

HumanDimensions
Research Program

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



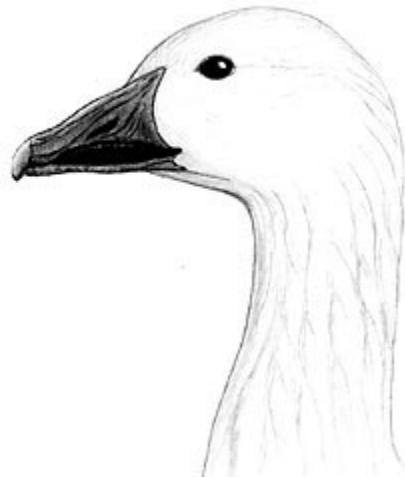
Federal Aid Project
Number W-112-R-21
Job Number 101.6
Wildlife Restoration
Oct. 1, 2011-Sept. 30, 2012

Marc Miller, Director
Illinois Department of Natural
Resources

Paul Vehlow
Federal Aid Coordinator

John E. Buhnerkempe
Chief, Division of Wildlife
Resources

Hunter Participation, Harvest, And Hunting Behavior During The 2012 Illinois Conservation Order Season



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

Prepared by
Mark G. Alessi,
Craig A. Miller and
Linda K. Campbell



INHS Technical Report 2012 (24)
August 27, 2012

Suggested Citation:

Alessi, M.G., C.A. Miller, and L.K. Campbell. 2012. Hunter Participation, Harvest, and Hunting Behavior During the 2012 Illinois Conservation Order Season. Job Completion Report, Federal Aid in Wildlife Restoration W-112-R-21. Human Dimensions Program Report HR-12-06/INHS Technical Report (24). Illinois Natural History Survey, Champaign, IL. 22pp.

TABLE OF CONTENTS

	<u>Page</u>
Table 1. Estimates of the number of hunters, days afield, and harvest of light geese 1999-2012 during the Illinois Conservation Order light goose season	7
Table 2. Estimated light goose harvest by month during the Conservation Order light goose season from 2004-2012	8
Table 3. Methods utilized by hunters to hunt light geese and the estimated harvest associated with each	9
Table 4. Types of land hunted by light goose hunters during 2012	10
Table 5. Non-hunters reasons for wanting to hunt light geese during the spring light goose season	11
Table 6. Perceived constraints by hunters who did not hunt light geese during the Illinois spring goose season in 2012	12
Table 7. Various categories of light goose hunting equipment owned by Illinois light goose hunters	13
Figure 1. Geographic distribution of Illinois light goose hunters' activity in spring 2012	14
Appendix A. Illinois Spring Snow Goose Hunter Survey 2011-2012 season	15
Appendix B. Cover letter sent with first mailing of the Illinois Spring Snow Goose Hunter Survey	20
Appendix C. Thank you/reminder postcard sent as a follow-up to the survey mailings	21
Appendix D. Cover letter sent with second mailing of the Illinois Spring Snow Goose Hunter Survey.....	22

HUNTER PARTICIPATION, HARVEST, AND HUNTING
BEHAVIOR DURING THE 2012 ILLINOIS
CONSERVATION ORDER SEASON

JOB COMPLETION REPORT

WILDLIFE HARVEST AND
HUMAN DIMENSIONS RESEARCH PROGRAM

STATE OF ILLINOIS

PROJECT NUMBER: W-112-R-21
STUDY 101
JOB NO. 101.6

Prepared by
Mark G. Alessi, Craig A. Miller, and Linda K. Campbell
Illinois Natural History Survey
Champaign, IL
August 27, 2012

Federal Aid in Wildlife Restoration
W-112-R-21

Illinois Department of Natural Resources

Marc Miller, Director
Illinois Department of Natural Resources

John E. Buhnerkempe, 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.

Abstract

Harvest of light geese (*Chen caerulescens*, *Chen rossii*) during the 2012 Illinois Light Goose Conservation Order season was estimated at 87,558, a 32% increase from the 2011 estimate of 66,406 geese. Participation increased 50%, from 3,825 hunters in 2011 to 5,726 hunters in 2012. Hunters spent an estimated 51,763 days afield during 2012, an increase of 21,010 days (68%) from 2011. The majority (69%) of the light goose harvest occurred during the month of February. Electronic calls were used most often (68%); unplugged shotguns were used by 60% of hunters. Fifty-two percent of light goose hunters indicated an increase in effort over the past five years, and 59% of hunters perceived an increase in light goose abundance during the regular goose seasons. More than one-half (57%) of non-hunters were interested in light goose hunting to extend their hunting season and enjoy the outdoors. Hunters who did not participate in the Conservation Order season reported “no place to hunt snow geese,” “no snow geese in my area,” and “not enough time” as the primary reasons they did not hunt light geese.

Objective

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

Methods

A sample of 3,000 waterfowl hunters was randomly selected from purchasers of the Illinois State Waterfowl Stamp for the 2011-2012 season. On 6 April 2012, these potential Conservation Order Light Goose (*Chen caerulescens*, *Chen rossii*) hunters were mailed a 4-page mail-back questionnaire and cover letter (Appendices A and B). Non-respondents were mailed a

thank you/reminder postcard (Appendix C) on 25 April 2012, a second copy of the questionnaire and cover letter (Appendix D) on 15 May 2012, and another thank you/reminder postcard on 5 June 2012. Estimates of number of hunters, days hunted, and light geese harvested were based on confirmed sales of 66,581 Illinois Migratory Waterfowl Stamps (2011-2012 series).

Estimated light goose harvest was adjusted for reporting bias using 0.478 as the adjustment factor (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 19.0 (IBM SPSS Inc. 2010).

The 2012 spring goose season took place from 8 January to 31 March in the North Zone and from 1 February to 31 March in the Central, South Central, and South Zones. The season began in each zone the day after the regular Canada goose (*Branta canadensis*) season closed. Hunters during the spring goose season were exempt from any daily bag or possession limits, and hunters were permitted to use unplugged shotguns, electronic calls, and hunt from half an hour before sunrise to half an hour after sunset.

Results

Harvest Results

The questionnaire was not deliverable to 16 addresses, thus reducing our mailing list to 2,984 individuals. A total of 1,612 questionnaires were returned, of which 1,568 were considered usable for a 54% response rate. Of the usable responses, 135 (9%) hunters reported hunting light geese during the 2012 spring goose season. This proportion is a slight increase to the 2011 proportion (6%) that hunted light geese. During the 2012 spring goose season, we estimated a total of 5,726 light goose hunters statewide hunted for 51,763 days and harvested 87,558 light geese (Table 1). The majority (69%) of the harvest occurred during February, a 4%

decrease from the 2011 February harvest (Table 2). Mean harvest was 15.29 geese per hunter for the season and 19.93 geese per successful hunter (harvested ≥ 1 goose) for the season. A total of 4,157 light geese were estimated to be crippled, which was a 47% decrease from the 2011 season.

Electronic calls were used by 68% of light goose hunters, and they harvested an estimated 75,980 (87%) light geese with electronic calls. Sixty percent of light goose hunters reported using an unplugged shotgun on at least one occasion, and they harvested an estimated 48,965 light geese with unplugged shotguns; hunters harvested an estimated 19,679 geese with the 4th, 5th, or 6th shell (Table 3). Light goose hunters hunted on private land that they had permission to hunt most frequently (72%, no change from 2011), followed by private land owned by themselves or their family (30% - up 10% from 2011, Table 4). Most (89%) light goose hunters did not use a guide while hunting geese during 2012.

Hunters who hunted light geese in 2012 had either increased their light goose hunting efforts (52%) or indicated no change (29%) in their efforts. A majority (97%) of spring goose hunters also hunted during the regular waterfowl seasons, and 50% hunted ducks and geese most often, followed by ducks (34%) and geese (16%). Most (59%) hunters perceived an increase in the number of light geese during the regular goose seasons. One-third (31%) of spring goose hunters also harvested light geese during the regular goose seasons, for a total of 9,712 light geese.

Non-Hunter Interest in Light Goose Hunting

Of the hunters who did not hunt during the spring goose season, 19% also did not hunt during the regular waterfowl season. Fifty-seven percent of non-spring hunters expressed an interest in light goose hunting; top reasons were to enjoy the outdoors (85%) and to extend their

hunting season (85%, Table 5). Perceived constraints of non-hunters were dominated by managerial, biological, and situational constraints (no place to hunt them: 32%, no geese where I live: 28%, and not enough time: 22%; Table 6).

The general location light goose hunters concentrated their efforts is presented in Figure 1. Spring goose hunters were younger ($M = 42$ years old) than non-hunters ($M = 48$ years old), and light goose hunters had been hunting light geese during the spring for an average of 4.7 years. Light goose hunters were asked what type(s) of light goose hunting equipment they had; 62% of hunters had snow goose calls (including e-callers), 54% had rag/sock decoys, 45% had shell decoys, and 45% had full-body decoys (Table 7). Fifty-five percent of light goose hunters borrowed or shared light goose equipment during the spring season: 65% of those hunters borrowed/shared rag/sock decoys, 58% were snow goose calls (including e-callers), and 55% were goose shells or full-body decoys. Fifty-five percent of goose hunters took someone light goose hunting for the first time in 2012.

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. 2010. 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.

Table 1. Estimates of the number of hunters, days afield, and harvest of light geese 1999-2012 during the Illinois Conservation Order light goose season.

	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 ^b
2006	5,543	53,154	59,799 ^b
2007	5,962 ± 1,147 ^a	39,170 ± 15,221	44,514 ± 25,794
2008	6,409 ± 1,046 ^a	50,471 ± 10,331	97,021 ± 40,811
2009	4,663 ± 950 ^a	33,947 ± 8,403	85,635 ± 36,479
2010	3,702 ± 820 ^a	25,581 ± 6,297	65,987 ± 42,519
2011	3,825 ± 826 ^a	30,753 ± 8,902	66,406 ± 30,962
2012	5,726 ± 943 ^a	51,763 ± 11,376	87,558 ± 41,316

^a 95% confidence intervals

^b Harvest data are estimates for Conservation Order Season only.

Table 2. Estimated light goose harvest by month during the Illinois Conservation Order light goose season from 2004-2012.

	January ^{b,c}	February	March
2004 ^a	-	26,404	10,785
2005	824 ^d	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

^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 Season only.

^d January harvest in 2005 also included Central Zone harvest.

Table 3. Methods utilized by hunters to hunt light geese and the estimated harvest associated with each during 2012.

Method	% Used	Total Hunters	Estimated Harvest
Electronic calls	68	3,894	75,980
Unplugged shotguns	60	3,436	48,965
Using 4 th , 5 th , or 6 th shell	35	2,004	19,679

Table 4. Types of land hunted by light goose hunters during 2012.

Land Hunted	%	% change from 2011
Public lands owned or managed by IDNR	4	- 13
Other public lands	4	---
Private land I or a member of my family own	30	+ 10
Private land on which I had permission to hunt	72	---
Private land I paid to access (lease, membership, etc.)	15	- 2
Other	2	- 1

Table 5. Non-hunters reasons for wanting to hunt light geese during the spring light goose season.

Reasons for Interest	Percent of Hunters
Enjoy the outdoors	85%
Extend my hunting season	85
Spend time with friends/family	72
Reduce the population	51
Protect the tundra	48
To eat them	45
No bag limits	41
Get to use electronic calls	45

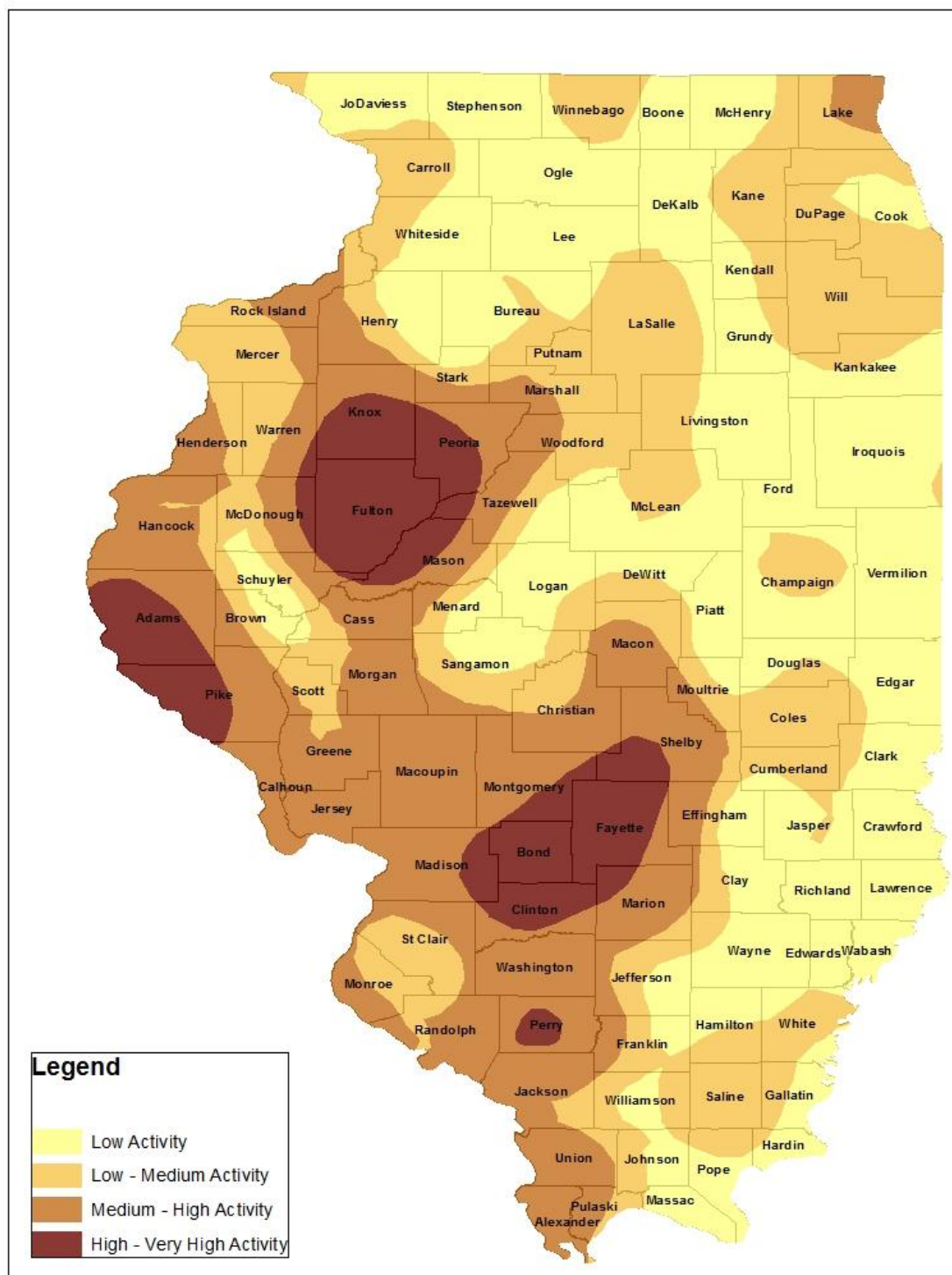
Table 6. Perceived constraints by hunters who did not hunt light geese during the Illinois spring goose season in 2012.

Perceived Constraints	Percent of Hunters
No place to hunt snow geese	32%
No snow geese where I live/hunt	28
Not enough time	22
Equipment is too much money	11
Don't know how to hunt them	7
They're too hard to hunt	6
Not enough people to hunt with	5
Other	5
Hunting techniques conflict with my ethics	< 1

Table 7. Various categories of light goose hunting equipment owned by Illinois light goose hunters.

Equipment	Percent of Hunters
Snow goose calls (including e-callers)	62%
Rag/sock decoys	54
Goose shells	45
Full-body decoys	45
Kites/Flags	44
Silhouettes	37
Floater	22
Spinning-wing decoys	21
Vortex™-like system	21
Other	4

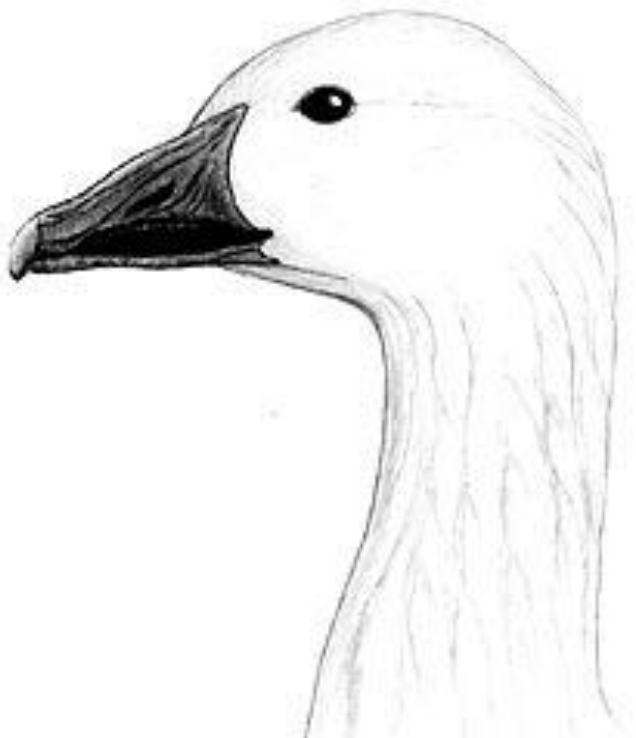
Figure 1. Geographic distribution of Illinois light goose hunters' ($n = 135$) activity in spring 2012.



Appendix A

Illinois Spring Snow Goose Hunter Survey

2011-2012 Season



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



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 answer the following questions about your hunting activities during the 2012 spring snow goose hunting season in Illinois.

1. Did you hunt snow geese in Illinois during the 2012 Conservation Order (Spring) snow goose season (**North Zone: Jan. 8-March 31, 2012; Central, South Central, and South Zones: Feb. 1- March 31, 2012**)? Do not include hunting snow geese during the regular Canada goose season. *(Please check one.)*

_____ Yes _____ No (Please skip to **Section 2**)

2. In which zone did you hunt snow geese most often during the 2012 spring snow goose season? *(Please check one.)*

_____ North Zone _____ Central Zone _____ South Central Zone _____ South Zone

3. Please indicate **your** effort- not your hunting party's effort- and harvest in the following table. **Include only harvest that occurred during the spring snow goose season; do not include snow goose harvest during the regular Canada goose seasons.** Report the county(ies) 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.

	County hunted	Days hunted	Geese harvested	Geese hit, but not retrieved
January:				
February:				
March:				

4. Did you hunt snow geese with a gun that held more than 3 shells? *(Please check one.)*

_____ Yes _____ No (Please skip to **Question 7**)

5. If yes, how many snow geese did you harvest with a gun holding 3 or more shells? *(Please indicate.)*

_____ snow geese

6. If yes, how many snow geese did you harvest with the 4th, 5th, or 6th shells in your gun? *(Please indicate.)*

_____ snow geese

7. Did you hunt snow geese with the aid of an electronic caller?

_____ Yes _____ No (Please skip to **Question 9**)

8. If yes, how many snow geese did you harvest with the aid of an electronic caller?

_____ snow geese

9. Did you use a guide or outfitter while hunting snow geese in Illinois during 2012?

_____ Yes _____ No

10. On which of the following types of land did you hunt snow geese in Illinois during 2012? (*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 indicate.*) _____

11. 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

12. Did you hunt waterfowl (ducks and/or geese) in Illinois during the 2011-2012 regular waterfowl seasons?

- Yes No

13. What did you hunt most often?

- Ducks Geese Both ducks and geese

14. Did you harvest any snow geese during the **regular goose season** in Illinois during the 2011-2012 goose season?

- Yes (how many? _____) No

15. How does the number of snow geese you see during the **regular 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

Section 2. Interest in Spring Snow Goose Hunting. The following questions allow us to understand more about the hunters who do not hunt snow geese during the spring season. **If you DID hunt snow geese during the spring season, please skip to Section 3.**

1. Did you hunt waterfowl (ducks and/or geese) during the 2011-2012 regular waterfowl seasons?

- Yes No (Please skip to **Question 4**)

2. What did you hunt most often?

- Ducks Geese Both ducks and geese

3. In which zone did you **hunt waterfowl most often during 2011-2012**? Please check only **one response**.

- North Zone Central Zone South Central Zone South Zone

4. Do you have an interest in hunting snow geese during the spring snow goose season?

- Yes No (Please go to **Section 3**)

5. Please identify why you're interested in hunting snow geese during the spring snow goose season. (Please check *all that apply*).

- | | | |
|--|---|--|
| <input type="checkbox"/> No bag limits | <input type="checkbox"/> Reduce the population | <input type="checkbox"/> Get to use electronic calls |
| <input type="checkbox"/> To protect the tundra | <input type="checkbox"/> Extend my hunting season | <input type="checkbox"/> To eat them |
| <input type="checkbox"/> Enjoy the outdoors | <input type="checkbox"/> Spend time with friends/family | |

6. Please identify 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 much money | <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: _____) | |

Section 3. 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? _____ years

2. How many years have you been spring snow goose hunting in Illinois? _____ years

3. Please give your age. _____ years

4. What is your county of residence?

_____ County

5. Which type(s) of snow goose hunting equipment do you have? (*Please check all that apply.*)

- | | | |
|---|---|---|
| <input type="checkbox"/> floater decoys | <input type="checkbox"/> full-bodied decoys | <input type="checkbox"/> rags/sock decoys |
| <input type="checkbox"/> silhouettes | <input type="checkbox"/> kites/flags | <input type="checkbox"/> calls (including electronic callers) |
| <input type="checkbox"/> shells | <input type="checkbox"/> spinning-wing decoys | <input type="checkbox"/> a vortex-like system |
| <input type="checkbox"/> Other (please identify): _____ | | |

6. Did you borrow or share snow goose equipment at all during the spring snow goose season?

- Yes No (Please skip to **Question 8**)

7. Which type(s) of snow goose hunting equipment did you borrow or share? (*Please check all that apply*)

- | | | |
|---|---|---|
| <input type="checkbox"/> floater decoys | <input type="checkbox"/> full-bodied decoys | <input type="checkbox"/> rags/sock decoys |
| <input type="checkbox"/> silhouettes | <input type="checkbox"/> kites/flags | <input type="checkbox"/> calls (including electronic callers) |
| <input type="checkbox"/> shells | <input type="checkbox"/> spinning-wing decoys | <input type="checkbox"/> a vortex-like system |
| <input type="checkbox"/> Other (please identify): _____ | | |

8. Did you take someone snow goose hunting for the first time during the spring snow goose season?

- Yes No



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.

Appendix B

ILLINOIS NATURAL HISTORY SURVEY

Institute of Natural Resource Sustainability
University of Illinois at Urbana-Champaign

April 09, 2012

Dear Waterfowl Hunter,

You have been chosen as one of a select group of Illinois waterfowl hunters during the 2011-2012 season to provide information about your waterfowl hunting activities related to snow goose hunting during the Conservation Order (spring) season. Enclosed is a survey questionnaire regarding your snow goose hunting experiences in Illinois during the 2012 Conservation Order (spring) season. We ask you to please take a few moments of your time 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 furnish our biologists is vital for proper waterfowl management and allows us to safeguard waterfowl populations while maximizing hunting opportunities.

This survey is limited to those hunters selected. Please take 15 minutes to complete the enclosed questionnaire.

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.

Appendix D

ILLINOIS NATURAL HISTORY SURVEY

Institute of Natural Resource Sustainability
University of Illinois at Urbana-Champaign

May 07, 2012

Dear Waterfowl Hunter,

You recently received a survey questionnaire requesting information about snow goose hunting during the 2012 Conservation Order (spring) season. We have not received your completed survey questionnaire at this time. If you recently returned your questionnaire, we thank you. If not, we have enclosed a second one for you. Please take a few moments of your time 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 furnish our biologists is vital for proper waterfowl management and allows us to safeguard waterfowl populations while maximizing hunting opportunities.

Please take 15 minutes to complete the enclosed questionnaire and return it in the envelope provided.

Thank you for your time and assistance.

Sincerely,


Craig A. Miller
Human Dimensions Research Program