



2017

Survey of Waterfowl Hunters in South Dakota

DJCase
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Engaging people in conservation

USGS
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Chapter 1

Introduction, Summary of Results, Take-aways

1.1 Background, Objectives, and Methods

1.1.1 Background

The 2012 North American Waterfowl Management Plan (NAWMP) Revision provides a new vision of waterfowl management that emphasizes a growing and supportive core of waterfowl hunters and an engaged conservation community inspired by waterfowl and wetlands. To achieve this goal, NAWMP partners must engage both the traditional waterfowl hunting community and broader stakeholder groups who are interested in waterfowl and the conservation of waterfowl and wetlands. To facilitate this engagement, the National Flyway Council (NFC)—in cooperation with the four Flyway Councils, the NAWMP Committee, and non-governmental agencies—initiated the formation of a Human Dimensions Working Group (HDWG), tasked with obtaining and incorporating human dimensions information and approaches into migratory bird conservation programs, policies, and practices. In particular, the NFC’s HDWG and other NAWMP partners developed a research proposal for North American stakeholder and general public surveys that will inform 1) NAWMP objectives, 2) harvest objectives and strategies, 3) habitat management, and 4) public engagement strategies.

1.1.2 Survey Objectives

The objectives of the stakeholder and general public surveys are to:

1. Assess what hunters and other waterfowl conservationists (especially birdwatchers or viewers) desire most from natural resource management and settings in order to inform NAWMP objectives and select habitat and population management alternatives.
2. Establish baseline measures that can be repeated to inform the development of a public engagement strategy and monitor trends to achieve the NAWMP goal of “growing numbers of waterfowl hunters, other conservationists, and citizens who enjoy and actively support waterfowl and wetlands conservation.”

3. Assess waterfowl hunters' and conservationists' knowledge, preferences, levels of use, and support for waterfowl and wetlands conservation.
4. Assess the general public's participation in waterfowl-associated recreation and how much they support waterfowl and wetlands conservation.
5. Assess the general public's awareness and their perceptions regarding the importance of the benefits and values (namely, ecological goods and services) provided by waterfowl and wetlands conservation.
6. Assess waterfowl professionals' perspectives on the levels of waterfowl populations and habitats needed to support hunter and birdwatcher use opportunities.

The expected outcomes of these surveys are as follows:

- Quantified measures of stakeholder preferences.
- A greater likelihood of developing NAWMP objectives and management actions that are informed by waterfowl and wetland stakeholders.
- A focus on harvest management actions that will provide the greatest benefits in terms of stakeholder preferences within the bounds of what is biologically feasible.

The creation, set-up, and implementation of the surveys was completed by a collaborative research team at the U.S. Geological Survey's Fort Collins Science Center, the Minnesota Cooperative Research Unit located at the University of Minnesota, and the University of Alberta. Among others, the team included Dr. David C. Fulton, Dr. Kristina Slagle, Dr. Alia Dietsch, Emily J. Wilkins, and Holly J. Miller. These researchers then delivered the oversample dataset (including results of the Discrete Choice Experiment and information on sampling and response rates) to DJ Case & Associates, where social scientists analyzed and synthesized the dataset they received.

1.1.3 Survey Instrument Design

The survey instruments of waterfowl hunters and birdwatchers were designed between June 2015 and September 2016. Designing the survey instruments involved multiple workshops, meetings, webinars, and reviews and comments from representatives from the Atlantic, Mississippi, Central, and Pacific flyways. The hunter and birdwatcher surveys also included five categories of questions identified by the HDWG as important:

- Discrete choice experiments: These allow researchers to identify respondents' preferences for particular attributes of waterfowl hunting and birdwatching—and to illuminate which attributes respondents value more or less, relative to others. The attributes used in the experiments were identified through a series of workshops with stakeholders conducted by researchers from the U.S. Geological Survey's Fort Collins Science Center. Design and implementation of the U.S. stakeholder workshops began in November 2014 and was completed in June 2015. A total of 12 workshops with hunters and 12 with birdwatchers were completed across the flyways in the U.S.
- Participation: This series of questions indicates participation levels in hunting, viewing, and conservation. It offers the potential to identify stakeholder segments based on participation levels as well as types of participation.
- Identity: Measures of identity formation indicate the degree to which hunters, birdwatchers, and others have developed personal identities associated with an activity or social role.

- Capacity: The long-term sustainability of waterfowl and wetlands depends on building support. The surveys include questions to identify the levels of support hunters and birdwatchers are providing via donations, membership, other behaviors, and attitudes.
- Management: The waterfowl hunter survey also includes some questions of particular interest to managers within each flyway.

See the last chapter of this report for a copy of the survey instrument.

1.1.4 Survey Sampling Design

A detailed description of how the sample of waterfowl hunters was drawn is available in “National Survey of Waterfowl Hunters: Central Flyway 2017 Summary,” written by Kristina Slagle and Alia Dietsch. In short, the sample of waterfowl hunters in this report ultimately originated from the Migratory Bird Harvest Information Program, a database of individuals who hunt any one of a wide variety of birds. These registrants were then narrowed to hunters 18 years and older, who hunt primarily in the state of interest, and then stratified and sampled. Researchers contacted waterfowl hunters up to four times by postal mail. Each potential respondent received a letter with instructions on how to take the survey via the Internet; the instructions also contained a unique six-digit code to access the survey. Initial contact letters were mailed November 15, 2016. Approximately two weeks later, a second contact letter containing the same information was mailed to everyone in the initial sample as a reminder to complete the survey. After updating the mailing list for undeliverable addresses, a third contact letter was sent the second week of January 2017 to everyone who had not yet completed the online survey. A \$1 incentive was included in contact letters during the third mailing. After updating the mailing list for additional undeliverable addresses, a fourth contact letter was sent the second week of February to all individuals who had not completed the online survey.

South Dakota was one of seven states that requested oversampling of waterfowl hunters to ensure a minimum of 400 respondents in the state. (This size would provide researchers with estimates within ± 5 percent at the 95 percent confidence level.) Researchers anticipated a response rate of 20 percent across the study after removing undeliverable addresses.

The total sample size of waterfowl hunters in South Dakota was 2,000. A total of 466 individuals in South Dakota completed at least a partial survey for a 23.3 percent response rate. Of these 466 individuals, 418 said they hunt ducks or geese or both; these individuals were allowed to complete the remainder of the survey.

1.1.5 Data Cleaning, Re-coding, and Analysis

Prior to analyzing the results of the waterfowl hunter survey, researchers removed responses from those who said they “hunt neither ducks nor geese.” (The online survey had already sent these respondents directly to the end of the survey, so this was merely a check.) After this point, all respondents were included in analyses whether they reached the survey’s end or not. Hence, the valid n of analyses below varies. The lead author on this report produced tables and charts using the open-source statistical software, R. For quality assurance, the second author cross-checked these independently on the original dataset using a different statistical program, SPSS. Any differences were resolved.

1.2 Summary of Results

This report details the results from an oversample survey of 418 waterfowl hunters in South Dakota. Results of a similar survey of states within the Central Flyway are available in a separate report, “National Survey of Waterfowl Hunters: Central Flyway 2017 Summary,” written by Kristina Slagle and Alia Dietsch.

1.2.1 Demographic and Social Network Traits of Respondents

Nearly all waterfowl hunters who responded to the survey were male, non-Hispanic, and white. Eighty percent were 35 years of age or older (Table 2.1). About three-quarters earned less than \$100,000 last year in personal income (Table 2.2).

Respondents were spread out across residential location: 47 percent said they live in a rural area or small town, while the remainder said they live in a small city, medium urban area, or a large urban area. Fifty-eight percent grew up in a rural area or small town (Table 2.3).

Respondents have diverse social networks. Between 57 and 62 percent have a close friend or a family relative who is an angler and/or a waterfowl hunter. Forty-one percent have a close friend who is a member of Ducks Unlimited (Tables 2.5 and 2.6).

Out of the organizations presented to respondents, the most trusted were waterfowl hunting/conservation organizations (mean = 3.4 out of 5, where 5 is “trust completely”) and state wildlife agencies (3.4). The least trusted were birding/bird conservation organizations (2.9) and elected officials (2.1) (Figure 2.1).

1.2.2 Participation in Waterfowl Hunting

Seven percent of respondents typically hunt only ducks, and 86 percent hunt ducks and geese. Over one-half have gone waterfowl hunting every year for the past five years. Ninety-two percent hunt 20 days or fewer in a typical year. During the 2015 season, three-quarters hunted between 1 and 20 days (Table 2.8).

Three-quarters of respondents started waterfowl hunting as children: 42 percent between ages 0–12 and 35 percent between ages 13–17 (Table 2.9).

Of respondents who hunt ducks, 35 percent have harvested five or fewer ducks in a typical year, and 20 percent have harvested six to 10. Six percent have harvested more than 50. Meanwhile, out of those who hunt geese, 54 percent have harvested five or fewer geese in a typical year, and 17 percent harvested between six and 10 (Table 2.10).

For respondents as a whole, the most important species to hunt are mallards and geese. The least important are diving ducks, such as scaup or bluebills, canvasback, and redheads (Figure 2.2).

In the past five years, nearly all have hunted for waterfowl most often in South Dakota and, therefore, in the Central Flyway. A small fraction have hunted in other states and provinces (Tables 2.12 and 2.14).

Most respondents (86 percent) primarily take day trips to hunt waterfowl. One-half hunt on public land or waters, while the remainder hunt on some type of private property, including property owned by the respondent, family, or friends. Virtually no respondents hunt on land they lease or pay to hunt on (Table 2.15).

One-quarter took a new person waterfowl hunting last year. For 43 percent of these, the new person they took was an adult friend, followed by 29 percent who took their own children and 24 percent who took other children (Table 2.17).

1.2.3 Satisfaction with Waterfowl Hunting

Respondents had diverse opinions about their satisfaction with hunting waterfowl in South Dakota (Figure 2.4):

- 61 percent of those who hunt primarily in South Dakota were somewhat or very satisfied with their overall duck hunting experience; 14 percent were somewhat or very dissatisfied.
- 57 percent were satisfied with the number of ducks in the daily limit; 7 percent were dissatisfied.
- 50 percent were satisfied with the quality of habitat where they hunt; 22 percent were dissatisfied.
- 44 percent were satisfied with the number of days in the duck season; 21 percent were dissatisfied.
- 41 percent were satisfied with the number of ducks they see in a season; 29 percent were dissatisfied.
- 39 percent were satisfied with the number of ducks they harvest; 25 percent were dissatisfied.

Most respondents did not perceive severe problems where they hunt. The largest source of concern was a lack of public places for waterfowl hunting: 41 percent rated this a moderate, severe, or very severe problem. Hunting pressure, crowding at hunting areas, and interference from other waterfowl hunters prompted similar responses. Conflict with other waterfowl hunters was rated a small problem (Figure 2.6).

To have a satisfying season, 58 percent feel they do *not* ever need to shoot a daily bag limit, and 23 percent feel they need to do so only occasionally on their hunts. Indeed, only 6 percent said they reached a daily bag limit on most or every hunt last year (Table 2.23).

1.2.4 Discrete Choice Modeling of Waterfowl Hunting Trips

Respondents were presented with 20 different hypothetical waterfowl hunting trips. Each trip differed in its characteristics (or attributes), such as the effort required to access a site and the potential for interference from other hunters. In 10 scenarios, respondents could make one of three selections—Trip 1 with its set of attributes, Trip 2 with its own set of attributes, or would not go. Analyzing which trips respondents selected reveals how important the attributes in those trips are to respondents.

When considering going waterfowl hunting, respondents revealed that *competition from other hunters* is their most important consideration. The importance to which respondents give each attribute is as follows (Table 2.25):

1. Interference/competition from other hunters, with less interference preferred. (*most important*)
2. Length of travel, with shorter times preferred.
3. Harvest, with greater numbers of waterfowl preferred.
4. Quantity of waterfowl, with greater numbers available preferred.
5. Access effort, with easier access preferred. (*least important*)

Within each attribute, respondents also revealed how much they prefer each level of a given attribute. Out of all possible attribute levels, the most preferred features of a waterfowl hunting trip were as follows (Table 2.26):

1. Travel time of 30 minutes.
2. No competition or low competition from other hunters.
3. Travel time of one hour.

In contrast, out of all possible attribute levels, the least preferred features of a waterfowl hunting trip were as follows:

1. High competition from other hunters.
2. Travel time of four hours.
3. Harvesting only one bird.

1.2.5 Policy and Regulatory Preferences

Respondents could select their top three priorities for waterfowl hunting from a list of seven possibilities. By far the highest priority was maximizing the population of ducks, followed by maximizing the length of the seasons. Note, however, that maximizing bag limits was not a high priority for most respondents; indeed, it was the lowest priority, along with reducing the number of species-specific bag limits. Ranked by average score, the revealed rank of respondents' priorities were as follows (Table 2.29):

1. Largest duck populations possible.
2. Longest seasons possible.
3. Providing simplest regulations possible.

Respondents presented a similar picture when asked what state and federal agencies should prioritize when setting duck hunting regulations. Ranked by the average score, their priorities were as follows (Table 2.30):

1. Providing the simplest regulations possible.
2. Having the largest duck populations possible.
3. Avoiding different season lengths for different duck species.

A mere 15 percent said species-specific rules for bag limits are hard to understand, and 17 percent said they are difficult to comply with. Respondents were evenly split over whether to maintain individual species bag limits or to create aggregate bag limits across species (Table 2.31).

Respondents were presented with three questions about duck harvest, bag limits, and season length. Most respondents said they would feel satisfied with a hunt if they harvested zero to three ducks in a day. Opinions about the smallest bag limit they would accept were more varied, ranging from being willing to hunt with any size bag limit to desiring a minimum of six ducks in a bag limit. The most popular season lengths were a) any length, b) 60 days, and c) 30 days (Table 2.32).

Most respondents (88 percent) said they primarily hunt waterfowl in the High Plains portion of South Dakota. However, subsequent analysis showed that most respondents actually resided in the *Low Plains* region of

the state; they were likely confused about where the boundaries of the Low and High Plains extend. This additional analysis involved matching respondents' IP address (collected when they completed the survey) with a particular geographic location. According to this analysis, 15 percent of respondents took the survey in the High Plains, and 63 percent took it in the Low Plains. The remaining respondents either took the survey while out of state or used an IP address that could not be matched to a geographic location (Table 2.13). Thus, the results reported in Tables 2.33, 2.34, 2.36, and 2.37 should be interpreted as the opinions of waterfowl hunters who hunt in both the High Plains *and* Low Plains.

Forty-two percent of respondents favored offering simpler regulations by keeping bag limits the same from one year to the next. Thirty-one percent preferred the largest bag limit possible by allowing limits to change, and 27 percent had no preference (Table 2.33).

During a restrictive season—when duck numbers and habitat conditions do not support a 97-day season and a bag limit of six ducks—the largest segment of respondents preferred a season of 39 days and three ducks. In general, the ability to harvest more ducks was more appealing during this hypothetical scenario than a longer season length (Table 2.34).

Two-thirds said the drake (male) mallard daily bag limit was “about right” in the state where they have hunted most the last five years (Table 2.36).

For a “liberal” season length, most respondents preferred to maintain its length at 97 days (41 percent) or did not have a preference (29 percent) (Table 2.37).

1.2.6 Avidity and Identity

Respondents tended to identify themselves as some type of hunter, conservationist, or duck hunter. Relatively fewer identified themselves as birdwatchers (Figure 2.11). The personal importance of waterfowl hunting varied (Figure 2.12):

- Over 60 percent agreed waterfowl hunting is one of the most enjoyable activities they do. However, respondents were more evenly split in their responses to other questions.
- 33 percent agreed waterfowl hunting has a central role in their life, and 31 percent disagreed.
- 21 percent agreed a lot of their life is organized around waterfowl hunting, and 46 percent disagreed.
- 45 percent agreed that most of their friends are in some way connected with waterfowl hunting, while the remainder disagreed or were neutral.

1.2.7 Wider Engagement in Conservation and Nature-related Activities

Respondents generally participate in other nature-related activities, such as hunting other animals besides waterfowl, fishing, and spending time in nature away from home (Figure 2.13). Three-quarters are involved in watching birds at home (74 percent have done it in the last 12 months) and watching birds away from their home (63 percent). One-quarter have installed or maintained nest boxes for birds. Nine percent have kept track of wild birds they see (Figure 2.15).

Respondents had variable involvement in waterfowl-related organizations: One-half are at least slightly involved in Ducks Unlimited; 18 percent, in regional or state waterfowl associations; and 16 percent, in Delta Waterfowl (Figure 2.16).

1.2.8 Financial Support for Conservation

A shifting proportion of respondents donated \$1–249 to different causes in the past 12 months: 45 percent of respondents donated within this range for wetlands or waterfowl conservation; 41 percent, for waterfowl hunting and hunting-related issues; 26 percent, for conservation of other bird species; and 9 percent, for birdwatching and related issues (Table 2.49).

Sixteen percent spent money for wetlands management on private lands in the past 12 months (Table 2.50).

1.2.9 Ecosystem Services of Wetlands

Regarding involvement with wetlands or waterfowl conservation activities in the past year, 28 percent have voted for candidates or ballot issues “often” or “very often.” Six percent have volunteered their personal time and effort “often” or “very often” (Figure 2.17).

Most are somewhat or very concerned about potentially losing benefits from the loss of wetlands, especially the risk of losing homes for wildlife (73 percent “very concerned”) and hunting opportunities (72 percent) (Figure 2.18). When forced to choose the benefit they were *most* concerned about losing, the largest proportion of respondents chose losing hunting opportunities (41 percent). They were *least* concerned about losing storage of greenhouse gases (35 percent) (Table 2.53).

1.2.10 Open-ended Comments on Survey

Some respondents were grateful for the opportunity to take the survey, while some thought the survey instrument was too long. The remainder of the comments generally described issues or comments about season length and opening, agricultural run-off and the use of pesticides, regulations, and management decisions (Table 2.54).

1.2.11 Comparison of South Dakota Waterfowl Hunters to Waterfowl Hunters in the Central Flyway

A brief comparison with survey respondents from across the Central Flyway follows. (Some of the respondents in the flyway live in South Dakota, but they do not overlap with the respondents contained in this oversample, which this report analyzes.) This comparison focuses on policy and regulatory aspects. More detailed comparisons can be made by consulting “National Survey of Waterfowl Hunters: Central Flyway 2017 Summary,” written by Kristina Slagle and Alia Dietsch.

Like respondents in the flyway as a whole, respondents in South Dakota were generally satisfied with the number of ducks in the daily limit (the mean was 3.8/5 in South Dakota, 3.8/5 in the flyway, where 5 is “very satisfied”) and their overall hunting experience (3.6/5 in South Dakota, 3.9/5 in the flyway). Both sets of respondents were also least satisfied with the number of ducks typically present during the hunting season (the mean was 2.9/5 in South Dakota, 3.1/5 in the flyway, where 1 is “very dissatisfied”).

Respondents in both South Dakota and the Central Flyway preferred that, when setting duck hunting regulations, state and federal agencies prioritize having the largest duck populations possible (3.9/5 in South Dakota, 4.1/5 in the flyway, where 5 is “very high”) and providing the simplest regulations possible (3.9/5 in

South Dakota, 3.9/5). In South Dakota, the lowest two priorities were reducing the number of species-specific bag limits (3.0/5) and having the largest bag limits possible (2.6/5). In the flyway, the lowest two priorities were having the largest drake mallard bag limits possible (3.0/5) and having the largest bag limits possible (2.8/5).

Few respondents in both South Dakota and the flyway thought species-specific rules were hard to understand (15 percent in South Dakota, 19 percent in the flyway). Both sets were evenly split over whether to maximize harvest or create simpler regulations for duck species that typically have smaller bag limits.

Low proportions in both sets of respondents expected to reach a daily bag limit to have a satisfying season: 7 percent in South Dakota said they needed to reach a daily bag limit on most of their hunts or every time they hunted, compared with 11 percent in the flyway. A similar proportion in South Dakota indicated they reached a limit on most or every hunt last year (6 percent versus 3 percent in the flyway).

In South Dakota, 16 percent “need” to harvest four or more ducks in a day to feel satisfied, compared with 23 percent in the flyway.

Similar proportions of respondents desire a larger minimum daily bag limit. For example, 9 percent in South Dakota said five ducks is the smallest daily bag limit they would accept before they would no longer hunt, compared with 11 percent in the flyway who said the same.

Expectations about the length of waterfowl hunting seasons were similar between South Dakota and the flyway. Between the two, similar proportions desire seasons of 30 days (13 percent in South Dakota, 12 percent in the flyway), and similar proportions would hunt with any season length (42 percent in South Dakota, 40 percent in the flyway).

Respondents in South Dakota hunt public land or waters more than others in the flyway (48 percent in South Dakota versus 34 percent in the flyway). Two percent hunt on private property they lease or pay to hunt on, compared with 13 percent in the flyway.

In South Dakota, the most important species to hunt are mallards and geese. In the flyway, the most important are dabbling ducks such as gadwall, pintails, and teal, followed by mallards.

In terms of ecosystem services, respondents in both South Dakota and the Central Flyway were most concerned about potentially losing the following ecosystem services from the loss of wetlands: hunting opportunities, home for wildlife, clean water, and clean air. They were least concerned about losing scenic places for inspiration or spiritual renewal and storage of greenhouse gases.

1.2.12 Comparison of South Dakota Waterfowl Hunters to Survey of General Public

Following is a brief comparison of South Dakota waterfowl hunters with survey respondents from across the U.S., few of whom were waterfowl hunters. Additional findings can be found in the report titled “Public Views of Wetlands and Waterfowl Conservation in the United States: Results of a Survey to Inform the 2018 Revision of the North American Waterfowl Management Plan,” written by Emily J. Wilkins and Holly M. Miller.

Both sets of respondents over-represented people who are men, older, highly educated, and white. Compared to the waterfowl hunters in South Dakota, many respondents nationally had negative perceptions of hunting. Half stated that hunting would be unpleasant, and two-fifths believed hunting would be boring.

A majority of national respondents were very concerned about six out of 10 wetlands benefits, especially losing clean water, clean air, and homes for wildlife. These U.S. respondents were the most concerned

about clean water (80 percent “very concerned”), clean air (77 percent), and providing a home for wildlife and pollinators (around 68 percent). Only 20 percent of national respondents were very concerned about potentially losing hunting opportunities. In contrast, a majority of waterfowl hunters in South Dakota were very concerned about five categories out of 10—potentially losing a home for wildlife (73 percent “very concerned”), hunting opportunities (72 percent), clean water (60 percent), clean air (56 percent), and a home for pollinators (50 percent).

Waterfowl hunter respondents in South Dakota were similar to general population respondents in their involvement in wetlands or waterfowl conservation activities. Similar proportions advocated “often” or “very often” for political action (12 percent in South Dakota, 13 percent nationally); voted for candidates or ballot issues (28 percent in South Dakota, 21 percent nationally); and attended meetings about wetlands or waterfowl conservation (4 percent in South Dakota, 2 percent nationally).

Chapter 2

Results

This chapter describes results from a survey of waterfowl hunters. It begins with a demographic description of the respondents, as well as a description of their personal social network of acquaintances, relatives, and friends. Next comes a description of their participation in waterfowl hunting, including where they hunt, how often they hunt, and recruitment of new hunters, followed by their satisfaction with waterfowl hunting. The fourth section contains an analysis of respondents' preferences for waterfowl hunting trips through a discrete-choice modeling experiment. An in-depth look at respondents' attitudes toward current hunting regulations follows in the fifth section, including some flyway-specific questions. The remaining sections examine respondents' avidity and identity—in particular, the centrality of hunting and various social identities—and respondents' wider engagement in conservation and nature-related activities, including attitudes towards the ecosystem services of wetlands. The chapter concludes with comments on the survey itself.

The total possible valid N for each table and chart below is 418 individuals. Note, however, that a shifting proportion of respondents did not answer each question. Hence, the “all” category in tables shows the number of actual responses to the question. For example, Table 2.18 shows that out of the respondents who *did* take someone new waterfowl hunting last year, 43 percent of those introduced were adult friends.

The note beneath each table and chart includes the exact question wording and a reference to the question numbers on the original survey instrument. Response categories are listed only when they are shortened in the accompanying table or chart.

2.1 Demographic and Social Network Traits of Respondents

Table 2.1: Demographic Information—Gender, Age, Education, Ethnicity, Race

Variable	Levels	n	%
Gender	Male	335	95.2
	Female	17	4.8
	all	352	100.0
Age category	18-23	14	4.0
	24-34	58	16.5
	35-50	98	27.8
	51-65	134	38.1
	66+	48	13.6
	all	352	100.0
Highest level of education	HS or less	71	20.7
	Some college	46	13.4
	Associate's	44	12.8
	Bachelor's	116	33.8
	Postgraduate	66	19.2
	all	343	100.0
Ethnicity	Hispanic	2	0.6
	Non-Hispanic	346	99.4
	all	348	100.0
Race	Two or more	3	0.8
	White	348	99.2
	all	351	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Are you...? ...Male ...Female. (Q41) In what year were you born? (Q40) What is the highest level of education you have completed? (Q42) What ethnicity do you consider yourself? (Q34) From what racial origin(s) do you consider yourself? (Please select all that apply.) (Q35_1:Q35_5)

Table 2.2: Demographic Information—Income

Variable	Levels	n	%
Total personal income last year (in dollars)	<25k	28	8.7
	25k to <50k	71	22.0
	50k to <75k	81	25.1
	75k to <100k	55	17.0
	100k to <125k	37	11.5
	125k to <150k	15	4.6
	150k to <200k	12	3.7
	200k to <250k	8	2.5
	250k to <300k	7	2.2
	300k+	9	2.8
	all	323	100.0
Nature-related profession primary source of personal income	Yes	64	18.1
	No	289	81.9
	all	353	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Please indicate which of the following categories applies to your total personal income for last year? (Q33) Is a nature-related profession (such as farming, fisheries, forestry, environmental science, or conservation) the primary source of your PERSONAL income? (Q43)

Table 2.3: Demographic Information—Residence Now and While Growing Up

Variable	Levels	n	%
Where live now	Large urban area	4	1.1
	Medium urban area	72	20.3
	Small city	112	31.6
	Small town	57	16.1
	Rural area	110	31.0
	all	355	100.0
Where grew up	Large urban area	13	3.7
	Medium urban area	43	12.2
	Small city	92	26.2
	Small town	52	14.8
	Rural area	151	43.0
	all	351	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Which of these categories best describes the place where you live now? (Q32_r1) Which of these categories best describes the place where you lived during most of the time you were growing up (that is, until age 16)? (Q32_r2)

Table 2.4: Land Ownership

Variable	Levels	n	%
Own land in a rural area	Yes	130	36.6
	No	225	63.4
	all	355	100.0
If own land, number of acres	>0 to 2 acres	4	3.4
	>2 to 5 acres	10	8.6
	>5 to 20 acres	20	17.1
	>20 to 100 acres	19	16.2
	>100+ acres	64	54.7
	all	117	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Do you own land in a rural area (outside of an urban or suburban area)? (Q44) If own land in rural area, how many acres do you own in total? (Q44_1_other)

2.1.1 Personal Social Network

Table 2.5: Personal Network and Self-description—Activities, Jobs

Person	Acquaintance	Close Friend	Myself	Relative
Angler	47.8%	60.8%	67.5%	58.6%
Birdwatcher	26.8%	17.2%	31.3%	22.5%
Farmer/Rancher	45.0%	49.5%	18.4%	46.4%
Federal wildlife agency mngr./emp.	25.8%	8.1%	0.7%	2.4%
National park mngr./emp.	24.4%	9.1%	0.2%	4.5%
Other type of hunter	51.0%	66.0%	76.1%	64.8%
Outdoor educator	30.4%	14.8%	5.5%	4.8%
State/provincial park mngr./emp.	29.4%	11.7%	1.4%	4.3%
State/provincial wildlife agency mngr./emp.	33.3%	12.7%	2.9%	5.7%
Waterfowl hunter	47.8%	62.4%	73.0%	57.4%
Wildlife artist	22.5%	3.6%	1.7%	4.1%
Wildlife biologist	29.7%	11.2%	2.9%	5.7%
Wildlife photographer	25.4%	9.3%	7.4%	6.5%

Note: Respondents could make multiple selections. Question wording: We are interested in knowing about your “personal community” and whether you know people in certain kinds of occupations and people affiliated with certain types of organizations. Among your relatives, close friends, or acquaintances, are there people who participate in the following activities, have the following jobs, or who belong to the following organizations? Also, would you classify yourself in any of the following areas? (Select all that apply for each row or leave blank for “no one” in that row.) ...Angler ...Birdwatcher ...Farmer/Rancher ...National park manager/employee ...Outdoor educator ...State/provincial park manager/employee ...Waterfowl hunter ...Other type of hunter (e.g., small/big game) ...State/provincial wildlife agency manager/employee ...Federal wildlife agency manager/employee ...Wildlife artist (amateur or professional) ...Wildlife biologist ...Wildlife photographer (amateur or professional). (Q30_r1_c1:Q30_r13_c4)

Table 2.6: Personal Network and Self-description—Memberships

Person	Acquaintance	Close Friend	Myself	Relative
Mbr. bird conservation groups	15.8%	6.2%	4.8%	2.6%
Mbr. birding/birdwatching groups	15.1%	4.5%	1.7%	2.9%
Mbr. Delta Waterfowl	20.1%	15.8%	7.7%	6.5%
Mbr. Ducks Unlimited	36.6%	40.7%	34.2%	32.3%
Mbr. fishing/conservation orgs.	30.9%	21.1%	18.4%	16.3%
Mbr. local naturalist org.	12.0%	3.3%	2.4%	1.4%
Mbr. non-waterfowl hunting/conservation orgs.	34.4%	36.1%	31.1%	28.2%
Mbr. ornithological societies/groups	10.8%	3.8%	1.0%	1.2%
Mbr. other local/regional conservation orgs.	27.8%	21.3%	25.6%	14.6%
Mbr. other national/intl. conservation orgs.	14.4%	5.5%	5.3%	4.1%
Mbr. state/regional waterfowl assoc.	19.4%	11.7%	7.4%	4.8%

Note: Respondents could make multiple selections. Question wording: We are interested in knowing about your “personal community” and whether you know people in certain kinds of occupations and people affiliated with certain types of organizations. Among your relatives, close friends, or acquaintances, are there people who participate in the following activities, have the following jobs, or who belong to the following organizations? Also, would you classify yourself in any of the following areas? (Select all that apply for each row or leave blank for “no one” in that row.) ...Member of a fishing/conservation organization (e.g., Trout Unlimited, Izaak Walton) ...Member of birding and birdwatching groups (e.g., American Birding Association) ...Member of bird conservation groups (e.g., National Audubon Society, including local chapters; American Bird Conservancy, Cornell Lab, bird observatories) ...Member of ornithological societies and groups (e.g., Western Field Ornithologists, national or regional ornithological societies) ...Member of Ducks Unlimited ...Member of Delta Waterfowl ...Member of state or regional waterfowl association ...Member of a hunting/conservation organizations not focused on waterfowl (e.g., National Wild Turkey Federation, Rocky Mountain Elk Foundation) ...Member of other local/regional conservation organizations ...Member of a local naturalist organization ...Member of other national/international conservation organizations (e.g., The Nature Conservancy, Sierra Club, World Wildlife Fund). (Q30cont_r1_c1:Q30cont_r11_c4)

Figure 2.1: Trust in Organizations

Waterfowl hunting/conservation organizations	3.44 (0.98)	4%	12%	31%	42%	11%
State wildlife agencies	3.35 (1.02)	7%	9%	38%	35%	11%
Federal wildlife and land management agencies	3.08 (1.05)	9%	16%	41%	26%	8%
Other conservation organizations	2.95 (0.95)	8%	21%	45%	23%	4%
University researchers/scientists	2.94 (1.02)	11%	17%	40%	27%	3%
Birding/bird conservation organizations	2.87 (1.05)	12%	22%	40%	21%	5%
Elected officials	2.07 (0.94)	33%	35%	26%	6%	1%
Mean (SD)		Do not trust at all	Trust a little	Trust somewhat	Trust a lot	Trust completely

Note: Rows may not add to 100 percent due to rounding. Question wording: How much do you trust the following organizations to keep your best interest in mind as a waterfowl hunter? (Q32_r1:Q32_r7)

Table 2.7: Number of Total Responses per Question in Figure 2.1—Trust in Organizations

Item	Total Responses
Birding/bird conservation organizations	339
Elected officials	353
Federal wildlife and land management agencies	352
Other conservation organizations	345
State wildlife agencies	353
University researchers/scientists	349
Waterfowl hunting/conservation organizations	353

Note: The total number of responses shifted slightly for each question in Figure 2.1. The total numbers of valid responses for each question are listed here.

2.2 Participation in Waterfowl Hunting

Table 2.8: Type and Frequency of Waterfowl Hunting

Variable	Levels	n	%
Type of waterfowl hunting	I hunt only ducks	31	7.4
	I hunt ducks and geese	361	86.4
	I hunt only geese	26	6.2
	I hunt neither ducks nor geese	0	0.0
	all	418	100.0
Frequency of waterfowl hunting over last 5 years	None	26	6.2
	1 Year	23	5.5
	2 Years	44	10.6
	3 Years	43	10.3
	4 Years	44	10.6
	5 Years	237	56.8
	all	417	100.0
Typical days hunt waterfowl in a year	5 days or less	147	37.9
	6 to 10 days	119	30.7
	11 to 20 days	77	19.9
	21 to 30 days	22	5.7
	More than 30 days	23	5.9
	all	388	100.0
Days hunted waterfowl during last year's season	0 days	72	19.8
	1 to 5 days	125	34.4
	6 to 10 days	81	22.3
	11 to 20 days	55	15.2
	21 to 30 days	14	3.9
	More than 30 days	16	4.4
	all	363	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Which of the following statements best describes your pursuits in waterfowl hunting? (Q1) How many years of the last 5 years have you hunted WATERFOWL? (Q3) Over the last five years, about how many days did you usually hunt WATERFOWL in a year? (Q5) During LAST YEAR'S (2015) waterfowl hunting season, how many days did you hunt for WATERFOWL? (If you did not hunt, enter "0"). (Q6)

Table 2.9: Age Started Waterfowl Hunting

Variable	Levels	n	%
Age started (years old)	0-12	174	41.8
	13-17	145	34.9
	18-23	40	9.6
	24-34	25	6.0
	35-50	19	4.6
	51-65	9	2.2
	66+	4	1.0
	all	416	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: How old were you when you started waterfowl hunting? (Q2)

2.2.1 Harvest

Table 2.10: Ducks and Geese Harvested per Year on Average, Last Five Years

Variable	Levels	n	%
Ducks harvested per year on average	5 or less	127	34.6
	Between 6 and 10	73	19.9
	Between 11 and 20	90	24.5
	Between 21 and 50	56	15.3
	More than 50	21	5.7
	all	367	100.0
Geese harvested per year on average	5 or less	194	53.6
	Between 6 and 10	61	16.9
	Between 11 and 20	56	15.5
	Between 21 and 50	30	8.3
	More than 50	21	5.8
	all	362	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Over the last five years, about how many DUCKS did you harvest in a year ON AVERAGE? (Q4D) Over the last five years, about how many GEESE did you harvest in a year ON AVERAGE? (Q4G)

Figure 2.2: Importance of Hunting Particular Species in Central Flyway

Mallards	3.59 (1.2)	10%	8%	22%	33%	27%
Geese	3.46 (1.2)	9%	11%	26%	33%	21%
Other dabbling ducks (e.g., gadwall, pintails, teal, etc.)	2.94 (1.2)	18%	15%	29%	29%	8%
Diving ducks (e.g., scaup/bluebills, canvasback, redheads, etc.)	2.27 (1.2)	37%	23%	23%	11%	6%
	Mean (SD)	Not at all	Slightly important	Moderately important	Very important	Extremely important

Note: Rows may not add to 100 percent due to rounding. Question wording: How important is it to you to hunt the following in the Central Flyway? (Q13C_r1:Q13C_r4)

Table 2.11: Number of Total Responses per Question in Figure 2.2—Importance of Hunting Particular Species in Central Flyway

Item	Total Responses
Diving ducks (e.g., scaup/bluebills, canvasback, redheads, etc.)	383
Geese	383
Mallards	383
Other dabbling ducks (e.g., gadwall, pintails, teal, etc.)	381

Note: The total number of responses shifted slightly for each question in Figure 2.2. The total numbers of valid responses for each question are listed here.

2.2.2 Places Hunt Waterfowl

Table 2.12: State or Province Hunted for Waterfowl Most Often in Past Five Years

Variable	Levels	n	%
State or province	IA	1	0.3
	MN	3	0.8
	SD	382	98.2
	Canada-AB	1	0.3
	Canada-MB	1	0.3
	Canada-SK	1	0.3
	all	389	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: In which US State or Canadian Province have you hunted waterfowl most often over the past 5 years? (Q10S)

Table 2.13: Location of Respondents, based on IP Address

Location	Frequency	Percentage
Low Plains	250	62.5%
High Plains	61	15.3%
Out of state	32	8.0%
Unmatched	57	14.3%

Respondents' IP addresses were collected when they submitted their survey. Most respondents' addresses could be matched to a particular geographic location. Some, however, could not.

Table 2.14: Flyway Hunted Most Often Last Year or Year Last Hunted

Variable	Levels	n	%
Which Flyway hunted most often	Pacific Flyway	0	0.0
	Central Flyway	387	99.5
	Mississippi Flyway	2	0.5
	Atlantic Flyway	0	0.0
	all	389	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: In which Flyway did you hunt most often last year (2015) or the year you last hunted? (Q10F)

Table 2.15: Type and Location of Waterfowl Hunting Trips

Variable	Levels	n	%
Type of trips to hunt waterfowl	Primarily day trips	335	86.3
	Primarily overnight or multi-day trips	25	6.4
	Both about equally	28	7.2
	all	388	100.0
Where do most waterfowl hunting	Public land or waters	187	48.2
	Private property owned by you/family/partnership	59	15.2
	Private property owned by friend/other (free)	132	34.0
	Private property you lease or pay	6	1.6
	Guest on private property someone else leases/pays	4	1.0
	all	388	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Do you primarily take day trips or overnight/multi-day trips when you waterfowl hunt? (Q11) Please indicate where you do most of your waterfowl hunting. ...Public land or waters ...Private property owned by you, your family, or in partnership with someone else ...Private property owned by a friend or another landowner who gives you permission to hunt for free ...Private property you lease or pay to hunt on ...Guest on private property someone else leases or pays to hunt on. (Q12)

Table 2.16: Circumstances When Typically Go Hunting

Variable	Levels	n	%
When typically go hunting	When I plan the hunt myself	82	21.1
	When someone else invites me	58	14.9
	Both when I plan the hunt or someone else invites me	249	64.0
	all	389	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Under what circumstances do you typically go hunting? (Q9)

2.2.3 Recruitment and Involvement with New Hunters

Table 2.17: Introduced New Person to Waterfowl Hunting

Variable	Levels	n	%
Took new hunter	Yes	98	27.4
	No	260	72.6
	all	358	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: During this past season did you take anyone waterfowl hunting who had never waterfowl hunted before? (Q28)

Table 2.18: Person Respondent Introduced to Waterfowl Hunting

Variable	Levels	n	%
My own child(ren)	Yes	29	29.3
	No	70	70.7
	all	99	100.0
Related child(ren)	Yes	19	19.2
	No	80	80.8
	all	99	100.0
Other child(ren)	Yes	24	24.2
	No	75	75.8
	all	99	100.0
Adult close family	Yes	4	4.0
	No	95	96.0
	all	99	100.0
Adult extended family	Yes	7	7.1
	No	92	92.9
	all	99	100.0
Adult friend	Yes	43	43.4
	No	56	56.6
	all	99	100.0
Co-worker	Yes	8	8.1
	No	91	91.9
	all	99	100.0
Other	Yes	6	6.1
	No	93	93.9
	all	99	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: If you did, who did you introduce? (Select all that apply.) ...My own child(ren) ...Related child(ren) ...Other child(ren) ...Adult close family (e.g., brother/sister) ...Adult extended family (e.g., cousin/uncle) ...Adult friend ...Co-worker ...Other. (Q28skip_1:Q28skip_8)

2.3 Satisfaction with Waterfowl Hunting

Figure 2.3: Satisfaction in State Where Hunt Waterfowl Most

The number of ducks in the daily limit	3.79 (0.98)	2%	4%	37%	27%	30%
Your overall duck hunting experience	3.63 (1.02)	4%	10%	25%	43%	18%
Quality of habitat where you hunt	3.37 (1.13)	7%	15%	28%	34%	16%
The number of days in the duck season	3.31 (1.14)	8%	13%	35%	27%	17%
The number of ducks you harvest during the season	3.17 (1.11)	9%	16%	35%	28%	11%
The number of ducks you see during the season	3.14 (1.18)	10%	19%	30%	28%	13%
The number of ducks typically present during the hunting season	2.93 (1.19)	13%	25%	27%	25%	10%
	Mean (SD)	Very dissatis.	Smwht. dissatis.	Neutral	Smwht. satisfied.	Very satisfied

Note: Rows may not add to 100 percent due to rounding. Question wording: In the state where you hunt ducks most often, how dissatisfied or satisfied are you with... (Q15_r1:Q15_r7)

Table 2.19: Number of Total Responses per Question in Figure 2.3—Satisfaction in State Where Hunt Waterfowl Most

Item	Total Responses
Quality of habitat where you hunt	362
The number of days in the duck season	361
The number of ducks in the daily limit	360
The number of ducks typically present during the hunting season	362
The number of ducks you harvest during the season	362
The number of ducks you see during the season	362
Your overall duck hunting experience	363

Note: The total number of responses shifted slightly for each question in Figure 2.3. The total numbers of valid responses for each question are listed here.

Figure 2.4: Satisfaction for Respondents who Hunt Waterfowl Primarily *in South Dakota*

The number of ducks in the daily limit	3.79 (0.98)	2%	5%	37%	27%	30%
Your overall duck hunting experience	3.62 (1.01)	4%	10%	26%	43%	18%
Quality of habitat where you hunt	3.36 (1.13)	7%	15%	28%	34%	16%
The number of days in the duck season	3.32 (1.14)	8%	13%	35%	27%	17%
The number of ducks you harvest during the season	3.17 (1.10)	9%	16%	35%	28%	11%
The number of ducks you see during the season	3.14 (1.18)	10%	19%	30%	28%	13%
The number of ducks typically present during the hunting season	2.93 (1.19)	13%	25%	27%	25%	10%
	Mean (SD)	Very dissatis.	Smwht. dissatis.	Neutral	Smwht. satisfied.	Very satisfied

Note: Rows may not add to 100 percent due to rounding. Respondents included are only those who report hunting waterfowl most in this state. Question wording: In the state where you hunt ducks most often, how dissatisfied or satisfied are you with... (Q15_r1:Q15_r7)

Table 2.20: Number of Total Responses per Question in Figure 2.4—Satisfaction for Respondents who Hunt Waterfowl Primarily *in South Dakota*

Item	Total Responses
Quality of habitat where you hunt	355
The number of days in the duck season	354
The number of ducks in the daily limit	353
The number of ducks typically present during the hunting season	355
The number of ducks you harvest during the season	355
The number of ducks you see during the season	355
Your overall duck hunting experience	356

Note: The total number of responses shifted slightly for each question in Figure 2.4. The total numbers of valid responses for each question are listed here.

Figure 2.5: Extent of Potential Problems in State Where Hunt Waterfowl Most

Lack of public places for waterfowl hunting	2.30 (1.22)	34%	26%	23%	11%	6%
Hunting pressure	2.25 (1.05)	30%	29%	30%	9%	2%
Crowding at hunting areas	2.12 (1.05)	36%	27%	27%	8%	2%
Interference from other waterfowl hunters	2.07 (1.01)	37%	28%	27%	7%	1%
Conflict with other waterfowl hunters in places I hunt	1.73 (0.92)	52%	28%	15%	3%	1%
	Mean (SD)	Not at all	Slight	Moderate	Severe	Very severe

Note: Rows may not add to 100 percent due to rounding. Question wording: Please indicate how much of a problem the following are in the state where you hunt waterfowl most. (Q14_r1:Q14_r5)

Table 2.21: Number of Total Responses per Question in Figure 2.5—Extent of Potential Problems in State Where Hunt Waterfowl Most

Item	Total Responses
Conflict with other waterfowl hunters in places I hunt	386
Crowding at hunting areas	386
Hunting pressure	386
Interference from other waterfowl hunters	386
Lack of public places for waterfowl hunting	388

Note: The total number of responses shifted slightly for each question in Figure 2.5. The total numbers of valid responses for each question are listed here.

Figure 2.6: Extent of Potential Problems for Respondents who Hunt Waterfowl Primarily *in South Dakota*

Lack of public places for waterfowl hunting	2.30 (1.22)	34%	26%	24%	10%	7%
Hunting pressure	2.24 (1.05)	30%	29%	30%	9%	2%
Crowding at hunting areas	2.12 (1.04)	36%	27%	28%	7%	2%
Interference from other waterfowl hunters	2.06 (1.01)	38%	28%	27%	7%	1%
Conflict with other waterfowl hunters in places I hunt	1.73 (0.92)	52%	28%	15%	3%	1%
	Mean (SD)	Not at all	Slight	Moderate	Severe	Very severe

Note: Rows may not add to 100 percent due to rounding. Respondents included are only those who report hunting waterfowl most in this state. Question wording: Please indicate how much of a problem the following are in the state where you hunt waterfowl most. (Q14_r1:Q14_r5)

Table 2.22: Number of Total Responses per Question in Figure 2.6—Extent of Potential Problems for Respondents who Hunt Waterfowl Primarily *in South Dakota*

Item	Total Responses
Conflict with other waterfowl hunters in places I hunt	379
Crowding at hunting areas	379
Hunting pressure	379
Interference from other waterfowl hunters	379
Lack of public places for waterfowl hunting	381

Note: The total number of responses shifted slightly for each question in Figure 2.6. The total numbers of valid responses for each question are listed here.

Table 2.23: Expectations of and Frequency Reaching a Daily Bag Limit

Variable	Levels	n	%
Need to reach a daily bag limit to have a satisfying season	Never	223	57.5
	On at least one of my hunts	49	12.6
	Occasionally on my hunts	89	22.9
	Most of my hunts	24	6.2
	Every time I hunted	3	0.8
	all	388	100.0
Frequency reached a limit of ducks/geese last year	Never	184	47.4
	On at least one of my hunts	82	21.1
	Occasionally on my hunts	71	18.3
	Most of my hunts	25	6.4
	Every time I hunted	0	0.0
	I did not hunt in 2015	26	6.7
	all	388	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: How many times do you feel that you need to shoot a daily bag limit of ducks/geese to have a satisfying season? (Q7) How many times did you shoot a limit of ducks/geese last year's season (2015)? (Q8)

2.4 Discrete Choice Modeling of Waterfowl Hunting Trips

This study included a discrete choice experiment examining the preferences of waterfowl hunters concerning different potential combinations of hunting experiences. Choice models present hypothetical scenarios to respondents to derive individuals' preferences for alternatives composed of multiple resource and management attributes.¹ The approach allows estimation of the effects of all parameters of interest independently. Individuals are assumed to be utility maximizers, and respondents' choices reflect the perceived utility of the alternatives presented.² Utility is simply a measure of the perceived usefulness of something to an individual. The degree to which someone chooses one circumstance over another provides the ability to measure its perceived usefulness, or utility, to that person. In general, the utility of an attribute level may be considered a reflection of relative desirability. The choices of each individual respondent reflect the personal utility of attributes and attribute levels. These are then aggregated to estimate the utility of attributes and attribute levels among a larger population.

Alternatives presented in this survey consisted of five hunting-related attributes with various characteristics (Table 2.24):

1. Harvest: The number of waterfowl you are likely to harvest in a day.
2. Access effort: How easy or difficult it is to get into, out of, and around an area in order to hunt.

¹Adamowicz, W., J. Louviere, and M. Williams. "Combining Revealed and Stated Preference Methods for Valuing Environmental Amenities." *Journal of Environmental Economics and Management* 26, no. 3 (May 1994): 271–92. Green, Paul E., and V. Srinivasan. "Conjoint Analysis in Consumer Research: Issues and Outlook." *The Journal of Consumer Research* 5 (September 1978): 103–23.

²McFadden, Daniel. "The Choice Theory Approach to Market Research." *Marketing Science* 5, no. 4 (November 1986): 275–97.

3. Length of travel: The time you have to travel one way in order to hunt.
4. Quantity of waterfowl: The number of ducks/geese that you see in a day when hunting, even if not in shooting range.
5. Potential for interference/competition: Competition from other hunters who might interfere with your hunt in some way, such as making you feel crowded or competing for hunting spots or birds.

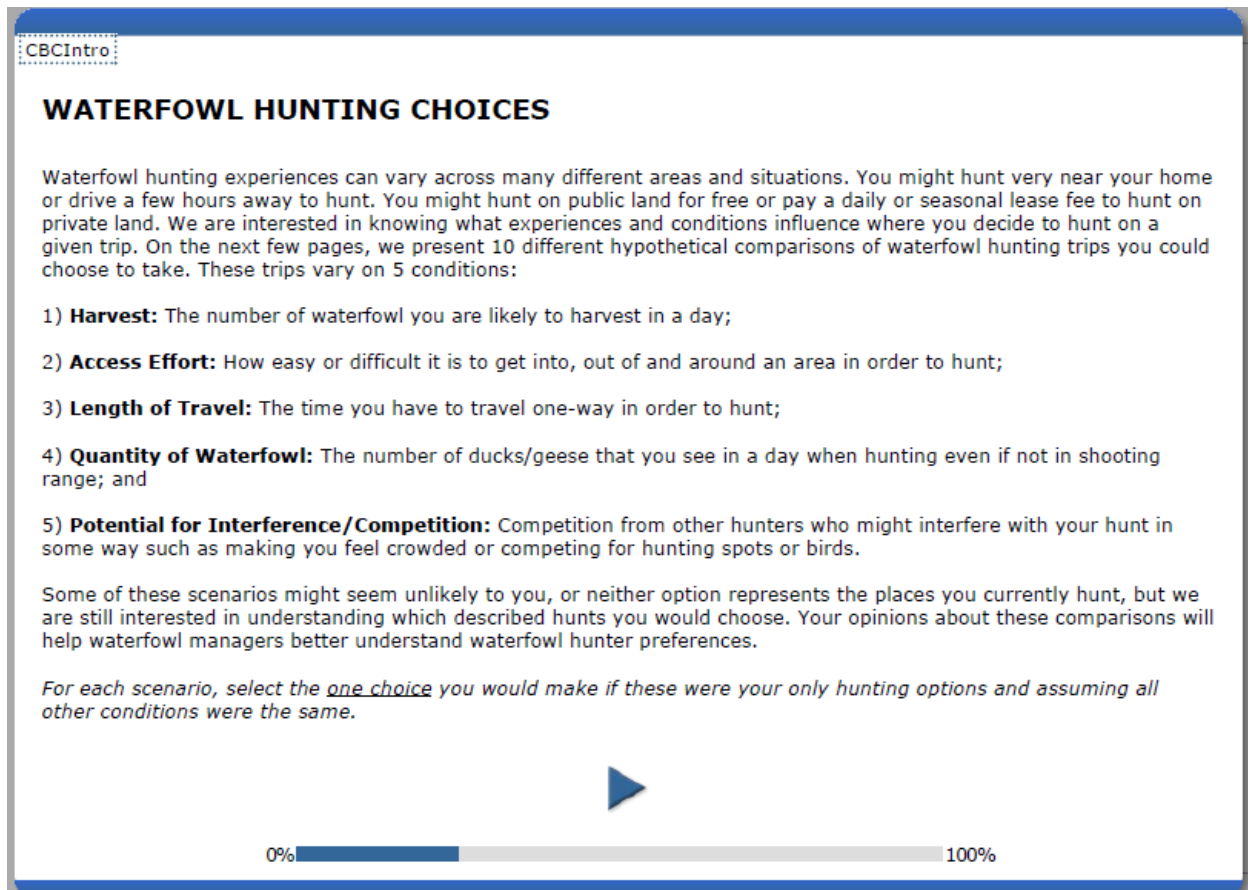
Table 2.24: Possible Trip Choice Characteristics in Discrete Choice Experiment

Attribute	Possible levels
<i>Harvest:</i> Number of waterfowl likely to harvest in a day	- One bird - 3 birds - 6 birds
<i>Access effort:</i> Difficulty of getting into, out of, and around area	- Easy access that takes little effort - Moderate access that takes some effort - Difficult access that takes a lot of effort
<i>Length of travel:</i> Time (one-way) you have to travel to hunt	- 30 minutes - 1 hour - 2 hours - 3 hours - 4 hours
<i>Quantity of waterfowl:</i> Number of ducks/geese you see in a day when hunting, even if not in shooting range	- 25 birds or less - 50 birds - 250 birds - 500 birds - 1,000 birds or more
<i>Potential for interference/competition:</i> Competition from other hunters who might interfere with your hunt in some way, such as making you feel crowded or competing for hunting spots or birds	- No competition - Low competition from other hunters - Moderate competition from other hunters - High competition from other hunters

To conduct this experiment, researchers developed 20 scenarios of hypothetical waterfowl hunting experiences. Respondents were presented with two scenarios at a time and asked to choose one option—Trip 1, Trip 2, or would not go (i.e., I would not go waterfowl hunting if these were my only choices).

The instructions that respondents saw while taking the survey are presented in Figure 2.7. An example of a choice scenario is shown in Figure 2.8.

Figure 2.7: Instructions for Discrete Choice Experiment



CBCIntro

WATERFOWL HUNTING CHOICES

Waterfowl hunting experiences can vary across many different areas and situations. You might hunt very near your home or drive a few hours away to hunt. You might hunt on public land for free or pay a daily or seasonal lease fee to hunt on private land. We are interested in knowing what experiences and conditions influence where you decide to hunt on a given trip. On the next few pages, we present 10 different hypothetical comparisons of waterfowl hunting trips you could choose to take. These trips vary on 5 conditions:

- 1) **Harvest:** The number of waterfowl you are likely to harvest in a day;
- 2) **Access Effort:** How easy or difficult it is to get into, out of and around an area in order to hunt;
- 3) **Length of Travel:** The time you have to travel one-way in order to hunt;
- 4) **Quantity of Waterfowl:** The number of ducks/geese that you see in a day when hunting even if not in shooting range; and
- 5) **Potential for Interference/Competition:** Competition from other hunters who might interfere with your hunt in some way such as making you feel crowded or competing for hunting spots or birds.

Some of these scenarios might seem unlikely to you, or neither option represents the places you currently hunt, but we are still interested in understanding which described hunts you would choose. Your opinions about these comparisons will help waterfowl managers better understand waterfowl hunter preferences.

For each scenario, select the one choice you would make if these were your only hunting options and assuming all other conditions were the same.


0%  100%

Figure 2.8: Example Scenario from Discrete Choice Experiment

HunterDC_Random1

If these were your only options for a waterfowl hunt, which would you choose?
Choose by clicking one of the buttons below:

(1 of 10)

	Option 1	Option 2	WOULD NOT GO
Harvest: Number of waterfowl you likely harvest in a day	One bird	3 birds	NONE: I would not go waterfowl hunting if these were my only choices.
Access Effort: How easy or difficult it is to get into, out of and around an area in order to hunt	Easy access that takes little effort	Moderate access that takes some effort	
Length of Travel: The time you have to travel one-way in order to hunt	3 hours	30 minutes	
Quantity of Waterfowl: The number of ducks/geese that you see in a day when hunting even if not in shooting range	50 birds	1,000 birds or more	
Potential for Interference/Competition: Competition from other hunters who might interfere with your hunt	High competition from other hunters	Moderate competition from other hunters	
Choose one option	<div style="border: 1px dashed gray; display: inline-block; padding: 2px;">HunterDC_Random1=1</div> <input type="radio"/>	<div style="border: 1px dashed gray; display: inline-block; padding: 2px;">HunterDC_Random1=2</div> <input type="radio"/>	<div style="border: 1px dashed gray; display: inline-block; padding: 2px;">HunterDC_Random1=3</div> <input type="radio"/>

▶

0% 100%

A Hierarchical Bayes model summarizes the preference of waterfowl hunters for different hunting experiences. The attribute “importances” provide a summary of how important each of the five attributes were in respondents’ choices (Table 2.25).

Table 2.25: Relative Attribute Importance

Choice attribute	Importances	SD
Potential for interference	31.36	10.20
Length of travel	23.87	9.89
Harvest	19.72	9.46
Quantity of waterfowl	14.58	6.96
Access effort	10.47	5.61

The relative attribute importance is derived from Hierarchical Bayes estimation of utilities. $n = 384$ for this analysis.

The utilities of each level for each attribute are summarized in Table 2.26:

- The set of part-worth utilities for each attribute is scaled to sum to zero.

- The larger the number, the higher the utility. A large positive number has higher utility than a large negative number.
- The larger the range in the part-worth utilities (i.e., the average utilities across levels within that attribute) for an attribute, the more influential that attribute is on respondents' choices and the greater the importance of that attribute. For example, potential for interference or competition was the most influential attribute, as indicated by the largest range in part-worth utilities (range in utilities = 150 [or $|-99.76| + 50.09$]).

Table 2.26: Relative Utilities of Different Attributes

Choice attribute	Average utilities	SD
<i>Harvest</i>		
- One bird	-54.23	34.46
- 3 birds	24.47	13.68
- 6 birds	29.76	30.34
<i>Access effort</i>		
- Easy access that takes little effort	15.65	14.64
- Moderate access that takes some effort	12.09	14.3
- Difficult access that takes a lot of effort	-27.74	20.08
<i>Length of travel</i>		
- 30 minutes	53.56	32.56
- 1 hour	37.84	29.78
- 2 hours	-6.38	17.79
- 3 hours	-28.23	27.96
- 4 hours	-56.79	30.79
<i>Quantity of waterfowl</i>		
- 25 birds or less	-31.35	26.96
- 50 birds	-17.92	17.7
- 250 birds	5.13	14.87
- 500 birds	12.97	16.2
- 1,000 birds or more	31.18	19.3
<i>Potential for interference</i>		
- No competition	50.09	24.05
- Low competition from other hunters	46.11	18.22
- Moderate competition from other hunters	3.57	14.04
- High competition from other hunters	-99.76	35.21
<i>None</i>	-33.63	125.09

Results of the Hierarchical Bayes model using zero-centered differences. $n = 384$ for this analysis.

By making these selections, respondents revealed which attributes of waterfowl hunting trips they consider to be more important relative to other attributes. The list below represents the relative importance of each attribute compared to the others:

1. Interference/competition from other hunters, with less interference preferred. (*most important*)
2. Length of travel, with shorter times preferred.
3. Harvest, with greater numbers of waterfowl preferred.

4. Quantity of waterfowl, with greater numbers available preferred.
5. Access effort, with easier access preferred. (*least important*)

Within each attribute, respondents also revealed how much they prefer each level of a given attribute. Out of all possible attribute levels, the most preferred features of a waterfowl hunting trip were as follows:

1. Travel time of 30 minutes.
2. No competition or low competition from other hunters.
3. Travel time of one hour.

In contrast, out of all possible attribute levels, the least preferred features of a waterfowl hunting trip were as follows:

1. High competition from other hunters.
2. Travel time of four hours.
3. Harvesting only one bird.

2.5 Policy and Regulatory Preferences

Figure 2.9: Respondents' Priorities in Waterfowl Hunting

Reducing number of species-specific bag limits	2%	5%	10%	83%
Providing simplest regulations possible	11%	24%	19%	47%
Longest seasons possible	17%	19%	13%	51%
Largest duck populations possible	43%	11%	7%	40%
Largest drake mallard bag limits possible	6%	7%	12%	75%
Largest bag limits possible	4%	6%	8%	82%
Avoiding diff. season lengths for diff. duck species	4%	13%	15%	68%
	First	Second	Third	Not ranked

Note: Rows may not add to 100 percent due to rounding. Question wording: Of all the options listed below, please rank your top three to indicate your highest priorities. Use the numbers 1, 2, and 3, with 1 being your highest priority, 2 being your second highest priority and 3 being your third highest priority. Use each number only once. (Q18b_1:Q18b_7)

Table 2.27: Number of Total Responses per Question in Figure 2.9—Respondents' Priorities in Waterfowl Hunting

Item	Total Responses
Avoiding diff. season lengths for diff. duck species	418
Largest bag limits possible	418
Largest drake mallard bag limits possible	418
Largest duck populations possible	418
Longest seasons possible	418
Providing simplest regulations possible	418
Reducing number of species-specific bag limits	418

Note: The total number of responses shifted slightly for each question in Figure 2.9. The total numbers of valid responses for each question are listed here.

Figure 2.10: Priorities State and Federal Agencies Should Give When Setting Duck Hunting Regulations

Providing the simplest regulations possible	3.90 (0.97)	2%	5%	25%	36%	31%
Having the largest duck populations possible	3.86 (0.92)	2%	3%	29%	39%	27%
Avoiding different season lengths for different duck species	3.44 (1.19)	7%	13%	31%	25%	23%
Having the longest seasons possible	3.42 (0.99)	2%	14%	39%	29%	16%
Having the largest drake mallard bag limits possible	3.12 (0.99)	5%	19%	45%	21%	10%
Reducing the number of species-specific bag limits	3.02 (0.99)	6%	20%	49%	15%	9%
Having the largest bag limits possible	2.61 (0.88)	11%	29%	49%	7%	3%
	Mean (SD)	Very low	Low	Moderate	High	Very high

Note: Rows may not add to 100 percent due to rounding. Question wording: How much priority should state and federal agencies give the following when setting annual duck hunting regulations? ...Having the largest bag limits possible ...Having the longest seasons possible ...Having the largest duck populations possible ...Avoiding different season lengths for different duck species ...Providing the simplest regulations possible ...Reducing the number of species-specific bag limits (i.e., bag limits that apply to specific species instead of the general duck bag limit) ...Having the largest drake mallard bag limits possible. (Q18a_r1:Q18a_r7)

Table 2.28: Number of Total Responses per Question in Figure 2.10—Priorities State and Federal Agencies Should Give When Setting Duck Hunting Regulations

Item	Total Responses
Avoiding different season lengths for different duck species	374
Having the largest bag limits possible	375
Having the largest drake mallard bag limits possible	376
Having the largest duck populations possible	376
Having the longest seasons possible	373
Providing the simplest regulations possible	375
Reducing the number of species-specific bag limits	376

Note: The total number of responses shifted slightly for each question in Figure 2.10. The total numbers of valid responses for each question are listed here.

Table 2.29: Revealed Rank of Respondents' Priorities in Waterfowl Hunting

Revealed Rank	Priorities	Average (mean)
1	Largest duck populations possible	1.4
2	Longest seasons possible	1.9
3	Providing simplest regulations possible	2.2
4	Largest drake mallard bag limits possible	2.2
5	Largest bag limits possible	2.3
6	Avoiding different season lengths for different duck species	2.3
7	Reducing number of species-specific bag limits	2.5

Note: Respondents assigned their top three priorities with a vote of 1 (highest priority), 2 (second highest priority), or 3 (third highest priority). The means listed are the average of the responses for each category, excluding missing data, where 1 = "highest priority," 2 = "second highest priority," 3 = "third highest priority," and 9 = "not ranked." Question wording: Of all the options listed below, please rank your top three to indicate your highest priorities. Use the numbers 1, 2, and 3, with 1 being your highest priority, 2 being your second highest priority and 3 being your third highest priority. Use each number only once. (Q18b_1:Q18b_7)

Table 2.30: Revealed Rank of Priorities State and Federal Agencies Should Give When Setting Duck Hunting Regulations

Revealed Rank	Priorities	Average (mean)
1	Providing the simplest regulations possible	3.9
2	Having the largest duck populations possible	3.9
3	Avoiding different season lengths for different duck species	3.4
4	Having the longest seasons possible	3.4
5	Having the largest drake mallard bag limits possible	3.1
6	Reducing the number of species-specific bag limits	3.0
7	Having the largest bag limits possible	2.6

Note: The means listed are the average of the responses for each category, excluding missing data, where 5 = "Very high," 4 = "High," 3 = "Moderate," 2 = "Low," and 1 = "Very low." Question wording: How much priority should state and federal agencies give the following when setting annual duck hunting regulations? ...Having the largest bag limits possible ...Having the longest seasons possible ...Having the largest duck populations possible ...Avoiding different season lengths for different duck species ...Providing the simplest regulations possible ...Reducing the number of species-specific bag limits (i.e., bag limits that apply to specific species instead of the general duck bag limit) ...Having the largest drake mallard bag limits possible. (Q18a_r1:Q18a_r7)

Table 2.31: Opinions on Species-specific Bag Limits

Variable	Levels	n	%
Species-specific rules hard to understand	Yes	54	15.0
	No	307	85.0
	all	361	100.0
Species-specific limits difficult to comply with	Yes	63	17.4
	No	298	82.5
	all	361	100.0
Preferred scenario for specific species	Maintain individual species bag limits	180	50.0
	Create aggregate bag limits across species	180	50.0
	all	360	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Duck bag limits restrict how many ducks can be bagged each day. For some duck species, the bag limit per day is different than the general duck bag limit. Such bag limits are termed “species-specific” bag limits. For the states where you hunt, are the rules and regulations for current species-specific bag limits difficult to understand? (Q19) For the states where you hunt, are the current species-specific bag limits difficult to comply with in the field? (Q20) Please indicate your preferred scenario for bag limits of duck species that typically have smaller bag limits ...Maximize harvest opportunity by maintaining individual species bag limits ...Create simpler regulations by creating aggregate bag limits for a combination of certain species (e.g., a diving duck limit). (Q21)

Table 2.32: Minimum Number of Ducks, Smallest Daily Bag Limit, and Minimum Number of Days in a Waterfowl Season

Variable	Levels	n	%
Minimum no. ducks to feel satisfied with hunt	0	94	26.6
	1	48	13.6
	2	90	25.4
	3	67	18.9
	4	30	8.5
	5	13	3.7
	6	9	2.5
	7	1	0.3
	More than 7	2	0.6
	all	354	100.0
Smallest daily bag limit would accept	I'll hunt w/any size daily bag limit	122	33.6
	1 ducks	10	2.8
	2 ducks	36	9.9
	3 ducks	89	24.5
	4 ducks	57	15.7
	5 ducks	34	9.4
	6 ducks	15	4.1
	all	363	100.0
Minimum no. days acceptable in a waterfowl season	I'll hunt w/any season length	154	42.4
	10 days	8	2.2
	15 days	1	0.3
	20 days	7	1.9
	25 days	2	0.6
	30 days	46	12.7
	35 days	5	1.4
	40 days	27	7.4
	45 days	28	7.7
	50 days	17	4.7
	55 days	4	1.1
	60 days	64	17.6
	all	363	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: What is the minimum number of ducks you have to harvest in a day to feel satisfied with the hunt? (Q16a) What is the smallest daily bag limit you would accept before you would no longer hunt ducks? (Q16b) What is the minimum number of days in a waterfowl hunting season you would accept before you would no longer hunt ducks? (Q16c)

2.5.1 Central High Plains–specific Questions

Table 2.33: Central High Plains: Approach to Setting Bag Limits for Non-mallards during 97-Day Season

Variable	Levels	n	%
Bag limits	Simpler regulations by keeping bag limits same year to year	130	42.2
	Largest bag limit possible by allowing limits to change	94	30.5
	No preference	84	27.3
all		308	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Please indicate the approach you would favor for setting bag limits for duck species other than mallards during 97-day seasons. (Select one.) ...Offer simpler regulations by keeping bag limits the same from one year to the next and limited to the following three categories: 6-bird daily bag for duck species at low risk of being overharvested, 3-bird daily bag limit (within 6-bird total daily bag) for duck species at medium risk of being overharvested, 1-bird daily bag limit (within 6-bird total daily bag) for duck species at high risk of being overharvested ...Offer the largest bag limit as possible for every duck species by allowing daily bag limits to change from one year to the next for 10 or more species. (Note: This is how regulations are currently set.) ...No preference. (CHP1)

Table 2.34: Central High Plains: Preferences for a Season Lengths and Bag Limits during a Restrictive Season

Variable	Levels	n	%
32 days, 4 ducks	Acceptable	246	84.5
	Unacceptable	45	15.5
	all	291	100.0
39 days, 3 ducks	Acceptable	240	83.3
	Unacceptable	48	16.7
	all	288	100.0
46 days, 2 ducks	Acceptable	178	61.2
	Unacceptable	113	38.8
	all	291	100.0
Most preferred option	32 days, 4 ducks	81	31.8
	39 days, 3 ducks	105	41.2
	46 days, 2 ducks	69	27.1
	all	255	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Please indicate if you find each of the following combinations of season lengths and daily bag limits to be acceptable or unacceptable for a restrictive season when duck numbers and habitat conditions will not support a 97-day season with a daily bag limit of 6 ducks. (Please select one for each season option.) ...Season length: 32 days, bag limit 4 ducks ...Season length: 39 days, bag limit 3 ducks ...Season length: 46 days, bag limit 2 ducks. (CHP2_r1:CHP2_r3) Of the 3 options listed above, which represents your most preferred option for a restricted season? (CHP2b1)

Table 2.35: Central High Plains: Would Accept Lower Daily Bag Limit of 4 Ducks per Day of Any Kind

Variable	Levels	n	%
Accept 4 ducks/day of any kind	Yes	132	42.7
	No	52	16.8
	Does not matter to me	125	40.5
	all	309	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Would you accept a lower daily bag limit of 4 ducks per day if you could harvest 4 ducks of any kind? (CHP3)

Table 2.36: Central High Plains: Attitude toward Drake Mallard Daily Bag Limit in State Where Hunted Most Last Five Years

Variable	Levels	n	%
Attitudes	Drake mallard daily bag limit too low	14	4.5
	Drake mallard daily bag limit about right	210	68.0
	Drake mallard daily bag limit too high	8	2.6
	No opinion	77	24.9
	all	309	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Which one statement best describes how you feel about the drake mallard daily bag limit over the last five years in the state where you hunted most? (CHP4)

Table 2.37: Central High Plains: Preferred "Liberal" Season Length

Variable	Levels	n	%
Preference	Reduce from 97 to 81 days	43	13.8
	Maintain length of 97 days	128	41.2
	Increase from 97 to 104 days	49	15.8
	No preference	91	29.3
	all	311	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: What "liberal" season length would you most prefer? (Note: The "liberal" seasons are now 97 days long.) ...Reduce the liberal season length from 97 to 81 days. (Note: This change could result in fewer bag limit changes from one year to the next for some species) ...Maintain the liberal season length of 97 days similar to the past 20 years ...Increase the liberal season length from 97 to 104 days. (Note: This change could result in a higher chance of having more moderate (45-day) and restrictive (30-day) seasons.) ...No preference. (CHP5)

2.5.2 Central Flyway–specific Questions

Table 2.38: Central Flyway: Approach to Setting Bag Limits for Non-mallards during 74-day Season

Variable	Levels	n	%
Bag limits	Simpler regulations by keeping bag limits same year to year	15	31.9
	Largest bag limit possible by allowing limits to change	17	36.2
	No preference	15	31.9
	all	47	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Next we have a few questions about your hunting experiences and the regulations within the Central Flyway. Please indicate the approach you would favor for setting bag limits for duck species other than mallards during 74-day seasons. (Select one.) ...Offer simpler regulations by keeping bag limits the same from one year to the next and limited to the following three categories: 6-bird daily bag for duck species at low risk of being overharvested, 3-bird daily bag limit (within 6-bird total daily bag) for duck species at medium risk of being overharvested, 1-bird daily bag limit (within 6-bird total daily bag) for duck species at high risk of being overharvested ...Offer the largest bag limit as possible for every duck species by allowing daily bag limits to change from one year to the next for 10 or more species. (Note: This is how regulations are currently set.) ...No preference. (C1)

Table 2.39: Central Flyway: Preferences for Season Lengths and Bag Limits during a Restrictive Season

Variable	Levels	n	%
32 days, 4 ducks	Acceptable	36	78.3
	Unacceptable	10	21.7
	all	46	100.0
39 days, 3 ducks	Acceptable	34	77.3
	Unacceptable	10	22.7
	all	44	100.0
46 days, 2 ducks	Acceptable	23	51.1
	Unacceptable	22	48.9
	all	45	100.0
Most preferred option	32 days, 4 ducks	20	50.0
	39 days, 3 ducks	12	30.0
	46 days, 2 ducks	8	20.0
	all	40	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Please indicate if you find each of the following combinations of season lengths and daily bag limits to be acceptable or unacceptable for a restrictive season when duck numbers and habitat conditions will not support a 74-day season with a daily bag limit of 6 ducks. (Please select one for each season option.) ...Season length: 32 days, bag limit 4 ducks ...Season length: 39 days, bag limit 3 ducks ...Season length: 46 days, bag limit 2 ducks. (C2_r1:C2_r3) Of the 3 options listed above, which represents your most preferred option for a restricted season? (C2b)

Table 2.40: Central Flyway: Would Accept Lower Daily Bag Limit of 4 Ducks per Day of Any Kind

Variable	Levels	n	%
Accept 4 ducks/day of any kind	Yes	14	29.8
	No	15	31.9
	Does not matter to me	18	38.3
	all	47	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Would you accept a lower daily bag limit of 4 ducks per day if you could harvest 4 ducks of any kind? (C3)

Table 2.41: Central Flyway: Attitudes toward Drake Mallard Daily Bag Limit in State Where Hunted Most Last 5 Years

Variable	Levels	n	%
Attitudes	Drake mallard daily bag limit too low	1	2.1
	Drake mallard daily bag limit about right	34	72.3
	Drake mallard daily bag limit too high	2	4.3
	No opinion	10	21.3
	all	47	100.0

Note: Column may not add to 100 percent due to rounding. Question wording: Which one statement best describes how you feel about the drake mallard daily bag limit over the last five years in the state where you hunted most? (C4)

Table 2.42: Central Flyway: Preferred “Liberal” Season Length

Variable	Levels	n	%
Preference	Reduce from 74 to 60 days	8	17.0
	Maintain length of 74 days	20	42.5
	Increase from 74 to 81 days	9	19.1
	No preference	10	21.3
	all	47	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: What “liberal” season length would you most prefer? (Note: The “liberal” seasons are now 74 days long.) ...Reduce the liberal season length from 74 to 60 days. (Note: This change could result in fewer bag limit changes from one year to the next for some species) ...Maintain the liberal season length of 74 days similar to the past 20 years ...Increase the liberal season length from 74 to 81 days. (Note: This change could result in a higher chance of having more moderate (45-day) and restrictive (30-day) seasons.) ...No preference. (C5)

2.6 Avidity and Identity

Avidity can refer to several aspects of a recreational experience. Here, it was assessed via the respondents’ involvement in and identification with conservation groups and the centrality or importance of hunting for

the individual. Social identity was assessed for five different identities relevant to waterfowl management—birdwatcher, duck hunter, goose hunter, other type of hunter, or conservationist.

Figure 2.11: Self-identification

Other Type of Hunter	4.09 (0.94)	2%	3%	18%	38%	39%
Conservationist	3.92 (1.04)	3%	7%	21%	33%	36%
Duck Hunter	3.50 (1.14)	3%	17%	30%	25%	25%
Goose Hunter	3.44 (1.14)	5%	17%	30%	27%	21%
Birdwatcher	2.55 (1.21)	22%	31%	25%	14%	8%
	Mean (SD)	Not at all	Slightly	Moderately	Strongly	Very strongly

Note: Rows may not add to 100 percent due to rounding. Question wording: A person can think of themselves in a variety of ways. Please indicate the extent to which you identify yourself as a/an... (Q29_r1:Q29_r5)

Table 2.43: Number of Total Responses per Question in Figure 2.11—Self-identification

Item	Total Responses
Birdwatcher	353
Conservationist	355
Duck Hunter	355
Goose Hunter	355
Other Type of Hunter	354

Note: The total number of responses shifted slightly for each question in Figure 2.11. The total numbers of valid responses for each question are listed here.

Figure 2.12: Personal Importance of Waterfowl Hunting

Waterfowl hunting is one of the most enjoyable activities I do	3.77 (1.0)	3%	8%	27%	34%	28%
Most of my friends are in some way connected with waterfowl hunting	3.24 (1.0)	4%	22%	29%	35%	10%
Waterfowl hunting has a central role in my life	3.08 (1.1)	6%	25%	35%	20%	13%
A lot of my life is organized around waterfowl hunting	2.71 (1.1)	13%	33%	34%	13%	8%
If I couldn't go waterfowl hunting, I am not sure what I would do instead	2.54 (1.2)	23%	28%	29%	12%	8%
	Mean (SD)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Note: Rows may not add to 100 percent due to rounding. Question wording: We are interested in knowing how much waterfowl hunting means to you. Please indicate how much you disagree or agree with the following statements about your involvement in waterfowl hunting. (Q27_r1:Q27_r5)

Table 2.44: Number of Total Responses per Question in Figure 2.12—Personal Importance of Waterfowl Hunting

Item	Total Responses
A lot of my life is organized around waterfowl hunting	358
If I couldn't go waterfowl hunting, I am not sure what I would do instead	357
Most of my friends are in some way connected with waterfowl hunting	358
Waterfowl hunting has a central role in my life	358
Waterfowl hunting is one of the most enjoyable activities I do	357

Note: The total number of responses shifted slightly for each question in Figure 2.12. The total numbers of valid responses for each question are listed here.

2.7 Wider Engagement in Conservation and Nature-related Activities

Figure 2.13: Participation in Nature-related Activities in Last 12 Months

Hunting other game birds	1.96 (0.20)	4%	96%
Fishing	1.93 (0.26)	7%	93%
Spending time in nature away from home	1.92 (0.27)	8%	92%
Backyard/at-home nature activities	1.90 (0.30)	10%	90%
Hunting any other game animals	1.84 (0.37)	16%	84%
Viewing wildlife	1.83 (0.38)	17%	83%
Hunting migratory birds, not waterfowl	1.66 (0.47)	34%	66%
Learning about nature	1.51 (0.50)	49%	51%
Other	1.19 (0.39)	81%	19%
	Mean (SD)	No	Yes

Note: Rows may not add to 100 percent due to rounding. Question wording: In the last 12 months, have you participated in the following nature-based activities? ...Spending time in nature away from home (e.g., picnicking, relaxing in nature, camping) ...Viewing wildlife (e.g., wildlife watching, birdwatching, bird feeding, wildlife photography) ...Learning about nature (e.g., attending festivals or lectures, visiting a nature center) ...Backyard/at-home nature activities (e.g., gardening, landscaping) ...Fishing ...Hunting migratory birds other than waterfowl (doves, woodcock, rails, etc.) ...Hunting other game birds (grouse, pheasants, turkey) ...Hunting any other game animals (deer, elk, rabbit, etc.) ...Other. (Q36_r1:Q36_r9)

Table 2.45: Number of Total Responses per Question in Figure 2.13—Participation in Nature-related Activities in Last 12 Months

Item	Total Responses
Backyard/at-home nature activities	355
Fishing	355
Hunting any other game animals	354
Hunting migratory birds, not waterfowl	352
Hunting other game birds	355
Learning about nature	350
Other	152
Spending time in nature away from home	355
Viewing wildlife	354

Note: The total number of responses shifted slightly for each question in Figure 2.13. The total numbers of valid responses for each question are listed here.

Respondents were asked, “In the last 12 months, have you participated in the following nature-based activities? ...Other” (survey code = Q36_r9_other). Their responses are included below verbatim, arranged alphabetically without editing of spelling, grammar, or content. See the word cloud of responses in Figure 2.14.

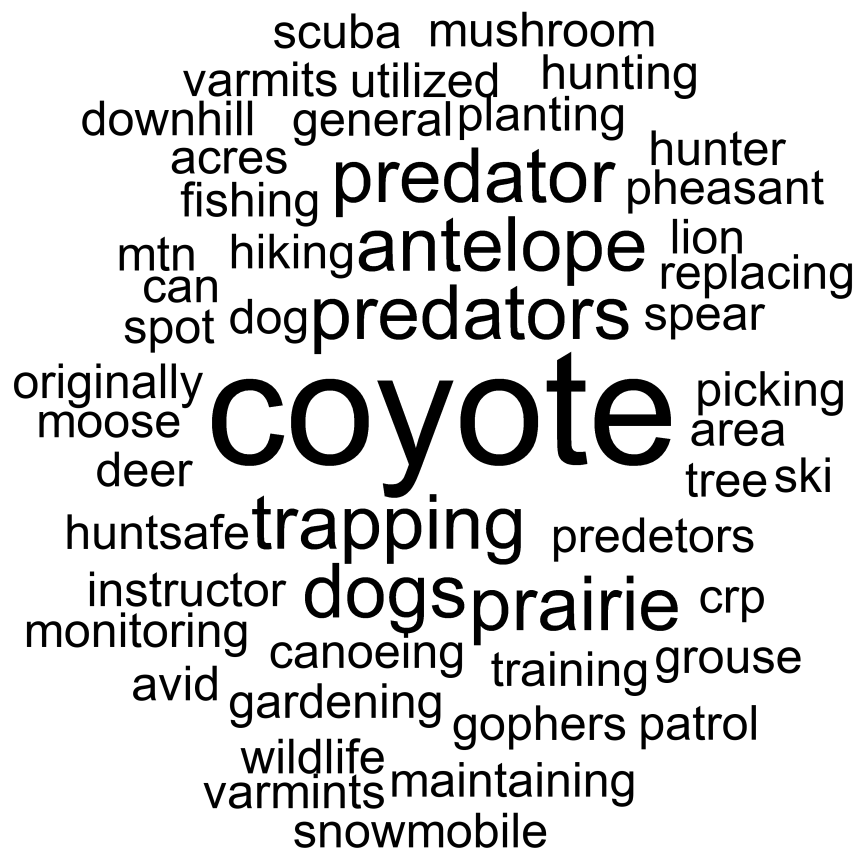
Table 2.46: Other Nature-based Activities

ID	Responses
1	antelope
2	coyote
3	coyote
4	Coyote
5	Coyote, mtn lion prairie dogs
6	Deer, antelope
7	downhill ski, snowmobile
8	gardening and dog training
9	gophers
10	Hiking, canoeing
11	huntsafe instructor
12	I'm an avid predator (coyote) hunter
13	maintaining CRP acres
14	moose
15	mushroom hunting
16	Pheasant and Grouse
17	Picking up and replacing to a spot it can be utilized in the same general area it was originally.
18	prairie dogs
19	predators
20	Predators
21	Predetors
22	scuba
23	Spear fishing

Table 2.46: (continued)

ID	Responses
24	Trapping
25	trapping/ Predator patrol
26	tree planting in SD
27	VARMINTS
28	Varmits
29	Wildlife Monitoring

Figure 2.14: Participation in “Other” Nature Activities in Last 12 Months



Note: The size of the word corresponds with the frequency of mentions. Question wording: In the last 12 months, have you participated in the following nature-based activities? ...Other (please specify if yes). (Q36_r9_other)

Figure 2.15: Participation in Wild Bird Activities in Last 12 Months

Watching birds at my home	1.74 (0.44)	26%	74%
Watching birds away from my home	1.63 (0.48)	37%	63%
Feeding birds at my home	1.51 (0.50)	49%	51%
Installing or maintaining nest boxes for birds	1.25 (0.43)	75%	25%
Photographing or filming birds	1.24 (0.43)	76%	24%
Counting/monitoring birds	1.10 (0.31)	90%	10%
Keeping track of the birds you see on a list, online, or on paper	1.09 (0.29)	91%	9%
Mean (SD)		No	Yes

Note: Rows may not add to 100 percent due to rounding. Question wording: In the last 12 months, which of the following activities related to wild birds did you participate in, if any? ...Watching birds at my home ...Feeding birds at my home ...Watching birds away from my home ...Photographing or filming birds ...Counting/monitoring birds (e.g., Christmas or Backyard Bird Count) ...Keeping track of the birds you see on a list, online, or on paper ...Installing or maintaining nest boxes for birds. (Q37_r1:Q37_r7)

Table 2.47: Number of Total Responses per Question in Figure 2.15—Participation in Wild Bird Activities in Last 12 Months

Item	Total Responses
Counting/monitoring birds	346
Feeding birds at my home	355
Installing or maintaining nest boxes for birds	351
Keeping track of the birds you see on a list, online, or on paper	347
Photographing or filming birds	348
Watching birds at my home	354
Watching birds away from my home	351

Note: The total number of responses shifted slightly for each question in Figure 2.15. The total numbers of valid responses for each question are listed here.

Figure 2.16: Involvement in Organizations in Past 12 Months

Ducks Unlimited	1.68 (0.81)	50%	37%	9%	4%
Regional / state waterfowl association	1.25 (0.61)	82%	13%	3%	2%
Delta Waterfowl	1.19 (0.53)	85%	12%	2%	2%
	Mean (SD)	No involvement	Slight	Moderate	High involvement

Note: Rows may not add to 100 percent due to rounding. Question wording: Please indicate your involvement with the following organizations in the past 12 months, even if you were not a member. ...Ducks Unlimited ...Delta Waterfowl ...Regional / state waterfowl association. (Q31_r1:Q31_r3)

Table 2.48: Number of Total Responses per Question in Figure 2.16—Involvement in Organizations in Past 12 Months

Item	Total Responses
Delta Waterfowl	326
Ducks Unlimited	353
Regional / state waterfowl association	325

Note: The total number of responses shifted slightly for each question in Figure 2.16. The total numbers of valid responses for each question are listed here.

2.7.1 Financial Support for Conservation

Financial support for conservation can take the form of donations, permit purchases, and fees. Respondents were asked about their previous support in the past year to wetland or waterfowl conservation, conservation of other birds, birdwatching and related issues, and waterfowl hunting.

Table 2.49: Personal Donations to Causes in Past 12 Months

Variable	Levels	n	%
Wetland and/or waterfowl conservation (in dollars)	0	148	42.5
	1-249	155	44.5
	250-999	38	10.9
	1000-2499	4	1.1
	2500-4999	3	0.9
	5000-9999	0	0.0
	10000+	0	0.0
	all	348	100.0
Conservation of other bird species (in dollars)	0	226	68.5
	1-249	87	26.4
	250-999	13	3.9
	1000-2499	1	0.3
	2500-4999	2	0.6
	5000-9999	1	0.3
	10000+	0	0.0
	all	330	100.0
Birdwatching and related issues (in dollars)	0	295	89.7
	1-249	30	9.1
	250-999	4	1.2
	1000-2499	0	0.0
	2500-4999	0	0.0
	5000-9999	0	0.0
	10000+	0	0.0
	all	329	100.0
Waterfowl hunting and hunting related issues (in dollars)	0	139	39.7
	1-249	142	40.6
	250-999	54	15.4
	1000-2499	11	3.1
	2500-4999	4	1.1
	5000-9999	0	0.0
	10000+	0	0.0
	all	350	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Please indicate how much money you personally donated to the following causes in the past 12 months. (Q33_r1:Q33_r4)

Table 2.50: Personally Spent Money for Wetlands Management on Private Lands in Past 12 Months

Variable	Levels	n	%
Spent money for wetlands mgmt. on private lands	No	298	83.7
	Yes	21	5.9
	Yes but rather not say how much	37	10.4
	all	356	100.0
How much spent (in dollars)	20	1	5.6
	30	1	5.6
	100	1	5.6
	150	1	5.6
	200	1	5.6
	250	1	5.6
	300	1	5.6
	500	2	11.1
	550	1	5.6
	800	1	5.6
	1000	2	11.1
	1200	1	5.6
	2000	1	5.6
	5000	2	11.1
	10000	1	5.6
	all	18	100.0

Note: Columns may not add to 100 percent due to rounding. In the past 12 months, did you personally spend money for wetlands management on private lands? (Q34) If so, how much did you spend? (Q34_2_other)

2.7.2 Ecosystem Services of Wetlands

Figure 2.17: Involvement in Wetlands or Waterfowl Conservation Activities in Last 12 Months

Voted for candidates or ballot issues	2.35 (1.45)	48%	6%	18%	19%	9%
Advocated for political action	1.84 (1.20)	60%	12%	15%	8%	4%
Worked on wetland improvement projects	1.63 (1.02)	67%	12%	14%	5%	2%
Attended meetings	1.60 (0.91)	63%	18%	15%	3%	1%
Contacted elected officials or government agencies	1.58 (0.96)	68%	14%	13%	5%	1%
Volunteered my personal time and effort	1.57 (0.96)	68%	14%	12%	5%	1%
	Mean (SD)	Never	Rarely	Sometimes	Often	Very often

Note: Rows may not add to 100 percent due to rounding. Question wording: Please indicate your level of involvement in the following wetlands or waterfowl conservation activities in the last 12 months ...worked on land improvement projects related to wetlands or waterfowl conservation ...attended meetings about wetlands or waterfowl conservation ...volunteered my personal time and effort to conserve wetlands or waterfowl ...contacted elected officials or government agencies about wetlands or waterfowl conservation ...voted for candidates or ballot issues to support wetlands or waterfowl conservation ...advocated for political action to conserve wetlands or waterfowl. (Q35_r1:Q35_r6)

Table 2.51: Number of Total Responses per Question in Figure 2.17—Involvement in Wetlands or Waterfowl Conservation Activities in Last 12 Months

Item	Total Responses
Advocated for political action	351
Attended meetings	352
Contacted elected officials or government agencies	353
Volunteered my personal time and effort	352
Voted for candidates or ballot issues	352
Worked on wetland improvement projects	353

Note: The total number of responses shifted slightly for each question in Figure 2.17. The total numbers of valid responses for each question are listed here.

Figure 2.18: Concern over Reduced Benefits Due to a Loss of Wetlands

Hunting opportunities	3.63 (0.69)	3%	5%	20%	72%
Providing a home for wildlife	3.62 (0.72)	3%	5%	18%	73%
Clean water	3.43 (0.82)	4%	9%	26%	60%
Clean air	3.32 (0.89)	6%	12%	27%	56%
Providing a home for animals such as butterflies and bees that pollinate plants and crops	3.25 (0.89)	6%	13%	31%	50%
Erosion protection	3.11 (0.89)	7%	13%	41%	39%
Flooding protection	2.95 (0.95)	9%	20%	37%	34%
Wildlife viewing and birdwatching	2.64 (1.08)	19%	25%	28%	28%
Scenic places for inspiration or spiritual renewal	2.52 (1.10)	23%	26%	27%	24%
Storage of greenhouse gases, such as carbon	2.50 (1.04)	20%	30%	29%	21%
Mean (SD)		Not at all	Slightly concerned	Somewhat concerned	Very concerned

Note: Rows may not add to 100 percent due to rounding. Question wording: How concerned would you be if the following benefits were reduced in your community due to a loss of wetlands? (Q38_r1:Q38_r10)

Table 2.52: Number of Total Responses per Question in Figure 2.18—Concern over Reduced Benefits Due to a Loss of Wetlands

Item	Total Responses
Clean air	352
Clean water	353
Erosion protection	349
Flooding protection	352
Hunting opportunities	352
Providing a home for animals such as butterflies and bees that pollinate plants and crops	351
Providing a home for wildlife	352
Scenic places for inspiration or spiritual renewal	350
Storage of greenhouse gases, such as carbon	352
Wildlife viewing and birdwatching	352

Note: The total number of responses shifted slightly for each question in Figure 2.18. The total numbers of valid responses for each question are listed here.

Table 2.53: Wetlands Benefits Most and Least Concerned about Potentially Losing

Variable	Levels	n	%
Benefit MOST concerned about losing	Flooding protection	23	6.6
	Erosion protection	9	2.6
	Wildlife viewing and birdwatching	3	0.9
	Hunting opportunities	142	40.9
	Storage of greenhouse gases	1	0.3
	Clean water	58	16.7
	Clean air	2	0.6
	Providing a home for wildlife	103	29.7
	Providing a home for pollinators	3	0.9
	Scenic places for inspiration or spiritual renewal	3	0.9
	all	347	100.0
Benefit LEAST concerned about losing	Flooding protection	29	8.4
	Erosion protection	11	3.2
	Wildlife viewing and birdwatching	36	10.4
	Hunting opportunities	11	3.2
	Storage of greenhouse gases	121	34.9
	Clean water	1	0.3
	Clean air	12	3.5
	Providing a home for wildlife	7	2.0
	Providing a home for pollinators	22	6.3
	Scenic places for inspiration or spiritual renewal	97	27.9
	all	347	100.0

Note: Columns may not add to 100 percent due to rounding. Question wording: Which of the wetlands benefits listed on the previous page would you be MOST concerned about being substantially reduced in your community? Please select the benefit you are most concerned about losing. (Q39) Which of the wetlands benefits listed on the previous page would you be LEAST concerned about being substantially reduced in your community? Please select the benefit you are least concerned about losing. Be sure to select a different benefit than you selected above. ...Flooding protection ...Erosion protection ...Wildlife viewing and birdwatching ...Hunting opportunities ...Storage of greenhouse gases, such as carbon ...Clean water ...Clean air ...Providing a home for wildlife ...Providing a home for animals such as butterflies and bees that pollinate plants and crops ...Scenic places for inspiration or spiritual renewal. (Q39a)

2.8 Open-ended Comments on the Survey

At the end of the survey, respondents were asked, “Please let us know about any key concerns you might have with any portion of the survey.” (survey code = Comments). Their responses are included below verbatim, arranged alphabetically without editing of spelling, grammar, or content.

Table 2.54: Comments about the Survey

ID	Responses
1	Amount of crp grass and the amount of drain tile being installed South Dakota
2	DEAR Sirs, I live in Armour S.D. and try to hunt ducks in our area Low Plains South Zone. We get very little and short opportunity to hunt mallards in our area. I strongly feel that that Duck unit should be dropped and included in the South Dakota HIGH PLAINS UNIT SO we get an opportunity to harvest a few mallards this year I have only shot 4 and alot of years none or have a one day hunt when weather is right and never get over 5 in a year, I goose hunt sane areas and this goes til Feb 12th and many years I notice that we miss a day or two opportunity to shoot ducks since our unit closes Dec20th for ducks please consider changing this unit to High Plains??? I'm 70yr old and know what I'm talking about in regards to this topic. We loose 2 or 3 days of Duck hunting because of this. If weather is nice they usually fly too early or to late to harvest any. Thanks
3	Duck season should start later so the season would be open when the northern mallards come though. Nearly every year the season is already closed when cold weather pushes them though. I would rather hunt northern mallards than early local ducks.
4	Everyone needs to reduce the amount of chemicals used in weed control in fields and along roads. The runoff is polluting the water.
5	Feel Duck season should start one week earlier to have better Blue-wing teal hunting and also feel that Dove season should start one week earlier as they migrate early in northern states.
6	Game fish only seems concerned about OVER CONTROL, and Hiring More Staff, and BIG PAY for themselves, and they Use Wildlife and peoples love of it, to take advantage of them. They Creat More regulations for no reason, and make it Harder to Hunt, while constangly Raising ones costs. SD has Ruined duck and Goose hunting by having early goose seasons. START THEM TOGETHER !! Hunting is So depressing that Most of my Hunting friends have quite.. THANKS GF&P. Everyone agrees that GF&P Is a Problem and not a solution. They have been Selling our Game Back to us, and telling us that it is a Privilage to hunt , but really it is a RIGHT.. Drain the Swamp ! ! ! ! ! Thanks
7	get individual bag limit for each speiceis of ducks
8	good survey
9	Good survey I'm pleased I took 30 minutes to complete. Land use shifts impact wildlife and society
10	Habitat

Table 2.54: (continued)

ID	Responses
11	Here in north central SD this year has been about the worst year i have seen or heard of as far as waterfowling goes. We are so dry and its been so nice that there is less than 2 weeks of season left and the ducks havent even shown up yet. I wouldnt say a longer season is need just push the dates back a couple weeks. Seems as tho the last 2 years or so the ducks are a few weeks behind schedule. As far as being dry it also doesnt help that every "broke farmer" is drain tiling everything which hurts not only ducks or geese but also deer and pheasants. And people wonder why all of our numbers are down. Also waterfowling has become extremely commercialized here as well it has become extremely hard to get permission since the birds are almost concentrated to big water bodies the outfitters are leasing everythibg in sight close to the major roosts. Another year or two of this and ill be selling out on the waterfowl hunting which sucks because ducks are my favorite thing to hunt.
12	Hopefully congress does not give federal lands to the States to manage.
13	Hunting is getting to be a rich man sport, due to the costs associated.
14	I'm concerned about the continuous tiling and draining of wet lands by the agricultural community. Many areas that at one time supported waterfowl and grew cat tails are being drained and tiled to allow farming. People can't figure out why there is more flooding down stream??
15	I am an avid waterfowler - am a small business owner - have a real job as well. This survey is long and it's imperative you can exit & start again where you left off... The *feel* of this survey seemed like it was leaning towards reducing hunting opportunities and/or season lengths and/or bag limits... Will the survey participants have the ability to view the results of this survey?
16	I am concerned with all the farmers drain tiling fields in South Dakota. This is draining valuable habitat and I believe that there should be some actions taken to prevent this activity.
17	I do not start hunting until November, mostly because I like to pick and bake my birds. people that just breast them out make me sick, personal thing. our duck season ends to early and even if extended does not guarantee there will be anything left due to the freeze which usually happens mid November but some years not and I love those late mallards so why not?
18	I don't trust bleeding heart liberals;) The effort to protein ratio for duck hunting can at times get completely out of whack. Wetlands are amazing places that need to be protected. The general population needs to be protected from bleeding heart liberals. I want to like the sierra club and other organizations, but you have to be careful or they will take away access to federal lands. Weird survey, I am a unique hunter I hunt near Minneapolis, in Canada, and occasionally the Dakotas for waterfowl. I must say the one question you missed for a U of M survey. Do you agree with the length of the Minnesota season? I completely do not. the migration typically hits a week after the season ends with a very fast freeze, season needs another week in MN!!! Also,the inside of the 494/694 loop needs to be hunted it turns into the largest urban waterfowl sanctuary in the upper midwest.
19	I found this survey time consuming and annoying. Please do not contact me further.
20	I live in the western region of SD, west of the river, and over the last 40 years have gone from no goose season to a resident population of Giants and greater Canadians with eight bird limit. When freeze up comes, that ends the season, same with ducks. Set the season,and let the weather regulate it, When we get snow cover, that ends the hunt except on the big waters. One week ago, I was fishing on stock dams in 70 degree weather, nov.14th, other years we were ice fishing onThanksgiving !

Table 2.54: (continued)

ID	Responses
21	I love waterfowl hunting. As far as the season length, I think it is fine. The hard part is timing the migration. On so many years the waterfowl miss the season because of the climate, and sometimes it is right on the money. I almost wish the season was split in some way so you could hunt the local population early and the migrating population as it starts to move through. I hunt mainly along the Missouri river and my boys and I have been out hunting Canadian geese just last week. It is nice that the season went longer this year.
22	I recognize the work put into this survey,I ignored it the first time I was asked to complete it. I am not a child of the computer age.I resist these changes and am bull headed about completing them. I believe I am outgrowing them. Whoever put this together, I say "good job" and thank you.
23	i think we should have a quota season for say 50 birds a year and open september 20th thur april 1st so the season would be long and if you shoot your 50 in a day your done but. most of us would hunt late season and spring so to take only drake birds. I see no difference if i take 50 in the fall or take 50 in a year its still 50 ducks. i would think the hen kill would drop a ton if we could fill are limits in the spring. or a spilt season spring and fall 2 60 day seasons with a 3 bird daily limit.
24	I was a member of Ducks Unlimited for several decades but quit several years ago when they commenced fund raising by buying private wetlands, spending money to enhance them and then selling them to the highest private bidder, therefore denying the public a possible place to hunt. I belonged to Delta for many years but quit when their magazine constantly complained about South Dakota not opening the floodgates to unlimited out of staters thereby wrecking quality hunting for everybody but the rich or privileged.
25	i would like to see a split season for the duck season in sd because the season is usally over before the ducks get here
26	I would like to see the early teal season return if the population warrants an early season
27	I would not consider myself a waterfowl hunter. If it weren't for my son really getting into it I would probably go once a year for a day on a guided hunt for geese
28	If you don't own land it is hard to hunt. It is too commercialized. The rich can lease the good hunting land.
29	In my hunting area, there are many people that travel 50+ miles to hunt duck/geese. The same area that I hunt has many pothole areas that are hunted by those paying private hunters. These same hunters who pay private land owners also hunt the large public wetlands in the opening days of the season. They camp on the public sites overnight to get the best areas for the first days of hunting knowing they can move to the private paid areas when the public areas are hunted out. Maybe having resident public areas is something that can help wildlife in general, those that live in the area take care of their own land and neighbors better than people from out of area.
30	It's really long!
31	It gets harder & harder to get young people involved in hunting. Not as many kids have relatives that live in the country & own land to hunt. Many landowners are now charging to hunt their land. More public lands are needed along with more habitat to support more wildlife. thanks!!
32	keep it simple and affordable so youth are interested and want to participant.we are not all going to get a limit all the time but if it happens(good for them) your losing the youth and there goes the money for water foul conservation,ext. than what are you going to have?
33	Length of season does not matter if it is closed before the migration even gets here.

Table 2.54: (continued)

ID	Responses
34	Let local people help decide on regulations for wildlife refuges/production ares. Go back to the older ways/techniques of managing bag limits and refuges. Their have been too many duplicate studies which have proven nothing for wildlife management. The fish and wildlife service has not been efficient in its management of fishing. Landowners have stated the wildlife production areas are the most efficient neighbor for establishing weed problems.
35	Let those who partake in survey also see total results upon completion.
36	Most of the cover and wetlands are either destroyed or farmed. The so-called public land is either grazed or is farmed also!!!! The goose population is expanding and the bag limit is 50!! The geese are shot at 9 months out of the year and are extremely trained to gun shots/flaring to the slightest things!!! In the past, one piece public land north of where I lived was managed to concentrate the goose population and their half day hunting, their was a 5 bird limit it was enjoyable to hunt, and you could get 4 to 5 geese a day. Now they are draining the slough and managing it for song birds?????? I think we should look at our management. Ask us hunters what we think! Your professionals who manage these laws have no common sense. If you would like to manage the goose population listen to older hunters/ landowners / farmers they know more about the wildlife than the professionals you put in the field!
37	My and those I hunt with are VERY concerned with the USFWS policy or procedure where they are always removing all the trees and treebelts, shelterbelts on the federal properties. I know they do this due to restoring to native grasses and to eliminate raptor perches. The issue is when waterfowl are gone on it is a bad or slow year you can always hunt pheasants or big game. Some of these areas were fantastic for deer, until they remove all the trees. Very Sad.
38	My biggest complaint about the waterfowl season in South Dakota is not the length of the season rather the dates the season is open. The migration of waterfowl through the eastern half of South Dakota appears to be getting later and later each year. Perhaps delaying the opening of the season by two weeks and extending the South Dakota Season to the end of December for ducks would resolve this concern.
39	My biggest gripe is all these farmers draining wetlands and installing tile to dry up sloughs to provide more acreage for farming. Also the removal of tree groves for the same reason. The farmers remove all of this for crops, then complained to the wildlife and fisheries organizations to keep wildlife from eating their crops or when hunting season rolls around, they complain because there is no game to hunt and they blame the G,F and P or other groups, when it's the farmers who are at fault.
40	My concerns are the open season during the heavy migration periods. My frustration is with the time/length of the migration which is usually not controllable. It is getting to the point where the peak migration only lasts a week, limiting the number and quality of the hunts. I'm not big on shooting early local ducks that are not in the prime. That is why I have moved away from duck hunting. It is not about the killing of birds but the quality of the hunt and the bird.
41	My family owns and operates a hunting farm and are always involved in wildlife management and improvement. Although I have moved a few hours away, my family still helps with the hunters in the fall and enjoy hunting all species when time allows. There is nothing like big Canadians coming into the decoys!
42	My main concern is limiting the number of out of state waterfowl hunters to South Dakota.
43	My major concern is the start and stop dates for waterfowl seasons. In my state the birds arrive later in the season almost every year and by that time the season is about over. Our season in SD low plains needs to be extended to the end of December.

Table 2.54: (continued)

ID	Responses
44	my strongest concerns and opinions would be drain tile, farming practices close to and around natural water systems, habitat maintenance, acres, and quality. I also have strong opinions about the early Canada goose season. I do NOT like it. I hear about to much wanton waste and believe the bag limits should increase during the regular season instead. Lots of birds also go to waste because of the high temps during early season and many hunters will not take the extra necessary steps to keep birds and simply discard them. Waterfowl and wildlife's greatest threat is overfarming and the areas they do have are of poor quality, i.e. CREP, and unsubstantial size. Almost all public land of east river S.D. is so small in size it produces very little and most all game is chased out by the second week of pheasant season. Also it seems that farm tiling has disrupted all natural water bodies creating lakes out of sloughs or turning them into small damp cattail fields, neither of which is worth duck crap for hunting ducks.
45	No concerns with the survey. Im more concerned with the feds hiking the waterowl stamp fee 10 dollars in 1 year rather than a slow incline of the price. Im not a huge waterfowler like my father and other relatives but he'd be rolling in his grave to have to pay that kind of money to shoot a flying chunk of bad liver.
46	No problem. Very adequate
47	No questions on the dates seasons start or a split season based on the migration and weather.
48	none
49	none
50	None
51	None:
52	Nothing to add
53	On each section of the survey it would've been nice too expand alittle in our own words how we feel on the topics that were cited too us. Like leaving the hunting season at 97 days but opening it later in the year(October in South Dakota's case) and letting it run over into February-March time frame because the weather in the last 3 years hasn't pushed Waterfowl down till late November early December and leaves only a few days at most for anyone too even get a shot at them before the season for ducks is closed. For some reason a lot of folks think the Ducks and Geese are learning it's better too hold out up north and push south fast, just our observations watching numbers decline year after year and then when seasons are closed they come through. I watch for Waterfowl flying south in the fall/winter and then wait for the Snows too come back up north and a lot of my family and friends help watch them as well so we have a general idea when they are arriving, where they loaf, and so on.... Appreciate your time and effort Hope the little I said is some information too create a hypothesis on what can be done and can't. Again, Appreciate your time and effort
54	ONLY THAT I am not that avid a duck hunter as my friends are ,although duck hunting is important to me .
55	Personally, I have been a bit let down with the small number of birds that I have seen on public land in Eastern South Dakota. I'm not sure if this is due to over-hunting or what or if anything could be done to better the hunting on these grounds.
56	Season dates need to line up with current migratory patterns. Add season splits or lower bag limits to achieve this goal.
57	Send more money next time, this is a long survey.

Table 2.54: (continued)

ID	Responses
58	Stopping Wetland Drainage. Taxpayers shouldn't be paying for any crop insurance or subsidies for corn ethanol. This encourages bad land practices that includes wetland drainage, plowing up virgin prairie,& shelterbelts being removed completely. Taxpayers should pay landowners that actually are doing something for conservation on their land like not draining a wetland, having grass buffers for clean water etc. Most are not doing anything and getting a free ride from taxpayers. Thank You.
59	Sure, shooting ducks or geese is always rewarding, but it is not the primary reason or the sole source of satisfaction, in going afield. It is more about breathtaking sunrises, and sunsets, warm camaraderie of fellow hunters and continuing the great traditions that have been the fabric our great history. So...given ANY opportunity, I would continue to head out to the marshes and fields, to enjoy the great experience of waterfowling.
60	Survey is way to long!!
61	SURVEY SAID IT WAS FOR THE LAST HUNTING SEASON-2015-WHEN THE LAST SEASON WAS 2016
62	takes too much time to complete
63	Technical College should be listed as education. You don't need a degree to be successful.
64	The northern mallards need a longer season they get here when the season is just about closed in the low plain region of south Dakota along the lake Francis case area the tribal ground are usual granted a extended season everywhere by the Feds
65	The number of ducks is extremely low this year in my area
66	The weather payed a huge part in my waterfowl hunting. The weather was warm so the ducks didn't come down until cold weather sent them past us further south! I had hoped to hunt way more than I did.
67	There is little to no mention of the Ag & other pollutants and chemicals that pollute our wetlands, lakes and rivers. Buffering the effects of those pollutants by wetlands deserves mention as this is a very important role they provide. Our public benefits of wetlands are being flushed to the dead zone in the Gulf like you would flush a toilet and few in our public seem to care!
68	These surveys are the stupidest things we do all year. This is a huge waste of our tax payers dollars. There were no questions on licenses and how to easily obtain them compared to the ass backwards way there is now. No way to start family traditions or anything of that nature. Basically the GFP should be ashamed of them selves for doing such a piss poor job or "management" of wildlife. Killing deer with tracking collars is inhuman and they should be brought up on charges of animal abuse. Go Trump! Drain the swamp!
69	This is the first year I noticed real crowding or competition from other hunters while waterfowl hunting. It could be related to growing urban areas in my part of the state.
70	This was a survey where I feel it actually meant something. The questions made me think (especially the option 1 or 2 scenarios). They were interesting. While waterfowl hunting is not my main passion, it is something I do yearly, it is my sons passion. I have an interest in keeping hunting opportunities available for all for many years to come.
71	Too Long
72	Too Long of survey.
73	Too long.
74	Too much drainage of wetlands with tile. We need to save our habitat.
75	Transportation requirements for waterfowl are hard to follow, limiting and outdated. I would like to see these changed.

Table 2.54: (continued)

ID	Responses
76	We have a significant problem in South Dakota with the legislature not considering the need for resident hunting opportunities and not listening to the game and parks commission who is in charge of licences. They are way more concerned with bringing in tourism dollars for waterfowl hunting than supporting the residents who live here and pay taxes. We need to do a better job in Washington with CRP that is the key for ducks, pheasants and deer. I think the feds have done a good job with limiting how much tile has gone in but in places it is too late.
77	We have had a huge decrease in habitat in the last 5 years in South Dakota. that has directly impacted our number of wild animals available to hunt. if farmers are not given a financial incentive to increase wildlife habitat on their land they wont, with very few exceptions. when prices were high they said they wanted to farm more to make more money. now with low prices they say they need to farm more to make money. CRP acres needs to be increased along with grass and wetland easements from willing sellers if my granddaughters will have anywhere to hunt in the coming years.
78	We need to get more land—especially wetlands—back into CRP!!!
79	We need to have a spring duck season even if it has a small daily limit.
80	when the waterfowl is around the season is either closed or is about to end. season dates need to be adjusted so that we can hunt the birds when they are around. the season dates should all be the same for the whole county not divided separated by a road where the north side is open but the south side is closed.
81	You didn't ask about access to wetlands all they care about is pheasant hunting and field waterfowl hunters boat hunters are not important.

Chapter 3

Survey Instrument

Thank you for participating in the national survey of waterfowl hunters. You are one of only a relatively few waterfowl hunters in your state being contacted to participate in this study. Your state wildlife management agency is helping to sponsor this study because it is important to them to understand your waterfowl hunting experiences and what you think might improve them. We are working closely with your state waterfowl managers and the National Flyway Council to complete this study. The survey will take about 20 minutes to complete, and we greatly appreciate your time and effort. Your responses are very important to the study and will be used to help guide and improve waterfowl management in the future. Please be assured that your participation in the study, and all of your responses, will be kept confidential. You must be 18 or older to participate. Thank you for your help!

1. [Q1] Which of the following statements best describes your pursuits in waterfowl hunting?
 - (a) I hunt only ducks
 - (b) I hunt ducks and geese
 - (c) I hunt only geese
 - (d) I hunt neither ducks nor geese
2. [Q2] How old were you when you started waterfowl hunting? _____
3. [Q3] How many years of the last 5 years have you hunted WATERFOWL?
 - (a) None
 - (b) 1 year
 - (c) 2 years
 - (d) 3 years
 - (e) 4 years
 - (f) 5 years
4. [Q4D] Over the last five years, about how many DUCKS did you harvest in a year ON AVERAGE?
 - (a) 5 or less
 - (b) Between 6 and 10

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- (c) Between 11 and 20
 - (d) Between 21 and 50
 - (e) More than 50
5. [Q4G] Over the last five years, about how many GEESE did you harvest in a year ON AVERAGE?
- (a) 5 or less
 - (b) Between 6 and 10
 - (c) Between 11 and 20
 - (d) Between 21 and 50
 - (e) More than 50
6. [Q5] Over the last five years, about how many days did you usually hunt WATERFOWL in a year?
- (a) 5 days or less
 - (b) 6 to 10 days
 - (c) 11 to 20 days
 - (d) 21 to 30 days
 - (e) More than 30 days
7. [Q6] During LAST YEAR'S (2015) waterfowl hunting season, how many days did you hunt for WATERFOWL? (If you did not hunt, enter "0"). _____
8. [Q7] How many times do you feel that you need to shoot a daily bag limit of ducks/geese to have a satisfying season?
- (a) Never
 - (b) On at least one of my hunts
 - (c) Occasionally on my hunts
 - (d) Most of my hunts
 - (e) Every time I hunted
9. [Q8] How many times did you shoot a limit of ducks/geese last year's season (2015)?
- (a) Never
 - (b) On at least one of my hunts
 - (c) Occasionally on my hunts
 - (d) Most of my hunts
 - (e) Every time I hunted
 - (f) I did not hunt in 2015
10. [Q9] Under what circumstances do you typically go hunting?
- (a) When I plan the hunt myself

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- (b) When someone else invites me
- (c) Both when I plan the hunt or someone else invites me
11. [Q10F] In which Flyway did you hunt most often last year (2015) or the year you last hunted?
- (a) Pacific Flyway
- (b) Central Flyway
- (c) Mississippi Flyway
- (d) Atlantic Flyway
12. [Q10S] In which US State or Canadian Province have you hunted waterfowl most often over the past 5 years? _____
13. [Q11] Do you primarily take day trips or overnight/multi-day trips when you waterfowl hunt?
- (a) Primarily day trips
- (b) Primarily overnight or multi-day trips
- (c) Both about equally
14. [Q12] Please indicate where you do most of your waterfowl hunting.
- (a) Public land or waters
- (b) Private property owned by you, your family or in partnership with someone else
- (c) Private property owned by a friend or another landowner who gives you permission to hunt for free
- (d) Private property you lease or pay to hunt on
- (e) Guest on private property someone else leases or pays to hunt on
15. How important is it to you to hunt the following in the Central Flyway? (*Not at all important, Slightly important, Moderately important, Very important, Extremely important*)
- (a) [Q13C_r1] Diving ducks (e.g., scaup/bluebills, canvasback, redheads, etc.)
- (b) [Q13C_r2] Mallards
- (c) [Q13C_r3] Other dabbling ducks (e.g., gadwall, pintails, teal, etc.)
- (d) [Q13C_r4] Geese
16. Please indicate how much of a problem the following are in the state where you hunt waterfowl most. (*Not at all, Slight problem, Moderate problem, Severe problem, Very severe problem*)
- (a) [Q14_r1] Crowding at hunting areas
- (b) [Q14_r2] Hunting pressure
- (c) [Q14_r3] Interference from other waterfowl hunters
- (d) [Q14_r4] Conflict with other waterfowl hunters in places I hunt
- (e) [Q14_r5] Lack of public places for waterfowl hunting

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17. In the state where you hunt ducks most often, how dissatisfied or satisfied are you with: (*Very dissatisfied, Somewhat dissatisfied, Neutral, Somewhat satisfied, Very satisfied*)
- (a) [Q15_r1] The number of ducks you see during the season
 - (b) [Q15_r2] The number of ducks you harvest during the season
 - (c) [Q15_r3] The number of days in the duck season
 - (d) [Q15_r4] The number of ducks in the daily limit
 - (e) [Q15_r5] The number of ducks typically present during the hunting season
 - (f) [Q15_r6] Quality of habitat where you hunt
 - (g) [Q15_r7] Your overall duck hunting experience
18. [Q16a] What is the minimum number of ducks you have to harvest in a day to feel satisfied with the hunt? _____
19. [Q16b] What is the smallest daily bag limit you would accept before you would no longer hunt ducks? _____
20. [Q16c] What is the minimum number of days in a waterfowl hunting season you would accept before you would no longer hunt ducks? _____
- The following questions comprise the Discrete Choice Experiment, described in Section 2.4.*
21. [HunterDC_Random1] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
22. [HunterDC_Random2] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
23. [HunterDC_Random3] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
24. [HunterDC_Random4] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
25. [HunterDC_Random5] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
26. [HunterDC_Random6] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
27. [HunterDC_Random7] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
28. [HunterDC_Random8] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
29. [HunterDC_Random9] If these were your only options, which would you choose? Choose by clicking one of the buttons below.
30. [HunterDC_Random10] If these were your only options, which would you choose? Choose by clicking one of the buttons below.

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31. How much priority should state and federal agencies give the following when setting annual duck hunting regulations? (*Very low, Low, Moderate, High, Very high*)
- (a) [Q18a_r1] Having the largest bag limits possible
 - (b) [Q18a_r2] Having the longest seasons possible
 - (c) [Q18a_r3] Having the largest duck populations possible
 - (d) [Q18a_r4] Avoiding different season lengths for different duck species
 - (e) [Q18a_r5] Providing the simplest regulations possible
 - (f) [Q18a_r6] Reducing the number of species-specific bag limits (i.e., bag limits that apply to specific species instead of the general duck bag limit)
 - (g) [Q18a_r7] Having the largest drake mallard bag limits possible
32. Of all the options listed below, please rank your top three to indicate your highest priorities. Use the numbers 1, 2, and 3, with 1 being your highest priority, 2 being your second highest priority and 3 being your third highest priority. Use each number only once.
- (a) [Q18b_1] Having the largest bag limits possible
 - (b) [Q18b_2] Having the longest seasons possible
 - (c) [Q18b_3] Having the largest duck populations possible
 - (d) [Q18b_4] Avoiding different season lengths for different duck species
 - (e) [Q18b_5] Providing the simplest regulations possible
 - (f) [Q18b_6] Reducing the number of species-specific bag limits (i.e., bag limits that apply to specific species instead of the general duck bag limit)
 - (g) [Q18b_7] Having the largest drake mallard bag limits possible
33. [Q19] Duck bag limits restrict how many ducks can be bagged each day. For some duck species, the bag limit per day is different than the general duck bag limit. Such bag limits are termed “species-specific” bag limits. For the states where you hunt, are the rules and regulations for current species-specific bag limits difficult to understand?
- (a) Yes
 - (b) No
34. [Q20] For the states where you hunt, are the current species-specific bag limits difficult to comply with in the field?
- (a) Yes
 - (b) No
35. [Q21] Please indicate your preferred scenario for bag limits of duck species that typically have smaller bag limits.
- (a) Maximize harvest opportunity by maintaining individual species bag limits
 - (b) Create simpler regulations by creating aggregate bag limits for a combination of certain species (e.g., a diving duck limit)

36. [CentralScreen] Next we have a few questions about your hunting experiences and the regulations within the Central Flyway. Do you primarily hunt waterfowl in the High Plains portion of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma or Texas, or in one of the following states: Colorado, Montana, New Mexico or Wyoming?
- (a) Yes
 - (b) No
37. [C1] Please indicate the approach you would favor for setting bag limits for duck species other than mallards during 74-day seasons.
- (a) Offer simpler regulations by keeping bag limits the same from one year to the next and limited to the following three categories: 6-bird daily bag for duck species at low risk of being overharvested, 3-bird daily bag limit (within 6-bird total daily bag) for duck species at medium risk of being overharvested, 1-bird daily bag limit (within 6-bird total daily bag) for duck species at high risk of being overharvested
 - (b) Offer the largest bag limit as possible for every duck species by allowing daily bag limits to change from one year to the next for 10 or more species. (Note: This is how regulations are currently set.)
 - (c) No preference
38. Please indicate if you find each of the following combinations of season lengths and daily bag limits to be acceptable or unacceptable for a restrictive season when duck numbers and habitat conditions will not support a 74-day season with a daily bag limit of 6 ducks. (Please select one for each season option.) (*Acceptable—I would still hunt, Unacceptable—I would NOT hunt*)
- (a) [C2_r1] Season length: 32 days, bag limit 4 ducks
 - (b) [C2_r2] Season length: 39 days, bag limit 3 ducks
 - (c) [C2_r3] Season length: 46 days, bag limit 2 ducks
39. [C2b] Of the 3 options listed above, which represents your most preferred option for a restricted season?
- (a) Season length: 32 days, bag limit 4 ducks
 - (b) Season length: 39 days, bag limit 3 ducks
 - (c) Season length: 46 days, bag limit 2 ducks
40. [C3] Would you accept a lower daily bag limit of 4 ducks per day if you could harvest 4 ducks of any kind?
- (a) Yes
 - (b) No
 - (c) Does not matter to me
41. [C4] Which one statement best describes how you feel about the drake mallard daily bag limit over the last five years in the state where you hunted most?
- (a) The drake mallard daily bag limit was too low

- (b) The drake mallard daily bag limit was about right
 - (c) The drake mallard daily bag limit was too high
 - (d) No opinion
42. [C5] What “liberal” season length would you most prefer? (Note: The “liberal” seasons are now 74 days long.)
- (a) Reduce the liberal season length from 74 to 60 days. (Note: This change could result in fewer bag limit changes from one year to the next for some species.)
 - (b) Maintain the liberal season length of 74 days similar to the past 20 years
 - (c) Increase the liberal season length from 74 to 81 days. (Note: This change could result in a higher chance of having more moderate (45-day) and restrictive (30-day) seasons.)
 - (d) No preference
43. [CHP1] Please indicate the approach you would favor for setting bag limits for duck species other than mallards during 97-day seasons. (Select one.)
- (a) Offer simpler regulations by keeping bag limits the same from one year to the next and limited to the following three categories: 6-bird daily bag for duck species at low risk of being overharvested, 3-bird daily bag limit (within 6-bird total daily bag) for duck species at medium risk of being overharvested, 1-bird daily bag limit (within 6-bird total daily bag) for duck species at high risk of being overharvested
 - (b) Offer the largest bag limit as possible for every duck species by allowing daily bag limits to change from one year to the next for 10 or more species. (Note: This is how regulations are currently set.)
 - (c) No preference
44. Please indicate if you find each of the following combinations of season lengths and daily bag limits to be acceptable or unacceptable for a restrictive season when duck numbers and habitat conditions will not support a 97-day season with a daily bag limit of 6 ducks. (Please select one for each season option.) (*Acceptable—I would still hunt, Unacceptable—I would NOT hunt*)
- (a) [CHP2_r1] Season length: 32 days, bag limit 4 ducks
 - (b) [CHP2_r2] Season length: 39 days, bag limit 3 ducks
 - (c) [CHP2_r3] Season length: 46 days, bag limit 2 ducks
45. [CHP2b1] Of the 3 options listed above, which represents your most preferred option for a restricted season?
- (a) Season length: 32 days, bag limit 4 ducks
 - (b) Season length: 39 days, bag limit 3 ducks
 - (c) Season length: 46 days, bag limit 2 ducks
46. [CHP3] Would you accept a lower daily bag limit of 4 ducks per day if you could harvest 4 ducks of any kind?
- (a) Yes

- (b) No
- (c) Does not matter to me
47. [CHP4] Which one statement best describes how you feel about the drake mallard daily bag limit over the last five years in the state where you hunted most?
- (a) The drake mallard daily bag limit was too low
- (b) The drake mallard daily bag limit was about right
- (c) The drake mallard daily bag limit was too high
- (d) No opinion
48. [CHP5] What “liberal” season length would you most prefer? (Note: The “liberal” seasons are now 97 days long.)
- (a) Reduce the liberal season length from 97 to 81 days. (Note: This change could result in fewer bag limit changes from one year to the next for some species.)
- (b) Maintain the liberal season length of 97 days similar to the past 20 years
- (c) Increase the liberal season length from 97 to 104 days. (Note: This change could result in a higher chance of having more moderate (45-day) and restrictive (30-day) seasons.)
- (d) No preference
49. We are interested in knowing how much waterfowl hunting means to you. Please indicate how much you disagree or agree with the following statements about your personal participation in waterfowl hunting. (*Strongly disagree, Disagree, Neutral, Agree, Strongly agree*)
- (a) [Q27_r1] Waterfowl hunting is one of the most enjoyable activities I do
- (b) [Q27_r2] Most of my friends are in some way connected with waterfowl hunting
- (c) [Q27_r3] Waterfowl hunting has a central role in my life
- (d) [Q27_r4] A lot of my life is organized around waterfowl hunting
- (e) [Q27_r5] If I couldn't go waterfowl hunting, I am not sure what I would do instead
50. [Q28] During this past season, did you take anyone waterfowl hunting who had never waterfowl hunted before?
- (a) Yes
- (b) No
51. If you did, who did you introduce? (Select all that apply.)
- (a) [Q28skip_1] My own child(ren)
- (b) [Q28skip_2] Related child(ren)
- (c) [Q28skip_3] Other child(ren)
- (d) [Q28skip_4] Adult close family (e.g., brother/sister)
- (e) [Q28skip_5] Adult extended family (e.g., cousin/uncle)

- (f) [Q28skip_6] Adult friend
- (g) [Q28skip_7] Co-worker
- (h) [Q28skip_8] Other
52. A person can think of themselves in a variety of ways. Please indicate the extent to which you identify yourself as a/an... (*Not at all, Slightly, Moderately, Strongly, Very strongly*)
- (a) [Q29_r1] Birdwatcher
- (b) [Q29_r2] Duck Hunter
- (c) [Q29_r3] Goose Hunter
- (d) [Q29_r4] Other Type of Hunter
- (e) [Q29_r5] Conservationist
53. We are interested in knowing about your “personal community” and whether you know people in certain kinds of occupations and people affiliated with certain types of organizations. Among your relatives, close friends, or acquaintances, are there people who participate in the following activities, have the following jobs, or who belong to the following organizations? Also, would you classify yourself in any of the following areas? (Select all that apply for each row or leave blank for “no one” in that row.) (*Acquaintance, Close friend, Relative, Myself*)
- (a) [Q30_r1_c1:Q30_r1_c4] Angler
- (b) [Q30_r2_c1:Q30_r2_c4] Birdwatcher
- (c) [Q30_r3_c1:Q30_r3_c4] Farmer/Rancher
- (d) [Q30_r4_c1:Q30_r4_c4] National park manager/employee
- (e) [Q30_r5_c1:Q30_r5_c4] Outdoor educator
- (f) [Q30_r6_c1:Q30_r6_c4] State/provincial park manager/employee
- (g) [Q30_r7_c1:Q30_r7_c4] Waterfowl hunter
- (h) [Q30_r8_c1:Q30_r8_c4] Other type of hunter (e.g., small/big game)
- (i) [Q30_r9_c1:Q30_r9_c4] State/provincial wildlife agency manager/employee
- (j) [Q30_r10_c1:Q30_r10_c4] Federal wildlife agency manager/employee
- (k) [Q30_r11_c1:Q30_r11_c4] Wildlife artist (amateur or professional)
- (l) [Q30_r12_c1:Q30_r12_c4] Wildlife biologist
- (m) [Q30_r13_c1:Q30_r13_c4] Wildlife photographer (amateur or professional)
54. We are interested in knowing about your “personal community” and whether you know people in certain kinds of occupations and people affiliated with certain types of organizations. Among your relatives, close friends, or acquaintances, are there people who participate in the following activities, have the following jobs, or who belong to the following organizations? Also, would you classify yourself in any of the following areas? (Select all that apply for each row or leave blank for “no one” in that row.) (*Acquaintance, Close friend, Relative, Myself*)

- (a) [Q30cont_r1_c1:Q30cont_r1_c4] Member of a fishing/conservation organizations (e.g., Trout Unlimited, Izaak Walton)
- (b) [Q30cont_r2_c1:Q30cont_r2_c4] Member of birding and birdwatching groups (e.g., American Birding Association)
- (c) [Q30cont_r3_c1:Q30cont_r3_c4] Member of bird conservation groups (e.g., National Audubon Society, including local chapters; American Bird Conservancy; Cornell Lab; bird observatories)
- (d) [Q30cont_r4_c1:Q30cont_r4_c4] Member of ornithological societies and groups (e.g., Western Field Ornithologists, national or regional ornithological societies)
- (e) [Q30cont_r5_c1:Q30cont_r5_c4] Member of Ducks Unlimited
- (f) [Q30cont_r6_c1:Q30cont_r6_c4] Member of Delta Waterfowl
- (g) [Q30cont_r7_c1:Q30cont_r7_c4] Member of state or regional waterfowl association
- (h) [Q30cont_r8_c1:Q30cont_r8_c4] Member of a hunting/conservation organizations not focused on waterfowl (e.g., National Wild Turkey Federation, Rocky Mountain Elk Foundation)
- (i) [Q30cont_r9_c1:Q30cont_r9_c4] Member of other local/regional conservation organizations
- (j) [Q30cont_r10_c1:Q30cont_r10_c4] Member of local naturalist organizations
- (k) [Q30cont_r11_c1:Q30cont_r11_c4] Member of other national/international conservation organizations (e.g., The Nature Conservancy, Sierra Club, World Wildlife Fund)
55. Please indicate your involvement with the following organizations in the past 12 months, even if you were not a member. (*No involvement, Slight involvement, Moderate involvement, High involvement*)
- (a) [Q31_r1] Ducks Unlimited
- (b) [Q31_r2] Delta Waterfowl
- (c) [Q31_r3] Regional/State Waterfowl Association
56. How much do you trust the following organizations to keep your best interest in mind as a waterfowl hunter? (Select one for each organization.) (*Do not trust at all, Trust a little, Trust somewhat, Trust a lot, Trust completely*)
- (a) [Q32_r1] State wildlife agencies
- (b) [Q32_r2] Federal wildlife and land management agencies
- (c) [Q32_r3] Elected officials
- (d) [Q32_r4] Waterfowl hunting/conservation organizations
- (e) [Q32_r5] Birding/bird conservation organizations
- (f) [Q32_r6] Other conservation organizations
- (g) [Q32_r7] University/college researchers/scientists
57. Please indicate how much money you personally donated to the following causes in the past 12 months. (Select one for each.) (*\$0, Less than \$250, \$250 to \$999, \$1000 to \$2499, \$2500 to \$4999, \$5000 to \$9999, \$10000 or more*)
- (a) [Q33_r1] Wetland and/or waterfowl conservation

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- (b) [Q33_r2] Conservation of other bird species
 - (c) [Q33_r3] Birdwatching and related issues
 - (d) [Q33_r4] Waterfowl hunting and hunting related issues
58. [Q34] In the past 12 months, did you personally spend money for wetlands management on private lands?
- (a) Yes
 - (b) No
 - (c) Yes, but I'd rather not say how much
59. [Q34_2_other] If so, how much did you spend? (Please round to the nearest \$500 if more than \$1,000.)
60. Please indicate your level of involvement in the following wetlands or waterfowl conservation activities in the last 12 months.
- (a) [Q35_r1] Worked on land improvement projects related to wetlands or waterfowl conservation
 - (b) [Q35_r2] Attended meetings about wetlands or waterfowl conservation
 - (c) [Q35_r3] Volunteered my personal time and effort to conserve wetlands or waterfowl
 - (d) [Q35_r4] Contacted elected officials or government agencies about wetlands or waterfowl conservation
 - (e) [Q35_r5] Voted for candidates or ballot issues to support wetlands or waterfowl conservation
 - (f) [Q35_r6] Advocated for political action to conserve wetlands or waterfowl
61. In the last 12 months, have you participated in the following nature-based activities? (*Yes, No*)
- (a) [Q36_r1] Spending time in nature away from home (e.g., picnicking, relaxing in nature, camping)
 - (b) [Q36_r2] Non-motorized outdoor recreation activities (e.g., hiking, backpacking, horseback riding, bicycling, rock climbing, skiing, swimming, canoeing, and kayaking)
 - (c) [Q36_r3] Motorized outdoor recreation activities (e.g., motorized boating, riding ATVs, snowmobiling)
 - (d) [Q36_r4] Viewing wildlife (e.g., wildlife watching, birdwatching, bird feeding, wildlife photography)
 - (e) [Q36_r5] Consumptive wildlife-based activities (e.g., hunting, fishing)
 - (f) [Q36_r6] Learning about nature (e.g., attending festivals or lectures, visiting a nature center)
 - (g) [Q36_r7] Backyard/at-home nature activities (e.g., gardening, landscaping)
 - (h) [Q36_r8] Other _____
62. In the last 12 months, which of the following activities related to wild birds did you participate in, if any?
- (a) [Q37_r1] Watching birds at my home
 - (b) [Q37_r2] Feeding birds at my home

- (c) [Q37_r3] Watching birds away from my home
- (d) [Q37_r4] Photographing or filming birds
- (e) [Q37_r5] Counting/monitoring birds (e.g., Christmas or Backyard Bird Count)
- (f) [Q37_r6] Keeping track of the birds you see on a list, online, or on paper
- (g) [Q37_r7] Installing or maintaining nest boxes for birds

In this section we would like to know what you think about wetlands. Wetlands include swamps, marshes, bogs, shallow ponds (less than 6 feet deep), and shallow areas on lakeshores and seashores. Some wetlands are only wet some of the year, while others are wet year round. They can be in cities or in rural areas and can be the size of a basketball court or cover several square miles.

63. Wetlands perform a variety of functions which are beneficial to people. When wetlands are lost or degraded, these benefits can be greatly reduced or disappear altogether. Below is a list of benefits that are threatened due to loss of wetlands. How concerned would you be if the following benefits were reduced in your community due to a loss of wetlands? (*Not at all concerned, Slightly concerned, Somewhat concerned, Very concerned*)
- (a) [Q38_r1] Flooding protection
 - (b) [Q38_r2] Erosion protection
 - (c) [Q38_r3] Wildlife viewing and birdwatching
 - (d) [Q38_r4] Hunting opportunities
 - (e) [Q38_r5] Storage of greenhouse gases, such as carbon
 - (f) [Q38_r6] Clean water
 - (g) [Q38_r7] Clean air
 - (h) [Q38_r8] Providing a home for wildlife
 - (i) [Q38_r9] Providing a home for animals such as butterflies and bees that pollinate plants and crops
 - (j) [Q38_r10] Scenic places for inspiration or spiritual renewal
64. [Q39] Which of the wetlands benefits listed on the previous page would you be MOST concerned about being substantially reduced in your community? Please select the benefit you are most concerned about losing.
- (a) Flooding protection
 - (b) Erosion protection
 - (c) Wildlife viewing and birdwatching
 - (d) Hunting opportunities
 - (e) Storage of greenhouse gases, such as carbon
 - (f) Clean water
 - (g) Clean air

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- (h) Providing a home for wildlife
- (i) Providing a home for animals such as butterflies and bees that pollinate plants and crops
- (j) Scenic places for inspiration or spiritual renewal
65. [Q39A] Which of the wetlands benefits listed on the previous page would you be LEAST concerned about being substantially reduced in your community? Please select the benefit you are least concerned about losing. Be sure to select a different benefit than you selected above.
- (a) Flooding protection
- (b) Erosion protection
- (c) Wildlife viewing and birdwatching
- (d) Hunting opportunities
- (e) Storage of greenhouse gases, such as carbon
- (f) Clean water
- (g) Clean air
- (h) Providing a home for wildlife
- (i) Providing a home for animals such as butterflies and bees that pollinate plants and crops
- (j) Scenic places for inspiration or spiritual renewal
66. [Q40] In what year were you born? (Enter the last 2 digits.) _____
67. [Q41] Are you...?
- (a) Male
- (b) Female
68. [Q42] What is the highest level of education you have completed?
- (a) Some high school or less
- (b) High school or GED
- (c) Some college (no degree)
- (d) Associate's
- (e) Bachelor's
- (f) Graduate or professional school
69. [Q43] Is a nature-related profession (such as farming, fisheries, forestry, environmental science, or conservation) the primary source of your PERSONAL income?
- (a) Yes
- (b) No
70. [Q44] Do you own land in a rural area (outside of an urban or suburban area)?
- (a) Yes

- (b) No
71. [Q44_1_other] If own land in rural area, how many acres do you own in total? _____
72. [Q45_r1] Which of these categories best describes the place where you live now?
- (a) Large urban area (population 500,000 or more)
 - (b) Medium urban area (population between 50,000 and 499,999)
 - (c) Small city (population between 10,000 and 49,999)
 - (d) Small town (population between 2,000 and 9,999)
 - (e) Rural area (population less than 2,000)
73. [Q45_r2] Which of these categories best describes the place where you lived during most of the time you were growing up (that is, until age 16)?
- (a) Large urban area (population 500,000 or more)
 - (b) Medium urban area (population between 50,000 and 499,999)
 - (c) Small city (population between 10,000 and 49,999)
 - (d) Small town (population between 2,000 and 9,999)
 - (e) Rural area (population less than 2,000)
74. [Q46] Please indicate which of the following categories applies to your total personal income for last year?
- (a) Less than \$25,000
 - (b) \$25,000 to \$49,999
 - (c) \$50,000 to \$74,999
 - (d) \$75,000 to \$99,999
 - (e) \$100,000 to \$124,999
 - (f) \$125,000 to \$149,999
 - (g) \$150,000 to \$199,999
 - (h) \$200,000 to \$249,999
 - (i) \$250,000 to \$299,999
 - (j) \$300,000 or more
75. [Q47] What ethnicity do you consider yourself?
- (a) Hispanic
 - (b) Not Hispanic
76. From what racial origin(s) do you consider yourself? (Please select all that apply.)
- (a) [Q48_1] American Indian or Native Alaskan
 - (b) [Q48_2] Asian

- (c) [Q48_3] Black or African American
- (d) [Q48_4] Native Hawaiian or other Pacific Islander
- (e) [Q48_5] White

77. [Comments] Please let us know about any key concerns you might have with any portion of the survey. Thanks very much for your comments and the time and effort you have put into helping us with the review! _____