



The 2020 Waterfowl Hunting Season in Minnesota

A study of hunters' opinion and activities

6/30/2021

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Executive summary

Results presented in the executive summary are select findings on the key variables examined in the broader study; full results exist in the tables to follow. In some cases, we have recoded or collapsed response scales for ease of interpretation.

Experiences

Participation in waterfowl hunting

Waterfowl hunters reported varying rates of participation in duck, goose, and sandhill crane hunting during the 2020 season (Figure 1A). The vast majority of hunters (91%) reported having participated in some form of waterfowl hunting in 2020. Among these individuals, 95% reported targeting ducks, while 66% and 33% reported hunting Canada geese during the regular and early seasons respectively. Fewer hunters reported targeting other geese (4%), or Sandhill Crane (2%).

An estimated 70,128 Minnesotans participated in waterfowl hunting in the state during the 2020 season. Among these individuals, there were an estimated 66,762 duck hunters, 25,877 early goose hunters, 45,933 regular goose hunters, 2,945 hunters targeting other geese, and 1,192 Sandhill Crane hunters.

Waterfowl hunting effort and harvest

On average, hunters reported harvesting just under 13 ducks during the 2020 waterfowl hunting season. Hunters harvested an average of 5.8 geese during the regular Canada goose season, and 4.0 geese during the early season. Among hunters targeting other geese, hunters averaged a harvest of 1.5 geese. Harvest of Sandhill crane was 0.4 per season, on average (Figure 1B). Hunters spent an average of 10.5 days a field during the 2020 season.

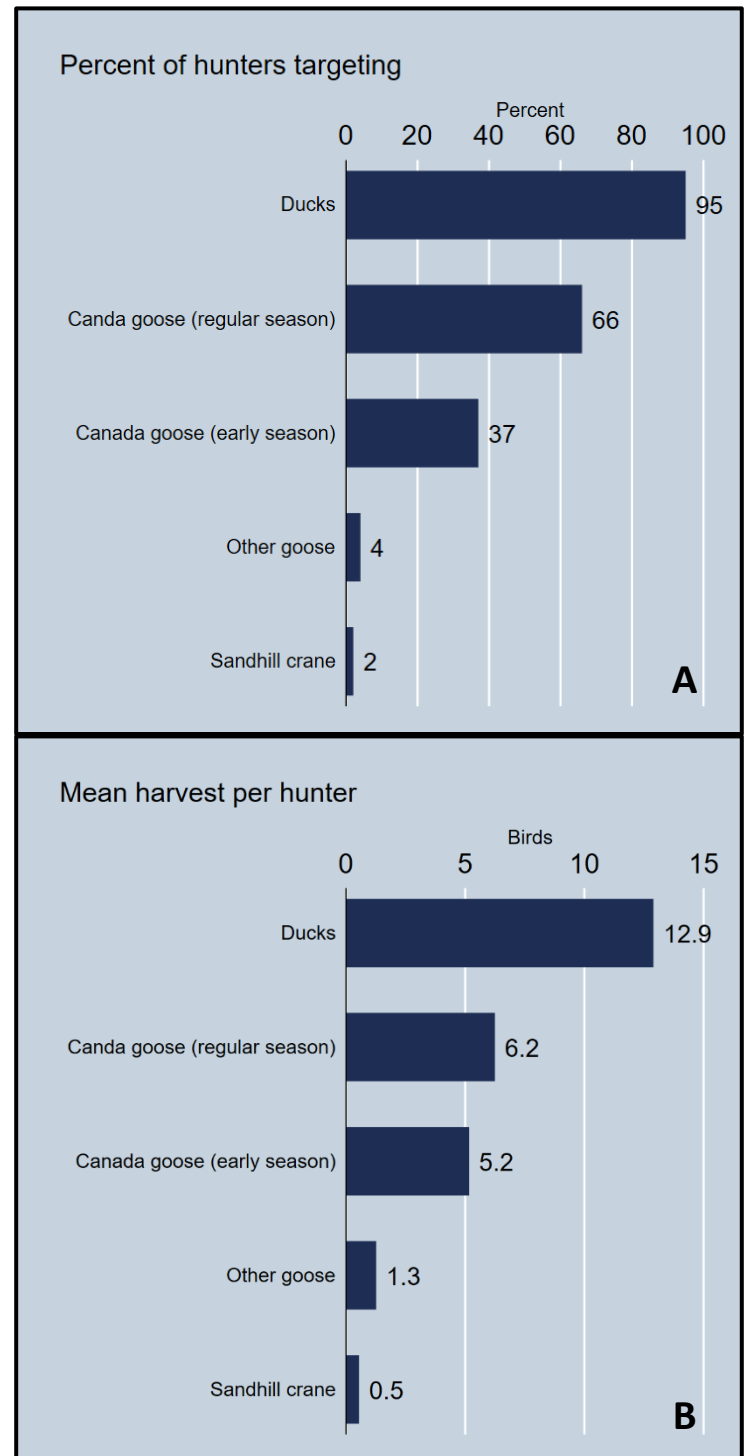


Figure 1. Percent of Minnesota waterfowl hunters targeting different waterfowl (A) and mean harvest of different waterfowl (B) during 2020 seasons.

Satisfaction

Minnesota waterfowl hunters reported high levels of satisfaction with their general waterfowl hunting experience. Nearly 70% of hunters reported being either, slightly, moderately, or extremely satisfied. This is in comparison to 23% of hunters that reported that they were dissatisfied.

In looking at duck hunters' overall satisfaction specifically, that vast majority (66%) reported having a satisfying experience during the 2020 season. Slightly fewer goose hunters (52%) reported feeling satisfied with their overall goose hunting experience in 2020.

A majority of hunters (52%), reported that they were dissatisfied with the number of ducks they saw during the 2020 season, while 43% were satisfied (Figure 2A). Goose hunters reported slightly higher satisfaction with the number of birds they saw during the season (51%), compared to duck hunters (Figure 2B).

Satisfaction with harvest differed between duck and goose hunters. Around 45% of duck hunters reported feeling dissatisfied with harvest during the 2020 season, and 47% reported feeling satisfied. Relatively few hunters reported neutrality toward their satisfaction with harvest (9%). Goose hunters reported feeling dissatisfied (32%), neutral (28%), and satisfied (40%) with harvest in 2020.

A majority of duck hunters (52%) were satisfied with duck hunting regulations in 2020, while 24% reported feeling dissatisfied and neutral respectively. Slightly fewer goose hunters (45%) were satisfied with goose hunting regulations, 35% were neutral, and 21% dissatisfied.

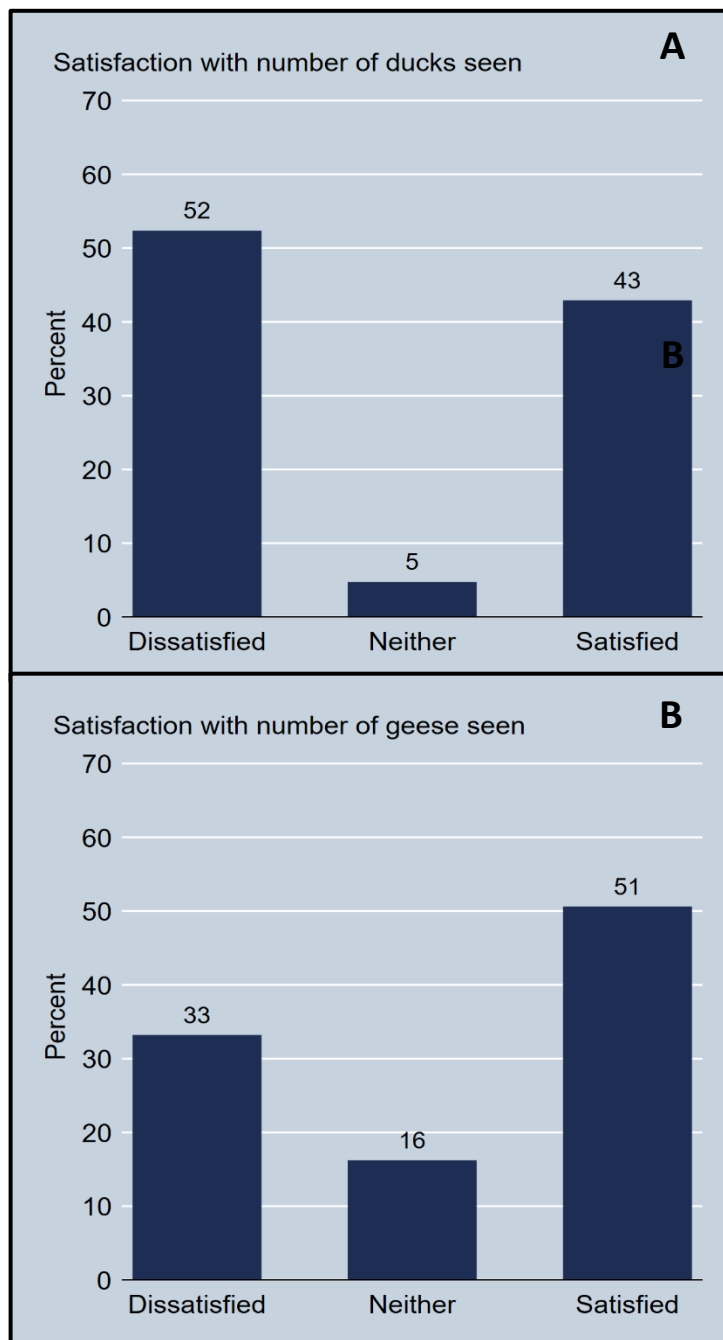


Figure 2. Minnesota waterfowl hunters' satisfaction with the numbers of ducks (A) and geese (B) seen while hunting during 2020.

Experimental early teal season and bonus teal

A key objective of this study was to assess hunters' level of support for creating a teal hunting season in Minnesota. This potential season would permit the harvest of blue-winged and green-winged teal for a period of up to 16 days in the period prior to the regular duck season. Under the flyway agreement administered by the U.S. Fish and Wildlife Service, MNDNR may increase the blue-winged teal bag by two birds, above the normal bag, during the first 16 days of the regular duck season, in lieu of a stand-alone teal hunting season. Hunters reported their support for this "bonus teal" option as well.

Waterfowl hunters expressed mixed opinions about the prospect of establishing an experimental teal hunting season. Forty-six percent of hunters reported that they either slightly, moderately, or strongly supported the idea of establishing an experimental early teal season. A further 18% were neutral about the idea, and 36% were slightly, moderately, or strongly opposed (Figure 3A).

Hunters were in strong support of an option that would increase the blue-winged teal bag limit by two birds during the first 16 days of the regular waterfowl hunting season. Only 16% of hunters opposed the bonus blue-winged teal option, 23% were neutral toward the proposal, and 61% were in support (Figure 3B).

Hunters expressed interest in participating in an experimental teal season. When asked their intent to participate if a season were offered, 31% reported that they did not intend to participate in an experimental early teal season, 10% were neutral, and 59% indicated they were either slightly, moderately, or very likely to participate.

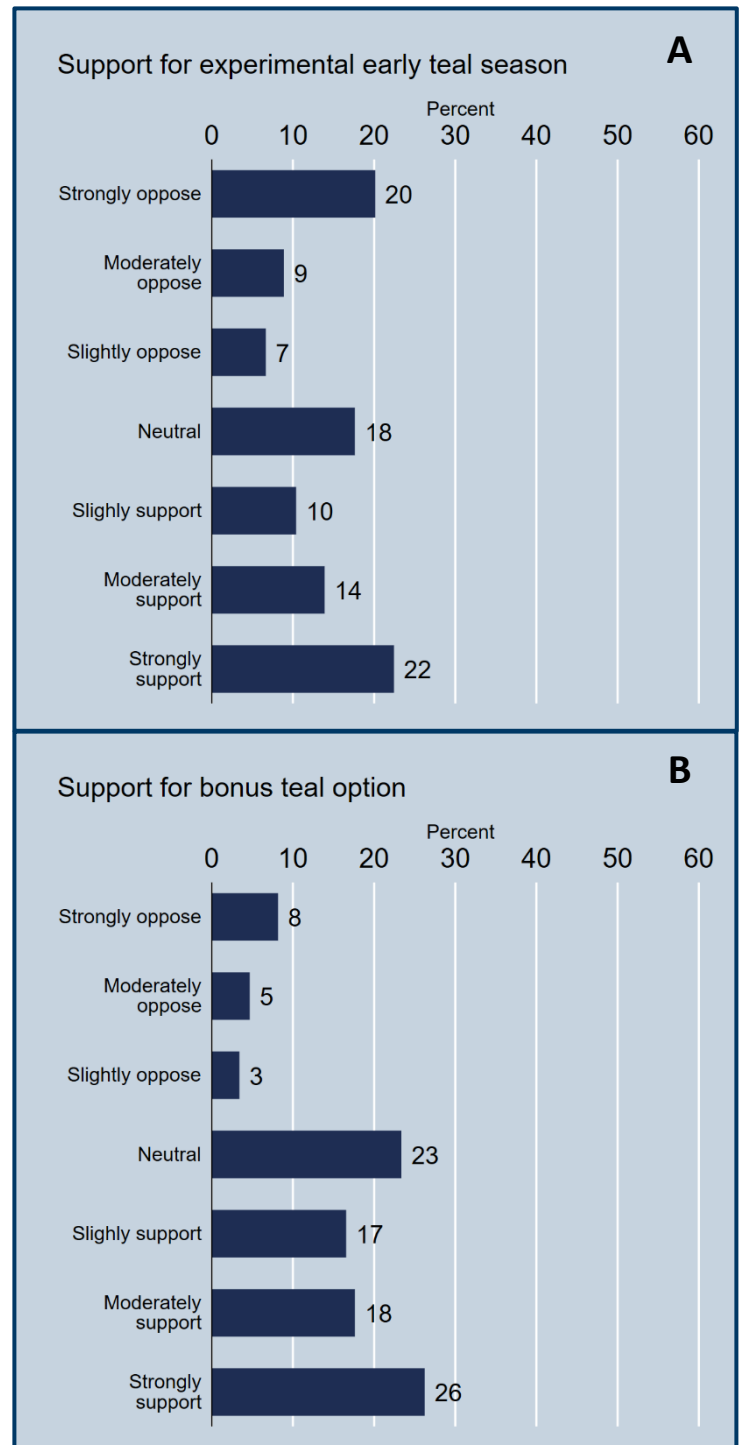


Figure 3. Minnesota waterfowl hunters' support for an experimental early teal season (A) and bonus teal option (B).

Waterfowl hunting trip expenditures

Waterfowl hunters were asked to consider a typical waterfowl hunting trip they took during the 2020 season and report how much money spent in 8 categories of potential expenses during that trip. Hunters were asked not to include durable goods like boats, or firearms in their estimation. Categories of expenditures included “automobile transportation;” “other transportation;” “equipment and supplies;” “food and drink;” “lodging;” “access;” “guide fees;” and “other” (Figure 4). Hunters also reported the length of their typical trip, and the number of trips they took during the entire season. From the average expenditures per trip/per day, the average number of trips each hunter takes per season, and the total number of hunters, it is possible to estimate the total waterfowl hunting trip expenditures for Minnesota waterfowl hunters for 2020.

On average, waterfowl hunters took 7.3 hunting trips in 2020, at an average length of 2.3 days. This resulted in 16.6 trip days per hunter per year. On a typical trip, hunters spent \$406, or \$179 per hunter per trip day. An estimated 70,128 hunters participated in waterfowl hunting in Minnesota in 2020. At 16.6 trip days per hunter, Minnesota waterfowl hunter took 1,166,228 trip days in 2020. With an average trip day expenditure of \$179, Minnesota waterfowl hunters spent an estimated \$208,754,926 on waterfowl hunting trips in 2020.

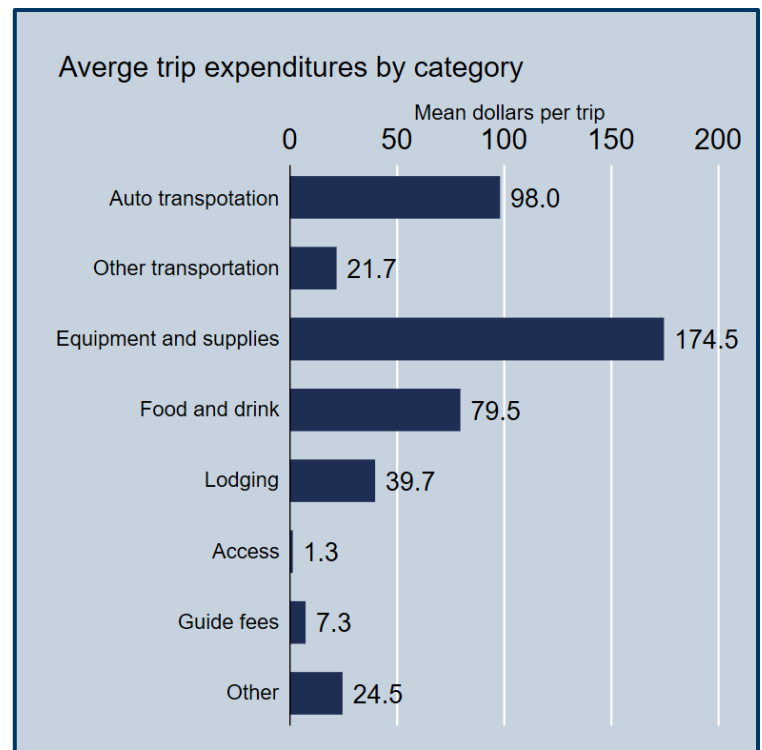


Figure 4. Minnesota waterfowl hunters' average trip related expenditures by category in 2020.

Season dates and splits

Waterfowl hunters reported their preferences for season dates, splits, and openers. A majority (57%) of waterfowl hunters preferred to keep the same opening day as the previous season (Saturday nearest September 24th), while 30% of hunters preferred the historic opener of October 1st. A further 13% of hunters did not have an opinion about the waterfowl season opening date (Figure 5).

Most hunters indicating that the North zone was their preferred waterfowl hunting zone (79%) expressed a preference to maintain the current season date structure with no split. Waterfowl hunters who indicated the central and south zone were their preferred hunting locations, were more heterogeneous in their preference for a season split. A plurality of central zone hunters (44%) preferred a 5-day split, while 49% of south zone hunters expressed a preference for a longer 12-day split.

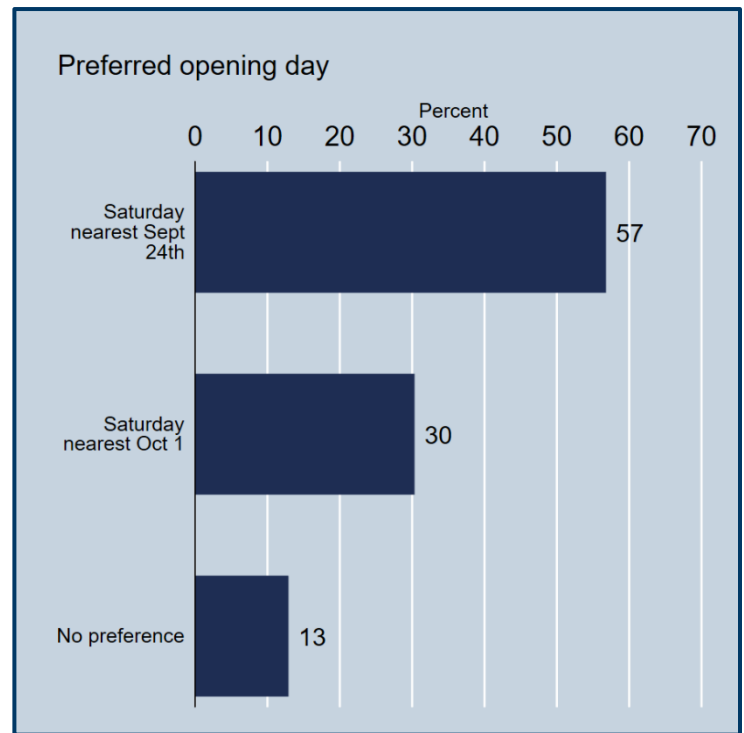


Figure 5. Minnesota waterfowl hunters' preference for the waterfowl season opening date.

Choice experiment – regulation preferences

In addition to Likert-scaled questions about regulations, hunters completed an experiment intended to reveal their preferences. Regulations evaluated in the experiment included the experimental early teal season, restrictions on motorized decoys, and legal shooting hours. In the experiment, hunters chose the set of regulations they most preferred, between two experimentally manipulated sets of regulations, and an option for neither. Hunters completed 6 choice tasks each.

Results show that for the early teal season, hunters were more likely to choose regulation sets that either contained the option for no teal season, or for the bonus teal option. Hunters were less likely to choose sets that contained a teal season, and the strength of that negative effect increased with increasing season length. Hunters were more likely to choose regulation sets that relaxed status quo regulations on motorized decoy use, and extended legal shooting to sunset all year. A summary of modeled coefficients describing the relative effect of that attribute on hunters' choice of regulations is presented in Figure 6. Positive values reflect an increased likelihood of an individual selecting the set of regulations when that attribute level is present in the set. Negative values reflect a lower likelihood of choice when that attribute level is present.

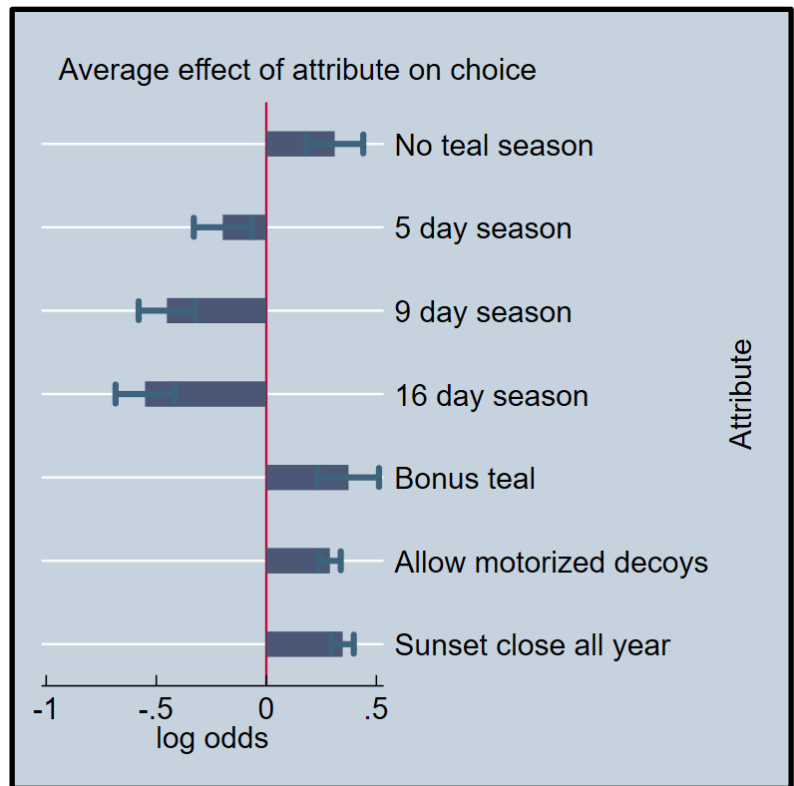


Figure 6. Choice experiment results. Log odds coefficients are from the alternative specific conditional logit model estimated via maximum likelihood, interpreted as the increase in the log of the probability of choice for a unit change in that variable.

Background and Study Purpose

The Minnesota DNR periodically conducts surveys of waterfowl hunters to assess their satisfaction with waterfowl hunting, waterfowl harvest and effort, and their preferences for waterfowl hunting regulations, among other topics. This report details the results of a survey of Minnesota waterfowl hunters following the 2020 seasons. Of special interest in this study was waterfowl hunters' preferences for the establishment of an experimental early teal hunting season.

Methods

Sample Selection and Data Collection

We selected a stratified random sample of Minnesota waterfowl hunters (n=6,864) in four study strata (n=1,716) corresponding to hunters' place of residence within the North, Central, and South waterfowl hunting zones, and the seven county twin-cities metro area. Hunters were included in the sample frame if they were age 18 or older at the time the sample was drawn, and had purchased a 2020 Minnesota waterfowl hunting stamp. Hunters aged 65+ are not required to purchase a waterfowl hunting stamp, and are included in the sample frame if they purchased one voluntarily. We estimate waterfowl hunters aged 65+ are roughly 3% of the waterfowl hunting population.

Collection occurred in three rounds, through postal mail. In the first two rounds, hunters received a letter that directed them to a website to complete the questionnaire online. In third round, non-responding hunters received a paper copy of the survey, along with a postage-paid self-addressed return envelope.

Response Rates

At study close, 2070 hunters completed the questionnaire either online or through the mail. A further 215 pieces of mail were returned undeliverable. After removing undeliverable cases from the sample, this represents an effective response rate of 31%. Response rates detailed in Table 1.

Table 1. Survey response rates

Initial Sample	Undeliverable	Respondents	Adjusted sample	Raw response rate	Adjusted response rate
6864	215	2070	6649	.30	.31

Weighting

We weighted results according to proportional representation of respondents by age and the population of hunters residing in the geographic study strata. Table 2 contains a summary of weights applied to the data to make representative estimates at the population level.

Table 2. Weighting schedule

Weight Category	Population #	Population %	Respondent #	Respondent %	Weight
North 18-27	4740	0.0662	60	0.029	2.285215204
North 28-37	3355	0.0469	82	0.0396	1.183528405
North 38-52	3714	0.0519	132	0.0638	0.813894253
North 53+	3878	0.0542	240	0.1159	0.467408468
Central 18-27	6024	0.0842	71	0.0343	2.454294239
Central 28-37	4885	0.0683	73	0.0353	1.935716364
Central 38-52	4995	0.0698	139	0.0671	1.039490934
Central 53+	4458	0.0623	214	0.1034	0.602596083
South 18-27	3520	0.0492	61	0.0295	1.669217165
South 28-37	2910	0.0407	91	0.044	0.925021038
South 38-52	3159	0.0441	131	0.0633	0.69755482
South 53+	3036	0.0424	218	0.1053	0.40285178
Metro 18-27	5314	0.0743	64	0.0309	2.401826265
Metro 28-37	5883	0.0822	104	0.0502	1.636309767
Metro 38-52	5548	0.0775	150	0.0725	1.069904975
Metro 53+	6141	0.0858	240	0.1159	0.740163849

Choice experiment

We designed a stated choice experiment to assess waterfowl hunters' preferences for waterfowl hunting regulations. Hunters evaluated six scenarios each. Scenarios contained two sets of different waterfowl hunting regulations, and respondents chose the set they most preferred or an option for "neither."

In a choice experiment, an assumption exists that individuals are utility maximizers, and that their choice is the one that maximizes their utility given the constraints of the choice architecture. Each set of regulations contained three attributes with different levels. Attributes included the experimental early teal season, the use of motorized decoys, and the legal shooting hours for waterfowl hunting. Table 3. contains levels of attributes in the experiment. For the early teal season, there were five levels including the status quo (no teal season), 5, 9, and 16 day seasons, and an option for "bonus teal" where hunters would have an increased bag of 2 blue winged teal during the first 16 days of the regular waterfowl hunting season. The experiment contained two levels for the use of motorized decoys, and for legal shooting hours. For motorized decoys, levels included the status quo, which bans their use during the first part of the season and on WMAs, and no restrictions on motorized decoys. For shooting hours, levels included the status quo, which is a legal shooting ending at 4pm during the first part of the season, and legal shooting closing at sunset for the whole season.

The experimental design was generated in the Sawtooth statistical software (Chrzan and Orme, 2000). We used the d-efficiency metric to compare study designs considering the number of choice tasks, attributes and levels, data needs and length. The d-efficiency of several designs were compared and a design with 4 survey versions with 6 tasks was ultimately selected. Each version does not contain all possible choice sets. Rather, they are distributed across the four versions systematically in an orthogonal design that creates meaningful tradeoffs in attribute levels in choice tasks.

Table 3. Stated choice experiment attributes and levels

Attributes	Levels
Teal season	No September teal season (current regulation)
	5-day September teal season
	9-day September teal season
	16-day September teal season
	No September teal season, but 2 bonus blue-winged teal in addition to regular bag limit during first 16 days of the regular waterfowl season
Motorized decoys	Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation)
	No restrictions on motorized decoys
Shooting hours	Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)
	Shooting hours that close at sunset for the whole season

Results

Tables

Table 4. Mean year Minnesota waterfowl hunters began hunting waterfowl, as of 2020, and the mean number of years hunting waterfowl in Minnesota

Year	Mean	SD
Year first hunted waterfowl	1996	16.3
Years hunting waterfowl in Minnesota	20.1	15.2

Table 5. Percent of waterfowl hunters that reported hunting in 2015-2019

Year	Percent hunted
2019	84
2018	81
2017	79
2016	74
2015	73
Did not hunt any of these years	7

Table 6. Percent of hunters that hunted during the 2020 waterfowl season

Season	Percent hunted
Did you hunt in MN during the 2020 waterfowl season	91

Table 7. Percent of hunters that hunted for different waterfowl species in Minnesota in 2020, if they hunted for waterfowl at all, and their mean harvest by species

During the 2020 waterfowl season, did you hunt in MN for ¹ :	Percent hunted	Mean harvest per hunter	SD	95% C.I. [Lower, Upper]
Ducks	95	12.9	17.9	11.7, 14.4
Canada Geese (early season)	37	6.2	9.3	5.2, 7.2
Canada Geese (regular season)	66	5.2	13.5	4.2, 6.2
Other Geese (Snow, etc.)	4	1.3	2.3	0.1, 2.0
Sandhill Crane	2	0.5	1.0	-0.1, 1.2

¹Percents are among those that hunted for waterfowl during 2020

Table 8. Estimated numbers of waterfowl hunters pursuing ducks, geese, and Sandhill cranes in Minnesota in 2020

	Permits sold 2020	Actually hunted 2020	Ducks	Canada goose (early season)	Canada goose (regular season)	Other goose	Sandhill crane
Total individuals ^{1,2}	71560	70128	66762	25877	45933	2945	1192

¹Estimates are a lower bounds and do not include out of state hunters, hunters under 18, or hunters over the age of 65 if they did not purchase a Minnesota waterfowl hunting stamp.

²Obtained by multiplying the percent of respondents reporting participation in each activity by the number of permits sold

Table 9. Mean number of days waterfowl hunters spent hunting on weekend days and holidays and weekdays in 2020

Day type	Mean days hunted	SD
Weekend days or holidays	7.1	5.6
Weekdays (Monday-Friday)	3.4	4.9
Total	10.5	9.0

Table 10. Waterfowl hunters' reported change in hunting due to COVID-19

	Greatly decrease	Moderately decreased	Slightly decreased	No change	Slightly increased	Moderately increased	Greatly increased
How did COVID-19 affect your participation in waterfowl hunting during the 2020 season?	3	4	9	71	6	3	4

Table 11. Mean days hunters spent hunting waterfowl in 2020 by zone

Zone	Mean days hunted	SD
North Zone	4.8	7.0
Central Zone	6.2	8.2
South Zone	5.0	7.9

Table 12. Waterfowl hunters' satisfaction with aspects of waterfowl hunting in 2020

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
General waterfowl hunting experience	4	9	10	8	14	33	22
Duck hunting experience	6	8	10	9	15	29	22
Duck hunting harvest	14	11	20	9	15	21	11
Duck hunting regulations	6	6	12	24	11	23	18
Goose hunting experience	4	5	11	28	14	23	15
Goose hunting harvest	10	8	14	28	15	15	10
Goose hunting regulations	6	5	10	35	9	18	18

Table 13. Hunters' satisfaction with the number of ducks and geese seen while hunting in 2020

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
Number of ducks seen	18	16	19	5	15	19	9
Number of geese seen	9	12	13	16	18	20	13

Table 14. Minnesota waterfowl hunters' beliefs about the 6 bird daily duck bag

The daily limit was...	...too low	...about right	...too high	No opinion
The U.S. Fish and Wildlife Service allowed states to have a 6 duck daily bag limit in 2020. Which one statement best describes how you feel about the total daily duck bag limit in Minnesota (6 ducks)?	5	77	8	10

Table 15. Waterfowl hunters support for existing and potential waterfowl hunting regulations

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Using a North, Central, and South duck zone during the waterfowl season	6	4	6	45	10	16	13
Ending shooting hours at 4pm for the first part of Minnesota's waterfowl season	23	13	14	21	8	40	11
Restrictions on open water hunting (must be in concealing vegetation) during the regular waterfowl season	14	11	13	30	9	12	12
Restricting the use of motorized decoys for the first part of Minnesota's waterfowl season	29	13	15	20	6	7	10
Restricting the use of motorized decoys on wildlife management areas (WMAs) for the entire duck season	26	14	14	26	5	6	10
Allowing overwater goose hunting in Sept. (currently restricted in NW MN, Carlos Avery WMA, Swan Lake area)	10	4	4	42	10	13	16
Allowing special active duty military/veterans hunt (like Youth Waterfowl Weekend)	11	5	5	18	9	14	38
Allowing 5 dark goose bag limit the entire season	3	2	5	10	11	12	27
Allowing motors/electric motors on more WMAs	15	7	7	31	15	10	15

Table 16. Waterfowl hunters support for changes to Sandhill Crane hunting regulations

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Expand the size of the current Sandhill Crane zone	2	1	1	38	11	14	33
Expand Sandhill Crane hunting to a new hunting zone in the central/eastern part of the state	2	1	1	38	10	15	33

Table 17. Waterfowl hunters' support for establishing and early teal season in Minnesota

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
What is your level of <u>support for a special September teal-only season</u> in Minnesota?	20	9	7	18	10	14	22

Table 18. Minnesota waterfowl hunters preferred length of a hypothetical early teal season

Season length	Percent of hunters
0 days	31
5 days	24
9 days	28
16 days	17

Table 19. Waterfowl hunters' likelihood of participating in a hypothetical early teal hunting season

	Very unlikely	Moderately unlikely	Slightly unlikely	Neutral	Slightly likely	Moderately likely	Very likely
If a special September teal-only season is created, how <u>likely</u> are you to hunt in this early teal-only season?	21	6	4	10	14	18	27

Table 20. Waterfowl hunters' support for a bonus 2 blue-winged teal bag during the first 16 days of the regular duck season

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
What is your level of support for 2 blue-winged teal bonus bag limit during the first 16 days of the regular duck season in Minnesota?	8	5	3	23	17	18	26

Table 21. Waterfowl hunters' beliefs about a hypothetical early teal season

	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
A special September teal season would disturb waterfowl before the regular season.	4	6	8	16	22	15	28
I am concerned about having a September teal season because it might conflict with Youth Waterfowl Hunting Weekend.	15	8	9	35	13	9	10
I am concerned about having a September teal season because teal nest in Minnesota.	12	9	11	41	11	7	9
Minnesota should have a September teal season because teal seasons are offered in other states.	18	7	7	32	16	9	11
Minnesota should have a September teal season because the continental blue-winged teal population can sustain a higher harvest.	11	5	7	34	16	11	7

Table 21. Continued

	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
I am concerned about having a September teal season because the number of breeding teal in Minnesota is lower than long-term averages.	5	5	10	53	13	7	7
I would prefer 2 bonus blue-winged teal in the regular duck season instead of a September teal season.	8	6	7	28	13	13	24
I am concerned about having a September teal season because I think other hunters would shoot ducks that are not teal.	4	3	5	15	20	18	34
I am concerned about having a September teal season because I might shoot ducks that are not teal.	29	9	9	21	16	7	9
An early teal season would allow hunters to harvest more ducks.	6	2	5	33	24	17	14
The 2 bird bonus blue-winged teal limit would complicate regulations.	16	12	14	27	15	7	9

Table 22. Hunters' preferred waterfowl season opening date

Date Preference	Percent of hunters
Saturday nearest Sept. 24 (dates vary from Sept. 21 to Sept. 27); used since 2011.	40
Saturday nearest Oct. 1 (dates vary from Sept. 28 to Oct. 4); historical opener.	46
No preference	14

Table 23. Hunters' reported most important waterfowl hunting zone

Zone	Percent of hunters reporting zone as most important with respect to season dates
North	30
Central	41
South	23
No preference	7

Table 24. Hunters' preference for future season dates by waterfowl hunting zone

	Saturday Sept. 25 to Tuesday Nov. 23	Saturday Sept. 25 to Sunday October 3, close 5 days, reopen Saturday Oct. 9 to Sunday Nov. 28	Saturday Sept. 25 to Sunday October 3, close 12 days, reopen Saturday Oct. 16 to Sunday, Dec. 5	No preference
North zone	79	10	7	4
Central zone	36	44	10	10
South zone	25	16	49	10
No preference	19	14	8	59

Table 25. Hunters' support for youth waterfowl hunting weekend

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Do you support or oppose the concept of Youth Waterfowl Hunting Weekend?	11	5	5	9	9	12	49

Table 26. Hunters' identification as a waterfowl hunter

	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Being a waterfowl hunter is an important part of who I am.	1	2	1	9	21	21	45
Waterfowl hunting is something I rarely think about.	44	24	19	6	4	2	1
I would be at a loss if I were forced to give up waterfowl hunting.	4	4	5	7	17	18	45
Being a waterfowl hunter is about more than just hunting.	0	0	1	4	9	17	69
I have no clear feelings about being a waterfowl hunter.	57	21	8	10	2	1	1

Table 27. Mean distance hunters traveled on a typical waterfowl hunting trip

	Mean distance	SD
Distance traveled (one way) from home on a typical waterfowl hunting trip ¹	73.1	79.3

¹Responses of 500 miles or greater excluded from analysis.

Table 28. Mean length of a typical waterfowl hunting trip

	Mean days	SD
Length of typical waterfowl hunting trip ¹	2.1	2.1

¹All partial days round up to nearest full day

Table 29. Hunters' expenditures during a typical waterfowl hunting trip

Item	Mean expenditure	SD
Automobile transportation	\$97.98	\$260.00
Other transportation (e.g., boat fuel)	\$21.71	\$136.35
Equipment and supplies (e.g., ammunition)	\$174.47	\$520.09
Food and drinks	\$79.48	\$155.51
Lodging	\$39.70	\$145.08
Access (e.g., boat launch fees)	\$1.28	\$10.29
Guide fees	\$7.27	\$69.97
Other	\$24.50	\$136.13
Mean Per Trip Expenditure	\$406.33	\$735.30

*if a hunter reported an expense for any category, categories with missing values were set to \$0 for that individual

Table 30. Mean number of waterfowl hunting trips taken by waterfowl hunters during 2020

	Mean waterfowl hunting trips	SD
Waterfowl trips taken during the 2020 season	7.3	8.5

Table 31. Waterfowl hunting trip expenditures, 2020

Mean waterfowl trips taken during the 2020 season	Mean length of typical waterfowl hunting trip	Mean annual trip days per hunter	Mean total trip expenditures, per trip	Mean total expenditures per trip day	Total hunters 18+	Total trip days	Total expenditures during 2020
7.33 trips	2.27 days	16.63 trip days	\$406.33	\$179.00	70,128 hunters	1,166,228	\$208,754,926

- Estimates are in 2020 dollars
- Estimated expenditures are an extrapolation of the mean trips taken, mean trip length, average per trip day expenditures, and estimated number of hunters that year
- Expenditures do not include durable goods like boats, firearms, and other items that may last multiple years, and are therefore a lower bounds estimate of economic impact

Table 32. Minnesota waterfowl hunters support for eliminating the waterfowl hunting regulations booklet

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Level of support for discontinuing printing of a separate waterfowl hunting regulations book, and including information on waterfowl hunting in the general hunting regulation book	11	4	6	21	9	18	31

Table 33. Minnesota waterfowl hunters sources of information about waterfowl hunting regulations

Source	Never	Rarely	Occasionally	Often	Always
A paper copy of the waterfowl hunting regulations book	4	9	24	35	27
The Minnesota DNR website	5	14	33	38	11
A PDF copy of the waterfowl hunting regulations book saved to my computer or mobile device	32	20	20	20	9
A non-MNDNR third party resource	71	19	8	2	0

Table 34. Minnesota waterfowl hunters' membership in waterfowl hunting and conservation organizations

Organization	Percent of hunters
Ducks Unlimited	37
Delta Waterfowl	6
Local sportsman's club	13
Other national/statewide conservation/hunting organization (please specify)	16

Table 35. Percent of Minnesota waterfowl hunters that hunted waterfowl in another state in 2020, and mean trip length

	No	Yes	If, Yes mean days hunted	SD
Did you hunt waterfowl in a state other than MN in 2020	78	22	6.5	4.3

Table 36. Mean age of Minnesota waterfowl hunters

	Mean	SD
Age	39.4	14.8

Table 37. Waterfowl hunters' reported educational attainment

Level of education	Percent of hunters
Grade school	0
Some high school	1
High school diploma or GED	11
Some vocational or technical school	8
Vocational or technical school (associate's) degree	18
Some college	13
Four-year college (bachelor's) degree	34
Some graduate school	2
Graduate (master's or doctoral) degree	11

Choice experiment

We designed a stated choice experiment to assess waterfowl hunters' preferences for waterfowl hunting regulations. Hunters evaluated six scenarios each. Scenarios contained two sets of different waterfowl hunting regulations, and respondents chose the set they most preferred or an option for "neither" (See Question 19 in Appendix A).

In a choice experiment, an assumption exists that individuals are utility maximizers, and that their choice is the one that maximizes their utility given the constraints of the choice architecture. Each set of regulations contained three attributes with different levels. Attributes included the experimental early teal season, the use of motorized decoys, and the legal shooting hours for waterfowl hunting. Table 3. contains levels of attributes in the experiment. For the early teal season, there were five levels including the status quo (no teal season), 5, 9, and 16 day seasons, and an option for "bonus teal" where hunters would have an increased bag of 2 blue winged teal during the first 16 days of the regular waterfowl hunting season. The experiment contained two levels for the use of motorized decoys, and for legal shooting hours. For motorized decoys, levels included the status quo, which bans their use during the first part of the season and on WMAs, and no restrictions on motorized decoys. For shooting hours, levels included the status quo, which is a legal shooting ending at 4pm during the first part of the season, and legal shooting closing at sunset for the whole season.

We estimated effects using the alternative specific conditional logit model via the maximum likelihood method. Table 38 contains model results, including both log-odds and odds ratio functional forms of estimated coefficients. All attributes had a statistically significant effect on choice at critical value of $p < 0.05$. The average effect of the teal season on choice was significant and negative. However, levels differed in their effect. On average, hunters were more likely to choose regulation sets that contained the status quo option with no teal season, or the bonus teal option. Teal seasons of 5, 9, and 16 days all had a negative effect on the likelihood of choice, with an increasingly negative effect with the increasing length of the season. Hunters were more likely to choose regulation sets when there were no restrictions on motorized decoys, and the shooting hours extended to sunset during the entire season.

Table 38. Choice model results

Variable	Coeff. (SE)	Odds Ratio	z-value	p-value
Teal (average effect)	-0.05 (0.01)	0.95	5.54	<0.001
No teal season	0.32 (0.07)	1.36	4.65	<0.001
5-day season	-0.20 (0.07)	0.82	2.93	<0.01
9-day season	-0.45 (0.07)	0.64	6.85	<0.001
16-day season	-0.55 (0.07)	0.58	8.01	<0.001
Bonus teal	0.37 (0.07)	1.45	5.25	<0.001
Allow motorized decoys	0.29 (0.03)	1.33	11.25	<0.001
Sunset close all year	0.34 (0.03)	1.41	13.13	<0.001

- Model results are for alternative specific conditional logit estimated in Stata v 16
- Average effect if the teal attribute estimated in a separate model

THE 2020 WATERFOWL HUNTING SEASON IN MINNESOTA

A study of hunters' opinions and activities



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

Your help on this study is greatly appreciated!

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

m DEPARTMENT OF
NATURAL RESOURCES

{PIN}

2020 waterfowl hunter survey report

Minnesota Department of Natural Resources
Fish and Wildlife Division
500 Lafayette Rd.
St. Paul, Minnesota 55155
WaterfowlHunterSurvey.DNR@state.mn.us

Part I. Your Waterfowl Hunting Background

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

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

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

_____ years

Q3. For the 5 years prior to last year's waterfowl season (2020), which years did you hunt waterfowl in Minnesota? (Check all that apply.)

- ☐ 2019
- ☐ 2018
- ☐ 2017
- ☐ 2016
- ☐ 2015
- ☐ I did not hunt during any of these years.

Q4. Did you hunt waterfowl in Minnesota during the 2020 season? (Please check one.)

- ☐ No — (~~Skip to Part IV, question Q11.~~)
- ☐ Yes (Please continue with Part II, Q5.)

Part II. Your 2020 Minnesota Waterfowl Hunting Season

Next we have a few questions about your hunting experiences during the 2020 Minnesota waterfowl-hunting season. (If you did not hunt waterfowl in Minnesota in 2020 please skip to Part IV, Q11.)

Q5. Please indicate whether you hunted for the following kinds of waterfowl in Minnesota in 2020. If you did hunt, estimate the total number of that kind of waterfowl you bagged (shot and retrieved).

During the 2020 waterfowl season, did you hunt in Minnesota for:	Please circle no or yes.		If yes, how many did you personally bag in Minnesota? (Write in number bagged.)
Ducks	no	yes	_____ ducks
Canada Geese during:			
Early September Canada Goose Season	no	yes	_____ geese
Regular Canada Goose Season	no	yes	_____ geese
Other Geese (Snow Geese, etc.)	no	yes	_____ geese
Sandhill cranes	no	yes	_____ cranes

Q6. During the 2020 Minnesota waterfowl season, about how many days did you hunt on...

Weekend days or holidays: _____ days

Weekdays (Monday-Friday): _____ days

Q7. How did COVID-19 affect your participation in waterfowl hunting during the 2020 season. (Please circle one.)

Greatly decreased	Moderately decreased	Slightly decreased	No change	Slightly increased	Moderately increased	Greatly increased
1	2	3	4	5	6	7

Q8. During the 2020 Minnesota waterfowl season, how many days did you hunt in each zone? (See map.) Exclude days hunted during the September goose seasons.

North Zone: _____ days

Central Zone: _____ days

South Zone: _____ days



Part III. Your Hunting Satisfaction

Q9. During the 2020 Minnesota waterfowl hunting season, how satisfied or dissatisfied were you with the following? (Circle one response for each. If you did not hunt ducks or geese please check the box in the far right column.)

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Did not hunt
General waterfowl hunting experience	1	2	3	4	5	6	7	<input type="checkbox"/>
DUCKS:								
hunting experience	1	2	3	4	5	6	7	<input type="checkbox"/>
hunting harvest	1	2	3	4	5	6	7	<input type="checkbox"/>
hunting regulations	1	2	3	4	5	6	7	<input type="checkbox"/>
GEESE:								
hunting experience	1	2	3	4	5	6	7	<input type="checkbox"/>
hunting harvest	1	2	3	4	5	6	7	<input type="checkbox"/>
hunting regulations	1	2	3	4	5	6	7	<input type="checkbox"/>

Q10. During the 2020 Minnesota waterfowl hunting season, how satisfied or dissatisfied were you with the number of ducks and geese you saw in the field? (Please circle one response for each. If you did not hunt ducks or geese please check the box in the far right column.)

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied	Did not hunt
Number of ducks <u>seen</u>	1	2	3	4	5	6	7	<input type="checkbox"/>
Number of geese <u>seen</u>	1	2	3	4	5	6	7	<input type="checkbox"/>

Part IV. Waterfowl Management and Special Regulations

Respond to the remaining questions even if you did not hunt waterfowl in Minnesota in 2020.

Q11. The U.S. Fish and Wildlife Service allowed states to have a 6 duck daily bag limit in 2020. Which one statement best describes how you feel about the total daily duck bag limit in Minnesota (6 ducks)? (Check one.)

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

Q12. We would like to know if you oppose or support each of these different strategies: (Circle one for each.)

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Using a North, Central, and South duck zone during the waterfowl season	1	2	3	4	5	6	7
Ending shooting hours at 4pm for the first part of Minnesota's waterfowl season	1	2	3	4	5	6	7
Restrictions on open water hunting (must be in concealing vegetation) during the regular waterfowl season	1	2	3	4	5	6	7
Restricting the use of motorized decoys for the first part of Minnesota's waterfowl season	1	2	3	4	5	6	7
Restricting the use of motorized decoys on wildlife management areas (WMAs) for the entire duck season	1	2	3	4	5	6	7
Allowing overwater goose hunting in Sept. (currently restricted in NW MN, Carlos Avery WMA, Swan Lake area)	1	2	3	4	5	6	7
Allowing special active duty military/veterans hunt (like Youth Waterfowl Weekend)	1	2	3	4	5	6	7
Allowing 5 dark goose bag limit the entire season	1	2	3	4	5	6	7
Allowing motors/electric motors on more WMAs	1	2	3	4	5	6	7

Part V. Sandhill Crane Hunting in Minnesota

In 2020, hunters could pursue sandhill cranes from September 19 to October 25 in the northwest crane zone, with a bag limit of 2 cranes per day. We would like to know if you oppose or support the management actions related to crane hunting in Minnesota.

Q13. Would you oppose or support the following changes to crane hunting in Minnesota. (Circle one for each.)

	Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support
Expand the size of the current crane zone	1	2	3	4	5	6	7
Expand sandhill crane hunting to a new hunting zone in the central/eastern part of the state	1	2	3	4	5	6	7

Part VI. Early Teal Season

All states in the Mississippi Flyway, including Minnesota, are allowed a special teal-only season in September for up to 16 days OR a bag limit that includes 2 bonus blue-winged teal in addition to the regular bag limit during the first 16 days of the regular duck season. If Minnesota added a September teal season, it would occur about 2-3 weeks before the regular waterfowl season opens. Blue-winged and green-winged teal would be the only legal species.

Q14. What is your level of support for a special September teal-only season in Minnesota? (Circle one number.)

1	2	3	4	5	6	7
Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support

Q15. If a special September teal-only season is created, how many days should it be? (Check one.)

- ☐ 0 days
- ☐ 5 days
- ☐ 9 days
- ☐ 16 days

Q16. If a special September teal-only season is created, how likely are you to hunt in this early teal-only season? (Circle one number.)

1	2	3	4	5	6	7
Very unlikely	Moderately unlikely	Slightly unlikely	Neutral	Slightly likely	Moderately likely	Very likely

Q17. What is your level of support for 2 blue-winged teal bonus bag limit during the first 16 days of the regular duck season in Minnesota? (Circle one number.)

1	2	3	4	5	6	7
Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support

Q18. We would like to know some of your perceptions about a possible special teal season, or a bonus blue-winged teal bag limit during the regular duck season in Minnesota. For each of the following statements, please indicate how much you agree or disagree with that statement. (Circle one response for each of the following statements.)

	Strongly disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
A special September teal season would disturb waterfowl before the regular season.	1	2	3	4	5	6	7
I am concerned about having a September teal season because it might conflict with Youth Waterfowl Hunting Weekend.	1	2	3	4	5	6	7
I am concerned about having a September teal season because teal nest in Minnesota.	1	2	3	4	5	6	7
Minnesota should have a September teal season because teal seasons are offered in other states.	1	2	3	4	5	6	7
Minnesota should have a September teal season because the continental blue-winged teal population can sustain a higher harvest.	1	2	3	4	5	6	7
I am concerned about having a September teal season because the number of breeding teal in Minnesota is lower than long-term averages.	1	2	3	4	5	6	7
I would prefer 2 bonus blue-winged teal in the regular duck season instead of a September teal season.	1	2	3	4	5	6	7
I am concerned about having a September teal season because I think other hunters would shoot ducks that are not teal.	1	2	3	4	5	6	7
I am concerned about having a September teal season because I might shoot ducks that are not teal.	1	2	3	4	5	6	7
An early teal season would allow hunters to harvest more ducks.	1	2	3	4	5	6	7
The 2 bird bonus blue-winged teal limit would complicate regulations.	1	2	3	4	5	6	7

Part VII. Preferences for Waterfowl Hunting Regulations

Q19. The MNDNR is collecting data to understand hunters' preferences for different waterfowl hunting regulations, especially about teal hunting, the use of motorized decoys, and legal shooting hours. The scenarios that follow contain different combinations of options for regulations about these activities and elements of waterfowl hunting. Although not all of these scenarios reflect ultimate decisions about waterfowl hunting regulations, your preferences are an important part of that decision.

For each scenario, please check the box beneath the option with the combination of waterfowl regulations that you most prefer, or check the box for none if you would not hunt waterfowl if those were the only two options. In these scenarios all other waterfowl hunting regulations would remain the same as the 2020 season.

September teal season: A waterfowl hunting season for blue-winged and green-winged teal, held during the month of September, before the regular waterfowl hunting season. No such season currently exists in Minnesota, but a season up to 16 days in length is allowable under federal regulation.

Bonus blue-winged teal: Hunters would be allowed to take 2 blue-winged teal for the first 16 days of the regular duck season, in addition to the regular season daily duck bag limit. Currently, blue-winged teal count in the regular season daily duck bag limit.

Motorized decoys: Waterfowl hunting decoys with motors that cause wings to spin, or similar. Currently, motorized decoys are not legal from opening day of waterfowl season until the mid-season split. Motorized decoys are not legal on any Minnesota DNR Wildlife Management Area (WMA).

Legal shooting hours: Hunters are currently required to stop hunting at 4pm from the opening day of the regular season until the mid-season split, and sunset thereafter.

Scenario 1. Which option do you prefer?	Option 1: ➤ 5-day September teal season ➤ No restrictions on motorized decoys ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	Option 2: ➤ No September teal season (current regulation) ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at sunset for the whole season	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scenario 2. Which option do you prefer?	Option 1: ➤ 9-day September teal season ➤ No restrictions on motorized decoys ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	Option 2: ➤ 9-day September teal season ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at sunset for the whole season	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scenario 3. Which option do you prefer?	Option 1: ➤ No September teal season, but 2 bonus blue-winged teal in addition to regular bag limit during first 16 days of the regular waterfowl season ➤ No restrictions on motorized decoys ➤ Shooting hours that close at sunset for the whole season	Option 2: ➤ 16-day September teal season ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scenario 4. Which option do you prefer?	Option 1: ➤ 5-day September teal season ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	Option 2: ➤ No September teal season (current regulation) ➤ No restrictions on motorized decoys ➤ Shooting hours that close at sunset for the whole season	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scenario 5. Which option do you prefer?	Option 1: ➤ 16-day September teal season ➤ No restrictions on motorized decoys ➤ Shooting hours that close at sunset for the whole season	Option 2: ➤ 9-day September teal season ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Scenario 6. Which option do you prefer?	Option 1: ➤ No September teal season, but 2 bonus blue-winged teal in addition to regular bag limit during first 16 days of the regular waterfowl season ➤ No restrictions on motorized decoys ➤ Shooting hours that close at sunset for the whole season	Option 2: ➤ No September teal season (current regulation) ➤ Motorized decoys banned during the first part of season, & on WMAs for the entire season (current regulation) ➤ Shooting hours that close at 4 pm for the first part of the season, and sunset later in the season (current regulation)	NONE: I would not hunt waterfowl if these were my only two options.
Check <u>one</u> box ►	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part VIII. Waterfowl Hunting Season Dates

Q20. Which opening date do you prefer? (Please check one.)

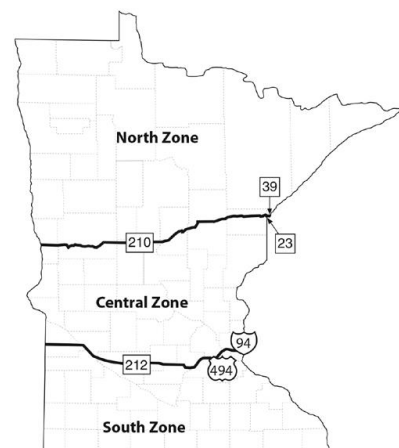
- ☐ Saturday nearest Sept. 24 (dates vary from Sept. 21 to Sept. 27); used since 2011.
- ☐ Saturday nearest Oct. 1 (dates vary from Sept. 28 to Oct. 4); historical opener.
- ☐ No preference.

Minnesota waterfowl zones

Three waterfowl zones (North, Central and South) were used in Minnesota during the 2020 season. Waterfowl zones allow states to set different season dates in different regions of the state to match waterfowl migration patterns, freeze-up dates, and hunter preferences.

Q21. In which area of the state is the timing of open waterfowl hunting and season dates most important to you? (See Map. Please select only one area.)

- ☐ North
- ☐ Central
- ☐ South
- ☐ No preference



Q22. For the area you selected above, what is your preference for season dates in 2021? (Please check one.)

- ☐ Saturday Sept. 25 to Tuesday Nov. 23 (*same season as used last year in North Duck Zone*)
- ☐ Saturday Sept. 25 to Sunday October 3, close 5 days, reopen Saturday Oct. 9 to Sunday Nov. 28 (*same season as used last year in Central Duck Zone*)
- ☐ Saturday Sept. 25 to Sunday October 3, close 12 days, reopen Saturday Oct. 16 to Sunday, Dec. 5 (*same season as used last year in South Duck Zone*)
- ☐ No preference

Part IX. Youth Waterfowl Hunting Weekend

Q23. Do you support or oppose the concept of Youth Waterfowl Hunting Weekend? (Please check one.)

- | | | | | | | |
|-----------------|-------------------|-----------------|---------|------------------|--------------------|------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Strongly oppose | Moderately oppose | Slightly oppose | Neutral | Slightly support | Moderately support | Strongly support |

Part X. Waterfowl Hunting Involvement

Q24. How much do you agree or disagree with the following statements measuring the importance of waterfowl hunting to you personally? (Circle one number for each.)

	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
Being a waterfowl hunter is an important part of who I am.	1	2	3	4	5	6	7
Waterfowl hunting is something I rarely think about.	1	2	3	4	5	6	7
I would be at a loss if I were forced to give up waterfowl hunting.	1	2	3	4	5	6	7
Being a waterfowl hunter is about more than just hunting.	1	2	3	4	5	6	7
I have no clear feelings about being a waterfowl hunter.	1	2	3	4	5	6	7

Part XI. Waterfowl Hunting Trips and Costs

The following questions ask about your financial expenditures on waterfowl hunting. We will use this information to estimate the economic value of waterfowl hunting in Minnesota. *Please recall a waterfowl-hunting trip from this past season that you think represents a typical waterfowl-hunting trip for you.* The questions in this section will ask you to estimate specific attributes of this typical trip, including length, travel distance, and costs.

Q25. How many miles did you travel (one-way) from your home on your typical waterfowl hunting trip?

_____ miles one-way

Q26. How many days was your typical waterfowl hunting trip?

_____ days

Q27. In total about how much did you spend on each of the following on your typical waterfowl hunting trip? (Please exclude costs like guns, decoys, and boats that are not specific to a trip.)

If no costs in that category, please write 0

Automobile transportation \$ _____

Other transportation (e.g., boat fuel) \$ _____

Equipment and supplies (e.g., ammunition) \$ _____

Food and drinks \$ _____

Lodging \$ _____

Access (e.g., boat launch fees) \$ _____

Guide fees \$ _____

Other \$ _____

Q28. How many waterfowl hunting trips (a trip can be for part or all of a single day or for multiple days) did you take during the 2020 season?

_____ trips

Part XII. Waterfowl Hunting Regulations Information

Q29. Each year the MNDNR prints paper copies of books containing waterfowl hunting regulations, and general hunting regulations separately. There is a proposal to combine these two publications to reduce costs and save paper. How much would you support or oppose discontinuing printing of a separate waterfowl hunting regulations book, and including information on waterfowl hunting in the general hunting regulations book?

1	2	3	4	5	6	7
Strongly oppose	Moderately oppose	Slightly oppose	Neutral	Slightly support	Moderately support	Strongly support

Q30. When you are looking for information about waterfowl hunting regulations in Minnesota, how often do you consult the following sources?

	Never	Rarely	Occasionally	Often	Always
A paper copy of the waterfowl hunting regulations book	1	2	3	4	5
The Minnesota DNR website	1	2	3	4	5
A PDF copy of the waterfowl hunting regulations book saved to my computer or mobile device	1	2	3	4	5
A non-MNDNR third party resource	1	2	3	4	5

Q31. From the list of possible places to obtain information about waterfowl hunting in Minnesota, which one do you prefer the most, and which one do you prefer the least? Select one for most preferred and one for least preferred.

Least preferred	Waterfowl hunting regulation information source	Most preferred
<input type="checkbox"/>	The MNDNR Website	<input type="checkbox"/>
<input type="checkbox"/>	A printed copy of the waterfowl hunting regulations, separate from general hunting regulations	<input type="checkbox"/>
<input type="checkbox"/>	A mobile application on my phone provided by MNDNR	<input type="checkbox"/>
<input type="checkbox"/>	A printed copy of the general hunting regulations, including waterfowl hunting regulations	<input type="checkbox"/>
<input type="checkbox"/>	A PDF copy of the waterfowl hunting regulations saved to my mobile device or computer	<input type="checkbox"/>

Part XIII. About You

Q32. Are you currently a member of: (*Check all that apply.*)

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

Q33. Did you hunt for waterfowl in a state or province other than Minnesota in 2020? (*Please check one.*)

- ☐ No.
- ☐ Yes. *If yes, how many days did you hunt for waterfowl outside Minnesota?* _____

Q34. What is your age?

_____ years

Q35. What is the highest level of education you have completed? (*Check one.*)

- | | |
|--|---|
| <input type="checkbox"/> Grade school | <input type="checkbox"/> Some college |
| <input type="checkbox"/> Some high school | <input type="checkbox"/> Four-year college (bachelor's) degree |
| <input type="checkbox"/> High school diploma or GED | <input type="checkbox"/> Some graduate school |
| <input type="checkbox"/> Some vocational or technical school | <input type="checkbox"/> Graduate (master's or doctoral) degree |
| <input type="checkbox"/> Vocational or technical school (associate's) degree | |

Q36. What was your annual household income from all sources, before taxes, in 2020?

\$ _____

Is there anything else you would like to share about waterfowl hunting in Minnesota?

A report detailing the results of this study will be posted to the Minnesota DNR webpage in Spring 2021. If you have any questions about this study, please email WaterfowlHunterSurvey.DNR@state.mn.us.

THANK YOU FOR YOUR HELP!

Please return the completed questionnaire in the enclosed self-addressed, stamped envelope.