

# Results of the 2018-2019 Virginia Hunter Survey



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## **ABSTRACT**

The 2018-2019 Virginia hunter survey was conducted in January and February of 2019 to measure the satisfaction, preferences, and attitudes of Virginia hunters regarding game species and potential wildlife regulations. This was the first Virginia hunter survey to be hosted online. Licensed Virginia hunters were invited to complete the survey via an email invitation or a mailed postcard. Survey respondents completed 4,507 surveys with a response rate of 26.5%. Post-stratification weights were used to adjust calculated means to account for non-respondents, who were more likely to be younger than 45 years. The high number of responses, combined with statistical weighting, yielded highly reliable results that are representative of the hunters in Virginia.

## **INTRODUCTION**

This study was conducted to improve the agencies' understanding of resident hunters' satisfaction, preferences, and attitudes towards game species and potential wildlife regulations. The Virginia Department of Game and Inland Fisheries (DGIF) is responsible for managing the Commonwealth of Virginia's fish and wildlife resources. DGIF biologists and managers can use the results of this project to inform decisions that will impact wildlife and hunters in Virginia.

This is the 25<sup>th</sup> survey of Virginia hunters conducted by DGIF. This is the first statewide DGIF survey of Virginia hunters to use an online survey. Previous hunter surveys were conducted strictly via mail invitations. This methodology has long-served the needs of the agency, but the response rates for mail invitation surveys are declining (Baruch & Holtom, 2008) while the costs of mailing and postage are increasing. The development and success of DGIF's Go Outdoors Virginia (GOV) license sales platform provided an opportunity to send survey invitations via email and push-to-web (PTW) postcards. PTW survey invitations combine the strengths of mail and online surveys, by using a sample frame of physical addresses that has nearly complete coverage of licensed hunters and minimizing printing and mailing by using postcards instead of full envelopes. PTW survey invitations have begun to emerge as a cost effective method for sampling in human dimensions research (Serenari et al., 2019).

## **METHODS**

### *Sampling*

The survey design included two invitation methods, an email invitation and a PTW postcard invitation. These methods were used concurrently to evaluate their suitability for future DGIF surveys. Two random samples of resident Virginia hunters were drawn from the population of hunters that purchased one of the following licenses in calendar year 2018: Resident Hunting License, Resident Sportsman's License, Resident County or City Hunting License, Resident Senior Citizen Hunting License, and Resident Annual Hunting License for 70 Percent Partially Disabled Veterans. A sample of 9,940 hunters with email addresses in the GOV database was

drawn for the email invitations. More email invitations were sent compared to PTW invitations because email invitation surveys typically return lower response rates (Dillman et al., 2014). A sample of 7,500 hunters with physical addresses was drawn for the PTW invitation. This sample was evenly stratified into two groups, hunters with an email address in the database and hunters that do not have an email address in the database. Not all database entries have email addresses because hunters are not required to provide an address when purchasing a license, or vendors might not ask or record email addresses during a transaction. A majority of licensed hunters have an email address in the GOV system. An email address is required to use the GOV webpage or mobile application. In addition to purchasing licenses, hunters can use the GOV system to check harvested deer or turkey.

Procedures for distributing survey invitations followed Dillman's (2014) Tailored Design Method. Following an initial email invitation, a week later, one subsequent email reminder was sent to non-respondents. A second follow-up email reminder had been planned but was not sent based on the number of responses following the initial invitation and the reminder. Email invitations were sent on January 24, 2019. Of the 9,940 emails sent, 233 were undeliverable. The follow-up email reminder was sent to non-respondents on January 31, 2019. The email invitation survey was closed February 20, 2019. The survey received 2,800 responses for a response rate of 28.8%.

Postcard invitations were mailed on January 23 and January 24, 2019. Of the 7,500 invitations sent, 222 were undeliverable. First reminders were mailed on February 6 and final reminders were mailed on February 13. Responses completed on or before February 20, 2019 were included in data analysis. A total of 1,707 respondents completed the PTW survey for a response rate of 23.5%. The email and PTW survey invitations combined had 4,507 responses for a completion rate of 26.5%.

### *Survey Design*

The 2018-2019 hunter survey was transitioned to an online survey. Historically, DGIF hunter surveys were conducted with traditional paper mail surveys (e.g. Kidd et al., 2014). Online surveys with email invitations have several advantages over paper surveys. Email invitations do not incur costs for materials, postage, or labor to sort mail and input data from paper surveys into a digital format. Online surveys are more flexible than paper surveys. Online surveys commonly employ skip or display logic so respondents can receive follow-up questions based on responses to previous questions. These tools helped shorten the surveys for respondents that engaged in fewer hunting activities, increasing the chances of survey completion (Dillman et al., 2014). For example, early in the survey respondents were asked if they participated in the previous deer season. Later in the survey, only respondents that indicated that they participated in the deer season received questions about their satisfaction in the previous deer season. Two major disadvantages of an online survey are identifying an appropriate sample frame (a list of people that the sample is drawn from) with valid email addresses, and lower response rates compared to paper mail surveys. The development of the GOV system has resulted in a reliable sample frame with email addresses for licensed hunters. A higher number of email invitations were sent to mitigate for the expected lower response rate.



The survey instrument was developed in coordination with DGIF Terrestrial Wildlife Division staff. An initial scoping period was conducted with Terrestrial Wildlife leadership and project leaders to identify salient wildlife management issues. With feedback and suggestions from staff, question wording and structure was refined for accuracy and readability. Qualtrics Survey Software was used to design the survey, distribute email invitations, and received all survey responses.

### *Statistical Analyses*

A non-response bias test was conducted by comparing demographics of respondents and non-respondents. Some non-respondent demographic data was available in the GOV system. The mean age for respondents was higher than the mean age of non-respondents (Table 31). To develop post-stratification weights (Bethlehem, 2010), all sampling units, both respondents and non-respondents were broken into quartile ranges (Table 31). The age ranges within these quartiles was used to assign age categories to respondents. The post-stratification weight was calculated so that responses for each category would match the quartile range calculated for non-respondents (Table 31). This process helps to correct the bias for the high number of younger non-respondents.

There was also a difference in the proportion of respondents who self-identified as White compared to the proportion of non-respondents who were recorded as Non-white (add statistic). Post-stratification weights were not added to account for this bias because the non-respondent data in the GOV system is incomplete and not reliable enough to accurately calculate weights. Within the non-respondents sample there were more hunters without race or ethnicity recorded compared to the combined number of hunters that were recorded as Black, Hispanic, American Indian, or Asian. Similarly, among respondents more hunters responded with “Prefer not to say” compared to hunters that identified as a racial or ethnic minority (Table 30). There was not a significant gender difference between respondents and non-respondents.

There was also a difference between the ages of the sample receiving the email invitation and the sample receiving the PTW invitation. The difference between the average ages of email and PTW respondents was less than 3 years, the PTW sample was older ( $p < .001$ ). Because more email invitations were sent, we could have expected fewer respondents from older hunters. However, the effect size for this difference was weak, based on a calculated Cohen’s  $d = 0.18$  (Cohen, 1977). Consequently, responses were not weighted based on invitation type. Additionally, the difference between mean respondent and non-respondent ages was greater than the difference detected between invitation type. The non-response age bias was in the opposite direction, with fewer than expected younger respondents. This further supports the decision not to weight by invitation type.

## **RESULTS**

Tabular results of data are presented in Table 1 – Table 31. Broadly, the survey results can be divided into three sections. The first section includes questions related to game species and game management, which are presented in Table 1 – Table 20. The second section includes questions

related to communication and outreach, and these results are presented in Table 21 – Table 29. The demographics of survey respondents and non-respondents are presented in Table 30 and Table 31. Multivariate analyses and cross tabulations were calculated at the request of staff.

The survey was completed by over 95% of respondents that started they survey, indicating that the survey was an appropriate length. The median time of survey completion was 11.5 minutes. Typically, survey designers aim to keep the survey completion time under 15 minutes (Dillman et al., 2014). The average time is not reported because Qualtrics reports the time between when a survey is started and when it is completed. Respondents that started a survey and then completed the survey days later heavily skew the average survey completion time.

## **MANAGEMENT IMPLICATIONS**

The response rate for the email invitations was higher than expected, and represents an efficient, cost-effective method for collecting responses from constituents in the GoOutdoorsVA database. Although email invitation surveys are often criticized for low response rates, the response rate of this survey exceeded the expected response rate, at an efficient cost per response rate (Kaplowitz et al., 2004). This hunter survey implemented a modular design, some of the questions respondents received were based on previous responses. Successfully implementing this design in future surveys will help minimize survey completion time and retain high completion rates.

The PTW survey invitations are a valuable supplemental method for improving survey coverage. Email addresses are not required to purchase licenses from third-party vendors and a sizable portion of licensed hunters and anglers do not have an email address in the license database. If the number of emails within the GOV system increases and response rates to hunter and angler surveys remains high, PTW surveys may not be necessary in the future.

Future efforts to survey hunters would benefit from the addition of a non-digital survey for households without regular computer or internet access. A number of potential respondents called in by phone and expressed their willingness to complete the survey, but did not have regular internet access. A shortened survey could be implemented by phone, or a mail survey can be distributed to these households. These results could be used as part of a non-response survey (Dillman et al., 2014).

The lower response rate among younger hunters was unexpected, and indicates a need to further engage this group in human dimensions research and recruitment, retention, and reactivation (R3) efforts. Although email invitation surveys typically have lower response rates among older individuals (Lesser et al., 2011), there are cases in which surveys responses are biased towards older respondents (Gigliotti & Dietsch, 2014; Wallen et al., 2016). Although previous studies have detected differences in ages of respondents and sport avidity, by survey invitation type, those differences have been relatively weak (Wallen et al., 2016). That relationship could change if avidity or the relationship between constituent groups and DGIF changes. Future research among DGIF's constituents should continue to monitor for important differences in age groups for wildlife recreation avidity and trust between constituent groups and the agency.

To evaluate for differences between this online survey and previous DGIF paper surveys, the mean age of survey respondents was indirectly compared. The mean age of respondents to this hunter survey was higher than previous DGIF hunter surveys. Previous survey results indicate a consistent increase in mean age (e.g.,  $\bar{x} = 42.2$  in 1996-1997,  $\bar{x} = 47.7$  in 2013-2014). This aligns with national trend data that indicates that hunters are an aging population (USFWS 2014). The wording of the age question in previous surveys was “How old are you?” and the wording in this 2018-2019 survey was “In what year were you born?” This change was made because asking for year of birth is less off-putting, and could have resulted in more responses or more accurate responses compared to the previously used question. More importantly, this hunter survey only includes responses for hunters over the age of 18. Previous data analysis of hunter surveys included youth responses to more accurately estimate harvest and effort. In summary, the mean age among respondents in this survey is relatively consistent with known information of the population and changes made to the survey.

Table 1. Percent response and count of respondents that hunted deer, turkey, and ruffed grouse in the 2018-2019 season.

	Response %	Count
Deer	86.2	3590
Spring Turkey	46.9	1955
Fall Turkey	23.6	981
Ruffed Grouse	3.3	138

Table 2. Results to the questions of level of importance for hunting game species. Mean response is based on a scale of, Not at all important (1) to Extremely Important (7).

	Mean (1-7)	Response % (Count)						
		Not at all Important	-	-	Moderately Important	-	-	Extremely Important
Deer	6.2	3.5 (144)	1.1 (44)	1.4 (59)	9.0 (371)	6.0 (247)	10.9 (449)	68.2 (2832)
Fall Turkey	3.8	19.8 (795)	7.8 (312)	10.3 (414)	34.2 (1371)	7.0 (279)	5.4 (217)	15.4 (618)
Spr. Turkey	4.9	11.8 (480)	4.5 (183)	5.5 (223)	22.5 (913)	8.3 (338)	8.8 (358)	38.4 (1558)
Bear	3.4	34.6 (1390)	8.5 (343)	7.3 (295)	22.0 (885)	5.8 (235)	4.9 (197)	16.7 (673)
Rabbit	3.5	26.6 (1076)	9.3 (377)	10.6 (429)	28.2 (1141)	7.1 (289)	5.7 (231)	12.4 (501)
Squirrel	3.6	25.4 (946)	8.9 (344)	9.0 (353)	28.6 (1099)	8.7 (335)	7.0 (273)	12.4 (471)
Quail	2.8	41.5 (1552)	10.9 (426)	8.9 (344)	20.4 (765)	5.0 (193)	4.5 (168)	8.9 (325)
Raccoon	2.3	58.9 (2207)	9.8 (378)	6.8 (263)	13.8 (515)	1.8 (69)	2.3 (79)	6.7 (245)
Fox	2.6	50.0 (1869)	9.8 (375)	7.8 (299)	18.4 (688)	4.1 (156)	2.8 (103)	7.2 (267)
Waterfowl	3.5	37.5 (1430)	6.5 (247)	5.8 (215)	16.1 (613)	4.6 (180)	5.4 (196)	24.1 (902)
Ruff. Grouse	2.5	50.1 (2003)	9.5 (382)	8.4 (337)	18.1 (724)	3.8 (153)	2.6 (104)	7.4 (298)
Woodcock	2.2	59.3 (2368)	9.8 (392)	7.3 (291)	13.8 (551)	2.8 (113)	1.9 (75)	5.0 (200)

Table 3. Results to the question, “Overall, how would you rate the quality of the DEER seasons in 2018-2019?” Mean response is based on a scale of, Poor (1) to Excellent (7).

	Mean (1-7)	Response % (Count)						
		Poor	-	-	Adequate	-	-	Excellent
Archery		8.8	4.8	7.7	37.2	12.8	11.2	17.5
	4.5	(278)	(150)	(243)	(1175)	(405)	(353)	(553)
Muzzleloader		8.2	4.2	7.4	33.5	13.9	13.3	19.4
	4.7	(269)	(136)	(242)	(1095)	(454)	(435)	(633)
Firearms		9.5	5.3	9.3	29.9	13.6	13.9	18.6
	4.5	(328)	(182)	(320)	(1033)	(470)	(482)	(643)

Table 4. Results to the question, “Please indicate your level of support or opposition to the following daily bag limit **West of the Blue Ridge:**” Average response is based on a scale of Strongly Oppose (1) to Strongly Support (7). All other values reported are percent of responses.

	Mean (1-7)	Response % (Count)						
		Strongly Oppose	-	-	Neither	-	-	Strongly Support
One deer per day (all lands)		17.3	4.2	4.2	43.9	4.4	4.4	21.6
	4.1	(591)	(145)	(142)	(1501)	(152)	(149)	(739)
Two deer per day (all lands)		15.3	3.0	4.0	37.1	7.0	6.5	27.1
	4.5	(527)	(102)	(136)	(1278)	(242)	(222)	(934)
Only one deer per day may be antlerless on VDGIF and National Forest (NF) lands		16.0	3.6	3.8	42.8	7.5	7.5	18.9
	4.3	(547)	(124)	(129)	(1466)	(256)	(257)	(646)
Two deer per day (private lands); One deer per day on VDGIF & NF lands		15.2	3.4	3.2	40.5	8.0	6.8	22.8
	4.4	(523)	(118)	(110)	(1390)	(273)	(234)	(782)

Table 5. Results to the questions, “How did you check deer you harvested during the 2018-2019 hunting season?” Responses total to over 100% because respondents could select more than one answer.

	Response %	Count
Called-in with phone	41.7	1232
Using DGIF Website	17.6	520
Using DGIF GoOutdoorsVA App	43.2	1275
Physical game check station	13.0	383
ONLY physical game check station	7.6	224

Table 6. Results to the questions, “How important or unimportant are the following when checking your deer at a public deer check station?” Average response is based on a scale of Not at all important (1) to Extremely Important (5). All other values reported are percent of responses.

	Mean (1-5)	Response % (Count)				
		Not at all important	Slightly important	Moderately important	Very important	Extremely important
Sharing hunting experience	3.1	21.5 (24)	8.9 (33)	30.4 (113)	22.5 (84)	16.8 (64)
Displaying harvest to others	2.5	34.3 (131)	12.3 (47)	32.5 (124)	11.5 (44)	9.4 (36)
Receiving a physical check card	3.0	22.9 (26)	10.3 (38)	27.6 (105)	19.2 (71)	20.0 (76)
Maintaining a tradition	3.6	14.7 (56)	6.3 (24)	20.7 (79)	22.8 (87)	35.6 (136)
Learning about harvest of others	3.2	14.4 (55)	10.5 (40)	32.5 (124)	25.7 (98)	17.0 (65)
Learning about largest harvest of others	3.4	13.1 (50)	9.9 (38)	26.7 (102)	25.1 (96)	25.1 (96)
Receiving a physical check	2.8	25.6 (33)	11.9 (41)	31.4 (116)	15.8 (60)	15.3 (61)
Don't have to call DGIF <sup>†</sup>	2.5	40.7 (153)	8.8 (33)	25.5 (96)	12.2 (46)	12.8 (48)
Don't have to use DGIF website <sup>†</sup>	2.3	43.1 (163)	11.1 (42)	24.3 (92)	8.7 (33)	12.7 (48)
Don't have to use DGIF Go Outdoors App <sup>†</sup>	2.3	46.5 (175)	10.9 (41)	22.6 (85)	8.0 (30)	12.0 (45)

<sup>†</sup> Final three survey items have high internal consistency (Cronbach's  $\alpha = .945$ ). This indicates that the survey items are measuring the same thing, the importance of having an alternative to electronic or phone systems for deer checking.

Table 7. Results to the questions, “Overall, how would you rate the quality of your **2018 Spring** [2018-2019 Fall] turkey season?” Average response is based on a scale of Poor (1) to Excellent (7).

	Mean	Response % (Count)						
		Poor	-	-	Adequate	-	-	Excellent
2018 Spring turkey	4.3	10.5 (204)	5.6 (108)	10.0 (194)	38.4 (744)	12.8 (248)	8.5 (165)	14.1 (272)
2018-2019 Fall turkey	3.8	12.9 (126)	6.4 (62)	10.8 (105)	47.2 (460)	9.1 (89)	5.5 (54)	8.1 (79)

Table 8. Results to the question, “Where do you primarily hunt for turkeys?” Responses total to over 100% because respondents could select more than one answer.

Type of area hunted	Response %	Count
Private	83.5	1876
Federal lands (National Forests)	11.4	256
State lands (WMA, State Forest)	5.1	115

Table 9. Results to the question, “Did you participate in the 2018-2019 bear season?”

	Response %	Count
Yes, I harvested a bear	2.2	90
Yes, but I did NOT harvest a bear	25.3	1053
No, but I’m interested in harvesting a bear in the future	38.9	1616
No, and I am not interested in harvesting a bear in the future	33.6	1398

Table 10. Results to the question, “Did you harvest a black bear during the 2018-2019 season while:”

	Response %	Count
Deer hunting	34.4	31
Hunting for other game	1.1	1
Hunting specifically for bear	64.4	58



Table 11. Results to the questions, “Do you agree or disagree that the following explain why you did not harvest a bear during the 2018-2019 season?” Average response is based on a scale of Disagree (1) to Agree (5).

	Mean (1-5)	Response % (Count)				
		Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree
Did not see any bears	3.5	28.3 (724)	3.8 (98)	13.7 (349)	6.6 (169)	47.5 (1214)
Did not see a big enough bear	2.8	39.0 (949)	3.0 (72)	29.6 (719)	5.8 (140)	22.7 (552)
Shot but could not retrieve the bear	1.5	77.3 (1847)	0.1 (3)	21.1 (505)	0.3 (7)	1.2 (28)
Did not have a good clean shot	2.0	63.3 (1507)	0.8 (18)	25.6 (608)	1.6 (39)	8.7 (207)
Did not want to handle/transport bear carcass	1.8	66.0 (1578)	1.3 (31)	25.2 (603)	3.2 (76)	4.3 (102)
Do not know how to dress a bear	1.9	64.6 (1544)	1.8 (43)	22.7 (543)	4.0 (95)	6.9 (165)
Did not want to spend the time traveling to and checking at a bear station	2.0	60.8 (1452)	2.2 (53)	25.0 (598)	5.7 (136)	6.3 (150)

Table 12. Results to the questions, “Do you agree or disagree that the following explain why you are not interested in hunting bear?” Average response is based on a scale of Disagree (1) to Agree (5).

	Response % (Count)					
	Mean (1-5)	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree
Bear are too hard to find	2.4	31.0 (404)	10.4 (135)	44.4 (578)	7.3 (95)	7.0 (91)
No interest in harvesting a bear	4.1	2.8 (38)	2.4 (33)	14.1 (191)	13.6 (184)	67.0 (905)
No interest in bear meat	3.8	6.4 (85)	5.3 (71)	19.2 (257)	11.2 (150)	57.9 (775)
Already killed a bear in my lifetime	1.6	73.1 (957)	0.8 (10)	17.6 (231)	0.5 (6)	8.1 (106)
Did not want to buy a bear license	3.2	24.0 (319)	1.4 (19)	27.0 (358)	5.8 (77)	41.7 (554)
Do not want to handle/transport bear carcass	3.0	27.1 (357)	2.1 (28)	32.7 (431)	7.7 (101)	30.4 (400)
Do not know how to dress a bear carcass	2.7	35.8 (471)	4.1 (54)	27.1 (356)	7.6 (100)	25.4 (334)
Did not want to spend the time traveling to and checking a bear at a check station	2.6	33.5 (442)	2.8 (37)	39.9 (526)	5.0 (66)	18.7 (247)

Table 13. Contingency table of responses that explain no interest in hunting bear. Column of All Respondents calculated by adding “Somewhat Agree” and “Agree” responses. Column for “No interest in harvesting a bear” calculated by adding “Somewhat Agree” or “Agree” responses for both “No interest in harvesting a bear” responses and row item responses.

	All Respondents Percent (Count)	Agreement with “No interest in harvesting a bear”
Did not want to buy a bear license	47.5 (631)	50.4 (533)
Do not want to handle/transport bear carcass	38.1 (501)	43.2 (454)
Do not know how to dress a bear carcass	33.0 (434)	35.3 (372)
Did not want to spend the time traveling to and checking a bear at a check station	23.7 (313)	24.7 (260)

Table 14. Respondents' preference for type of check station for checking black bear.

	Response %	Count
Physical check station	27.3	1116
Electronic check station	35.9	1467
Not sure/ Need more information	9.1	373
No preference	27.7	1133

Table 15. Respondents' likelihood of harvesting a bear if an electronic check option was available.

	Response %	Count	Mean (1-5)
Much more likely	7.5	304	3.2
More likely	14.8	600	
Neither more or less likely	70.2	2856	
Less likely	3.0	123	
Much less likely	4.5	183	

Table 16. Responses to potential options for receiving instructions for removing a bear tooth and using an electronic check system. Responses total to over 100% because respondents could select more than one answer.

	Response %	Count
Instructions printed on envelope	34.0	1325
Instruction sheet mailed with envelope	29.5	1148
Instructions on the DGIF website	43.7	1702
Link to instruction on DGIF GoOutdoorsVA App	34.8	1357
Youtube video with instructions	42.1	1639

Table 17. Combined responses for receiving instructions for removing a bear tooth and using an electronic check system. Does not include multiple responses for more than two categories.

	Response %	Count
Printed & Mailed	11.5	446
Printed & Website	15.0	584
Printed & App	12.6	491
Printed & Youtube	14.2	554
Mailed & Website	15.1	589
Mailed & App	12.0	467
Mailed & Youtube	14.0	546
Website & App	20.7	805
Website & Youtube	22.2	864
App & Youtube	19.7	768

Table 18. Results to the question, “Have you ever hunted grouse before? If yes, when did you most recently hunt grouse?”

	Response %	Count
No	65.3	2579
Yes, within the past 5 years	6.7	265
Yes, in the past 5-10 years	7.0	275
Yes, it’s been more than 10 years	21.1	832

Table 19. Results to the question, “Do you agree or disagree that the following have limited or prevented you from hunting grouse?” Mean response is based on a scale of, Strongly disagree (1) to Strongly agree (5).

	Mean (1-5)	Response % (Count)				
		Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Lack of places to hunt grouse near me	3.7	9.9 (368)	3.6 (134)	31.6 (1177)	19.1 (712)	35.9 (1338)
Don't have a place to raise or train a dog	3.0	20.6 (717)	6.4 (226)	44.1 (1502)	12.3 (422)	16.6 (565)
I don't want to train a dog	2.9	23.3 (847)	6.9 (253)	42.2 (1537)	10.2 (370)	17.4 (634)
I don't have anyone to hunt with	2.6	29.6 (1078)	7.7 (281)	41.0 (1493)	12.4 (451)	9.3 (338)
I don't have the time	2.8	24.9 (906)	9.5 (345)	42.0 (1530)	14.9 (541)	8.8 (321)
Hunting grouse is too challenging	2.4	29.4 (1067)	11.4 (414)	50.8 (1840)	5.5 (201)	2.8 (103)
Grouse populations are too low	3.6	5.8 (215)	2.2 (81)	44.2 (1631)	16.2 (598)	31.6 (1167)
The terrain is difficult to navigate	2.6	24.4 (887)	8.8 (321)	53.9 (1961)	8.9 (325)	4.0 (144)

Table 20. Responses to the question, “DGIF manages for wildlife habitat on publicly accessible, wildlife management areas (WMA) located across Virginia. How strongly do you support or oppose the following wildlife habitat practices for DGIF WMAs?”

	Response % (Count)					
	Mean (1-5)	Oppose	Somewhat oppose	Neither oppose or support	Somewhat support	Support
Logging some areas to create openings of promote growth of desired species of vegetation	4.2	3.8 (154)	3.9 (159)	12.2 (493)	23.4 (944)	56.7 (2290)
Prescribed burning of some areas to reduce fuel loading or to promote growth of desired species of vegetation	4.3	2.9 (118)	3.5 (140)	12.5 (504)	22.9 (925)	58.2 (2346)
Use of herbicides to manage vegetation	3.0	22.6 (912)	17.8 (715)	22.9 (922)	15.6 (627)	21.2 (852)
Mechanical techniques to manage vegetation, such as mowing or mulching	4.3	1.7 (70)	1.6 (66)	14.2 (570)	24.7 (994)	57.7 (2323)
Planting crops for wildlife food and habitat	4.7	0.9 (38)	0.4 (16)	5.8 (234)	11.1 (448)	81.8 (3306)

Table 21. Results to the question, “Overall, how would you rate the usefulness of the Virginia Hunting and Trapping regulations booklet?”

Response	Response %	Count	Mean (1-5)
Not at all useful (1)	2.4	98	3.9
Slightly useful	4.8	192	
Moderately useful	17.6	707	
Very useful	43.3	1749	
Extremely useful (5)	31.6	1270	

Table 22. Results to the question, “How many times did you refer to the Virginia Hunting and Trapping regulations booklet in 2018?”

Response	Response %	Count
Never	10.0	404
Once	7.1	287
2-3 times	28.9	1168
4-6 times	23.3	942
More than 7 times	30.7	1240

Table 23. Results to the question, “Did you refer to the Virginia Hunting and Trapping regulations booklet or a digital DGIF source (website or app) more often to check hunting and trapping regulations?”

Response	Response %	Count
Checked booklet much more often (1)	15.8	630
Checked booklet more often	10.7	426
Check booklet and digital sources about the same	24.5	979
Checked digital sources more often	19.4	773
Checked digital sources much more often (5)	29.6	1181



Table 24. Results to the questions, “How useful are the following Virginia Hunting and Trapping regulation booklet sections?” Mean value excludes “Not sure/Don’t know” responses.

	Mean (1-5)	Response % (Count)					
		Not sure/ Don’t know	Not at all useful	Slightly useful	Moderately useful	Very useful	Extremely useful
What’s new- Changes to regulations	4.2	0.7 (27)	5.2 (207)	15.5 (616)	37.4 (1489)	34.7 (1382)	6.6 (261)
Hunting Licenses & Fees	3.9	2.4 (95)	9.6 (379)	20.9 (829)	35.6 (1410)	26.6 (1054)	5.0 (199)
General Hunting Information	4.0	0.9 (37)	6.6 (262)	18.6 (741)	40.5 (1612)	29.2 (1161)	4.2 (168)
Local Firearm Ordinances	4.0	2.5 (98)	9.8 (388)	17.5 (694)	34.9 (1386)	30.4 (1205)	5.0 (198)
Tagging and Checking	4.0	1.9 (74)	9.4 (374)	19.8 (785)	36.7 (1454)	26.9 (1067)	5.3 (209)
Public Hunting Lands	3.9	3.8 (152)	12.4 (492)	22.0 (872)	29.4 (1166)	24.6 (975)	7.7 (307)
Quota Hunts	4.0	6.4 (251)	13.2 (523)	19.4 (766)	24.6 (971)	22.0 (868)	14.4 (569)

Table 25. Results to the question, “Do you agree or disagree that the regulation booklet presents information in a way that is easy to comprehend?”

Response	Response %	Count	Mean (1-5)
Strongly agree (1)	37.0	1477	2.1
Somewhat agree	35.9	1434	
Neither agree or disagree	12.9	514	
Somewhat disagree	9.8	391	
Strongly disagree (5)	4.5	180	

Table 26. Results to the question, “DGIF is considering combining the Hunting and Trapping booklet and the Migratory Game Bird Hunting booklet into a single booklet. Would you support or oppose the creation of a single booklet?”

Response	Response %	Count	Mean (1-5)
Strongly support (1)	45.9	1844	2.0
Somewhat support	20.6	830	
Neither oppose or support	22.7	913	
Somewhat oppose	5.8	235	
Strongly oppose (5)	4.9	199	

Table 27. Results to the question, “Would you consider mentoring an adult apprentice or youth hunter in Fall 2019?”

Response	Response %	Count
I am interested in mentoring an adult apprentices(s)	4.4	176
I am interested in mentoring a youth hunter(s)	15.7	625
I am interested in mentoring either an adult apprentice(s) or a youth hunter(s)	24.8	984
I am not interested in mentoring	55.1	2187

Table 28. Results to the question, “The youth and apprentice bear, deer, and turkey hunting weekends are currently held on three separate weekends. Would you prefer that these hunts remain on separate weekends, or be combined into a single weekend?”

Response	Response %	Count
Keep separate	55.0	2193
Combine	13.5	540
No preference	25.4	1012
Not sure/ Need more information	6.1	244

Table 29. Results to the question, “Would you be willing to purchase a voluntary habitat stamp if the funds are earmarked for upland wildlife habitat management on public lands?”

Response	Response %	Count
Yes	40.5	1627
No	21.8	876
Not sure	37.7	1515

Table 30. Demographics of survey respondents.

Demographics	Response %	Count
<u>Gender</u>		
Female	3.1	123
Male	96.3	3876
Prefer not to say	0.6	26
<u>Race/Ethnicity</u>		
White	94.1	3745
Non-White	2.4	96
Prefer not to say	3.5	138
<u>Age</u>		
	$\bar{x}$	
	48.8	

Table 31. Comparison of respondent and non-respondent ages.

Age (Years)	All	Respondents	Non-respondents
Mean	45.1	48.5	44.0
25 <sup>th</sup> Percentile	34		
Median	46		
75 <sup>th</sup> Percentile	56		
Ranges*			
First Quartile Range (18-33)	24.1 %	16.0 %	26.9 %
Second Quartile (34-44)	24.7 %	21.7 %	25.7 %
Third Quartile (45-54)	25.2 %	28.9 %	24.1 %
Fourth Quartile (55-93)	25.9 %	33.3 %	23.4 %

\* Presented by percent of column. The quartile ranges were calculated by using All sample.

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## APPENDICES

### *Appendix 1. 2018-2019 Hunter Survey*



**CONSERVE. CONNECT. PROTECT.**

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Thank you for participation in this survey. Results from this survey are confidential and will only be reported in aggregate. Your individual responses and information will not be shared with any other parties.

The first section of this survey relates to popular hunting species. Please consider the most recent hunting seasons for the following questions.

Did you hunt for deer in the 2018-2019 season?

☐ Yes

☐ No

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Did you hunt turkey in the **2018 Spring** season?

☐ Yes

☐ No

---

Did you hunt turkey in the **2018-2019 Fall** season?

☐ Yes

☐ No

---

Did you hunt for ruffed grouse in the 2018-2019 season?

☐ Yes

☐ No

---

Indicate the level of **importance** you place on hunting the following species:

	Not at all Important	-	-	Moderately Important	-	-	Extremely Important
Deer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fall Turkey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spring Turkey	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rabbit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Squirrel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raccoon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fox	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Waterfowl	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ruffed Grouse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Woodcock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall, how would you rate the quality of the DEER seasons in 2018-2019?

	Poor	-	-	Adequate	-	-	Excellent
Archery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Muzzleloader	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Firearms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---



Please indicate your level of support or opposition to the following daily bag limit **West of the Blue Ridge**:

	Strongly Oppose	-	-	Neither Oppose or Support	-	-	Strongly Support
One deer per day (all lands)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Two deer per day (all lands)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Two deer per day (all lands); Only one deer per day may be antlerless on VDGIF and National Forest (NF) lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Two deer per day (private lands); One deer per day on VDGIF & NF lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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How did you check the deer you harvested during the 2018-2019 hunting season? (*Check all that apply*)

- ☐ Telephone checking system — (866) GOT-GAME
  - ☐ Internet checking system — [www.gooutdoorsvirginia.com](http://www.gooutdoorsvirginia.com)
  - ☐ GoOutdoorsVA Mobile App
  - ☐ Physical game check station
-

How important or unimportant are the following when checking your deer at a physical game check station:

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Sharing your hunting experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Displaying your harvest to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a physical check card	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining a tradition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning about the harvest of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning about big bucks being harvested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Receiving a physical check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't have to call DGIF	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't have to use DGIF website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't have to use DGIF Go Outdoors App	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall, how would you rate the quality of your **2018 Spring** turkey season?

- ☐ Poor
  - ☐ -
  - ☐ -
  - ☐ Adequate
  - ☐ -
  - ☐ -
  - ☐ Excellent
- 

Overall, how would you rate the quality of your **2018-2019 Fall** turkey season?

- ☐ Poor
  - ☐ -
  - ☐ -
  - ☐ Adequate
  - ☐ -
  - ☐ -
  - ☐ Excellent
-

Where do you primarily hunt for turkeys?

- ☐ Private lands
- ☐ Federal lands (National Forests)
- ☐ State lands (WMA, State Forest)

Did you participate in the 2018-2019 bear season?

- ☐ Yes, I harvested a bear
- ☐ Yes, but I did NOT harvest a bear
- ☐ No, but I'm interesting in harvesting a bear in the future
- ☐ No, and I am not interested in harvesting a bear in the future

Did you harvest a black bear during the 2018-2019 season while:

- ☐ Deer hunting
  - ☐ Hunting for other game
  - ☐ Hunting specifically for bear
-

Do you agree or disagree that the following explain why you did not harvest a bear during the 2018-2019 season?

	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree
Did not see any bears	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not see a big enough bear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shot but could not retrieve the bear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not have a good clean shot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not want to handle/transport bear carcass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not know how to dress a bear carcass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not want to spend the time traveling to and checking a bear at a check station	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you agree or disagree that the following explain why you are not interested in hunting bear?

	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Agree
Bear are too hard to find	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No interest in harvesting a bear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No interest in bear meat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Already killed a bear in my lifetime	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not want to buy a bear license	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not want to handle/transport bear carcass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do not know how to dress a bear carcass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Did not want to spend the time traveling to and checking a bear at a check station	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DGIF is considering an option to allow hunters to electronically check bears. To manage bears, DGIF needs biological data from the harvested bear. If a bear is electronically checked, a bear tooth will need to be removed and mailed to DGIF. This tooth is used to determine the age of the bear, helping DGIF estimate the bear population size and health. DGIF would send specially marked envelopes and instructions to bear hunters.



With that in mind, would you prefer to use a physical check station or an electronic check system to check a black bear?

- ☐ Physical check station
  - ☐ Electronic check system
  - ☐ Not sure/ Need more information
  - ☐ No preference
- 

Would you be more or less likely to harvest a bear if you had the option to electronically check a bear? (Keep in mind that you would be required to remove and mail a bear tooth.)

- ☐ Much less likely
  - ☐ Less likely
  - ☐ Neither more or less likely
  - ☐ More likely
  - ☐ Much more likely
-

DGIF will provide information about how to remove a bear tooth if an electronic bear check system is started. Which of the following would be useful to you? (*Check all that apply*)

- ☐ Instructions printed on envelope
- ☐ Instruction sheet mailed with envelope
- ☐ Instructions on the DGIF website
- ☐ Link to instructions on DGIF Go Outdoors App
- ☐ Youtube video with instructions

Have you ever hunted grouse before? If yes, when did you most recently hunt grouse?

- ☐ No
  - ☐ Yes, within the past 5 years
  - ☐ Yes, in the past 5-10 years
  - ☐ Yes, it's been more than 10 years
-

Do you agree or disagree that the following have limited or prevented you from hunting grouse?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Lack of places near me to hunt grouse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Don't have a place to raise or train a dog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't want to train a dog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have anyone to hunt with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't have the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hunting grouse is too challenging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grouse populations are too low	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The terrain is difficult to navigate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

DGIF manages for wildlife habitat on publicly accessible, wildlife management areas (WMAs) located across Virginia. How strongly do you support or oppose the following wildlife habitat practices for DGIF WMAs?

	Oppose	Somewhat oppose	Neither oppose or support	Somewhat support	Support
Logging some areas to create openings of promote growth of desired species of vegetation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prescribed burning of some areas to reduce fuel loading or to promote growth of desired species of vegetation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of herbicides to manage vegetation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mechanical techniques to manage vegetation, such as mowing or mulching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planting crops for wildlife food and habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall, how would you rate the usefulness of the Virginia Hunting and Trapping regulations booklet? (An image of the 2018-2019 Hunting & Trapping regulations booklet is below)

- ☐ Not at all useful
- ☐ Slightly useful
- ☐ Moderately useful
- ☐ Very useful
- ☐ Extremely useful



How many times did you refer to the Virginia Hunting and Trapping regulations booklet in 2018?

- ☐ Never
  - ☐ Once
  - ☐ 2-3 times
  - ☐ 4-6 times
  - ☐ More than 7 times
- 

Did you refer to the Virginia Hunting and Trapping regulations booklet or a digital DGIF source (website or app) more often to check hunting and trapping regulations?

- ☐ Checked booklet much more often
  - ☐ Checked booklet more often
  - ☐ Checked booklet and digital sources about the same
  - ☐ Checked digital sources more often
  - ☐ Checked digital sources much more often
-

How useful are the following Virginia Hunting and Trapping regulation booklet sections:

	Not sure/ Don't know	Not at all useful	Slightly useful	Moderately useful	Very useful	Extremely useful
What's new- Changes to regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hunting Licenses & Fees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General Hunting Information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Firearm Ordinances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tagging and Checking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Public Hunting Lands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quota Hunts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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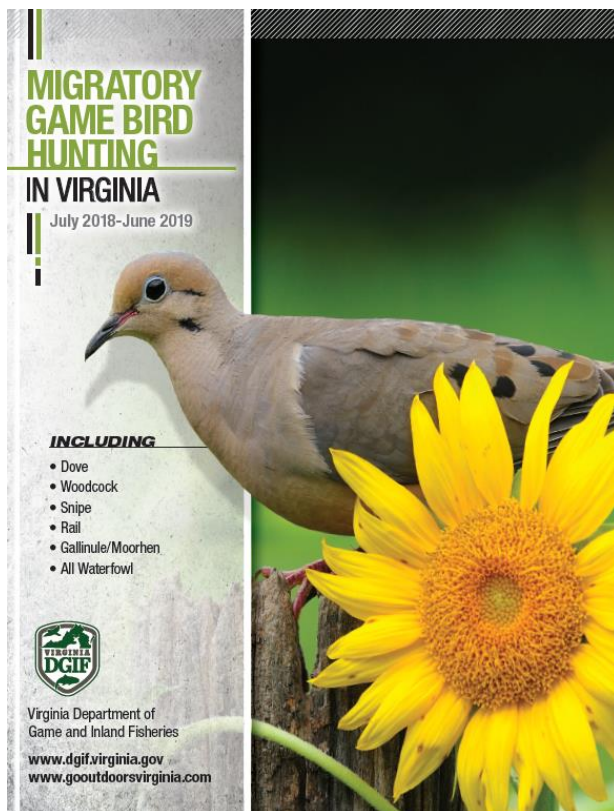


Do you agree or disagree that the regulation booklet presents information in a way that is easy to comprehend?

- ☐ Strongly agree
  - ☐ Somewhat agree
  - ☐ Neither agree nor disagree
  - ☐ Somewhat disagree
  - ☐ Strongly disagree
-

DGIF is considering combining the Hunting and Trapping booklet and the Migratory Game Bird Hunting booklet into a single booklet. Would you support or oppose the creation of a single booklet? (An image of the 2018-2019 Migratory Game Bird Hunting regulations booklet is below)

- ☐ Strongly support
- ☐ Somewhat support
- ☐ Neither oppose or support
- ☐ Somewhat oppose
- ☐ Strongly oppose
- 



Would you consider mentoring an adult apprentice or youth hunter in Fall 2019?

- ☐ I am interested in mentoring an adult apprentice(s)
  - ☐ I am interested in mentoring a youth hunter(s)
  - ☐ I am interested in mentoring either an adult apprentice(s) or a youth hunter(s)
  - ☐ I am NOT interested in mentoring
- 

The youth and apprentice bear, deer, and turkey hunting weekends are currently held on three separate weekends. Would you prefer that these hunts remain on separate weekends, or be combined into a single weekend?

- ☐ Keep separate
  - ☐ Combine
  - ☐ No preference
  - ☐ Not sure/ Need more information
- 

Would you be willing to purchase a voluntary habitat stamp if the funds are earmarked for upland wildlife habitat management on public lands?

- ☐ Yes
- ☐ No
- ☐ Not sure

What is your gender?

- ☐ Female
  - ☐ Male
  - ☐ Prefer not to say
- 

What is your race or ethnicity? (Check all that apply)

- ☐ American Indian or Alaskan Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic, Latino, or Spanish Origin
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White
- ☐ Prefer not to say

In what year were you born?

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If you have any further comments about hunting in Virginia, please share them in the space below.

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Thank you for taking the time to complete this survey. If you have questions regarding the study or this questionnaire, please contact the agency's Human Dimensions Specialist, Rene Valdez by email at [surveys@dgif.virginia.gov](mailto:surveys@dgif.virginia.gov) or by phone at 804-367-8747.

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This program receives Federal financial assistance from the U.S. Fish and Wildlife Service. Under Title VI of the 1964 Civil Rights Act, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, the U.S. Department of the Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or disability. If you believe that you have been discriminated against in any program, activity or facility as described above, or if you need more information please write to: The Civil Rights Coordinator for Public Access, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Mail Stop: WSFR-4020, Arlington, VA 22203.

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## *Appendix 2.1 Email survey invitation*



**CONSERVE. CONNECT. PROTECT.**

The Virginia Department of Game and Inland Fisheries invites you to participate in the 2018-2019 Hunter Survey. This survey is being conducted to better understand the specific game you hunted, how satisfied you were with your hunting experience, and to get your feedback on some of our proposed management plans.

You are among a small group of hunters selected for this survey. Your views are important to us and are used to develop wildlife management plans. We want your feedback even if you did not hunt this past year.

Please follow the instructions below to begin the survey. This survey should take no more than 10-15 minutes to complete. The results of this survey will be posted to our website this spring. If you have any questions about the survey, contact us at [surveys@dgif.virginia.gov](mailto:surveys@dgif.virginia.gov)

Thank you for your help!

**Follow this link to the Survey:**

[\\${!://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${!://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${!://OptOutLink?d=Click here to unsubscribe}](#)

*Appendix 2.2 Email survey reminder*



**CONSERVE. CONNECT. PROTECT.**

Dear Virginia Hunter,

Last week you should have received an invitation to participate in the 2018-2019 Hunter Survey. This is a reminder that the survey is still open and we want your feedback. You are among a small group of hunters selected for this survey and your views are important to us.

The survey can be accessed following the instructions below. This survey should take no more than 10-15 minutes to complete. If you have any questions about this survey, contact us at [surveys@dgif.virginia.gov](mailto:surveys@dgif.virginia.gov)

Thank you for your help!

**Follow this link to the Survey:**

[\\${!://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${!://SurveyURL}](#)

Follow the link to opt out of future emails:

[\\${!://OptOutLink?d=Click here to unsubscribe}](#)



### *Appendix 3.1 Postcard survey invitation*

#### **Dear Virginia Hunter,**

The Virginia Department of Game and Inland Fisheries invites you to participate in the 2018-2019 Hunter Survey. This survey is being conducted to better understand the specific game you hunted, how satisfied you were with your hunting experience, and to get your feedback on some of our proposed management plans.

You are among a small group of hunters selected for this survey. Your views are important to us and are used to develop wildlife management plans. The survey can be accessed online at [www.dgif.virginia.gov/surveys](http://www.dgif.virginia.gov/surveys). Your unique ID# to access the survey is on the opposite side of this postcard, below the address.

Sincerely,

Gray Anderson, Ph.D.  
Chief, Wildlife Resources Division

Virginia Department of Game and Inland Fisheries  
Conserve. Connect. Protect

Phone: 804-367-8747  
Email: [surveys@dgif.virginia.gov](mailto:surveys@dgif.virginia.gov)

#### **Virginia Department of Game and Inland Fisheries**

P.O. Box 90778  
Henrico, VA 23228-0778



CONSERVE. CONNECT. PROTECT.

### *Appendix 3.2 First postcard reminder*

#### **Dear Virginia Hunter,**

Last week you should have received an invitation to participate in the 2018-2019 Hunter Survey. If you have already completed this survey, thank you for your help. If you have not completed this survey, please do so at your earliest convenience. You are among a small group of hunters selected for this survey and your views are important to us.

The survey can be accessed online at [www.dgif.virginia.gov/surveys](http://www.dgif.virginia.gov/surveys). Your unique ID# to access the survey is on the opposite side of this postcard, below the address.

Sincerely,

Gray Anderson, Ph.D.  
Chief, Wildlife Resources Division

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Phone: 804-367-8747  
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**Virginia Department of  
Game and Inland Fisheries**  
P.O. Box 90778  
Henrico, VA 23228-0778



CONSERVE. CONNECT. PROTECT.

### *Appendix 3.3 Final postcard reminder*

#### **Dear Virginia Hunter,**

This is the final reminder to participate in the 2018-2019 Hunter Survey. If you have already completed this survey, thank you for your help. If you have not completed this survey, please do so at your earliest convenience. You are among a small group of hunters selected for this survey and your views are important to us.

The survey can be accessed online at [www.dgif.virginia.gov/surveys](http://www.dgif.virginia.gov/surveys). Your unique ID# to access the survey is on the opposite side of this postcard, below the address.

Sincerely,

Gray Anderson, Ph.D.  
Chief, Wildlife Resources Division

Virginia Department of Game and Inland Fisheries  
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Phone: 804-367-8747  
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#### **Virginia Department of Game and Inland Fisheries**

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