5
Overall skill as a snow goose hunter	1	2	3	4	5

2. Please rate how important harvesting snow geese is to your hunting experience by circling the number that matches your response.

Not at all Important	Slightly Important	Moderately Important	Slightly Important	Very Important	Extremely Important
1	2	3	4	5	6

3. Please rate your **SATISFACTION with the 2019 spring Conservation Order (snow goose) season in Illinois** for each of the following by circling the number that matches your response.

	Very Dissatisfied	Dissatisfied	Neither Dissatisfied or Satisfied	Satisfied	Very Satisfied
Number of snow geese you saw.	1	2	3	4	5
Mid-season matched peak of snow goose migration.	1	2	3	4	5
Amount of shooting you got in.	1	2	3	4	5
Amount of time you spent snow goose hunting.	1	2	3	4	5
Number of snow geese you harvested.	1	2	3	4	5
Weather during the season.	1	2	3	4	5
Number of snow geese that migrated through areas you hunted.	1	2	3	4	5

Section 3. Regular Waterfowl Seasons. The following questions allow us to understand more about the hunters who waterfowl in Illinois and refers to those seasons completed before the Conservation Order Light Goose season begins.

1. Which of the following best describes how often you hunt **waterfowl other than** light geese in Illinois?
 Every year Most years Occasional years Rarely Never

2. Did you hunt waterfowl (ducks and/or geese) in Illinois during the **2018-19 regular waterfowl seasons**?
 Yes No (Please skip to **Section 4**)

3. Which of the following seasons did you participate in? (Please check **all that apply.**)
 September Teal season
 September Canada Goose season
 Regular Duck season
 Regular Goose season

4. In which zone did you **hunt waterfowl most often during the 2018-19 regular waterfowl seasons**? (Please check **one.**)
 North Zone Central Zone South Central Zone South Zone

5. Which did you hunt most often? (Please check **one.**)
 Ducks Geese Both ducks and geese equally

6. Did you harvest any snow geese during the **regular goose season** in Illinois during the 2018-19 goose season?

_____ Yes (How many? _____) _____ No

Section 4. Background Information. The following questions allow us to understand more about the people involved in snow goose hunting in Illinois. All responses are kept confidential.

1. How many years have you been **waterfowl hunting in Illinois**? _____ Years

2. How many years have you been hunting during the **spring snow goose season** in Illinois? _____ Years

3. Please give your age. _____ Years

4. What is your gender? _____ Male _____ Female

5. What is your county of residence? _____ County

Comments:



**Federal Aid Project
funded by your purchase of
hunting equipment**

**THANK YOU FOR YOUR TIME AND ASSISTANCE!
Please return this survey in the postage-paid envelope provided.**

The Illinois Department of Natural Resources receives federal assistance and therefore must comply with federal anti-discrimination laws. In compliance with the Illinois Human Rights Act, the Illinois Constitution, Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act as amended, and the U.S. Constitution, the Illinois Department of Natural Resources does not discriminate on the basis of race, color, sex, national origin, age, or disability. If you believe you have been discriminated against in any program, activity, or facility, please contact the Equal Employment Opportunity Officer, Department of Natural Resources, One Natural Resources Way, Springfield, IL 62701-1787, (217) 782-7616 or the Officer of Human Resources, U.S. Fish and Wildlife Service, Washington, D.C. 20240.



ILLINOIS NATURAL HISTORY SURVEY

Prairie Research Institute
University of Illinois at Urbana-Champaign

Dear Snow Goose Hunter,

You have been chosen as one of a select group of Illinois snow goose hunters to provide information about your snow goose hunting activities. Enclosed is a survey questionnaire regarding your snow goose hunting experiences in Illinois during the 2019 Conservation Order (spring) season. We ask you to please take a few moments to complete this questionnaire and return it in the envelope provided **even if you were not successful or did not hunt snow geese during the Conservation Order (spring) season.**

The information you and other selected hunters provide our biologists is vital for proper snow goose management and allows us to safeguard snow goose populations while maximizing hunting opportunities.

This survey is limited to those hunters selected. Please take a few minutes to complete the enclosed questionnaire and return it in the postage paid envelope provided.

If you do not wish to participate, please return the blank questionnaire so we can remove your name from our mailing list.

You may access the results of this and other studies of hunters and hunting in Illinois at <http://www.inhs.illinois.edu/programs/hd/> or like us on Facebook at the Human Dimensions Research Program - Illinois Natural History Survey page to be notified when results are available. You may also find information about Illinois Department of Natural Resources wildlife management programs and wildlife in Illinois at <http://dnr.state.il.us/orc/wildliferesources/>.

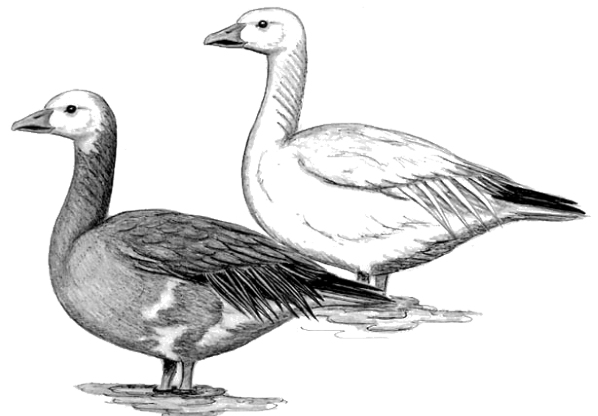
If you have questions regarding this study, please call us at (217) 244-5121.

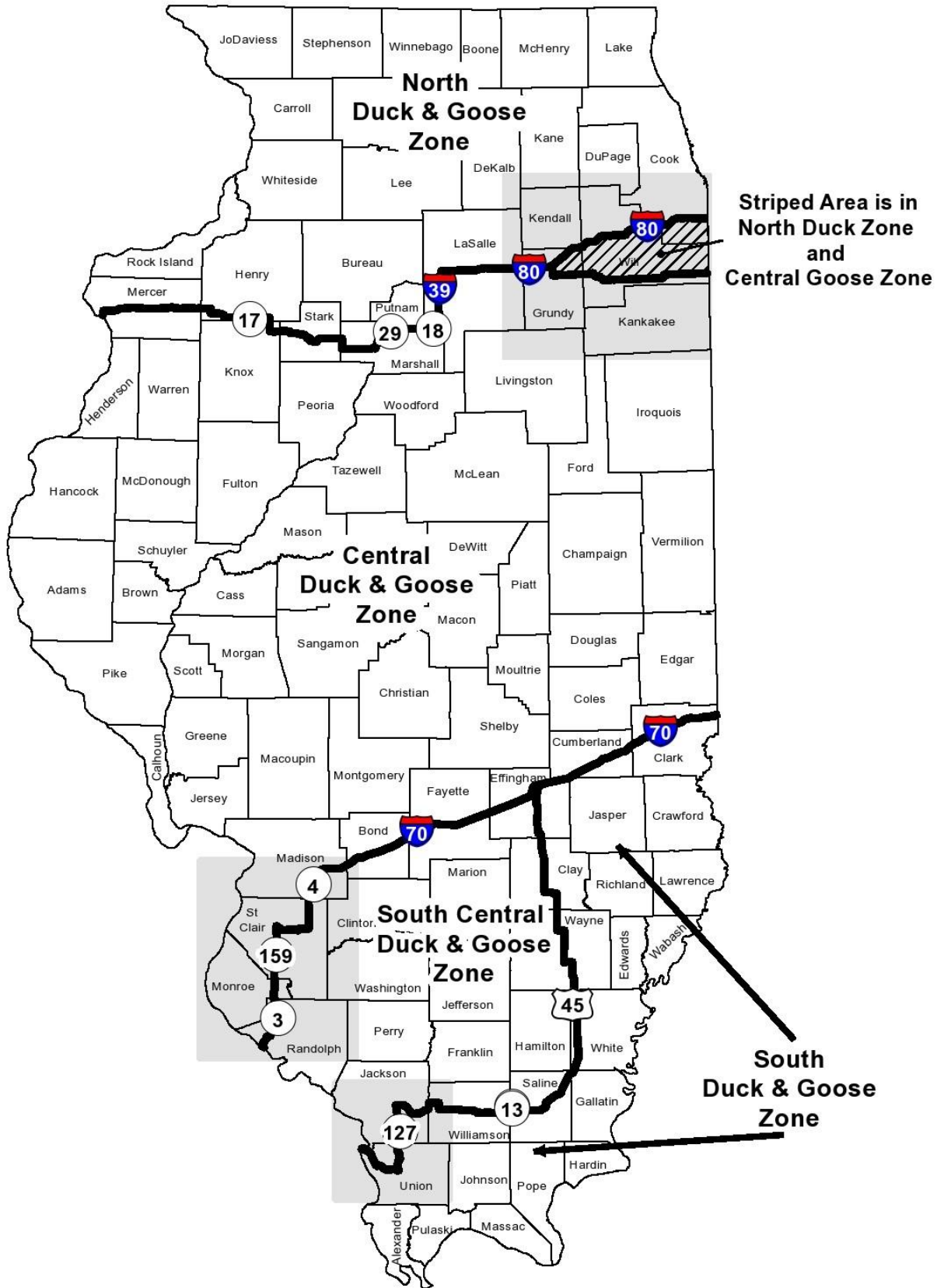
Thank you for your time and assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig A. Miller".

Craig A. Miller
Human Dimensions Research Program





Appendix C

Dear Waterfowl Hunter,

Recently you were mailed a questionnaire about snow goose hunting during the Conservation Order (spring) season. We have not yet received your response. **If you have already returned the questionnaire, we thank you. If you have not returned the questionnaire, please do so as soon as possible. Your input is very important!**

Your name and address will be deleted from our mailing list when your questionnaire is received.

Thank you for your cooperation.



ILLINOIS NATURAL HISTORY SURVEY

Prairie Research Institute
University of Illinois at Urbana-Champaign

Dear Waterfowl Hunter,

You recently received a survey questionnaire requesting information about snow goose hunting activities during the 2019 Conservation Order (spring) season. If you recently returned your questionnaire, we thank you. If not, please take a few minutes to complete the enclosed questionnaire and return it in the envelope provided **even if you were not successful or did not hunt snow geese during the Conservation Order (spring) season.**

The information you and other selected hunters furnish our biologists is vital for proper waterfowl management and allows us to safeguard waterfowl populations while maximizing hunting opportunities.

If you do not wish to participate, please return the blank questionnaire so we can remove your name from our mailing list.

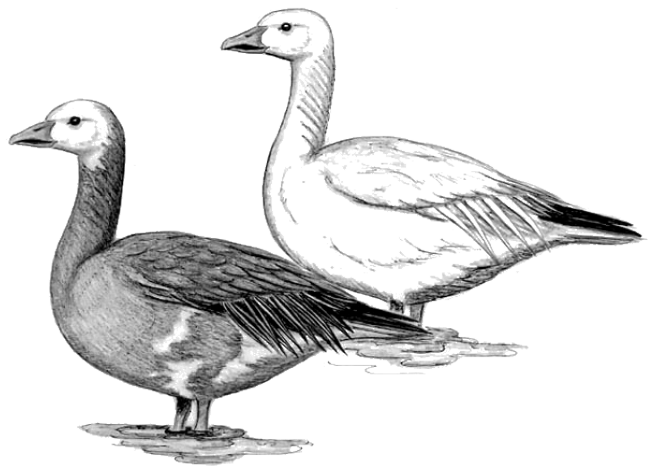
Please take a few minutes to complete the portions of the questionnaire that pertain to you and return it in the envelope provided. If you have any questions please call 217-244-5121.

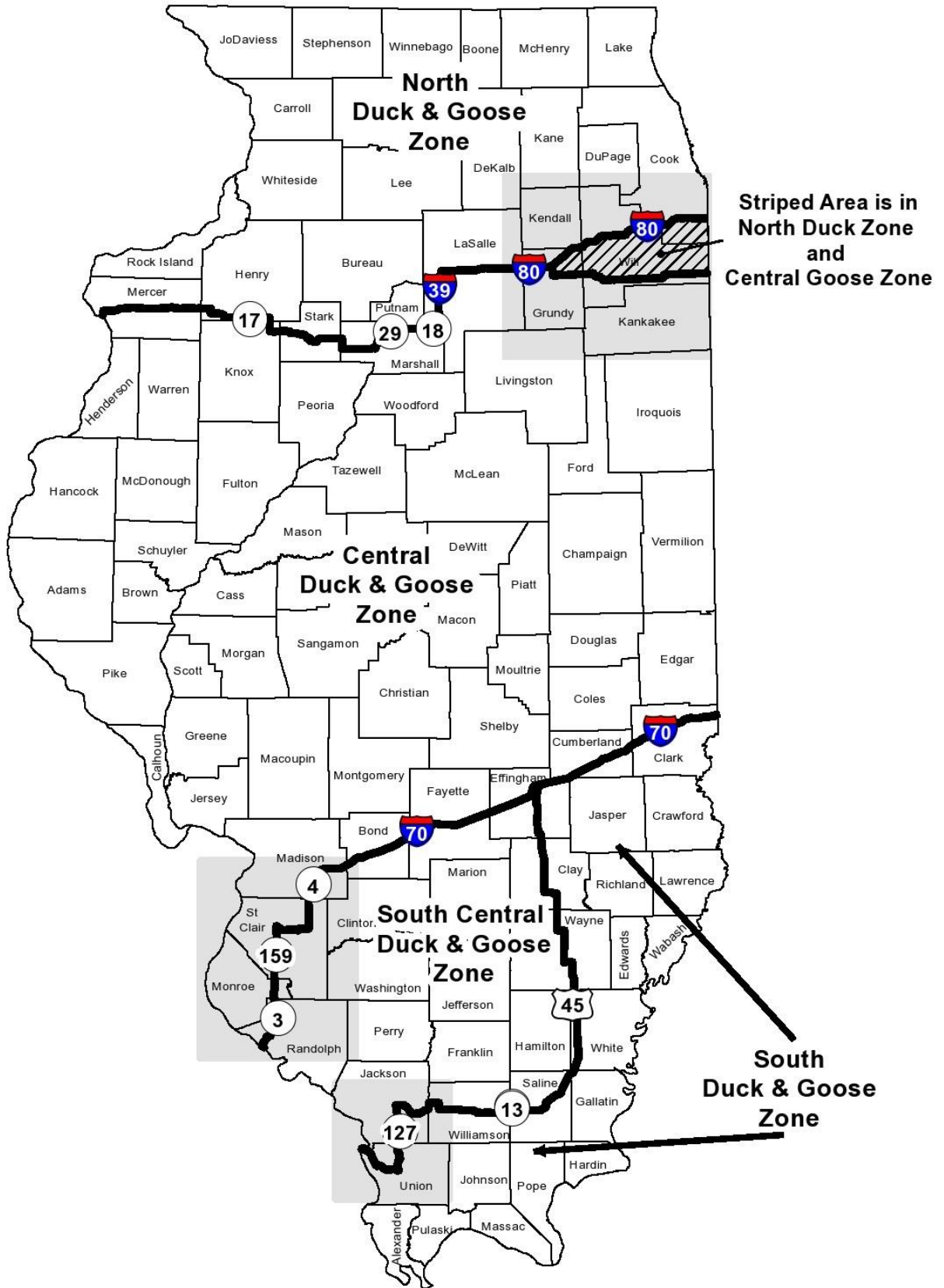
Thank you for your time and assistance.

Sincerely,

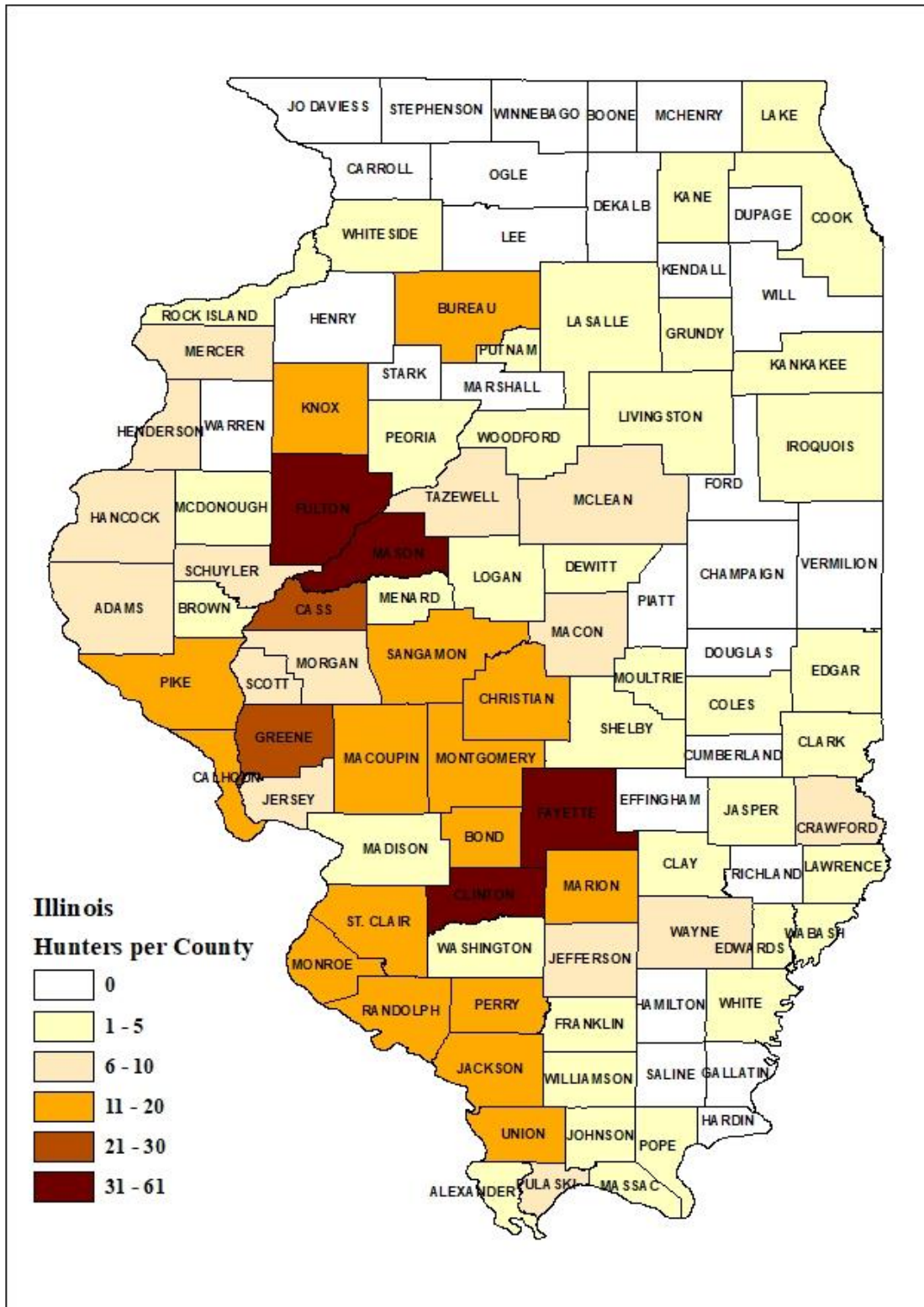
A handwritten signature in black ink, appearing to read "Craig A. Miller".

Craig A. Miller
Human Dimensions Research Program

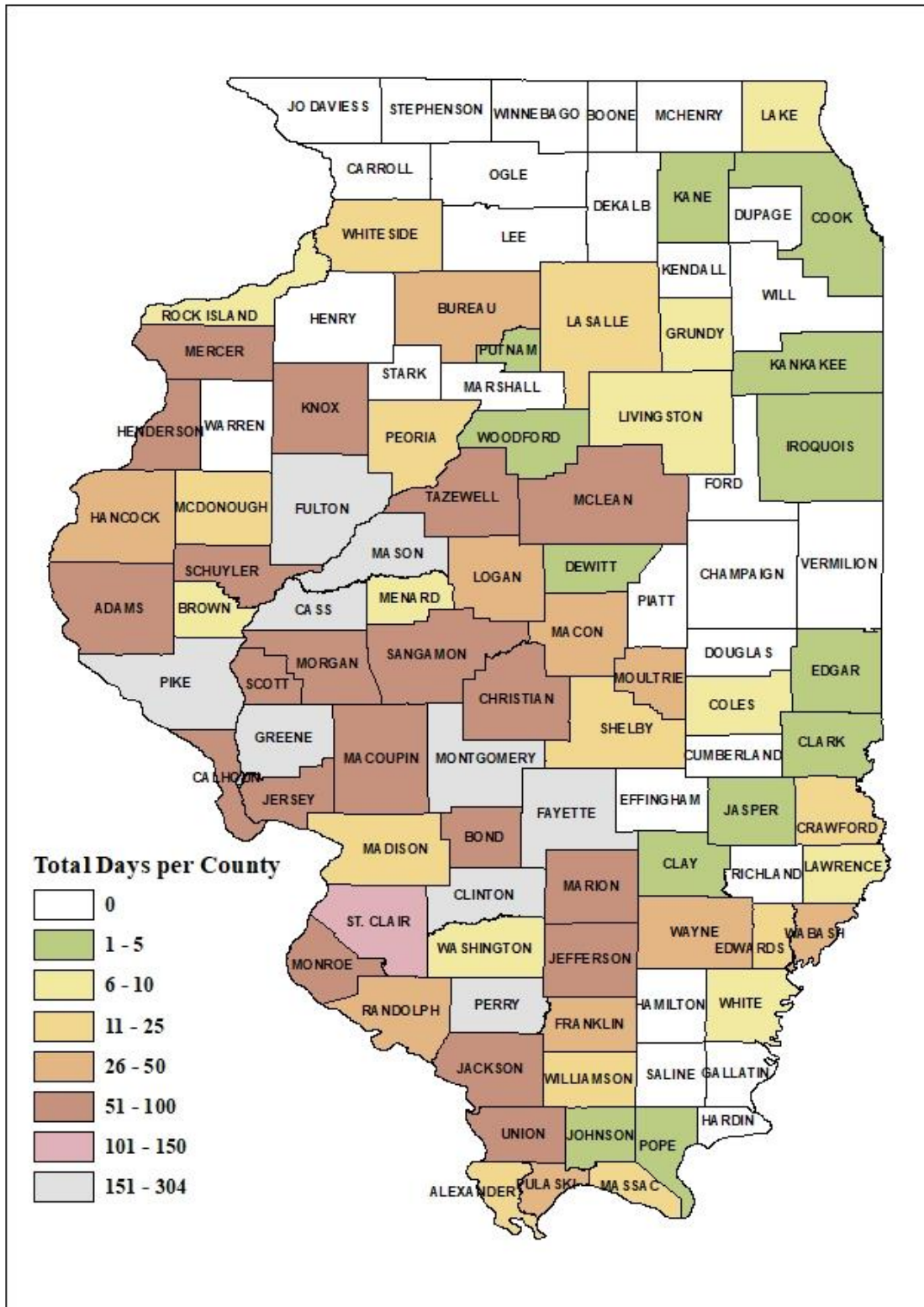




Distribution of Active Hunters per County ($n = 420$)



Total Days Spent Hunting per County (n = 420)



Total Snow Geese Harvested per County ($n = 420$)

