

*Human*Dimensions
Research Program

Hunter Participation, Harvest, and Hunting Behavior During the 2021 Illinois Conservation Order

Illinois Natural History Survey
Prairie Research Institute
University of Illinois at
Urbana-Champaign

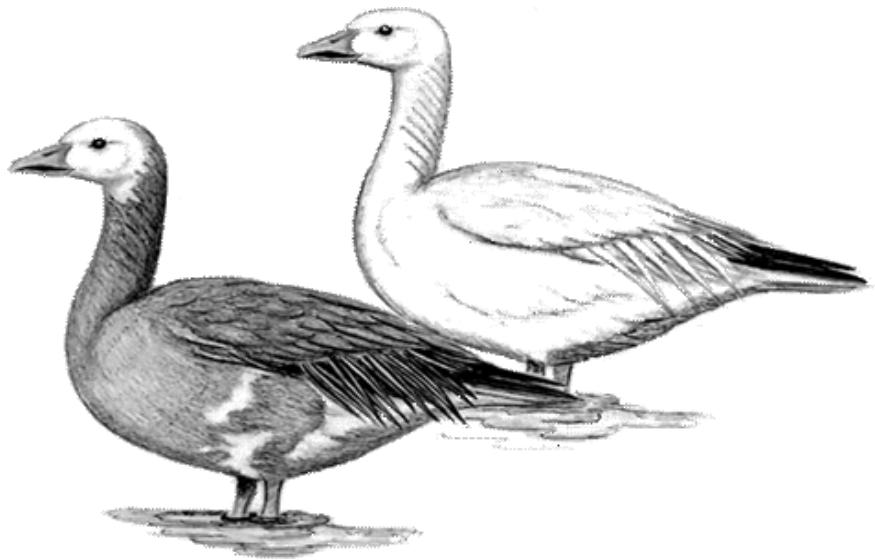


Federal Aid Project
Number W-112-R-30
Job Number 101.4
Wildlife Restoration
Oct. 1, 2020-Sept. 30, 2021

Colleen Callahan, Director
Illinois Department of Natural
Resources

Jennifer Wellman,
Federal Aid Coordinator

Mike Wefer,
Chief, Division of Wildlife
Resources



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

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



INHS Technical Report 2022 (12)
November 12, 2021

Key words: Conservation Order, light goose, harvest, hunting behavior

Suggested Citation:

Williams, B.D., C.A. Miller, L.J. Stephens, and E.M. Walberg. 2021. Hunter Participation, Harvest, and Hunting Behavior During the 2021 Illinois Conservation Order. Job Completion Report, Federal Aid in Wildlife Restoration W-112-R-30. Human Dimensions Program Report HR-19-04/INHS Technical Report 2022 (12). Illinois Natural History Survey, Champaign, IL. 28pp.

HUNTER PARTICIPATION, HARVEST, AND HUNTING BEHAVIOR DURING THE 2021 ILLINOIS CONSERVATION ORDER

JOB COMPLETION REPORT

WILDLIFE HARVEST AND
HUMAN DIMENSIONS RESEARCH PROGRAM

STATE OF ILLINOIS

PROJECT NUMBER: W-112-R-30
STUDY 101
JOB NO. 101.4

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

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

Illinois Natural History Survey
Champaign, IL
November 12, 2021

Federal Aid in Wildlife Restoration
W-112-R-30
Illinois Department of Natural Resources

Colleen Callahan, Director
Illinois Department of Natural Resources

Mike Wefer, Chief
Division of Wildlife Resources

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion, or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way, Springfield, IL 62702-1271; 217/785/0067; TTY 217/782/9175.

LIST OF FIGURES, TABLES, AND APPENDICES

	<u>Page</u>
Figure 1	Percentage of respondents who hunted light geese in Illinois the 2021 Light Goose Conservation Order (LGCO).....3
Figure 2	How often light goose hunters hunt the LGCO in Illinois3
Figure 3	Zone hunted most often during the 2021 LGCO4
Figure 4	Estimated Illinois LGCO hunter participation and harvest across time.....5
Figure 5	Distribution of days afield per hunter and light geese harvested per hunter for Illinois' during the 2021 LGCO5
Figure 6	Type of land hunters hunt most often during LGCO6
Figure 7	How respondents feel about the dates of the 2021 LGCO for the area they hunted.....6
Figure 8	Percent of light goose hunters who have ever used a guide/outfitter for light goose hunting7
Figure 9	How frequently a guide is used for light goose hunting7
Figure 10	Gender of hunters.....8
Table 1.....	Estimates of the number of hunters, days afield, harvest, and crippled light geese 1999-2021 during the Illinois Light Goose Conservation Order10
Table 2.....	Estimated light goose harvest by month during the Illinois LGCO 2004-202111
Table 3.....	Hunter comparison between the number of light geese SEEN during 2021 to the last 5 years12
Table 4.....	Hunter comparison between the number of light geese HARVESTED during 2021 to the last 5 years12
Table 5.....	Satisfaction with the 2021 Light Goose Conservation Order in Illinois13
Table 6.....	Hunters' attitudes toward light goose conservation.....13
Appendix A	Illinois Light Goose Conservation Order Survey: 2021 Season14
Appendix B	Cover letter sent with the first mailing of the 2021 Illinois Light Goose Conservation Order Survey.....18
Appendix C	Thank you/reminder postcard sent as follow-up to the mailings20
Appendix D.....	Cover letter sent with second and third mailings of the 2021 Illinois Light Goose Conservation Order Survey21
Appendix E	Geographic distribution tables of Illinois residence and light goose hunters' activity in the 2021 LCGO.....23

ABSTRACT

Harvest of light geese (*Anser caerulescens*, *Anser rossii*) during the 2021 Illinois Light Goose Conservation Order was estimated at 90,392. An estimated 2,732 hunters participated in the 2021 Illinois Light Goose Conservation Order. Hunters spent an estimated 32,369 days afield during 2021, and the majority (55.7%) of the snow (light) goose harvest occurred during the month of February. 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 2020 Light Goose Conservation Order. One in 10 hunters had increased harvest of light goose over the previous 5 years. Approximately twenty-one percent of active light goose hunters used a guide or outfitter while hunting light geese during the 2021 Order. Due to changes in sampling of addresses and calculation of estimates, comparisons should not be made to years prior to 2014.

OBJECTIVE

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

METHODS

A total of 3,000 waterfowl hunters were randomly selected from 2020-21 HIP registrants who reported they hunted snow geese during the 2020 Light Goose Conservation Order in Illinois and purchased a state waterfowl stamp. Hunters sampled were mailed a 4-page mail-back questionnaire (Appendix A) and cover letter (Appendix B) 30 April 2021. Non-respondents were mailed a thank you/reminder postcard (Appendix C) 14 May 2021, a second copy of the questionnaire and cover letter (Appendix D) 08 June 2021, and another thank you/reminder postcard 28 June 2021. A third copy of the questionnaire and cover letter (Appendix D) was mailed 14 July 2021. The number of light 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 2021 Illinois Spring Light Goose Hunter Survey who reported hunting light geese (adjustment for non-hunters is inherent),

L_t = total number of 2020-21 Harvest Information Program (HIP) registrants who indicated they hunted light geese in Illinois during 2020 waterfowl hunting season,

n = number of respondents to the 2021 Illinois Spring Light 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 2021 estimates for number of hunters, days hunted, and light geese harvested were based on 5,443 HIP registrants who reported they hunted during the 2020 LGCO on their 2020-21 HIP registration. Estimated light 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 28.0 (IBM SPSS Inc. 2021). Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution. 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 light 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 light goose hunter surveys in Illinois (Williams et al. 2013).

ORDER DATES AND BAG LIMITS

The 2021 Light Goose Conservation Order took place from 15 January to 30 April in the North Zone and from 1 February to 30 April 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 Light Goose Conservation Order were required to have a state waterfowl permit 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

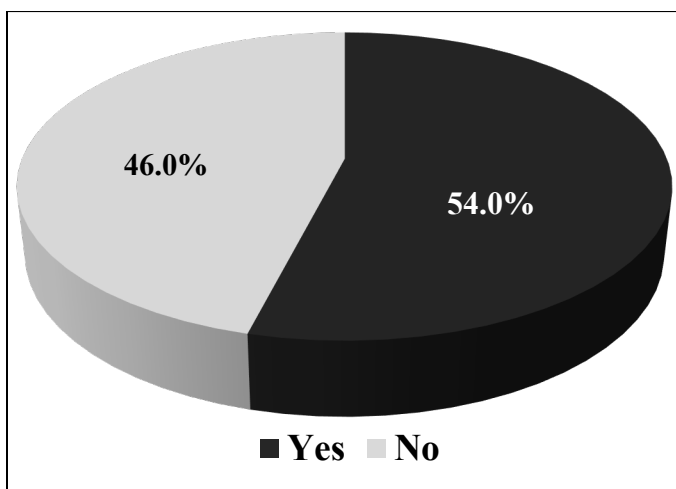


Figure 1. Percentage of survey respondents who hunted light geese in the 2021 Illinois LCGO ($n = 1,018$).

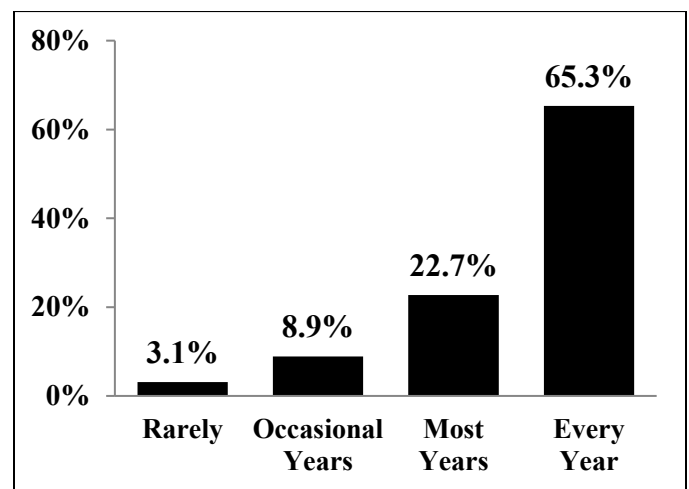


Figure 2. How often light goose hunters* hunt the LCGO in Illinois ($n = 550$).

*Hunters who reported they hunted light geese 1 day or more in Illinois during the 2021 Light Goose Conservation Order.

The questionnaire was undeliverable to 69 addresses, reducing the mailing list to 2,931 individuals. A total of 1,025 questionnaires were returned, of which 1,018 were considered usable, for a 35% response rate. Over half (54.0%) of respondents reported hunting light geese during the 2021 Light Goose Conservation Order (Figure 1). Two-thirds (65.3%) of active hunters, those who hunted at least one day during the 2021 LGCO, hunt light geese every year (Figure 2). Central zone was the most popular for hunters and over half (57.8%) of active hunters reported hunting the Central Zone most often for light geese (Figure 3).

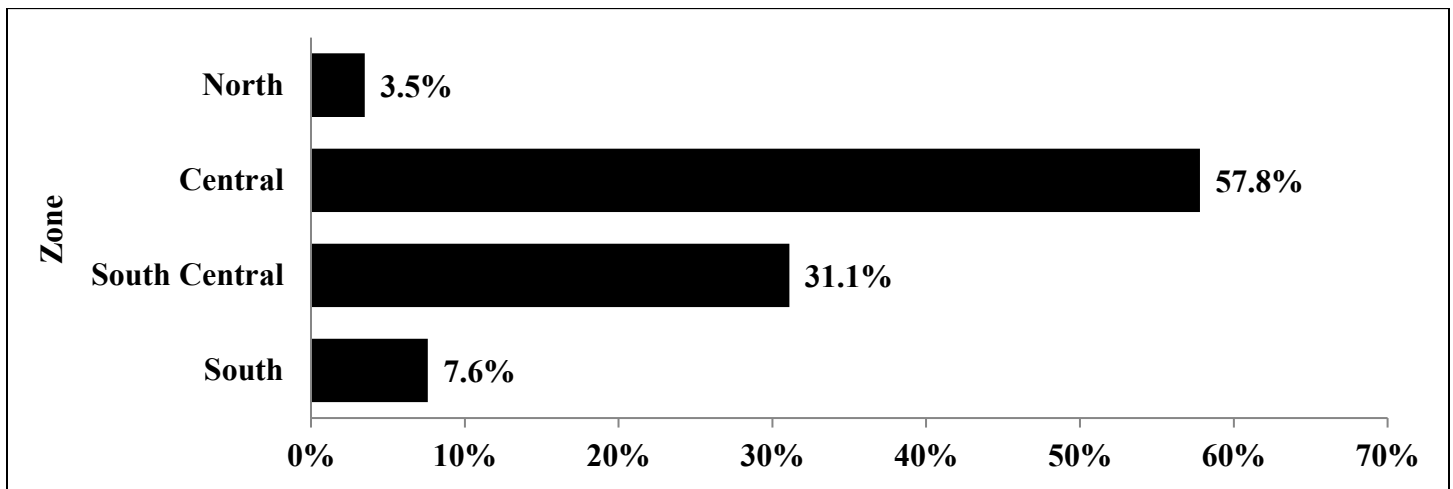


Figure 3. Zone hunted* most often during the 2021 LGCO (*n* = 550).

*Hunters who reported they hunted light geese 1 day or more in Illinois during the 2021 Light Goose Conservation Order.

During the 2021 Illinois LGCO, an estimated 2,748 participants hunted for 32,973 days and harvested 91,488 light geese (Table 1). Those who hunted most often in the Central zone were responsible for 58% of the harvest and 61% of the days hunted (Table 2). In comparison to the 2020 Order, hunter participation declined 16.5% and light goose harvest declined 34.9% (Figure 4). Among active LGCO hunters, 62.6% hunted 10 days or less (Figure 5), and 16.2% reported not harvesting any light geese, whereas 7.4% harvested ≥ 100 light geese. The fewest number of geese were harvested during January (<1%), 55.7% of the harvest occurred during February, and 44.2% percent occurred in March (Table 3).

Mean overall harvest was 33 geese per hunter, and 40 geese per hunter when unsuccessful hunters are excluded. A total of 5,443 light geese were estimated to be downed but not retrieved by hunters this Order.

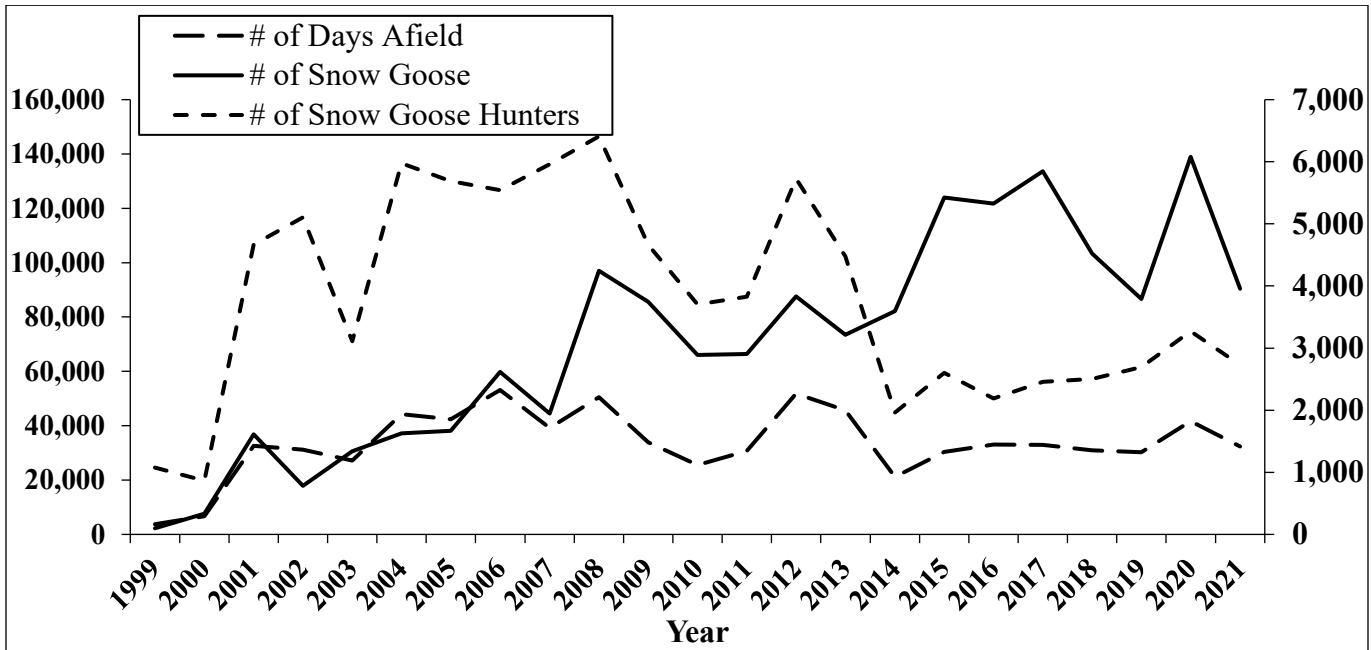


Figure 4. Estimated Illinois LGCO hunter participation and harvest across time.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

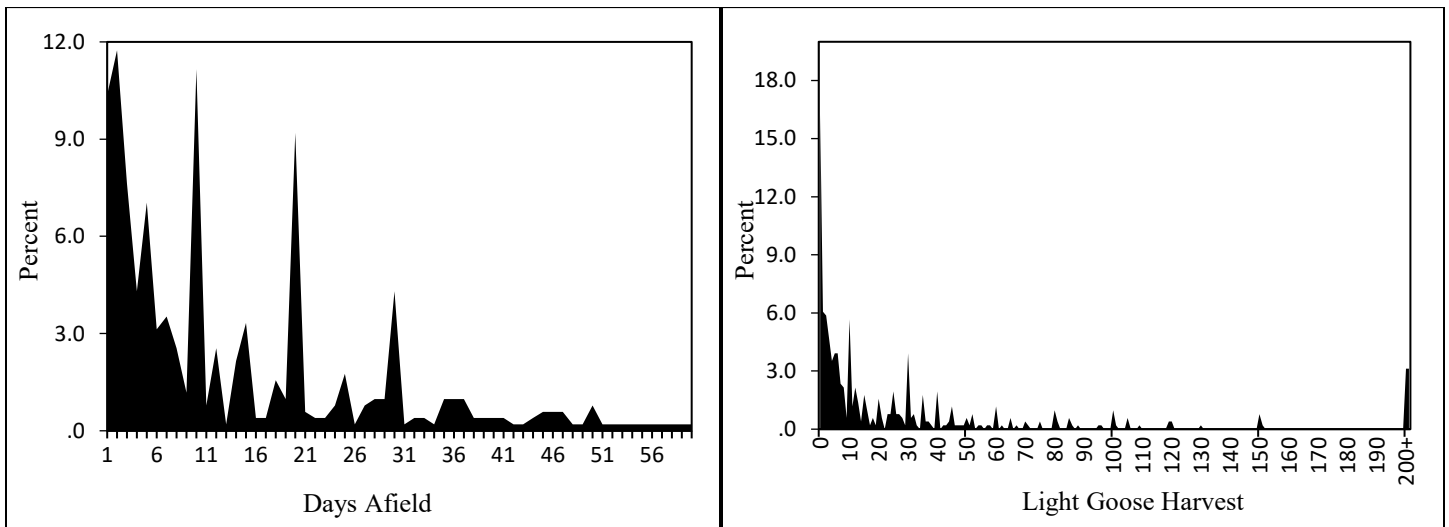


Figure 5. Distribution of days afield per hunter and light geese harvested per hunter for Illinois' during the 2021 Light Goose Conservation Order.

*Hunters who reported they hunted light geese 1 day or more in Illinois during the 2021 Light Goose Conservation Order.

Hunters hunted most frequently on private land with permission (59.6%), followed by private land for a fee (28.4%) (Figure 6). Hunters averaged 5.6 days hunting public land and 11.2 days hunting private lands.

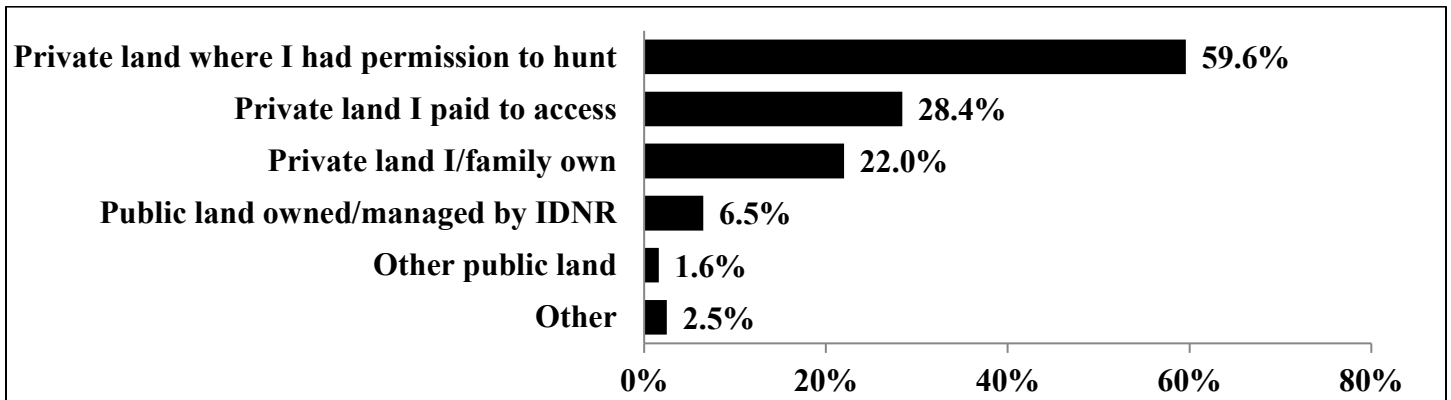


Figure 6. Type of land hunters* hunt most often during LGCO ($n = 550$).

*Hunters who reported they hunted light geese 1 day or more in Illinois during the 2021 Light Goose Conservation Order.

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

Satisfaction with the 2021 Light Goose Conservation Order

Almost, fifteen percent (14.8%) hunters perceived an increase in the number of light geese seen during the Conservation Order over the past 5 years, whereas two-thirds (67.0%) felt there was a decrease (Table 4). One in ten hunters (9.6%) harvested more light geese than they had over the past 5 years and three quarters % harvested fewer (Table 5). When asked about the dates of the 2021 Light Goose Conservation Order, most active hunters (68.3%) felt that the dates were about right, (Figure 7). Over half of active hunters were dissatisfied with the number of light geese they saw (63.2%) and their amount of shooting (60.6%). Hunters were most satisfied (34.9%) with the amount of hunting they did (Table 6.)

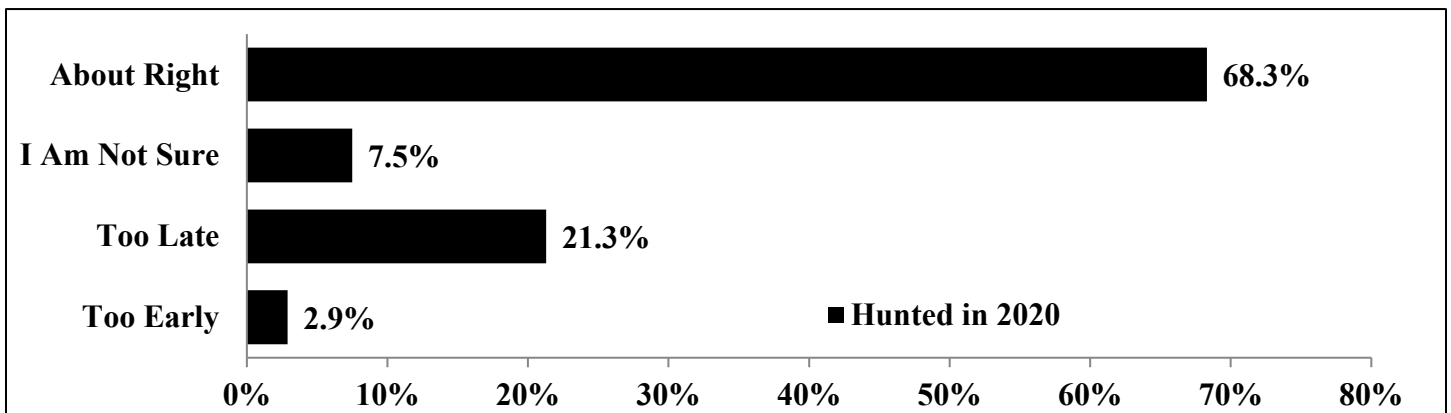


Figure 7. How hunters feel about the dates of the 2021 LGCO for the area they hunted.

When asked about conservation and the ecological impacts of light geese, hunters had the highest level of agreement with “I feel light geese populations are an overabundant species” (69.7%), “I feel light geese populations are too high” (65.5%), and “I feel light geese compete with greater white-fronted geese for food” (60.4%) (Table 7).

Use of guides and outfitters

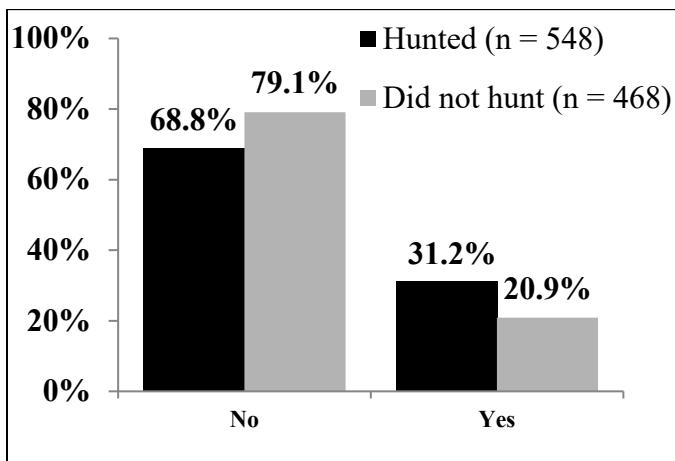


Figure 8. Percent of light goose hunters who have ever used a guide/outfitter for light goose hunting.

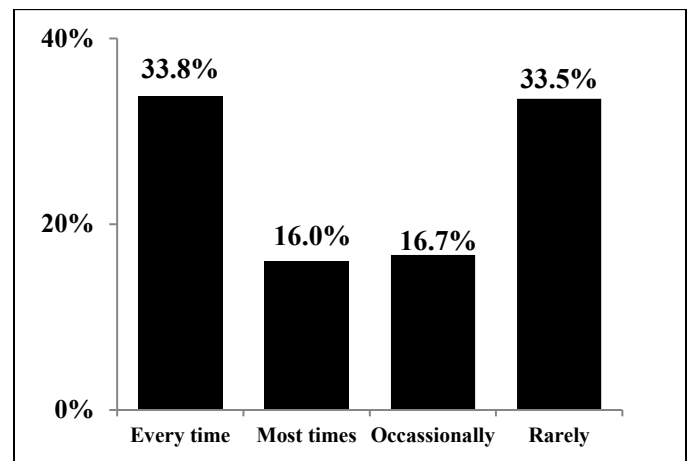


Figure 9. How frequently a guide is used for light goose hunting ($n = 269$).

Most hunters, regardless of participation in the most recent Conservation Order, have never used an outfitter to hunt light geese (Figure 8), though those who hunted this year were more likely to have used outfitters than those who did not hunt. Of those who have ever used an outfitter one in three use an outfitter/guide every time (33.8) and 33.5% use one rarely (Figure 9). Differences in frequency of use among those who were active hunters and those who did not hunt were not reported due to small sub-sample size. Almost 20 percent (18.7%) of those who hunted LCGO this year used an outfitter/guide to do so.

Hunter characteristics

Light Goose Conservation Order hunters were younger ($M = 46.8 \pm 16.1$ years old) than inactive hunters ($M = 48.9 \pm 16.2$ years old), and almost all (98.0%) were male (Figure 10). Those who hunted LCGO this year have been hunting light geese during the spring in Illinois for an average of 9.2 years as compared to

4.8 years for those who did not hunt. Similarly, they have hunted regular waterfowl in Illinois for an average of 27.2 years as compared to 24.6 years for those who did not. The counties with the most respondents were St. Clair (7.0%), Madison (6.9%), Adams (3.1%), Clinton (3.1%), and Tazewell (3.1%). The general locations in Illinois in which light goose hunters live and concentrated their efforts is presented in Appendix E.

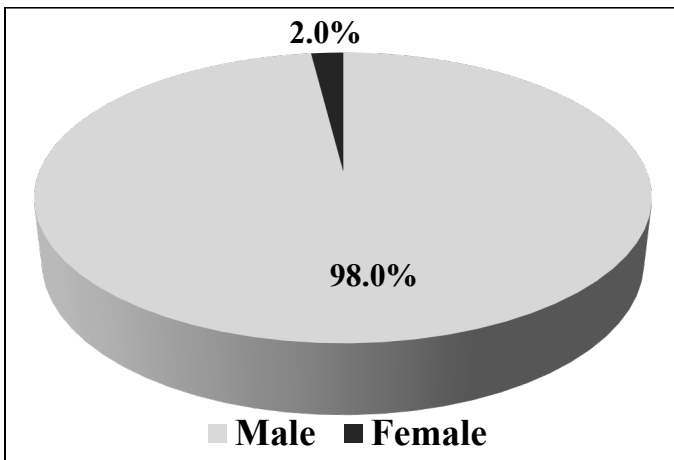


Figure 10. Gender of light goose hunters ($n = 1,018$).

REFERENCES

- Anderson, W.L., D.D. Thornburg, and R.M. Whitton. 1996. Estimating Canada goose harvest in southern Illinois quota zones. *Wildlife Society Bulletin* 24:233-237.
- IBM SPSS Inc. 2020. SPSS for Windows. IBM Corporation, 1 New Orchard Road, Armonk, NY, U.S.A.
- Lischka, S.A., W.L. Anderson, and L.K. Campbell. 2006. Results of the 2005-2006 Illinois hunter harvest survey. Human Dimensions Program Report HR-06-01. Illinois Natural History Survey, Champaign, IL. 55pp.
- Williams, B.D., C.A. Miller, and L.K. Campbell. 2013. Hunter Participation, Harvest, and Hunting Behavior During the 2013 Illinois Conservation Order Season. Job Completion Report, Federal Aid in Wildlife Restoration W-112-R-22. Human Dimensions Research Program HR-13-06/INHS Technical Report (33). Illinois Natural History Survey, Champaign, IL. 22pp.

Table 1. Estimates of the number of hunters, days afield, light geese harvest, and number of birds crippled from 1999-2021 during the Illinois Light Goose Conservation Order.

	Hunters	Days Afield	Harvest	Crippled
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	4,862
2006	5,543	53,154	59,799 ^a	8,892
2007	5,962 ± 1,147 ^b	39,170 ± 15,221	44,514 ± 25,794	11,078
2008	6,409 ± 1,046 ^b	50,471 ± 10,331	97,021 ± 40,811	11,050
2009	4,663 ± 950 ^b	33,947 ± 8,403	85,635 ± 36,479	5,547
2010	3,702 ± 820 ^b	25,581 ± 6,297	65,987 ± 42,519	3,561
2011	3,825 ± 826 ^b	30,753 ± 8,902	66,406 ± 30,962	7,810
2012	5,726 ± 943 ^b	51,763 ± 11,376	87,558 ± 41,316	4,157
2013	4,477 ± 1,192 ^b	45,724 ± 16,642	73,495 ± 52,191	3,686
2014	1,962 ± 188 ^b	21,170 ± 3,151	82,161 ^c ± 22,291	6,108
2015	2,599 ± 206 ^b	30,360 ± 3,213	123,944 ^c ± 29,265	5,491
2016	2,187 ± 81 ^b	33,048 ± 1,822	121,689 ^c ± 9,716	5,570
2017	2,459 ± 145 ^b	32,931 ± 2,403	133,629 ^c ± 24,576	5,774
2018	2,505 ± 141 ^b	30,989 ± 2,400	103,322 ^c ± 33,481	6,864
2019	2,694 ± 205 ^b	30,206 ± 3,138	86,683 ^c ± 34,461	5,558
2020	3,272 ± 186 ^b	41,621 ± 3,911	138,954 ^c ± 30,202	7,395
2021	2,748 ± 171 ^b	32,973 ± 2,702	91,488 ^c ± 30,313	5,630

^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 of the number of hunters, days afield, and harvest of light geese by zone hunted most often in 2021.

Zone	Hunters	Days Afield	Harvest	Crippled
North	102	716	246	-
Central	1,577	20,013	53,195	2,091
South Central	866	9,908	31,990	1,674
South	203	2,337	6,058	1,866
Total	2,748	32,973	91,488	5,630

*Estimates are based off “zone hunted most often” rather than county reported for harvest because some counties lie in multiple zones.

Table 3. Estimated light goose harvest by month during the Illinois Light Goose Conservation Order from 2004-2021.

	January ^{b,c}	February	March	April
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	
2020	196	85,326	53,432	
2021	96	50,340	39,956	1,096

^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 4. Hunter comparison between the number of light geese SEEN during 2021 to the last 5 years ($n = 546$).

	Hunted in 2021	
	Number of Hunters	Percentage of Hunters (%)
Decreased Considerably	128	23.4
Decreased Moderately	115	21.1
Decreased Slightly	123	22.5
No Change	99	18.1
Increased Slightly	50	9.2
Increased Moderately	22	4.0
Increased Considerably	9	1.6

Table 5. Hunter comparison between the number of light geese HARVESTED during 2021 to the last 5 years ($n = 544$).

	Hunted in 2021	
	Number of Hunters	Percentage of Hunters (%)
Decreased Considerably	167	30.7
Decreased Moderately	112	20.6
Decreased Slightly	132	24.3
No Change	81	14.9
Increased Slightly	37	6.8
Increased Moderately	12	2.2
Increased Considerably	3	0.6

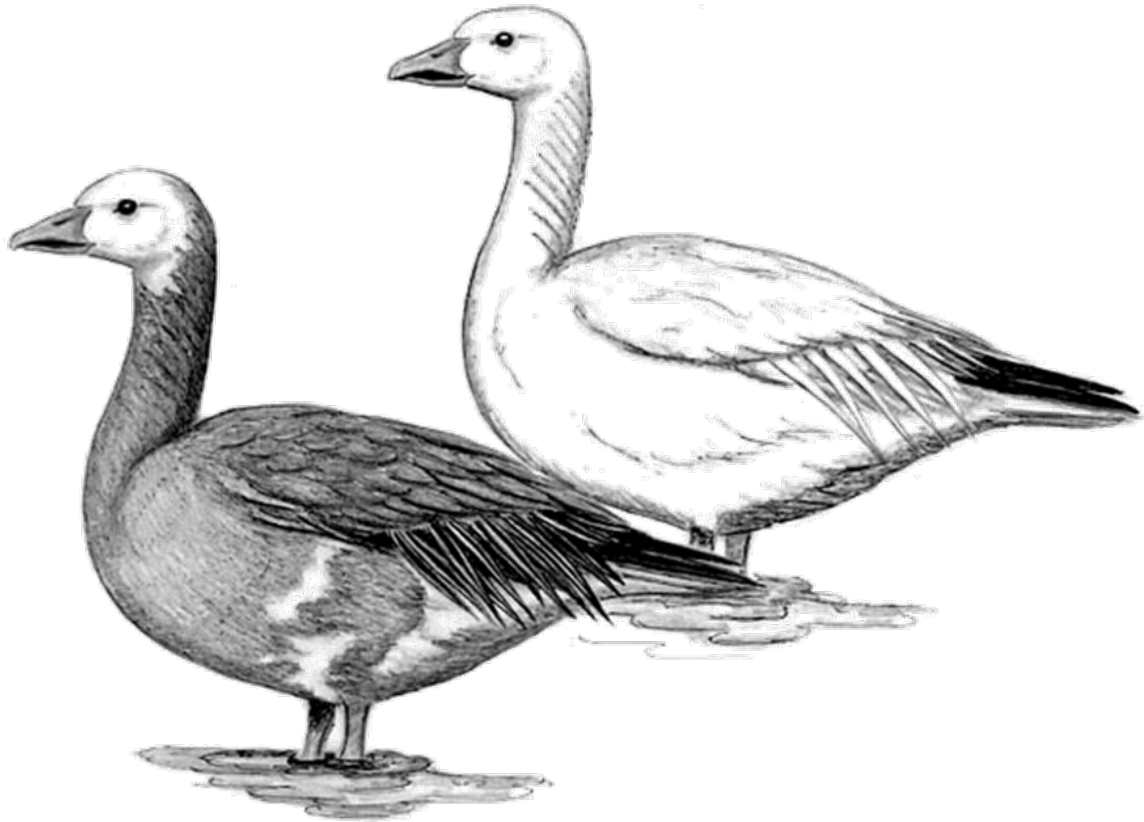
Table 6. Satisfaction with the 2021 Light Goose Conservation Order in Illinois.

	<i>n</i>	Very Dissatisfied %	Dissatisfied %	Neither %	Satisfied %	Very Satisfied %
Number of light geese you saw.	547	14.3	31.6	24.9	25.0	4.2
Mid-season matched peak of light goose migration.	543	12.0	30.4	34.3	20.4	2.9
Amount of shooting you got in.	548	27.2	33.4	23.2	12.8	3.5
Amount of time you spent light goose hunting.	544	7.2	23.7	34.2	29.4	5.5
Number of light geese you harvested.	546	27.5	35.7	21.1	13.9	1.8
The weather during the Conservation Order season.	546	20.7	22.5	30.8	23.4	2.6
Number of light geese that migrated through areas you hunted.	547	19.7	29.4	26.0	20.7	4.2

Table 7. Hunters' attitudes toward light goose conservation.

"I feel light geese..."	Strongly Disagree		Neither Agree or Disagree		Strongly Agree		
	%	%	%	%	%	%	
...compete with Canada geese for nest sites.	9.8	15.7	6.8	34.5	10.2	15.9	7.1
...compete with greater white-fronted geese for nest sites.	5.4	9.7	5.4	38.9	11.5	21.7	7.5
...contribute to a balanced ecosystem.	8.3	17.6	14.8	36.6	9.3	10.9	2.5
...populations are too high.	2.9	4.4	5.1	20.0	11.6	30.2	25.8
...compete with Canada geese for food.	3.8	7.4	6.3	20.4	16.3	28.5	17.4
...compete with greater white-fronted geese for food.	3.3	5.1	3.4	26.0	15.3	29.6	17.3
...populations have rebounded due to conservation efforts.	4.4	7.6	6.9	45.6	10.9	16.7	7.9
...are a conservation success story.	4.3	8.1	7.7	45.2	12.3	17.0	5.5
...threaten biodiversity.	2.4	4.7	4.9	41.5	15.3	20.4	10.9
...are harming habitat in the Hudson Bay region.	1.8	2.7	1.8	46.2	9.7	21.5	16.3
...are an overabundant species.	2.7	3.0	3.5	23.2	13.9	28.3	25.4

Illinois Light Goose Conservation Order Survey 2021



Illinois Department of Natural Resources
Division of Wildlife Resources
&
The Illinois Natural History Survey

I ILLINOIS
Illinois Natural History Survey
PRAIRIE RESEARCH INSTITUTE

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. Light Goose Conservation Order (Spring Light Goose) Hunting Effort and Harvest. Please take a few minutes to complete the following questionnaire to help us evaluate the *2021 Light Goose Conservation Order for goose hunting even if you did not hunt.*
All questions pertain to Illinois hunting. Please note: "Light geese" includes Snow, Ross', and Blue geese.

- Did you hunt in Illinois during the **2021 Light Goose Conservation Order (spring light goose)** (North Zone: **Jan. 15 - April 30, 2021**; Central, South Central, and South Zones: **Feb. 1 - April 30, 2021**)?
Do not include hunting light geese during the regular Canada goose season. (Please check **one**.)
 Yes No (If "No," please go to **Question 11**)
- Which of the following best describes how often you hunt **light geese** in Illinois?
 Every year Most years Occasional years Rarely
- In which zone did you **hunt light geese most often** during the **2021 Light Goose Conservation Order**? (Please check **one**.)
 North Zone Central Zone South Central Zone South Zone
- On which of the following types of land did you hunt light geese during the **2021 Light Goose Conservation Order**? (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): _____
- 4a. How many days did you hunt light geese on Illinois state public land and/or private land during the 2021 Light Goose Conservation Order? Please indicate number of days for each.
Public: _____ Days **Private:** _____ Days
- 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 Light Goose (light, blue, & Ross') Conservation Order; do not include light geese harvested during the regular Canada goose seasons.** Report the counties in which you hunted, number of days you hunted, and light geese harvested for the time period in which you hunted light geese. Include only light 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 backside of your cover letter 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:				
April:				

6. How does the number of light geese you **saw** during the **2021 Light Goose Conservation Order** 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

7. How does the number of light geese you **harvested** during the **2021 Light Goose Conservation Order** 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

8. About how far, on average, did you travel to hunt light geese in Illinois during 2021? _____ Miles

9. How did you feel about the dates of the **2021 Light Goose Conservation Order** 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

10. Please rate your **SATISFACTION with the 2021 Light Goose Conservation Order 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 light geese you saw.	1	2	3	4	5
Mid-season matched peak of light goose migration.	1	2	3	4	5
Amount of shooting you got in.	1	2	3	4	5
Amount of time you spent light goose hunting.	1	2	3	4	5
Number of light geese you harvested.	1	2	3	4	5
Weather during the season.	1	2	3	4	5
Number of light geese that migrated through areas you hunted.	1	2	3	4	5

11. Have you **ever** used a guide or outfitter while hunting light geese during the **Light Goose Conservation Order in Illinois**?

_____ Yes _____ No (If “No,” please go to **Question 12**)

11a. If “Yes,” on average for all years you have hunted light geese, how often do you use a guide or outfitter while hunting light geese in Illinois during the **Light Goose Conservation Order**?

_____ Every time _____ Most times _____ Occasionally _____ Rarely

11b. Did you use a guide or outfitter while hunting light geese in Illinois **during the 2021 Light Goose Conservation Order**?

_____ Yes _____ No

12. Please show how much you agree or disagree with the following statements about the Light Goose Conservation Order by circling the number that matches your response.

“I feel light geese...”	Neither						
	Strongly Disagree	Disagree	Slightly Disagree	Agree or Disagree	Slightly Agree	Agree	Strongly Agree
...compete with Canada geese for nest sites.	1	2	3	4	5	6	7
...compete with greater white-fronted 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
...compete with Canada geese for food.	1	2	3	4	5	6	7
...compete with greater white-fronted geese for food.	1	2	3	4	5	6	7
...populations have rebounded due to conservation efforts.	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
...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. Background Information. The following questions allow us to understand more about the people involved in light 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 hunted during the **Light Goose Conservation Order** 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



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 Illinois Hunter,

You have been chosen as one of a select group of Illinois light goose hunters to provide information about your hunting activities. Enclosed is a survey questionnaire regarding your hunting experiences in Illinois during the 2021 Light Goose Conservation Order (spring) season. **Even if you did not hunt in Illinois during the 2021 season, we ask that you please take a few minutes to complete the portions of the questionnaire that pertain to you.** A postage paid envelope is provided for returning the questionnaire to us.

This study by the Illinois Department of Natural Resources and the Illinois Natural History Survey is being done to gather information about the economic contributions for light goose hunting in Illinois. Results of this study will help wildlife managers make decisions to improve hunting opportunities and to better manage Illinois' wildlife populations. **Your responses are voluntary and completely confidential.** By responding you will help us more effectively manage wildlife and hunting in Illinois.

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 <https://publish.illinois.edu/human-dimensions/>. You may also find information about Illinois Department of Natural Resources wildlife management programs and wildlife in Illinois at <http://dnr.state.illinois.gov/hunting/>.

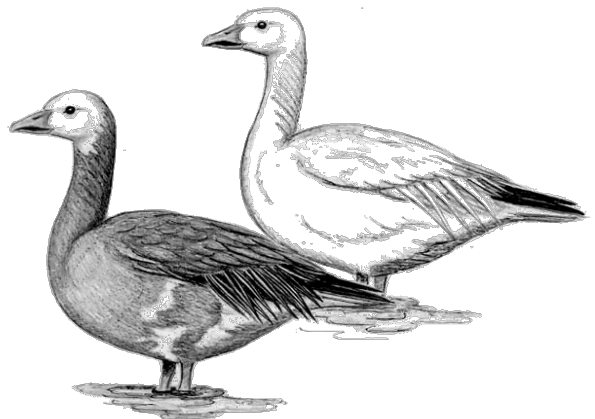
If you have questions regarding this study, please call us at (217) 244-5121 or email us at laurenjs@illinois.edu.

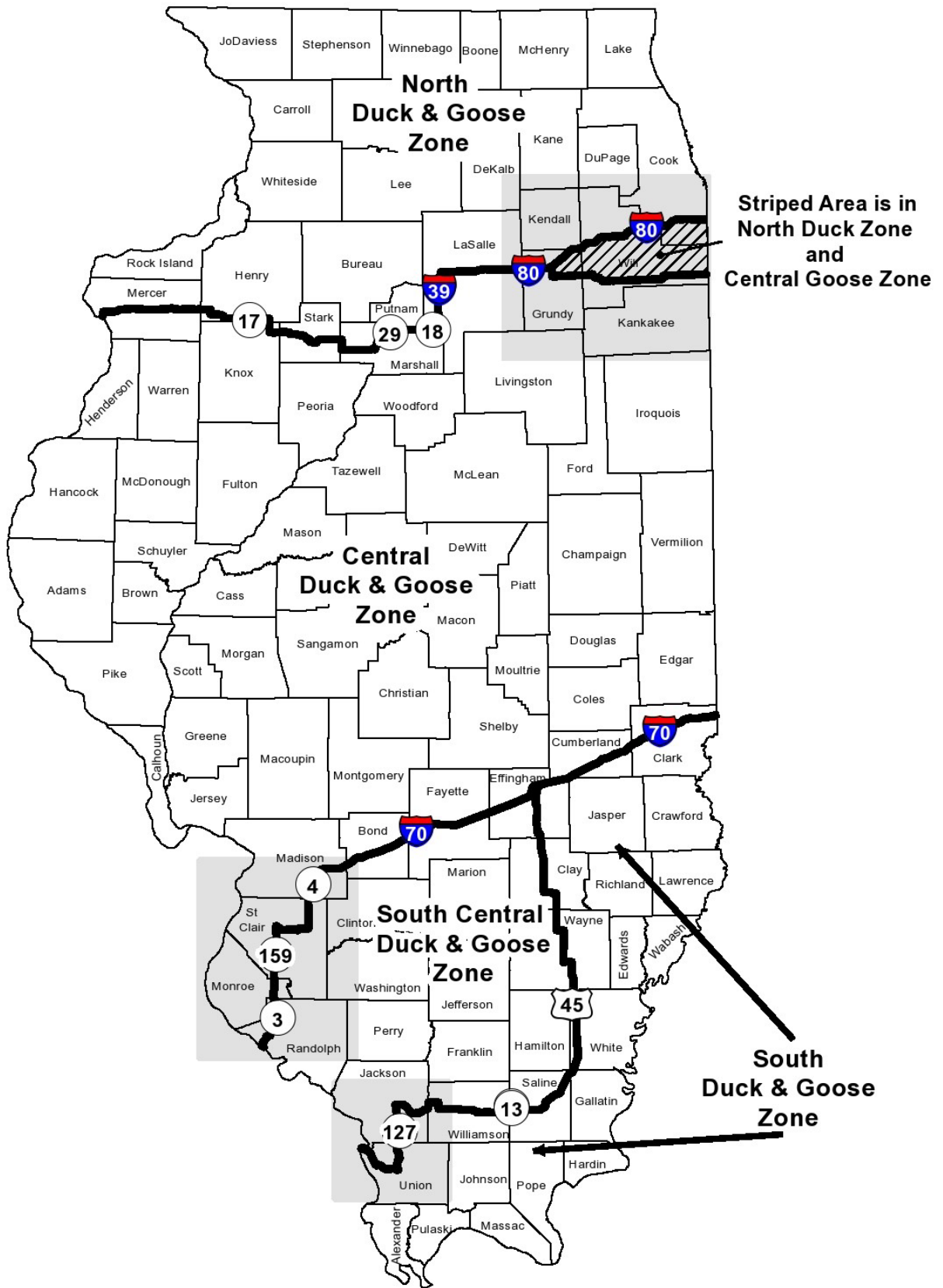
Thank you for your time and assistance.

Sincerely,

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

Craig A. Miller
Human Dimensions Research Program





Appendix C

Dear Illinois Hunter,

Recently you were mailed a questionnaire about your light goose hunting during the Illinois Light Goose 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 time and cooperation.



ILLINOIS NATURAL HISTORY SURVEY

Prairie Research Institute
University of Illinois at Urbana-Champaign

We recently mailed you a questionnaire regarding your hunting experiences during the 2021 Light Goose Conservation Order (spring) season. **Even if you did not hunt in Illinois during the 2021 season, we ask that you please take a few minutes to complete the portions of the questionnaire that pertain to you.** A postage paid envelope is provided for returning the questionnaire to us. If you have already returned the questionnaire, we thank you.

If you have not returned your completed questionnaire, please do so as soon as possible. We have enclosed another copy for your use. This study by the Illinois Department of Natural Resources and the Illinois Natural History Survey is being done to gather information about the economic contributions for light goose hunting in Illinois. Results of this study will help wildlife managers make decisions to improve hunting opportunities and to better manage Illinois' wildlife populations. **Your responses are voluntary and completely confidential.** By responding you will help us more effectively manage wildlife and hunting in Illinois.

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 <https://publish.illinois.edu/human-dimensions/>. You may also find information about Illinois Department of Natural Resources wildlife management programs and wildlife in Illinois at <http://dnr.state.illinois.gov/hunting/>.

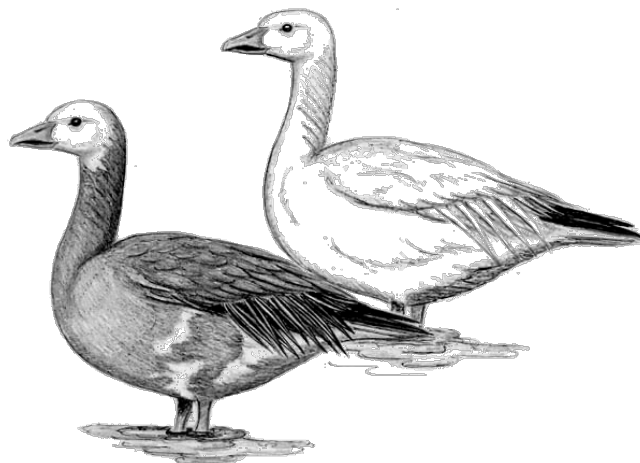
If you have questions regarding this study, please call us at (217) 244-5121 or email us at laurenjs@illinois.edu.

Thank you for your time and assistance.

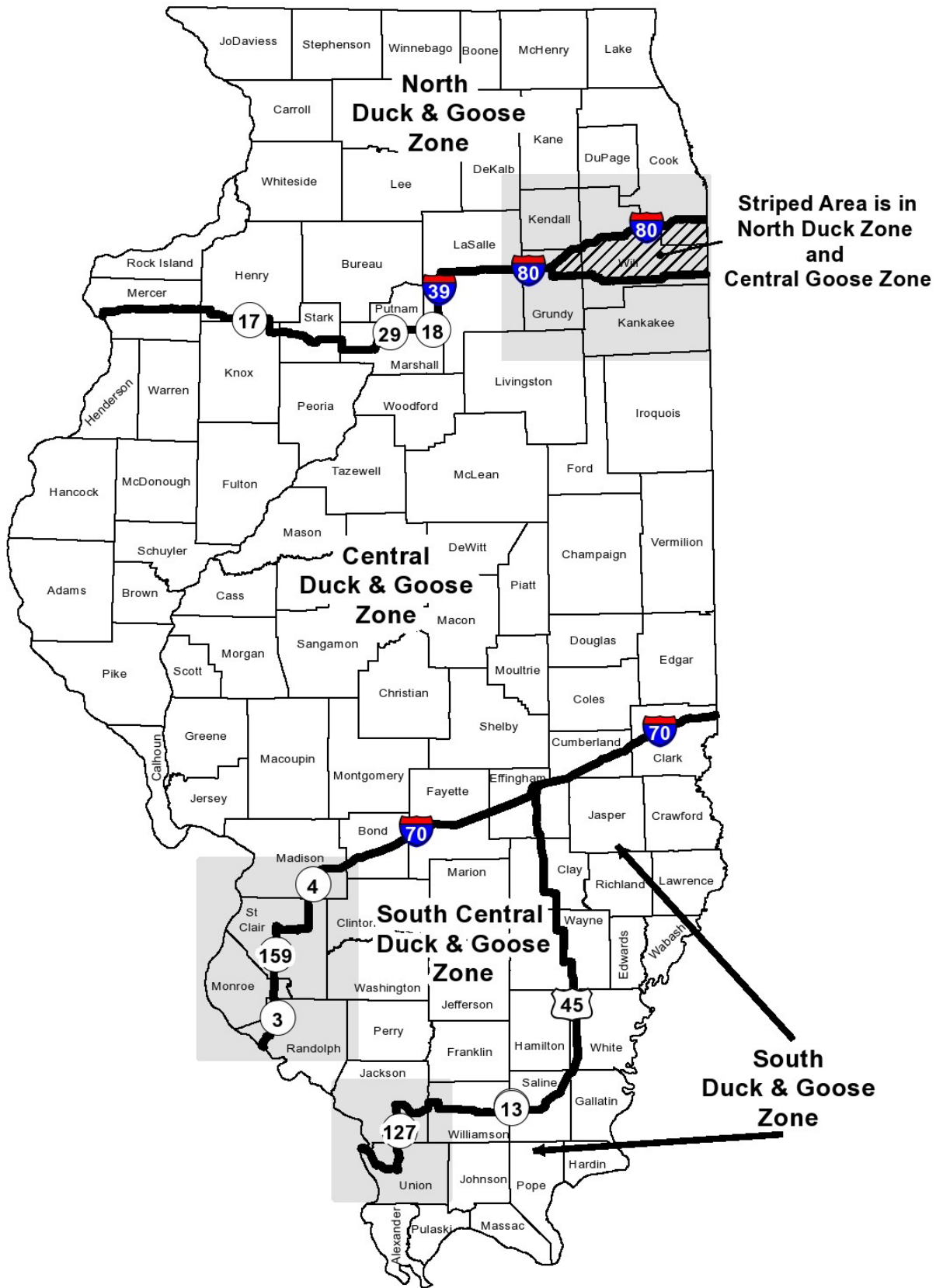
Sincerely,

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

Craig A. Miller
Human Dimensions Research Program



1816 South Oak Street,
Champaign, Illinois 61820 USA



Appendix E

Table E-1. Distribution of respondents by county of residence ($n = 1,018$).

County	<i>n</i>	County	<i>n</i>	County	<i>n</i>
Adams	25	Hardin	0	Morgan	19
Alexander	4	Henderson	7	Moultrie	7
Bond	7	Henry	5	Ogle	3
Boone	1	Iroquois	6	Peoria	18
Brown	2	Jackson	11	Perry	6
Bureau	6	Jasper	6	Piatt	5
Calhoun	30	Jefferson	8	Pike	13
Carroll	1	Jersey	-	Pope	2
Cass	16	Jo Daviess	2	Pulaski	1
Champaign	11	Johnson	4	Putnam	12
Christian	12	Kane	3	Randolph	11
Clark	4	Kankakee	6	Richland	1
Clay	4	Kendall	2	Rock Island	18
Clinton	35	Knox	14	St. Clair	68
Coles	6	Lake	10	Saline	3
Cook	12	LaSalle	22	Sangamon	26
Crawford	3	Lawrence	3	Schuyler	5
Cumberland	1	Lee	2	Scott	0
De Kalb	1	Livingston	3	Shelby	7
DeWitt	7	Logan	4	Stark	2
Douglas	8	McDonough	6	Stephenson	5
Du Page	6	McHenry	10	Tazewell	45
Edgar	3	McLean	15	Union	6
Edwards	2	Macon	23	Vermillion	2
Effingham	6	Macoupin	17	Wabash	4
Fayette	14	Madison	51	Warren	4
Ford	3	Marion	12	Washington	8
Franklin	11	Marshall	2	Wayne	2
Fulton	20	Mason	22	White	3
Gallatin	0	Massac	6	Whiteside	17
Greene	11	Menard	6	Will	27
Grundy	9	Mercer	8	Williamson	21
Hamilton	1	Monroe	16	Winnebago	4
Hancock	9	Montgomery	12	Woodford	14

Table E-2. Distribution of light geese harvested per county ($n = 550$).

County	Light Geese	County	Light Geese	County	Light Geese
Adams	200	Hardin	0	Morgan	1,371
Alexander	81	Henderson	31	Moultrie	7
Bond	291	Henry	0	Ogle	0
Boone	0	Iroquois	0	Peoria	110
Brown	40	Jackson	344	Perry	144
Bureau	0	Jasper	1	Piatt	0
Calhoun	587	Jefferson	127	Pike	967
Carroll	1	Jersey	-	Pope	0
Cass	1,123	Jo Daviess	0	Pulaski	34
Champaign	0	Johnson	101	Putnam	12
Christian	71	Kane	0	Randolph	170
Clark	107	Kankakee	0	Richland	0
Clay	308	Kendall	0	Rock Island	1
Clinton	1,774	Knox	100	St. Clair	331
Coles	30	Lake	3	Saline	0
Cook	0	LaSalle	35	Sangamon	39
Crawford	0	Lawrence	7	Schuyler	91
Cumberland	0	Lee	0	Scott	97
De Kalb	0	Livingston	40	Shelby	13
DeWitt	0	Logan	0	Stark	0
Douglas	6	McDonough	34	Stephenson	0
Du Page	0	McHenry	35	Tazewell	127
Edgar	287	McLean	1	Union	167
Edwards	0	Macon	0	Vermillion	0
Effingham	77	Macoupin	178	Wabash	255
Fayette	1,751	Madison	169	Warren	10
Ford	0	Marion	431	Washington	265
Franklin	191	Marshall	0	Wayne	153
Fulton	335	Mason	1,443	White	0
Gallatin	0	Massac	54	Whiteside	1
Greene	109	Menard	0	Will	12
Grundy	2	Mercer	60	Williamson	109
Hamilton	53	Monroe	295	Winnebago	0
Hancock	10	Montgomery	409	Woodford	54

Table E-3. Distribution of days hunted per county by county hunted ($n = 550$).

County	Days	County	Days	County	Days
Adams	204	Hardin	0	Morgan	65
Alexander	61	Henderson	32	Moultrie	15
Bond	92	Henry	0	Ogle	0
Boone	0	Iroquois	0	Peoria	63
Brown	32	Jackson	81	Perry	70
Bureau	2	Jasper	5	Piatt	0
Calhoun	280	Jefferson	139	Pike	337
Carroll	6	Jersey	-	Pope	0
Cass	115	Jo Daviess	0	Pulaski	27
Champaign	0	Johnson	27	Putnam	30
Christian	44	Kane	0	Randolph	103
Clark	2	Kankakee	0	Richland	0
Clay	20	Kendall	0	Rock Island	18
Clinton	400	Knox	136	St. Clair	220
Coles	15	Lake	3	Saline	0
Cook	2	LaSalle	21	Sangamon	14
Crawford	0	Lawrence	7	Schuyler	89
Cumberland	0	Lee	0	Scott	30
De Kalb	20	Livingston	33	Shelby	34
DeWitt	4	Logan	2	Stark	0
Douglas	4	McDonough	51	Stephenson	0
Du Page	0	McHenry	3	Tazewell	134
Edgar	10	McLean	23	Union	79
Edwards	0	Macon	11	Vermillion	0
Effingham	19	Macoupin	127	Wabash	52
Fayette	523	Madison	153	Warren	7
Ford	0	Marion	92	Washington	108
Franklin	88	Marshall	1	Wayne	40
Fulton	303	Mason	508	White	2
Gallatin	0	Massac	10	Whiteside	18
Greene	94	Menard	5	Will	13
Grundy	3	Mercer	52	Williamson	51
Hamilton	37	Monroe	89	Winnebago	0
Hancock	43	Montgomery	200	Woodford	48

Table E-4. Distribution of hunters* per county ($n = 550$).

County	n	County	n	County	n
Adams	19	Hardin	0	Morgan	8
Alexander	7	Henderson	6	Moultrie	4
Bond	12	Henry	0	Ogle	0
Boone	0	Iroquois	0	Peoria	11
Brown	2	Jackson	11	Perry	12
Bureau	2	Jasper	3	Piatt	0
Calhoun	32	Jefferson	17	Pike	30
Carroll	2	Jersey	-	Pope	0
Cass	18	Jo Daviess	0	Pulaski	5
Champaign	0	Johnson	2	Putnam	4
Christian	4	Kane	0	Randolph	13
Clark	1	Kankakee	0	Richland	0
Clay	3	Kendall	0	Rock Island	3
Clinton	63	Knox	22	St. Clair	26
Coles	1	Lake	2	Saline	0
Cook	1	LaSalle	3	Sangamon	6
Crawford	0	Lawrence	3	Schuyler	11
Cumberland	0	Lee	0	Scott	6
De Kalb	3	Livingston	4	Shelby	6
DeWitt	1	Logan	1	Stark	0
Douglas	1	McDonough	8	Stephenson	0
Du Page	0	McHenry	1	Tazewell	8
Edgar	2	McLean	4	Union	18
Edwards	0	Macon	2	Vermillion	0
Effingham	5	Macoupin	15	Wabash	4
Fayette	58	Madison	17	Warren	1
Ford	0	Marion	13	Washington	11
Franklin	11	Marshall	1	Wayne	3
Fulton	43	Mason	74	White	1
Gallatin	0	Massac	3	Whiteside	7
Greene	10	Menard	1	Will	2
Grundy	1	Mercer	8	Williamson	4
Hamilton	4	Monroe	7	Winnebago	0
Hancock	5	Montgomery	21	Woodford	5

*Sum is greater than n because some hunters participated in multiple counties.

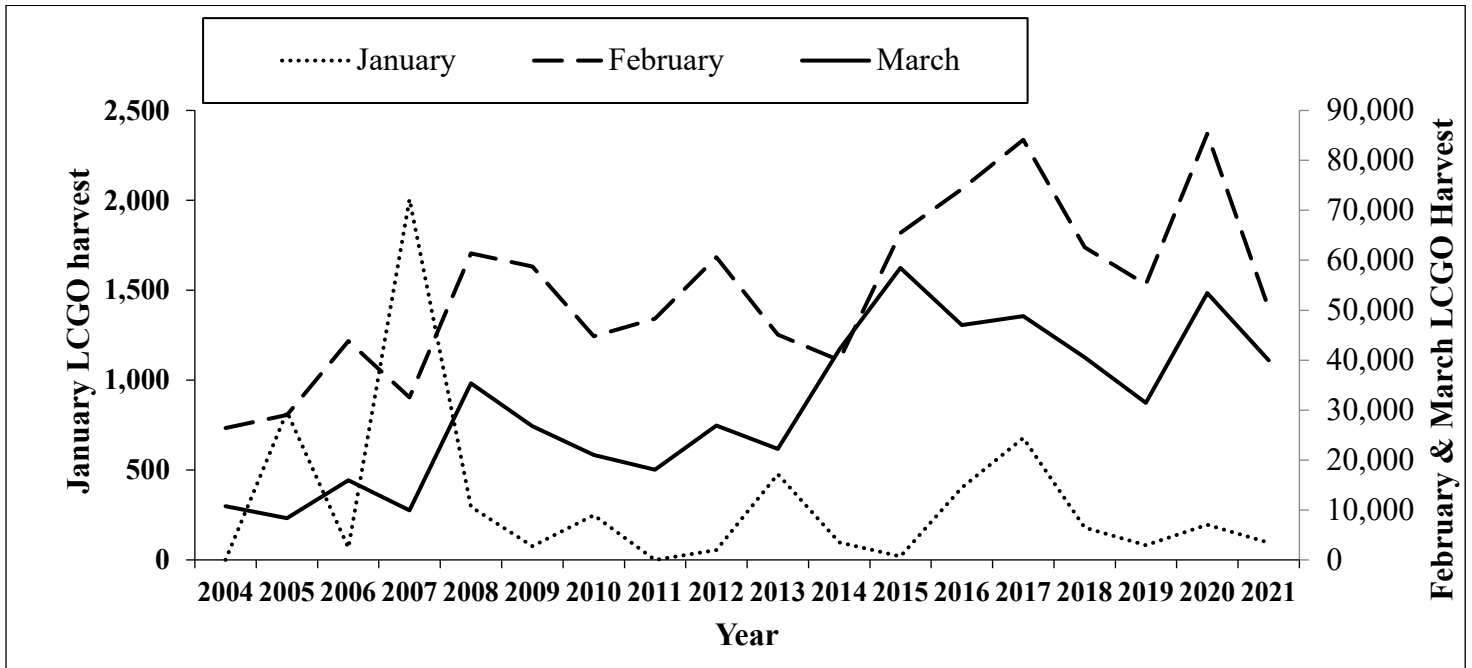


Figure E-1. Estimated number of LCGO harvested by month.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

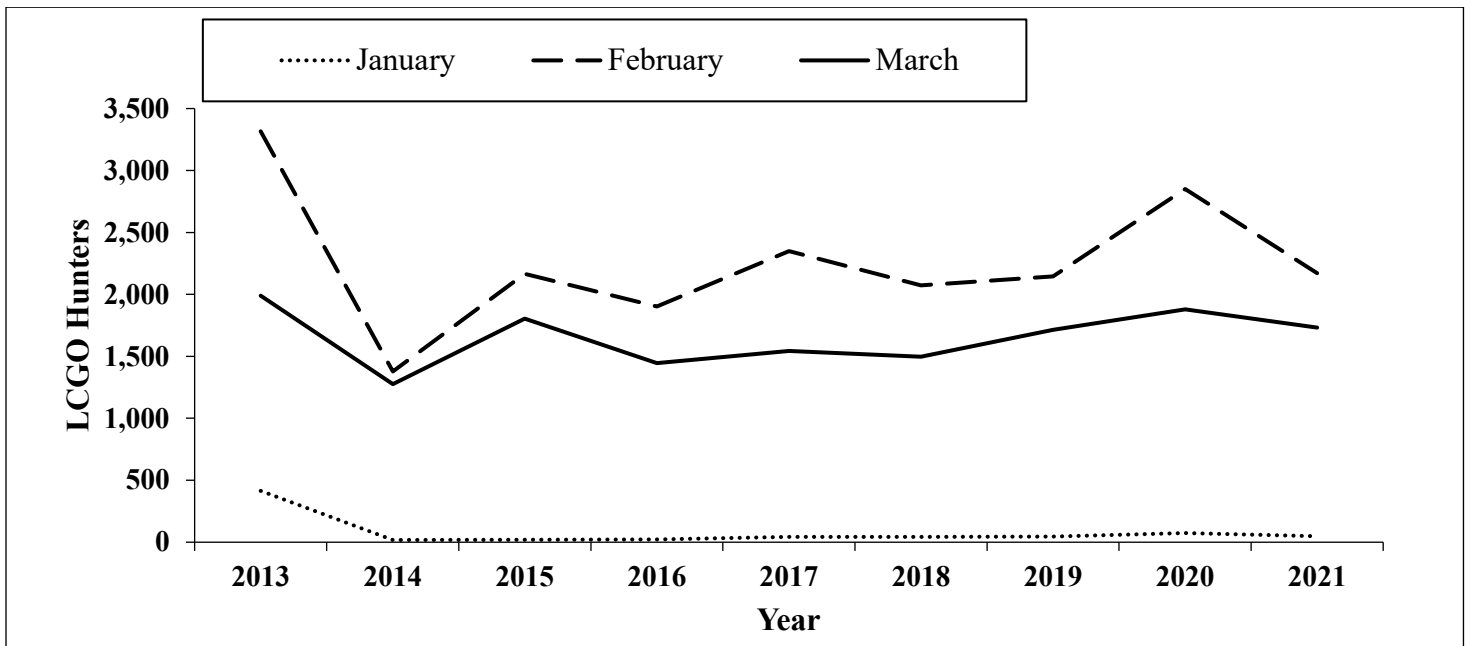


Figure E-2. Estimated number of LCGO hunters by month.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

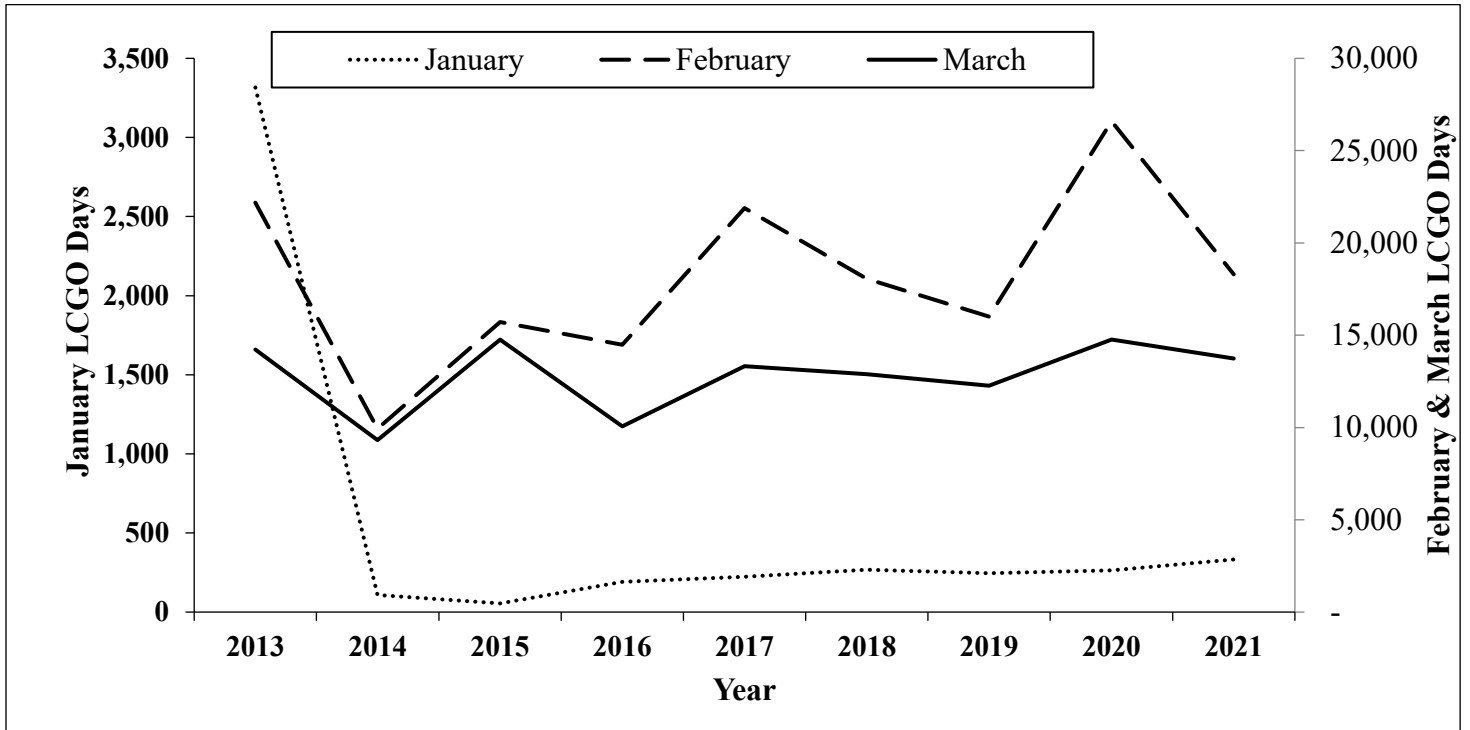


Figure E-3. Estimated number of days afield hunting LCGO by month.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.

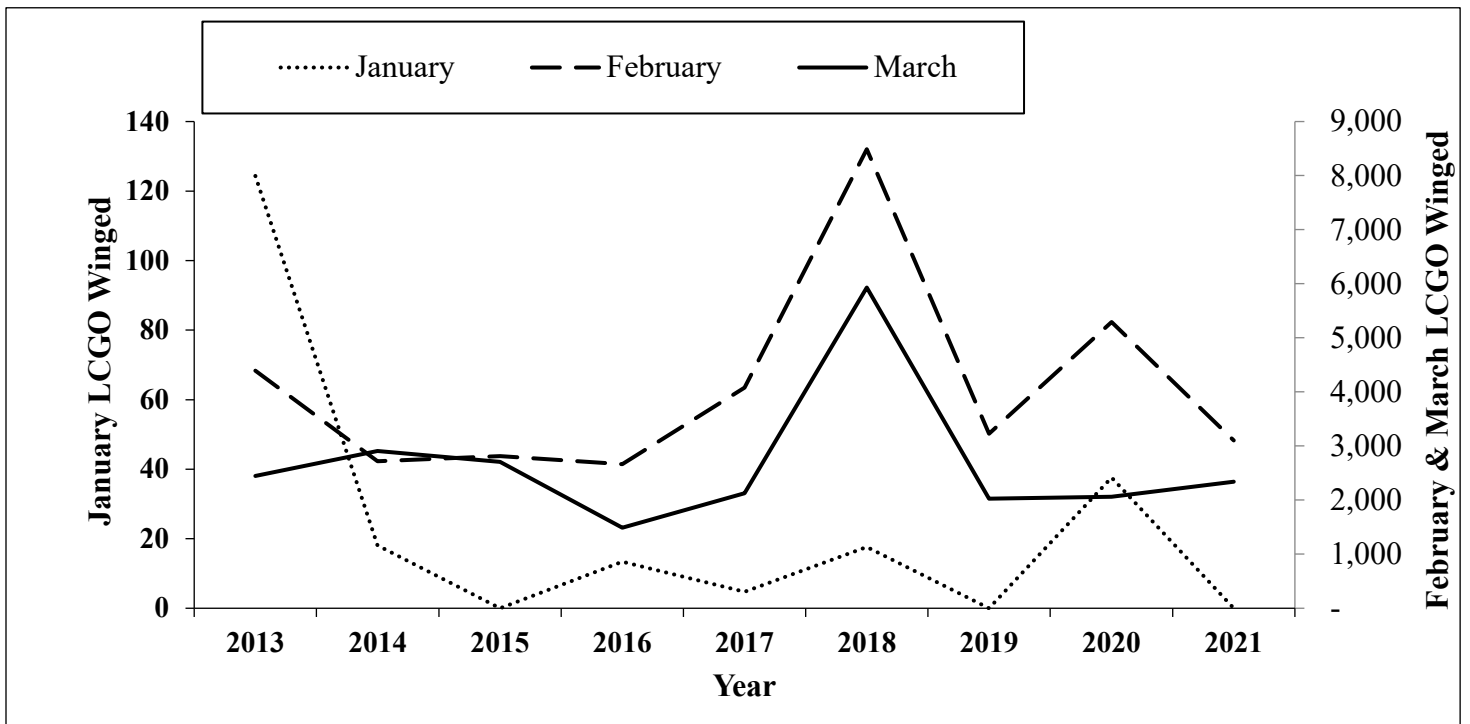


Figure E-4. Estimated number of hit but not retrieved LCGO by month.* Due to changes in number of hunters sampled and calculation of estimates, comparisons to previous years' figures must be done with caution.